



ROOF DECK CATALOG

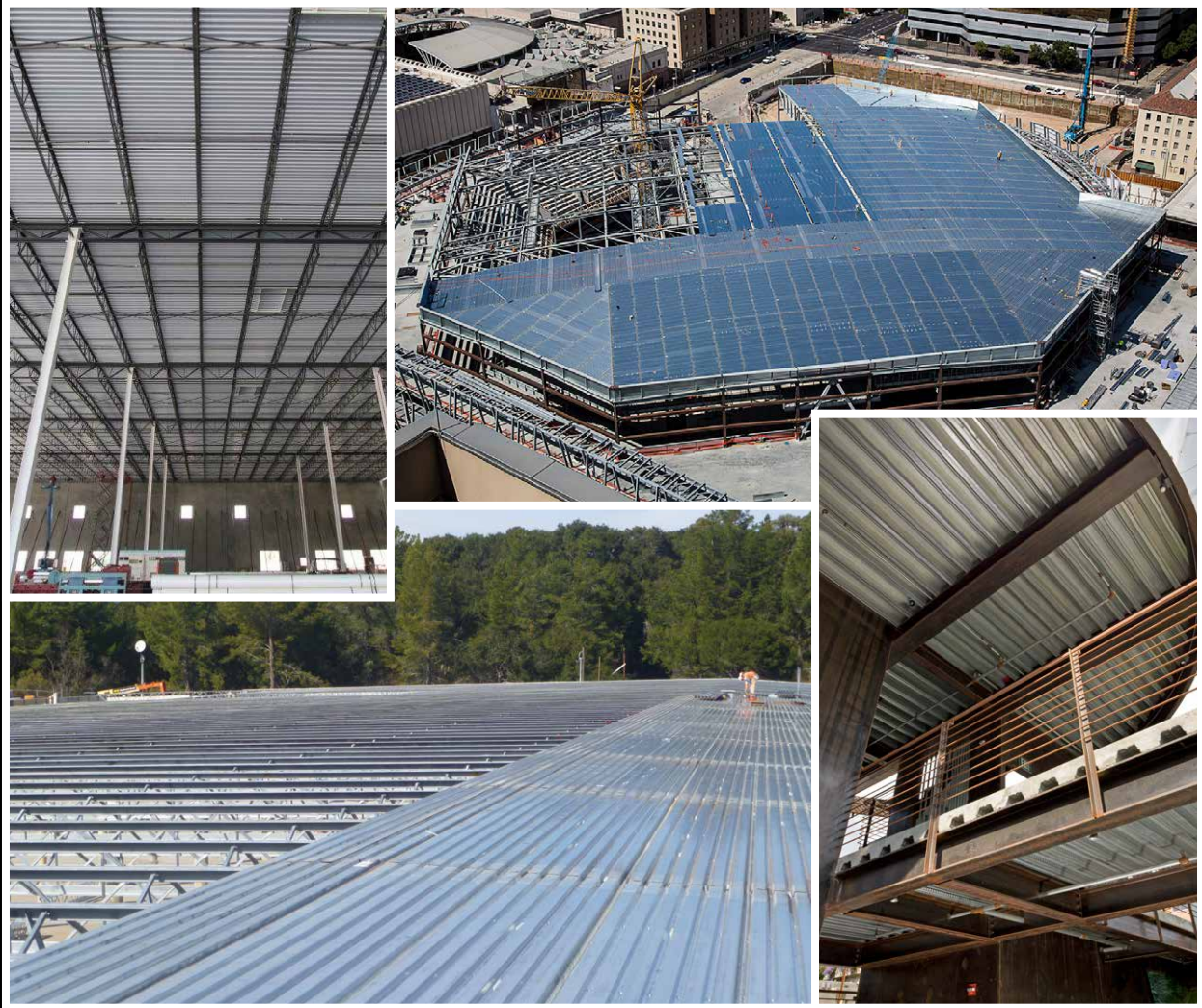




Table of Contents

ASC Steel Deck is leading the way in innovation with ongoing testing of our profiles. As a result, the printed catalog may not contain/reflect the latest test results and values of our products. For the most current load tables, refer to our catalog online at www.ascsd.com.

Your Feedback is Welcome

Leading the way in steel deck innovation is dependent upon your feedback. We invite architects, engineers, building owners, and all members of the building design and construction industry to reach out to ASC Steel Deck with any comments, suggestions, or needs for a profile we currently do not offer

Email us at info@ascsd.com

1.0 GENERAL INFORMATION

1.1	Introduction to ASC Steel Deck	2-3
1.2	Panel Features and Benefits	4-7
1.3	Product Offer	8-10
1.4	Product Approvals	11
1.5	Fire Ratings	12-15
1.6	Section Properties	16-17
1.7	Out of Plane Vertical Loads	18-19
1.8	Web Crippling	20-21
1.9	In Plane Diaphragm Shear	22-23
1.10	In Plane Diaphragm Flexibility	24-25
1.11	Support Fastening	26-31
1.12	Side Seam Fastening	32-33
1.13	Accessories	34-35

2.0 B PANELS

2.1	Properties & Vertical Loads	36-41
	Diaphragm Shear Tables	
2.2	DGB-36 & DGBF-36 with Welds	42-45
2.3	DGB-36 & DGBF-36 with Screws	46-49
2.4	DGB-36 & DGBF-36 with Hilti Nails	50-61
2.5	DGB-36 & DGBF-36 with Pneutek Fasteners	62-77
2.6	B-36 with Welds	78-79
2.7	BF-36 with Welds	80

3.0 N PANELS

3.1	Properties & Vertical Loads	82-87
	Diaphragm Shear Tables	
3.2	DGN-32 & DGNF-32 with Welds	88
3.3	DGN-32 & DGNF-32 with Screws	89
3.4	DGN-32 & DGNF-32 with Hilti Nails	90-91
3.5	DGN-32 & DGNF-32 with Pneutek Fasteners	92-95
3.6	NN-32 Nestable with Welds	96
3.7	NN-32 Nestable with Screws	97
3.8	NN-32 Nestable with Hilti Nails	98-99
3.9	NN-32 Nestable with Pneutek Fasteners	100-103

4.0 2W & 3W PANELS

4.1	Properties & Vertical Loads	104-109
	Diaphragm Shear Tables	
4.2	DG2W-36, DG2WF-36, DG3W-36 & DG3WF-36	110-112
4.3	2W-36 & 2WF-36 with Welds	113-114

5.0 DEEP DECK PANELS

5.1	4.5D-12, 6D-12 & 7.5D-12 Deep Deck	116-121
5.2	4.5DF-24, 6DF-24 & 7.5DF-24 Deep Deck Cellular	122-124
	Diaphragm Shear Tables	
5.3	4.5D-12, 6D-12 & 7.5D-12 with Welds	126-127

6.0 CP-32

6.1	Properties & Vertical Loads	128-130
6.2	Diaphragm Shear Tables with Welds	131

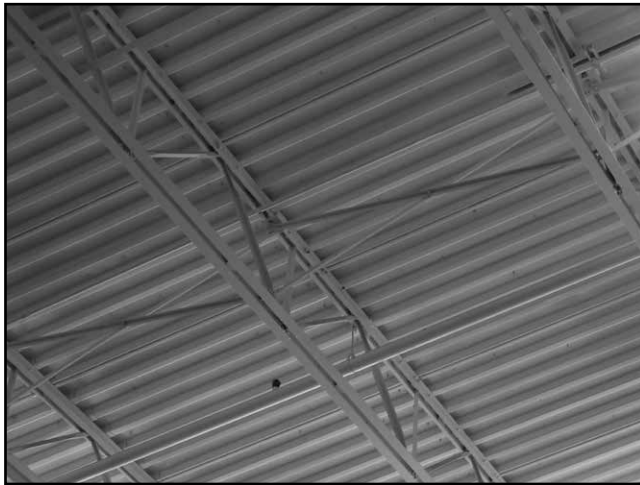
7.0 Acustadek®

7.1	Introduction	132-133
7.2	Performance	134-135
7.3	Properties & Vertical Loads	136-157

	Metric Conversion Chart	158
--	-------------------------	-----

Hilti is a registered trademark of Hilti Corp., LI-9494 Schaan, Principality of Liechtenstein
PNEUTEK is a registered trademark of Pneutek, 17 Friars Drive Hudson, NH

1.1 Introduction



General Benefits of Steel

The many benefits of ASC Steel Deck profiles combine to make one of the most versatile and cost efficient building materials available today. The structural strength of steel deck, relative to its light weight and shear strength, make it the clear building material of choice when compared to wood frame construction. The versatility, recyclable content, structural performance, and ease of installation make steel deck the ideal building material for architects, building owners, and engineers.

Evolution of Company

ASC Steel Deck has provided structural steel roof and floor deck throughout the Western United States since the 1970s. Over this time, ASC Steel Deck has undergone a few ownership changes and operated under different business names (ASC Pacific, BHP Steel Building Products, and IMSA Building Products). Since 2002, however, we have operated under the name ASC Steel Deck, a division of ASC Profiles LLC. While the name of the company has changed over the years, our continuous dedication to product innovation, high quality steel deck products, and customer service has positioned ASC Steel Deck as a leader in the industry.



Offering a Full Line of Steel Deck Products

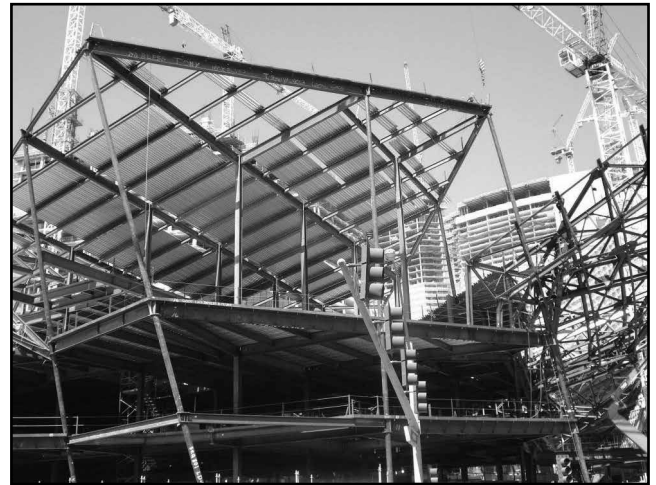
ASC Steel Deck is the only steel deck manufacturer on the West Coast which offers a full line of light-gage structural and deep deck products. From the typical 1½” to 3” roof and composite floor deck, to concrete form deck, to long spanning deep deck profiles, ASC Steel Deck’s extensive product offer meets the needs of the most complex conditions and demands for structural performance and design. Most of our roof deck products are offered in a variety of acoustical and perforated options.





Aesthetic Value of Steel Deck

ASC Steel Deck products offer the beauty of exposed steel as an added benefit to the structural performance required of building designs. Our new Smooth Series™ cellular deck offers a blemish free beam-to-pan rivet attachment, providing a clean surface ideal for an exposed steel design. When noise reduction is a necessity, ASC Steel Deck's Acustadek® panels offer acoustical noise reduction capabilities with aesthetic features which complement its use on exposed applications. Acustadek® is generally preferred in high noise areas such as airports, schools, gymnasiums, and concert halls. Acustadek® can contribute to LEED v4 EQ Credit Acoustic Performance Option 2.



Industry Innovator

ASC Steel Deck strives to lead the way in providing innovative products that reduce installation costs while offering some of the highest diaphragm shear values in the market today. ASC Steel Deck was an early innovator of the mechanical side-seam attachment method with the introduction of the DeltaGrip® tool in 2003. First to market in 2009, our 36/7/4 attachment pattern provides the lowest installed value in the market using 1½" deep roof deck and has since replaced the previous industry standard 36/5 and 36/7 attachment patterns. Other innovations include N-32, a 32" wide 3" deep roof deck panel, and our new Smooth Series™ rivet attachment for our portfolio of cellular deck products. First to the West Coast market, our new Smooth Series rivet attachment offers a blemish free attachment solution, eliminating the need for field touch up. Each of these innovations and future product offerings are designed to offer the lowest installed cost at the highest level of performance for building owners.



1.2 Panel Features and Benefits



DGB-36/B-36



1½" depth, 36" coverage, 5' to 12' Optimal Span(s)

●●●●● Excellent Diaphragm Shear

Web and Total Perforated Acustadek® Options

- ▲ DeltaGrip produces the highest shear diaphragms in the industry for 1½" decks
- ▲ Highest shear lowest cost 36/7/4 attachment pattern in industry
- ▲ Published tables for welded, pinned, and screw attachments to supports



DGN-32/N-32®



3" depth, 32" coverage, 10' to 16' Optimal Span(s)

●●●●○ Good Diaphragm Shear

Web and Total Perforated Acustadek® Options

- ▲ DeltaGrip produces the highest shear diaphragms in the industry for 3 inch decks
- ▲ Wider 32" panel results in the most labor efficient 3" N Deck in the industry
- ▲ Lightest weight 3" N deck per square foot in the industry



BN-36 NESTABLE



1½" depth, 36" coverage, 5' to 12' Optimal Span(s)

●●●○○ Good Diaphragm Shear

No Acustadek® Option

- ▲ Nestable configuration for screwed side lap attachment
- ▲ Meets Steel Deck Institute SDI wide rib requirements



NN-32™ NESTABLE



3" depth, 32" coverage, 10' to 16' Optimal Span(s)

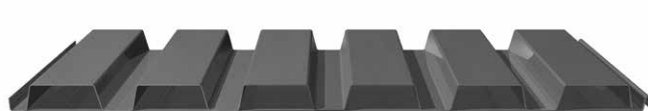
●●○○○ Modest Diaphragm Shear

No Acustadek® Option

- ▲ Nestable configuration for screwed side lap attachment
- ▲ Replaces Steel Deck Institute SDI Deep Rib (DR) roof decks



DGBF-36/BF-36



1½" depth, 36" coverage, 8' to 14' Optimal Span(s)

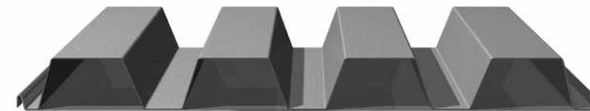
●●●●● Excellent Diaphragm Shear

Pan Perforated Acustadek® Option (Available with Smooth Series™ rivet attachments or welded)

- ▲ Aesthetic flat pan underside
- ▲ Longer Spanning than non-cellular profile
- ▲ DeltaGrip side-lap attachment provides the same benefits as non-cellular



DGNF-32/NF-32



3" depth, 32" coverage, 14' to 20' Optimal Span(s)

●●●○○ Good Diaphragm Shear

Pan Perforated Acustadek® Option (Available with Smooth Series™ rivet attachments or welded)

- ▲ Aesthetic flat pan underside
- ▲ Longer Spanning than non-cellular profile
- ▲ DeltaGrip side-lap attachment provides the same benefits as non-cellular



DG2W-36/2W-36



2" depth, 36" coverage, 8' to 14' Optimal Span(s)

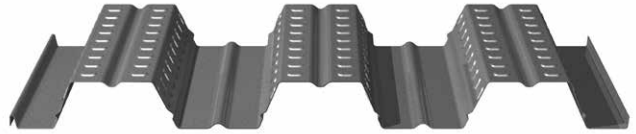
●●●○○ Good Diaphragm Shear

No Acustadek® Option

- ▲ DeltaGrip side-lap attachment for good shear performance
- ▲ Most economical panel per square foot for the span capacity
- ▲ Meets Steel Deck Institute SDI 2"x12" requirements



DG3W-36/3W-36



3" depth, 36" coverage, 11' to 20' Optimal Span(s)

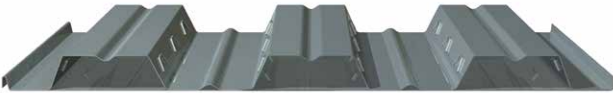
●●●○○ Good Diaphragm Shear

No Acustadek® Option

- ▲ DeltaGrip side-lap attachment for good shear performance
- ▲ Meets Steel Deck Institute SDI 3"x12" requirements



DG2WF-36/2WF-36



2" depth, 36" coverage, 10' to 20' Optimal Span(s)

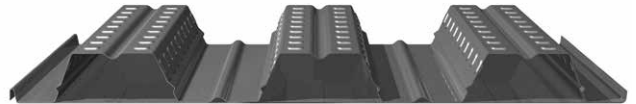
●●●○○ Good Diaphragm Shear

Pan perforated Acustadek® Option

- ▲ Aesthetic flat pan underside
- ▲ Longer Spanning than non-cellular profile
- ▲ Most economical panel per square foot
- ▲ Meets Steel Deck Institute SDI 2"x12" requirements



DG3WF-36/3WF-36



3" depth, 36" coverage, 14' to 22' Optimal Span(s)

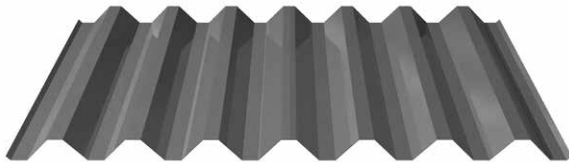
●●●○○ Good Diaphragm Shear

Pan perforated Acustadek® Option

- ▲ Aesthetic flat pan underside
- ▲ Longer Spanning than non-cellular profile
- ▲ Meets Steel Deck Institute SDI 2"x12" requirements



CP-32



1 3/8" depth, 32" coverage, 5' to 10' Optimal Span(s)

●●○○○ Modest Diaphragm Shear

No Acustadek® Options

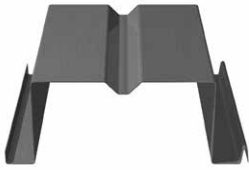
- ▲ CP-32 is manufactured with a side lap rolled in vent for use with lightweight insulating concrete fill
- ▲ CF 1-3/8 is suitable for exposed roofing and siding conditions
- ▲ ICC diaphragm shear tables available
- ▲ May be used in lieu of SDI C1.0



1.2 Panel Features and Benefits



4.5D-12 DEEP DECK



4½" depth, 12" coverage, 16' to 24' Optimal Span(s)

●○○○○ Modest Diaphragm Shear

Web Perforated Acustadek® option

- ▲ Single spans up to 32'
- ▲ Long span eliminates support framing



4.5DF-24 CELLULAR DEEP DECK



4½" depth, 24" coverage, 20 to 32' Optimal Span(s)

●○○○○ Modest Diaphragm Shear

Pan Perforated Acustadek® Option

- ▲ Aesthetic flat pan underside
- ▲ Higher out of plane capacity than non-cellular profile



6D-12 DEEP DECK



6" depth, 12" coverage, 20' to 32' Optimal Span(s)

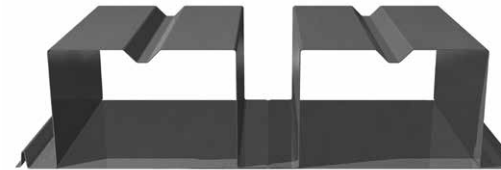
●○○○○ Modest Diaphragm Shear

Web Perforated Acustadek® option

- ▲ Single spans up to 32'
- ▲ Long span eliminates support framing



6DF-24 CELLULAR DEEP DECK



6" depth, 24" coverage, 24' to 32' Optimal Span(s)

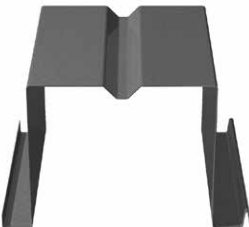
●○○○○ Modest Diaphragm Shear

Pan Perforated Acustadek® Option

- ▲ Aesthetic flat pan underside
- ▲ Higher out of plane capacity than non-cellular profile



7.5D-12 DEEP DECK



7½" depth, 12" coverage, 22' to 32' Optimal Span(s)

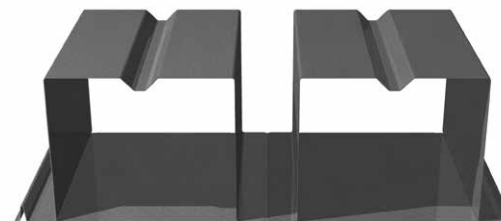
●○○○○ Modest Diaphragm Shear

Web Perforated Acustadek® option

- ▲ Single spans up to 32'
- ▲ Long span eliminates support framing



7.5DF-24 CELLULAR DEEP DECK



7½" depth, 24" coverage, 28' to 32' Optimal Span(s)

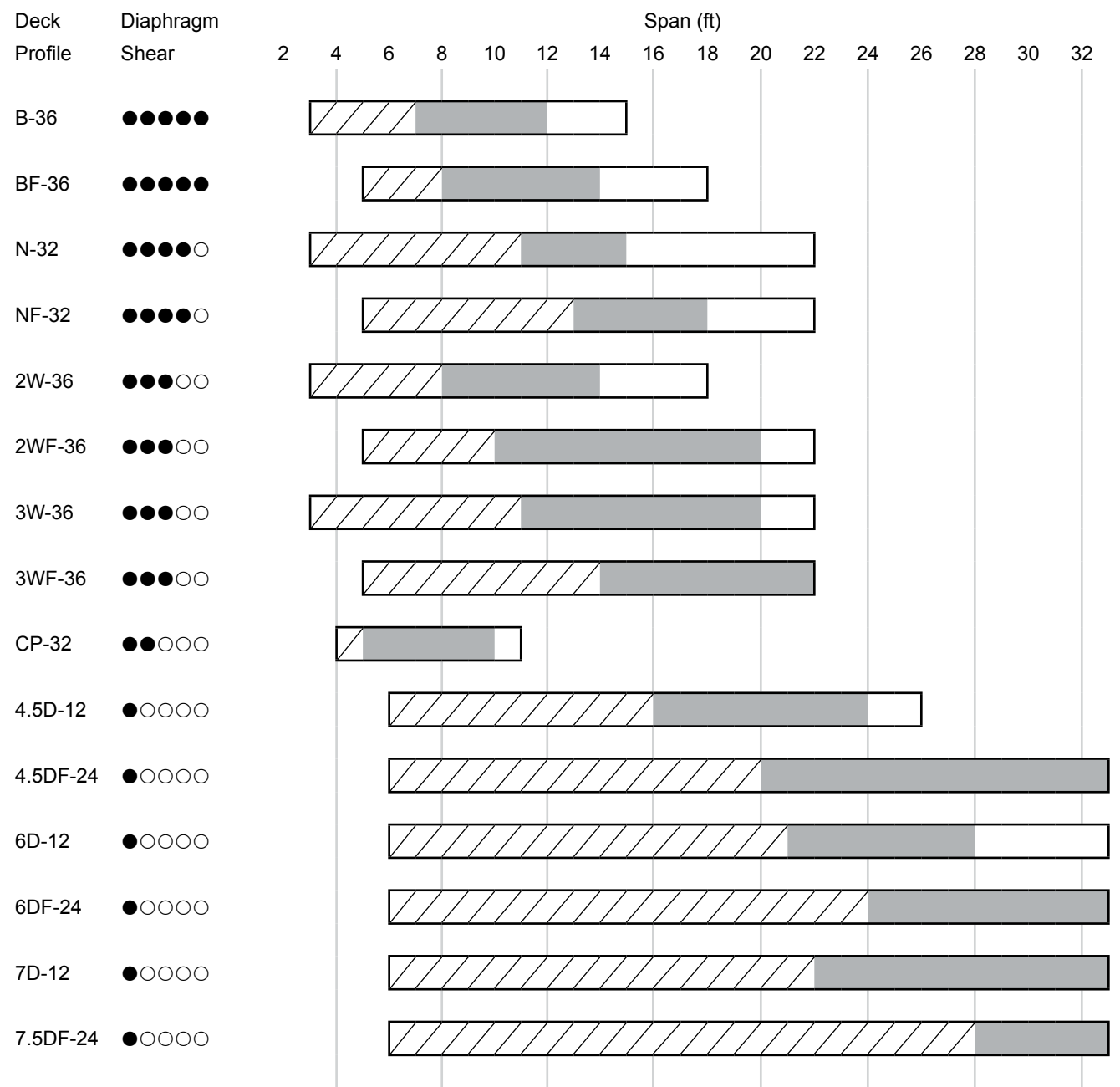
●○○○○ Modest Diaphragm Shear

Pan Perforated Acustadek® Option

- ▲ Aesthetic flat pan underside
- ▲ Higher out of plane capacity than non-cellular profile



PROFILE SELECTION GUIDE



Minimum span length on chart set to minimum panel manufactured length

Based on 25psf uniform vertical load and L/180 deflection limit

Based on 30 to 40psf uniform vertical load and L/240 deflection limit

Exceeds 40psf uniform vertical load and L/240 deflection limit

1.3 Product Offer



ASC Steel Deck offers a robust product offer. Our lightweight steel deck profiles have depths that range from 1 3/8" to 7 1/2". Panel lengths range from 5 feet to 45 feet. Steel deck panels are supplied with both galvanized and painted finishes to meet an array of project finish requirements.

Product Description

To assist designers with specifying the correct steel deck profile, see *Figure 1.3.3* which details how to specify the intended product. Following these guidelines will help to eliminate requests for information and change orders due to insufficient product descriptions in the plans and specifications. Designers can be assured that the product delivered is the product intended. Simply specify the gage, panel profile, panel coverage, metallic/paint coating, and any modifiers appropriate for the desired product.

Deck Panel Lengths

All ASC Steel Deck products are manufactured to the specified length for the project. The following table summarizes the minimum and maximum lengths that can be manufactured for each profile.

Figure 1.3.1: MANUFACTURED PANEL LENGTHS

Profile		Factory Cut Length	
		Minimum	Maximum
Non-cellular	B-36, N-32, 2W-36, 3W-36	3'-6"	45'-0"
	CP-32	4'-0"	45'-0"
	4.5D-12, 6D-12, 7.5D-12	6'-0"	32'-0"
Cellular	BF-36, NF-32, 2WF-36, 3WF-36	5'-0"	40'-0"
	4.5DF-24, 6DF-24, 7.5DF-24	6'-0"	32'-0"

Tolerances

ASC Steel Deck manufactures to industry standard tolerances. The tolerances are summarized as follows.

Figure 1.3.2: PANEL TOLERANCES

Length	±1/2"
Coverage Width	-3/8" +3/4"
Sweep	1/4" in 10' length
Square	1/8" per foot width

Finish Options

ASC Steel Deck offers several finish options that are appropriate for a variety of applications. Our standard G60 galvanized finish is suitable for most applications, offering excellent corrosion protection and compatibility with fire proofing when used in UL fire rated assemblies. We also offer PrimeShield®, an economical prime paint system over bare cold rolled steel. PrimeShield offers the steel limited interim protection from rusting during transport and erection before the weather-tight roof system is applied. PrimeShield should

not be used in high humidity or corrosive environments. Prime paint over galvanized steel deck can also be specified to obtain the benefit of the corrosion protection of galvanized steel deck with a factory applied prime paint substrate.

Galvanized

ASC Steel Deck offers steel deck products that are galvanized in accordance with ASTM A 653. The standard galvanized coating is G60 (0.6 ounce per square foot). G-90 (0.9 ounce per square foot) is recommended for high humidity and corrosive conditions. G-40 (0.4 ounce per square foot) may be specified for greater economy. Heavier galvanized finishes than G-90 can be specified for more severe environmental conditions and exposures. Inquire for product availability and minimum order sizes for G-40 or galvanizing heavier than G-90.

All ASC Steel Deck galvanized decks are manufactured from chemically treated steel coil in accordance with ASTM A 653. Chemical treatment is often referred to as passivation. The chemical treatment protects the galvanized steel from developing white rust during storage and transport of both coil and finished product. Some field-applied paint systems may not be compatible with the chemical treatment. The paint manufacture should be consulted to determine how the deck should be prepared prior to painting. ASC Steel Deck is not responsible for the adhesion of field applied primers and paints.

Galvanized with Prime Paint

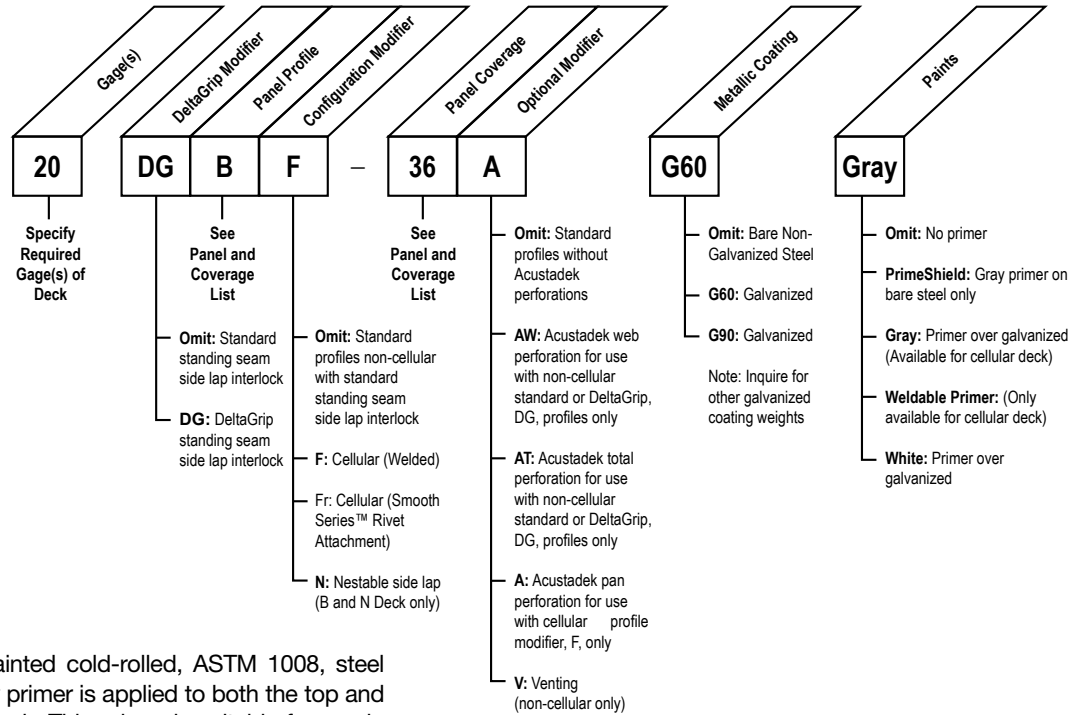
ASC Steel Deck offers all of its standard galvanized options with factory applied prime paint on the underside of the deck. The prime paint is available in standard gray. White primer is also available. The standard 0.3mil water-based gray acrylic primer has been specially developed to provide superior adhesion to the galvanized steel deck and is suitable for use in many UL fire rated assemblies. Factory applied primer is an impermanent interim coating that is intended to have finish paint applied after the deck is installed. The galvanized with prime paint option may eliminate the need for any special surface preparation for field applied paint applications which is often a requirement for chemically treated bare galvanized steel deck panels. ASC Steel Deck is not responsible for the adhesion of paint systems applied in the field.

Cellular deck is offered with a galvanized steel pan or a prime paint over galvanized steel pan. This 0.3mil gray primer is applied to the underside of the pan prior to resistance welding or riveting the cellular deck beam to the pan. Our new Smooth Series™ rivet attachment is flush with the exposed bottom surface, omitting visible "bumps" and burn marks, eliminating the cost of touch-ups associated with resistance welded deck products. Resistance welded deck, the current industry standard, leaves burn marks on the pan which generally require cleaning and touch-up prior to the application of a finish paint system being applied. Touching up the burn marks is generally much more cost effective than preparing an unpainted, chemically treated surface for the application of a field primer. The prime painted galvanized pan provides a good substrate for the application of most field-applied paint systems. ASC Steel Deck is not responsible for the adhesion of paint systems applied in the field.

DECK PROFILE & COVERAGE LIST

Panel	Coverage
B	36 inches
N	32 inches
2W	36 inches
3W	36 inches
CP	32 inches
4.5D	12 inches
4.5DF	24 inches
6D	12 inches
6DF	24 inches
7.5D	12 inches
7.5DF	24 inches

Figure 1.3.3: PRODUCT OFFER DESCRIPTION



Prime Shield®

PrimeShield is prime painted cold-rolled, ASTM 1008, steel deck. The standard gray primer is applied to both the top and underside of the steel deck. This primer is suitable for use in many UL fire rated assemblies. The prime paint is intended to be an impermanent interim coating to protect the bare cold-rolled steel, for a short period, from ordinary atmospheric conditions prior to weathertighting the building. PrimeShield should receive a finish paint system if left exposed in the interior of a building. This 0.3mil water-based acrylic primer provides a good base for most field-applied paint systems. ASC Steel Deck is not responsible for the adhesion of paint systems applied in the field.

Cellular Deck

Cellular deck is a good choice when a flat appearance on the underside of steel deck is desired. Cellular deck is manufactured from a top fluted section of steel deck referred to as the beam and a flat bottom section referred to as the pan. The male and female side seam interlock is formed on the edges of the pan.

The welded method offers resistance welds in accordance with UL 209. There is one row of resistance welds in each low flute of the beam.

The new Smooth Series™ rivet attachment is flush with the exposed bottom surface, eliminating “bumps” and burn marks

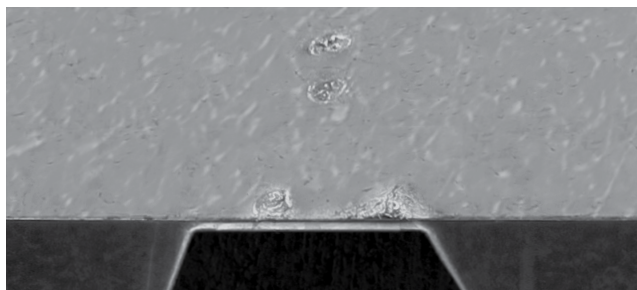


Figure 1.2.4: WELDED ATTACHMENT (Pictured from topside)

and the need for touch-ups in the field. Smooth Series rivets are available in galvanized and white finish, complementing our factory applied Prime Shield® primer gray and white finish cellular deck. The high quality rivet attachments are uniformly repeated along the deck profile.

All attachments to the underside of riveted cellular deck and Acustadek for the support of suspended items shall be made at low flute location only. The design professional is responsible for checking if the connection to the low flute material has sufficient capacity to resist the suspended load.

This product should not be used in floor assemblies where spray on fire proofing is to be applied to the bottom surface of the deck.

Cellular deck beam and pan may be manufactured out of the same gage or out of different gages. The following shows how to correctly specify the desired beam and pan gage combination.

Specify Cellular Deck Gage “xx/yy”

- The first (xx) is the gage of the beam (top fluted section)
- The second number (yy) is the gage of the pan (the bottom flat section with the side seam)

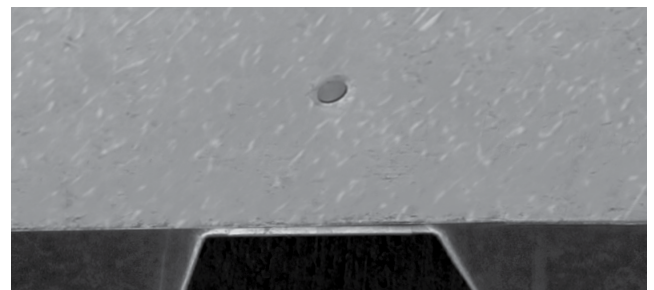


Figure 1.2.5: SMOOTH SERIES™ RIVET ATTACHMENT (Pictured from topside)

1.3 Product Offer

Venting

Some materials in the roof assembly may require venting of the steel roof deck, such as roof systems with light weight insulating concrete. Venting does not impact the structural performance of the steel deck. Deck should not be specified as vented when it is not required. The drawback of venting deck is when concrete is poured, the slurry drips through the vent tabs creating debris on the surface below. Cleaning up the slurry or protecting the surfaces underneath with plastic sheets adds cost to the project without providing any added value to the owner when venting is not required. The requirement for venting the deck should be clearly indicated in the specifications and be clearly stated in the deck schedule on the structural drawings.

For B, N, 2W, and 3W deck, upward protruding vent tabs are factory punched in the low flutes of the steel deck when venting is specified. For CP-32 venting is achieved by adding embossments to the side lap holding the lap open. (Figures 1.3.4 and 1.3.5)



Figure 1.3.4: B-36 WITH VENTING
(Pictured from underside)

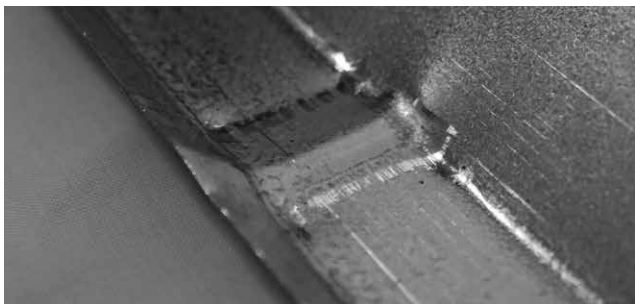


Figure 1.3.5: CP32 WITH VENTING
(Pictured from topside)

Die Set Ends (Swage)

Die set ends allow for the roof deck to be easily end lapped to increase the diaphragm stiffness. The die set swages the top flange and webs of the steel deck which allows the top sheet of end lapped deck to nest tightly over the bottom sheet. When deck is not die set, the installer may have to hammer the deck to get the ends to nest together tightly to ensure good quality connections. The die set ends are standard for B-36 and N-32 profiles. B-36 is optionally available without die set ends. 2W, 3W, and Deep Deck are not end lapped and do not have die set ends. Figure 1.3.6 shows a die-set end on N-32 deck.

Die set ends affect detailing and layout of the steel deck. Deck is spread in the direction of the male leg of the side seam. This allows the next sheet's female side seam to drop over

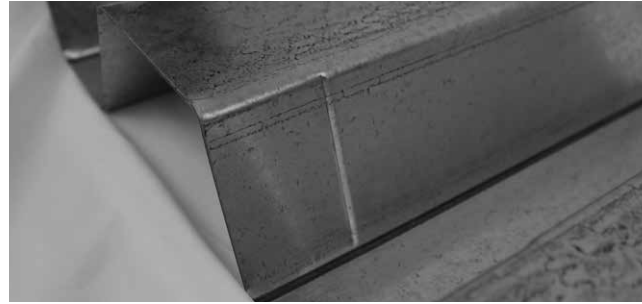


Figure 1.3.6: N-32 WITH DIE-SET (Swage)

the male side seam. The die set is on the left side relative to the direction of spreading deck. The next adjacent run of deck will be on the left side of the deck relative to the spreading direction to nest over the dies set ends. (Figure 1.3.7)

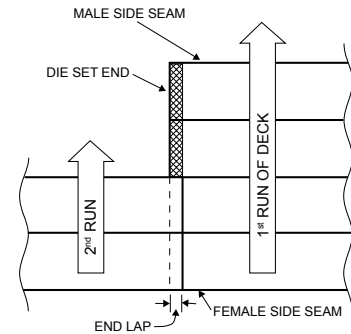


Figure 1.3.7: DECK LAYOUT

Exposed Deck

ASC Steel Deck roof and floor deck products are designed to be structural components for steel framed structures. As part of the normal manufacturing, handling, and transport procedures, it is common for the panel bundles to exhibit some degree of incidental scratching and denting. The surface defects are typically superficial and do not impact the structural capacity of the deck. On projects where the deck will be exposed to view after installation, it may be desirable to minimize the occurrence of these marks. In these cases, it is important for the designer specifying and the customer or contractor ordering the deck to request that the product be manufactured, handled, and transported for "EXPOSED" installation. This will result in modified handling and loading procedures designed to minimize (not eliminate) typical scratching and denting. Figure 1.2.10 and 1.2.11 shows typical handling marks from forklifts or dunnage.



Figure 1.3.7: UNDERSIDE HANDLING MARKS

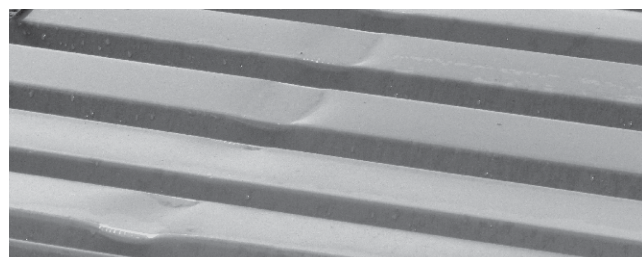


Figure 1.3.8: TOPSIDE HANDLING MARKS

ASC Steel Deck conducts extensive test programs with independent testing labs to ensure that our products comply with the stringent criteria of today's building codes. The structural performance of our steel deck products have been verified and approved by reputable evaluation agencies, including International Code Council Evaluation Service, (ICC-ES), International Association of Plumbing and Mechanics Officials Evaluation Services (IAPMO-ES), Los Angeles City Research Reports (LARR), Factory Mutual (FM), and Underwriters Laboratory (UL).



ICC-ES and IAPMO-ES

ASC Steel Deck panels are independently evaluated for conformance with the IBC by ICC-ES and IAPMO-ES. Both evaluation services are accredited by the American Standards Institute (ANSI) per ISO/IEC Guide 65 General Requirements for Bodies Operating Product Certification Systems. LA City Research Reports (LARR), are derived from the ICC-ES and IAPMO-ES reports. The technical evaluation for conformance with the IBC are made available to code officials, contractors, specifiers, architects, engineers, and others. ICC-ESR reports and IAPMO-ER reports provide evidence that ASC Steel Deck products meet the most rigorous standards and are compliant under current code requirements.



Factory Mutual Approvals

ASC Steel Deck B and N deck profiles have been evaluated and approved by Factory Mutual (FM). The steel decks meet the strict FM requirements for fire, foot traffic and wind uplift loads up to class 1-90. Both standard and DeltaGrip versions of the deck profiles are approved with a wide array of fasteners to supports. **Complete FM approval reports for ASC Steel Deck products can be found at www.ascsteeldeck.com.** These steel decks may be used as a component in an FM approved roof assembly. Deck selection, as a part of an FM assembly, should be made using the FM RoofNav selection tool at roofnav.fmglobal.com.

Deck	Gage	Maximum Span
DGB-36	22	6'-1"
DGB-36AW Acustadek	20	6'-7"
B-36	18	7'-7"
B-36AW Acustadek	16	8'-5"
DGBF-36 DGBF-36A Acustadek BF-36 BF-36A Acustadek	20/20	9'-4"
	20/18	9'-8"
	20/16	10'-1"
	18/20	10'-4"
	18/18	10'-9"
	18/16	11'-2"
16/16	12'-2"	
DGN-32	22	11'-7"
DGN-32AW Acustadek	20	12'-10"
N-32	18	15'-2"
N-32AW Acustadek	16	17'-2"
DGNF-32 DGNF-32A Acustadek NF-32 NF-32A Acustadek	20/20	12'-10"
	20/18	
	20/16	
	18/20	15'-2"
	18/18	
	18/16	
	16/20	17'-2"
	16/18	
16/16		

Figure 1.4.1: FM MAXIMUM DECK SPANS



Underwriters Laboratories UL-Fire Ratings

ASC Steel Deck products that bare the UL approved mark have been investigated for fire resistance. Underwriters Laboratories is an independent, product safety testing and certification organization. ASC Steel Deck has been evaluated for fire resistance per *UL 263 Fire Tests of Building Construction and Materials*. See *UL directory for fire rated assemblies*.

The **Fire Ratings** table (Figure 1.5.1) offers a quick reference summary of design numbers, fire ratings, deck type, SFRM Spray Applied Fire Resistive material listings and more. The details of the each design assembly are listed on UL Online Certification Directory www.ul.com. Additionally, ICC-ESR 1414 has prescribed Restrained Fire Resistance Ratings and Unrestrained Fire-resistance ratings for roof deck assemblies.

1.5 Fire Ratings



Figure 1.5.1: **ASC STEEL DECK- (UL) UNDERWRITERS LABORATORIES FIRE RESISTANCE**

UL Design Number	ANSI/UL 263	Support Type
	Fire Resistance Ratings Restrained and Unrestrained Assemblies (hrs)	Beam / Joist
P225	Restrained Assembly Ratings — 1 and 1½ Hr. Unrestrained Assembly Ratings — 1 and 1½ Hr	Beam-W6x12min, Joist- 20min depth
P230	Restrained Assembly Rating — 1 and 1½ Hr. Unrestrained Assembly Rating — 1 and 1½ Hr	Beam-W6x12min, Joist- 20min depth
P518	Restrained Assembly Rating — 1 Hr. Unrestrained Assembly Rating — 1 Hr	Joist - Cee-shaped sections, min 8 in. deep with 1-9/16 in. flanges and 9/16 in. lips, made from No. 18 gage or heavier, Steel truss - chords shall be min of 18 ga. and web sections a min of 20 ga. min depth of 8 in.
P701	Restrained Assembly Rating — ¾, 1, 1½ or 2 Hr. Unrestrained Assembly Rating — ¾, 1, 1½ or 2 Hr	Beam-W16x16min, Joist-20in joist girders
P711	Restrained Assembly Ratings — 1, 1½ or 2 Hr. Unrestrained Assembly Ratings — 1, 1½ or 2 Hr	Beam - W6x16 min size. , Joist girders -20 in. min depth, Joists Types 10J4, 10H4, 12J4, 14J7 or 14K4 min size.
P717	Restrained Assembly Rating — 1, 1½ or 2 H Unrestrained Assembly Rating — 1, 1½ or 2 H	Beam - W6x16 min size, Joist - 10H4, 14J7, 12K3 or 16K3 min sizes.
P719	Restrained Assembly Rating — 1, 1½, 2 or 3 Hr. Unrestrained Assembly Rating — 1, 1½ or 2 Hr	Beams-W6x16 min , Joist-10 K1 min, Joist girders -20 in. min depth and 13 lb/lin ft min weight.
P723	Restrained Assembly Ratings — 1, 1½, 2 and 3 Hr Unrestrained Assembly Ratings — 1, 1½, 2 and 3 Hr	Beam- W6x16 , Joist -min 10K1 or 12K5
P726	Restrained Assembly Rating — ¾, 1, 1½ or 2 Hr Unrestrained Assembly Rating — ¾, 1, 1½, or 2 Hr	Beam-W6X16 min, Joist -10K1 min , Joist girders - 20 in. min depth
P732	Restrained Assembly Ratings — 1, 1½, 2 or 3 Hr Unrestrained Assembly Ratings — ¾, 1, 1½, 2 or 3 Hr	Beam - Min W6x16 or W8x28 , Joist - 10K1 or 16K2 min, or 12K3 or 12K5 min size
P734	Restrained Assembly Ratings — ¾, 1, 1½ or 2 Hr Unrestrained Assembly Ratings — ¾, 1, 1½ or 2 Hr	Beam - W6x16min, Joist - 12J4, 14J7 or 14K4 min, Joist girders-20 in. min, any LH-Series joist may be used.
P739	Restrained Assembly Ratings — 1, 1½ and 2 Hr Unrestrained Assembly Ratings — 1, 1½ and 2 Hr	Beam- W6x16 min , Joist - 10H4, 14J7, 10K1 or 12K3 min.
P740	Restrained Assembly Ratings — 1, 1½ & 2 Hr Unrestrained Assembly Ratings — ¾, 1, 1½ & 2 Hr	Beam -W6x16 min , Joist 10K1 or 16K2 min or 12K3 min
P741	Restrained Assembly Ratings — 1, 1½ or 2 Hr Unrestrained Assembly Ratings — 0, 1, 1½ or 2 Hr	Beam - Min W6x16, Joist - Min 10K1

Table Notes:

- P2XX have suspended acoustical ceilings with an exposed grid system.
- P3XX have mineral or fiber board applied to the underside of the deck.
- P4XX have suspended gypsum board.
- P7XX have (SFRM) Spray Applied Fire Resistive Material applied to the deck.
- P9XX have not SFRM on the deck but it is required on the beams and joists.
- P9XX includes lightweight insulating concrete.
- The designer shall refer to the UL Fire Resistance directory for a detailed list of components in the fire rated assembly listing.



Figure 1.5.1: ASC STEEL DECK- (UL) UNDERWRITERS LABORATORIES FIRE RESISTANCE

UL Design Number	Panel Type (gages)					Coatings		Side-Lap Fastening				Support Fastening			Fire Protection	Lightweight Insulating Concrete
	DGB-36, B-36	DGN-32, N-32	DG2W-36, 2W-36	DG3W-36, 3W-36	CP-1 3/8, CP-32	Galvanized	Prime Shield	Screws	Button Punch	DeltaGrip	Welds	Screws	PAF (Pins/Nails)	Welds	(SRFM) Spray Applied Fire Resistant Material (Fiber or Cementitious)	
P225	✓	✓				✓	✓			✓	✓			✓	✓	
P230	✓					✓	✓			✓	✓			✓	✓	
P518	✓				✓	✓	✓	✓		✓		✓			✓	
P701	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P711	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P717	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	
P719	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	
P723	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	
P726	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P732	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	
P734	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P739	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	
P740	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P741	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	

- 8. ASC Steel Deck does not assume responsibility for adhesion of any spray-applied fireproofing material, surface preparation, cleaning, or other treatments of the deck surface.
- 9. "Gray" prime painted deck is supplied for application of spray-applied fireproofing.

- 10. Please contact ASC Steel Deck for galvanizing options.

1.5 Fire Ratings



Figure 1.5.1: ASC STEEL DECK- (UL) UNDERWRITERS LABORATORY FIRE RESISTANCE

UL Design Number	ANSI/UL 263	Support Type
	Fire Resistance Ratings Restrained and Unrestrained Assemblies (hrs)	Beam / Joist
P742	Restrained Assembly Ratings - 1, 1½ or 2 Hr. Unrestrained Assembly Ratings - 1, 1½ or 2 Hr	Beam-W6x16, Joist - 12J4 or 14J7 min, Joist girders-20 in. min depth and 13 lb/lin ft min weight, any LH-Series joist may be used.
P743	Restrained Assembly Ratings — 1, 1½ and 2 Hr Unrestrained Assembly Ratings — 1, 1½ and 2 Hr	Beam - W6x16 min size, Joist -10H4, 14J7, 10K1 or 12K3 min
P815	Restrained Assembly Rating- 1, 1½, 2 Hrs Unrestrained Assembly Rating- 1, 1½, 2 Hr	Beam W6x16 min size, Joist-10K1 or 12K3 min size.
P819	Restrained Assembly Rating — 1, 1½ or 2 Hr. Unrestrained Assembly Rating — 1, 1½ or 2 Hr	Beam - W6x16 min size, Joist 10K1 or 12K3
P908	Restrained Assembly Ratings — 1, 1½ or 2 Hr. Unrestrained Assembly Rating — 0, 1½, or 2 Hr	Beam- W6x16, W8x10, W8x18 or W8x28 min, Joists - 10K1, 12J4, 14K4 or 16K3 min, Joist girders-20 in. min depth and 13 lb/lin ft min weight
P920	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam - W8x10, W8x17, W6x16 or W8x28 min, Joists- 10K1, 12J4, 12K5 or 14K3 min
P921	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr Unrestrained Beam Rating — 1, 1½ or 2 Hr	Beam - W6X16 or W8X10 beam, Joist girders - 20 in. min depth and 13 lb/lin ft min weight. 12K5 or heavier steel joist may be used as secondary support
P922	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam - W6x16, or W8x28 min, Joists- 10K1 min with steel bridging angles required per SJI specifications.
P925	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam- W6X16 or W8X10, Joists -12K5 min, Joists or Joist girders 10K1- 20 in. min depth and 13 lb/lin ft min weight
P927	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam-W6x16, W8x10 or W8x1, Joists-12J4, 14K4 or 16K3 min, Joist girders-20 in. min depth and 13 lb/lin ft min weight
P928	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam - W6X16 or W8X10, Joist girders-20 in. min depth and 13 lb/lin ft min weight
P930	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam - W8x28 min size steel beam; or steel joists welded or bolted to end supports.
P936	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr Restricted Load Condition	Beam - W6x16 or W8x28 min size, Joists 10K1 or 16K2 min size with a max tensile stress of 30,000 psi or 12K3 or 12K5 min size with a max tensile stress of 24,000 psi.
P937	Restrained Assembly Rating — 1, 1½ or 2 Hr Unrestrained Assembly Rating — 0 Hr	Beam-W8x28 min, Joists-10K1 min

Table Notes:

1. P2XX have suspended acoustical ceilings with an exposed grid system.
2. P3XX have mineral or fiber board applied to the underside of the deck.
3. P4XX have suspended gypsum board.
4. P7XX have (SFRM) Spray Applied Fire Resistive Material applied to the deck.
5. P9XX have not SFRM on the deck but it is required on the beams and joists.
6. P9XX includes lightweight insulating concrete.
7. The designer shall refer to the UL Fire Resistance directory for a detailed list of components in the fire rated assembly listing.



Figure 1.5.1: ASC STEEL DECK- (UL) UNDERWRITERS LABORATORY FIRE RESISTANCE

UL Design Number	Panel Type (gages)					Coatings		Side-Lap Fastening				Support Fastening			Fire Protection	Lightweight Insulating Concrete
	DGB-36, B-36	DGN-32, N-32	DG2W-36, 2W-36	DG3W-36, 3W-36	CP-1 3/8, CP-32	Galvanized	Prime Shield	Screws	Button Punch	DeltaGrip	Welds	Screws	PAF (Pins/Nails)	Welds	(SRFM) Spray Applied Fire Resistive Material (Fiber or Cementitious)	
P742	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	
P743	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P815	✓	✓				✓	✓		✓	✓	✓			✓	✓	
P819	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	
P908	✓	✓				✓	✓			✓	✓			✓		✓
P920	✓	✓	✓			✓	✓			✓	✓			✓		✓
P921	✓	✓	✓		✓	✓	✓			✓	✓			✓		✓
P922	✓	✓				✓	✓		✓	✓	✓			✓		✓
P925	✓		✓		✓	✓			✓	✓	✓			✓		✓
P927	✓	✓	✓		✓					✓	✓			✓		✓
P928	✓	✓	✓		✓					✓	✓			✓		✓
P930		✓			✓					✓	✓			✓		✓
P936	✓	✓	✓		✓					✓	✓			✓		✓
P937	✓	✓	✓		✓					✓	✓			✓		✓

- 8. ASC Steel Deck does not assume responsibility for adhesion of any spray-applied fireproofing material, surface preparation, cleaning, or other treatments of the deck surface.
- 9. "Gray" prime painted deck is supplied for application of spray-applied fireproofing.

- 10. Please contact ASC Steel Deck for galvanizing options.

Section Properties

All of ASC Steel Deck's section properties are calculated in accordance with the American Iron and Steel Institute Specification for the Design of Cold-Formed Steel Structural Members, AISI S100-2007, Section B. Section properties can be used to develop the bending capacity of the steel deck for out-of-plane loads, which are typically defined by gravity or wind uplift. The section properties can also be used to determine the combined axial and bending capacity of the steel deck for bracing walls or other vertical elements of a building.

The section properties for steel roof deck, like other cold-formed steel members such as Cee, Zee, hat-shaped purlins, studs, and track are based on post-buckling strength. Post-buckling strength is based on the concept that compression flanges and portions of webs will exhibit some local buckling prior to the load capacity of the member being reached. To account for this, the widths of the flat compression elements of the steel deck are reduced for the purpose of determining the section properties, excluding the portion that can no longer effectively carry compression loads. This reduction of the gross section properties results in the effective section properties.

Steel Thickness

The thickness of steel roof deck is typically specified by a gage designation. The design of steel deck is dependent on the specified design base steel thickness in accordance with AISI S100-2007. The base steel thickness should not be confused with the total coated thickness, which is the combined thickness of the base steel, the optional galvanizing thickness, and any factory-applied paint system thickness.

The minimum acceptable base steel thickness to be supplied shall not be less than 95% of the design base steel thickness. This is specified in Section A2.4 Delivered Minimum Thickness of AISI S100-2007.

Some standards reference non-mandatory tables that list the thickness of sheet steel by gage designation. These include the AISC Manual of Steel Construction in the Miscellaneous Information section of the appendix and AWS D1.3 in the Annex. Both references indicate that the values are non-mandatory and are for reference only. The nominal total coated thicknesses listed for each gage in these sources should not be used to determine if the cold-formed steel structural member, including steel deck, meets the minimum thickness requirement for the specified gage.

Effective Section Properties

Effective section properties for a steel deck panel are used to check for the maximum bending and axial load capacities.

The effective properties are determined at the full yield stress of the steel. As the grade of steel increases, the effective section properties decrease. The effective width of the compression elements decreases as the localized plate-

like buckling increases. The moment capacity of the deck increases with the increased grade because the increasing yield strength of the steel outpaces the loss of effective compression width of the combined elements. Steel decks cannot be compared based strictly on effective section properties without considering the grade of the steel. The following demonstrates this for B-36 steel deck.

20 Gage B-36 Steel Deck Panel

Yield ksi	I_e^+ (in ⁴)	I_e^- (in ⁴)	S_g^+ (in ³)	S_e^- (in ³)	M_n^+ (k-in)
33	0.193	0.237	0.235	0.251	13.95
37	0.187	0.233	0.233	0.247	15.52
38	0.187	0.233	0.233	0.246	15.91
40	0.187	0.233	0.232	0.244	16.69
55	0.177	0.227	0.223	0.233	22.02
80	0.173	0.223	0.218	0.233	23.51

Figure 1.6.1: EFFECTIVE SECTION PROPERTIES

Many steel deck panels are not symmetric. In most cases, the top and bottom flange widths are not equivalent. The bending stress and location of the neutral axis is therefore different for positive and negative bending, resulting in different positive and negative section properties.

Gross Section Properties

The gross section properties of the steel deck are based on the entire cross section of the panel. Determination of gross section properties assumes that there are no compression buckling compression flanges or web elements of the steel deck and that there are no ineffective elements. The gross section properties are used in combination with effective section properties to determine the deflection of the steel deck under uniform out-of-plane loads, and for checking axial compression and bending.

Service Load Section Properties

The service load moment of inertia is used to determine the deflection of the steel deck for out-of-plane loads. The calculated moments of inertia are determined at a working stress level of 0.6Fy. Following accepted practice, the hybrid moment of inertia is based on the sum of two times the effective moment of inertia and the gross moment of inertia divided by three, as follows.

$$I_d = \frac{2I_e + I_g}{3}$$

This deflection equation for uniformly distributed loads takes into account that, throughout the length of the span, portions of the steel deck will have low bending stress below the onset of localized compression buckling in which the gross section properties would be valid and the other portions of the span will have bending stresses high enough to push beyond the onset of localized compression buckling in which effective section properties would be appropriate.

How to Read Section Properties Table

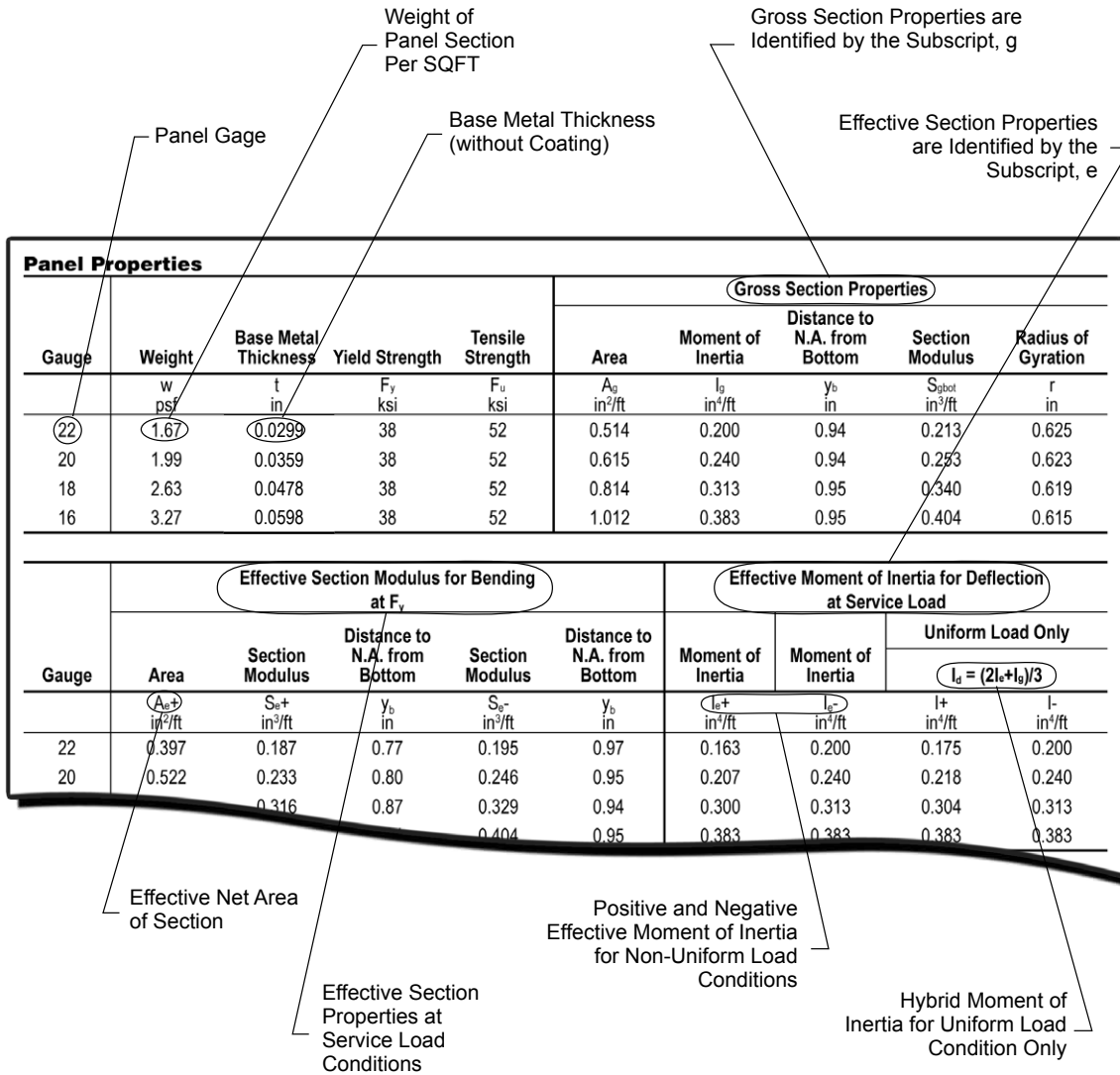


Figure 1.6.2: SAMPLE OF B-36 PANEL PROPERTIES TABLE

1.7 Out of Plane Vertical Loads

Out-of-Plane Loads

Out-of-plane loads are loads applied to the panel that are perpendicular to the panel surface. These loads, uniform and non-uniform, are a combination of the applied forces due to wind, roofing materials, equipment, machinery, live loads, and other factors. The allowable and factored load tables provide the panel capacity, the deck profile, gage (base metal thickness), span length, and the number of spans created by the support spacing.

Uniformly Distributed Loads

Inward out-of-plane uniform loads are typically a combination of gravity (dead, live, and snow) and inward wind loading conditions.

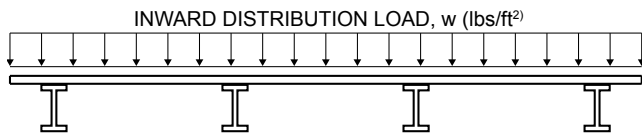


Figure 1.7.1: INWARD DISTRIBUTED LOAD

Outward out-of-plane uniform loads are typically wind uplift loads.

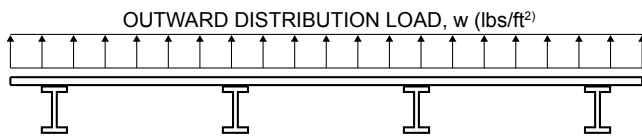


Figure 1.7.2: OUTWARD DISTRIBUTED LOAD

The allowable load capacities for each panel type, subject to uniform inward and/or outward load conditions, are determined by equations of mechanics and the published section properties. The panel capacities for outward uniform load conditions (wind uplift) shall be determined by the designer. ASC Steel Deck publishes inward allowable, (f_b/Ω), and factored, (ϕf_b), uniform distributed load tables that are based upon the bending capacity of the steel deck panels. In addition, service level distributed loads subject to varied deflection limits are presented in the tables. Where no deflection limit is listed, the panel bending capacity governs for the span and deflection limit combination.

Openings, Holes or Penetrations

The reinforcement of openings, holes, or penetrations in the diaphragm shall be in accordance with the Steel Deck Institute (SDI) *Manual of Construction with Steel Deck*. Alternatively, for openings that exceed the scope of the SDI *Manual of Construction with Steel Deck*, the designer should provide framing to transfer vertical and lateral loads around the opening in the steel deck.

Point Loads

Out of plane point loads do not have a uniform load distribution over the entire deck panel. Deck panels subject to point loads or concentrated out of plane loads such as hanging loads from suspended ceilings, mechanical and electrical equipment, plumbing or other utilities should be evaluated by the design professional based on bending capacity and web crippling where applicable. Load distribution devices should be specified where need to distribute the point or concentrated

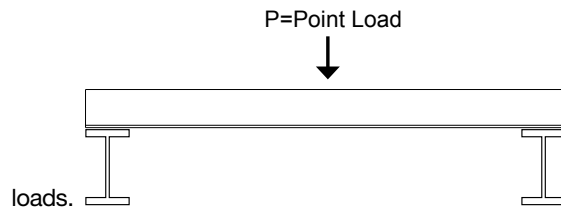


Figure 1.7.3: POINT LOAD

Most point loads will require some type of distribution device to spread the shear load to the webs of the steel deck. This can be accomplished with plates, angle, channels or other common structural shapes on top or below the steel deck. These devices may be secured using welds or bolts. There are no general maximum or minimum hanging load limits for steel deck.

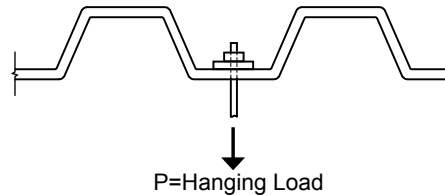


Figure 1.7.4: HANGING LOAD

Cantilever End Conditions

For cantilever end conditions, where the end of the deck panel is unsupported, the allowable length of the cantilever shall be determined by the designer using the published section properties, deflection limits, and material strength of the specified panel.

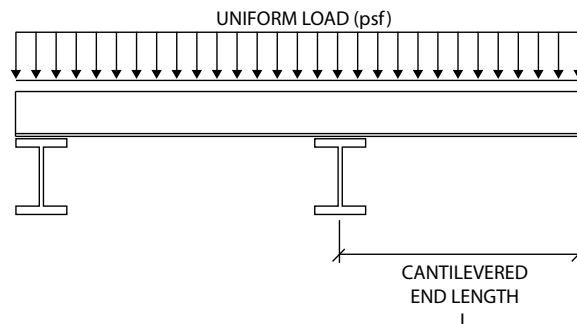


Figure 1.7.5: CANTILEVER END CONDITIONS

Deflection Limits

Steel deck panels deflect under out of plane loads. The deflections should be restricted to the recommended limits of the building code. The building code prescribes different deflection limits to address material stiffness compatibility, and to limit the possibility of perceivable vibrations. The common deflection limits as present in the IBC are listed in the table below. Steel deck panels will deflect under out of plane loading conditions such as live (temporary) and dead (permanent) loads.

Figure 1.7.6: DEFLECTION LIMITS FROM IBC TABLE 1604.3

Contraction	Load Combinations		
	Live	Dead + Live	Wind or Snow 4.5
Roof: Plaster ceiling	L/360	L/240	L/360
Roof: Non-plaster ceiling	L/240	L/180	L/240
Roof: No ceiling	L/180	L/120	L/180
Structural roofing and siding metal panels	...	L/60	...
Secondary roof members supporting metal roofing panels	L/150
Secondary roof support members supporting metal roof panels with no roof covering	L/90
Floor	L/360	L/240	...

Notes:

1. Where an ellipsis (· · ·) appears in this table, there is no requirement.
2. Reference the current IBC, Table 1603.4 and the supporting notes for additional information.
3. Reference the current IBC, Section 1611 for rain and ponding and Section 1503.4 for roof drainage requirements.
4. Wind load is permitted to be taken as 0.7 times the "component and cladding loads" for the purpose of determining deflection limits.
5. For steel structural members, the dead load shall be taken as zero. For cantilever members, L shall be taken as twice the length of the cantilever.



1.8 Web Crippling

Steel Deck Reactions at Supports

Steel deck reactions at supports are governed by the web crippling capacity of the steel deck webs on the supporting member. This is calculated in accordance with Section C3.4 of AISI S100-2007 for multi-web steel decks.

Reactions Due to Uniform Loads

The end and interior reactions listed in the tables in this catalog are for a uniformly distributed out-of-plane load applied to the deck (see Figure 1.8.1).

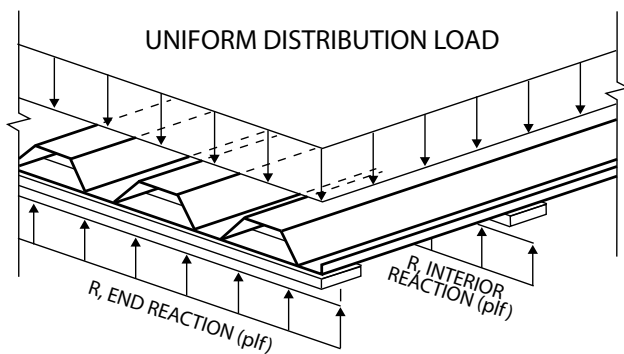


Figure 1.8.1: UNIFORM DISTRIBUTED OUT-OF-PLANE LOAD

The allowable R_n/Ω and factored ϕR_n reactions presented in the tables are in pounds per linear foot running axially along the support for a given deck-bearing length (the support member width) on the support. This is based on the web crippling capacity multiplied by the number of webs per foot. Figure 1.8.3 shows how to read the reaction tables in this catalog.

Panels must be attached to supports with fastener patterns not less than the minimum attachment patterns shown for the deck panel.

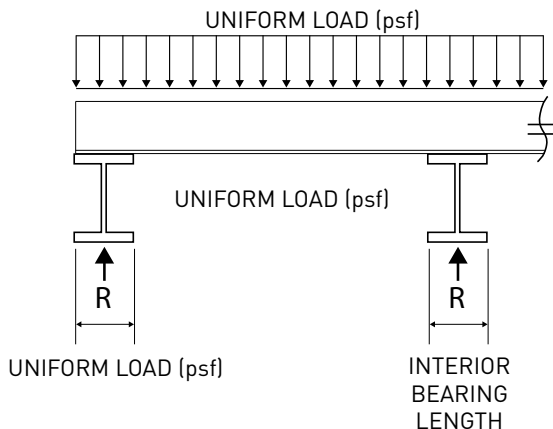


Figure 1.8.2: SUPPORT REACTIONS

Point or Line Load Reactions

For load conditions that exceed the uniform reaction tables, including point load and line loads on the steel deck panel, the maximum reactions should be based on the web crippling capacity for the steel deck. Reactions exceeding the published values, or for conditions other than a uniformly distributed loads, shall be determined by the designer in accordance with section C3.4 of the North American Specifications for the Design of Cold-Formed Steel Structural Members for multi-web steel panels and the geometric constants presented in the web crippling tables for the deck panel.



How to Read Web Crippling Table

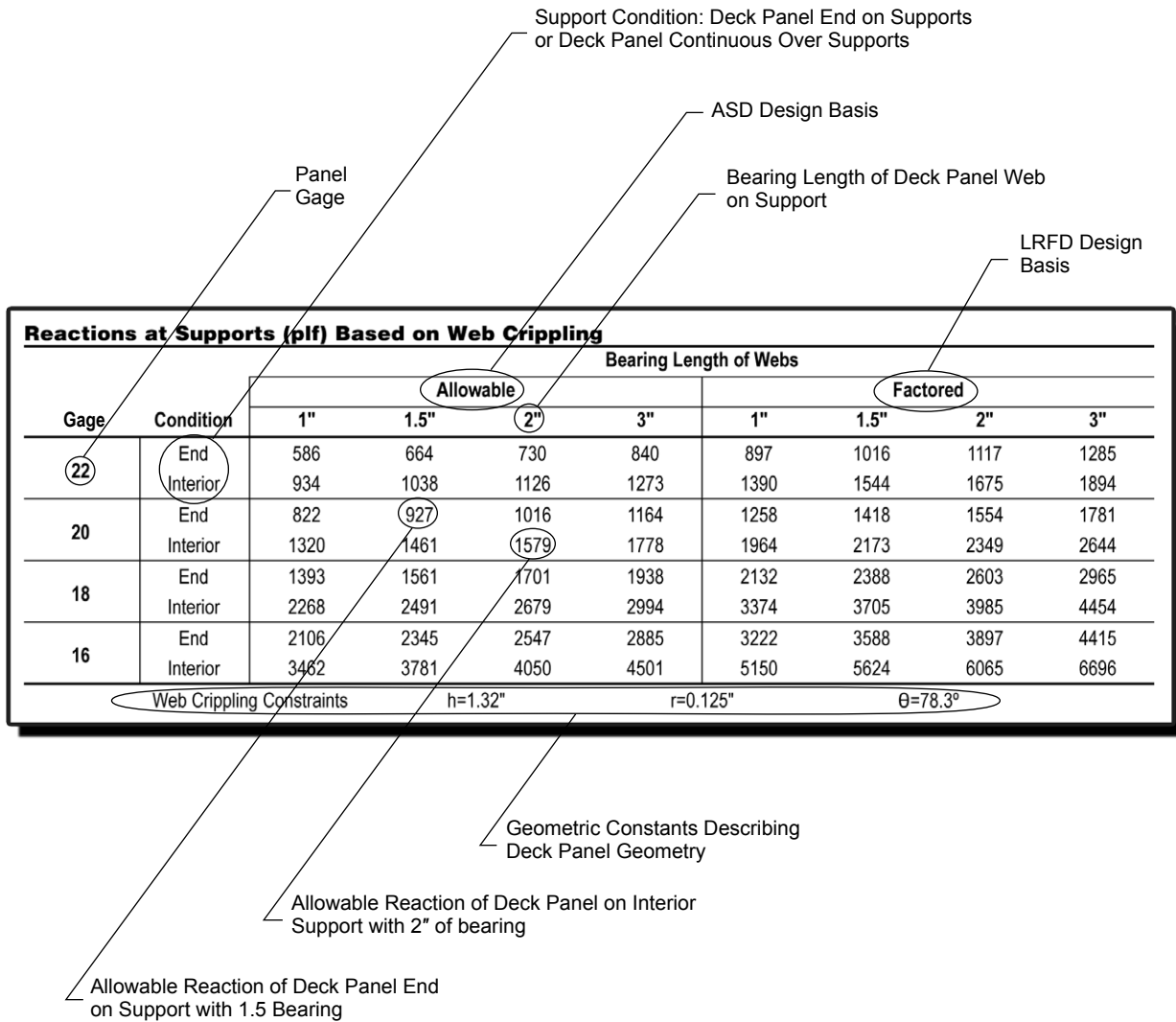


Figure 1.8.3: SAMPLE OF WEB CRIPPLING TABLE

1.9 In Plane Diaphragm Shear

Diaphragm Shear and Flexibility

Diaphragm shear and flexibility for steel deck diaphragms have been developed through a combination of fastener strength testing, full-scale diaphragm shear testing, and analytic equations. The steel deck panels produced by ASC Steel Deck can be used in assemblies not covered in this catalog using the design methods in the *Steel Deck Institute, Diaphragm Design Manual*, 3rd Edition.

Allowable and Factored Diaphragm Shear Tables

The allowable and factored diaphragm shears presented in the tables are based on load combinations, including earthquake (seismic) loading in accordance with Section D5 of the North American Specification for the Design of Cold-Formed Steel Structural Members. The values above and to the right in the shaded areas, as indicated on the partial table (see Figure 1.9.3), indicate that plate-like buckling governs for the span condition listed. For wind load combinations, the nominal diaphragm shear may be backed out of the allowable or factored shear, the appropriate factor from Table D5 for wind loading can be applied.

$$S_a = \frac{S_n}{\Omega} \quad \text{ASD} \quad \quad \quad S_f = \phi S_n \quad \text{LRFD}$$

- S_a Allowable diaphragm shear, plf
- S_f Factored diaphragm strength, plf
- S_n Nominal diaphragm strength, plf
- ϕ Resistance factor for LRFD, per Section D5 of the North American Specification for the Design of Cold-Formed Steel Structural Members
- Ω Safety Factor for ASD, per Section D5 of the North American Specification for the Design of Cold-Formed Steel Structural Members

Using Diaphragm Shear and Flexibility Tables

The allowable or factored diaphragm shear (pounds per lineal foot) and flexibility factor (micro inches per pound) are presented in the tables. The shear and flexibility calculations are based on the following variables:

1. Deck panel
2. Deck gage
3. Deck vertical load span (support spacing)
4. Connection type to supports
5. Connection to support pattern
6. Side lap connection type
7. Side lap connection spacing

In addition to the above conditions, the flexibility is also affected by the following:

8. End lap condition, end lapped or butted
9. Ratio of span to sheet length

Deck panels and gage are generally selected using the vertical load requirements for a given span. The connection type to supports is based on the supporting member thickness. The attachment pattern, the side lap connection type and spacing are generally selected to meet the diaphragm shear demand on the diaphragm. The deck panel gage may need to be increased to meet high diaphragm shear demands. It is generally more cost effective to exhaust deck attachment options to achieve a required diaphragm shear capacity before increasing the gage of the deck (see Figure 1.9.3)

TABLE D5

Factors of Safety and Resistance Factors for Diaphragms

Load Type or Combinations Including	Connection Type ¹	Limit State					
		Connection Related			Panel Buckling ²		
		USA and Mexico		Canada	USA and Mexico		Canada
		Ω_d (ASD)	Φ_d (LRFD)	Φ_d (LSD)	Ω_d (ASD)	Φ_d (LRFD)	Φ_d (LSD)
Earthquake	Welds	3.00	0.55	0.55	2.00	0.80	0.75
	Screws	2.50	0.65	0.65			
Wind	Welds	2.35	0.70	0.70			
	Screws						
All Others	Welds	2.65	0.60	0.60			
	Screws	2.50	0.65	0.65			

Note: Panel buckling is out-of-plane and not local buckling at fasteners

Figure 1.9.1: TABLE D5 FROM THE 2004 SUPPLEMENT & 2007 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

Diaphragm Shear and Flexibility of Cellular Panels

Specific diaphragm shear and flexibility tables are available for some of our cellular deck panels. For those cellular products that do not have specific tables, refer to the diaphragm shear and flexibility of the non-cellular version of the profile, using the gage of the flat bottom section of the cellular product. When designing based on the non cellular version of the panel, the actual shear of the cellular panel is higher and the flexibility is lower. The shear is higher because the connection to supports includes both the bottom flat sheet and the top profile sheet, which increases the strength of the connection. The cellular deck is stiffer than the non-cellular version of the profile because the flat bottom panel is much stiffer than the profile section alone.

End Lap or Butted Deck

The end lapping of deck panels versus butted deck panels does not affect diaphragm shear strength. The end lap does affect the diaphragm shear stiffness by eliminating most of the end warping for the deck flutes due to diaphragm shear. End lapping stiffens the diaphragm, reducing the in-plane deflection of the roof structure. End lapping also reduces the number of connections to supports at the sheet ends, leading to reduced erection costs. Butted deck panels ends are necessary in certain conditions, such as at valleys or ridges on steep slope roofs.

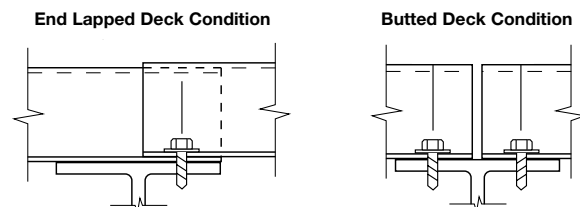


Figure 1.9.2: END LAP AND BUTTED DECK

Fastener Selection to Supporting Members

The fastening of deck to the supporting members has an impact of the diaphragm shear. The higher shear of the fastener, the higher the shear for a given sheet of deck. Welds produce high shears. Power actuated fasteners (nails/pins) can produce a wide range of shears depending on the sup-

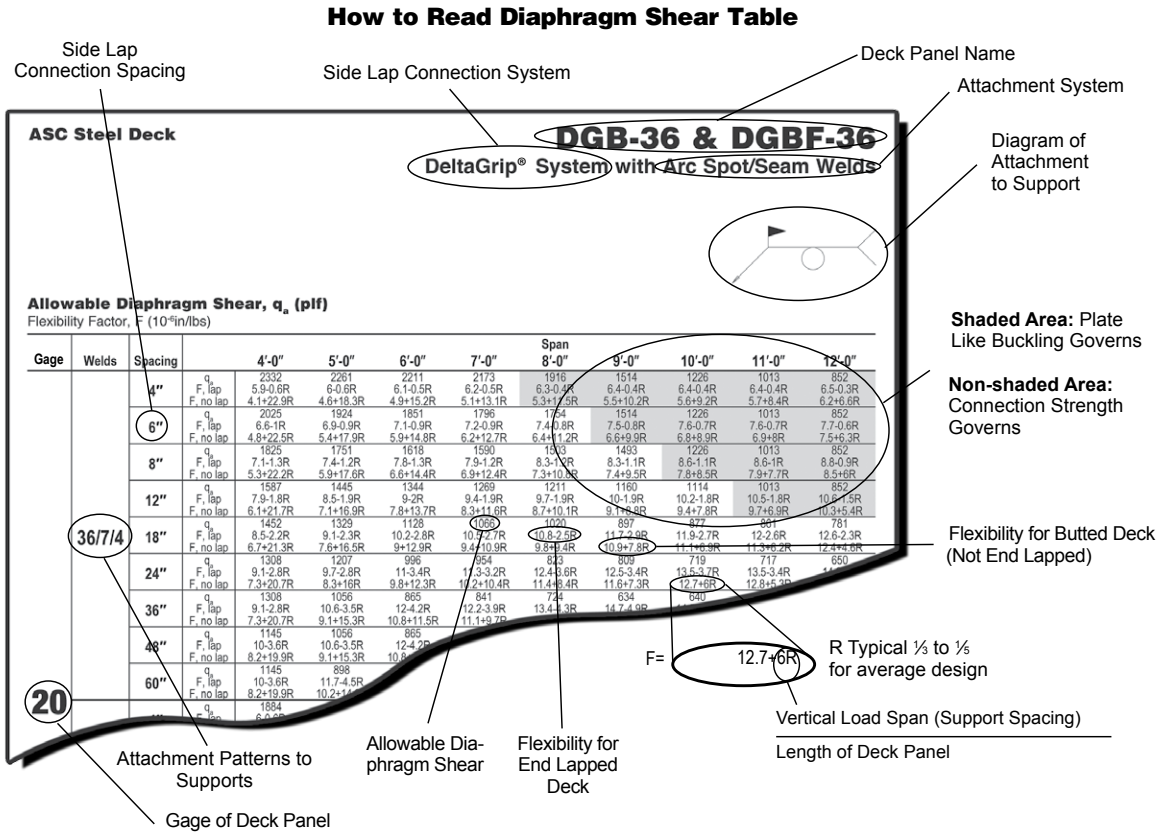


Figure 1.9.3: SAMPLE OF DIAGRAM SHEAR AND FLEXIBILITY TABLE

port member thickness and the selected fastener. Self drilling screws produce shears on the lower end of the mechanical fastener range. The fastening system must be compatible with the support member thickness and deliver the required performance for the diaphragm. Refer to the fastener section of the catalog for more information.

Side Seam/Side Lap Fasteners

All standard steel deck panels have a standing seam interlock which is suitable for button punch, top seam welds, and our revolutionary DeltaGrip® side lap fastening system (for panels designated DG). The button punch side lap fastener is the most cost effective, yet provides the lowest diaphragm shear capacity. Welded top seam fastening is the least cost effective but offers significantly higher diaphragm shear capacities than button punching. The most efficient and cost effective side lap fastener type is the DeltaGrip system. This system provides high diaphragm shear capacities similar to the top seam weld with installation costs equivalent to button punching.

Another side lap fastening option is the use of screws, with nestable side lap steel deck panels. Side lap screws provide moderate diaphragm shear capacities compared to low shear button punches and the high shear DeltaGrip systems. The installation cost of screws is greater than button punching and much less expensive than top seam welding.

Side Seam/Side Lap Fastener Spacing

The first side lap connection from the supporting member shall not be more than one-half the specified spacing of the side lap connections, (see Figure 1.9.4). No side lap connection

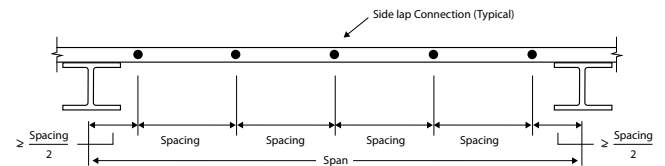


Figure 1.9.4: SIDE LAP FASTENER SPACING

should be installed directly over the center line of the support member.

Diaphragm Boundary Fasteners to Supports

Diaphragm boundary connection to supports, perpendicular to the deck, should be the specified attachment pattern for the steel deck panels.

Diaphragm boundary fastener spacing, parallel with panel ribs, shall not exceed the spacing, which is determined by dividing the required diaphragm shear demand by the fastener shear strength. Connector shear strengths are presented in Figures 1.11.10 and 1.11.11.

$$Spacing(in) = \frac{Q_{fa}}{s_a} \left(\frac{12in}{ft} \right) \quad Spacing(in) = \frac{Q_{ff}}{s_f} \left(\frac{12in}{ft} \right)$$

- Q_{fa} Allowable fastener strength using safety factor from AISI S100-2007 Table D5
- Q_{ff} Factored fastener strength using resistance factor from AISI S100-2007 Table D5
- s_a Allowable shear diaphragm demand
- s_f Factored shear diaphragm demand

Skew Cut Diaphragm Boundary

At skew cut conditions, the minimum number of fasteners is determined based on the location of the fasteners in the ribs per the perpendicular attachment schedule. The average spacing of the fastener per sheet shall not be greater than the spacing of the parallel boundary fasteners. Fasteners may need to be doubled up in some flutes to achieve this. (See figure 1.10.1)

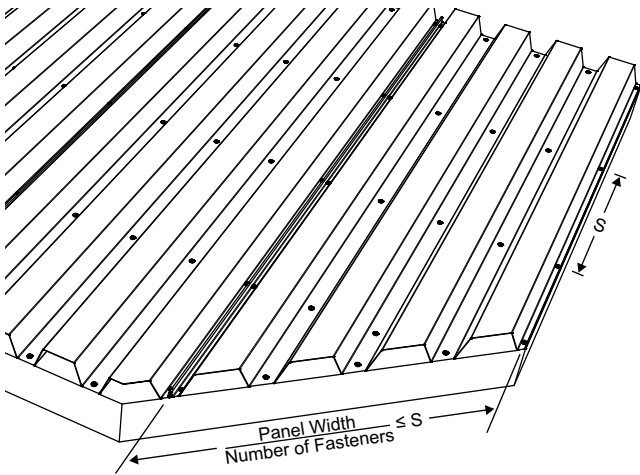


Figure 1.10.1: SKEW DIAPHRAGM

Diaphragm Shear Zoning

Steel deck diaphragms may be zoned based on shear demand on the diaphragm to create the most economical roof structure. This may not be practical for every building, but many rectangular large roof structures lend themselves to zoning. The deck panel along the collectors will have the highest shear demand dropping off toward the middle of the diaphragm. The deck gage and attachment pattern can be reduced as the shear demand in the diaphragm diminishes (see Figure 1.10.2).

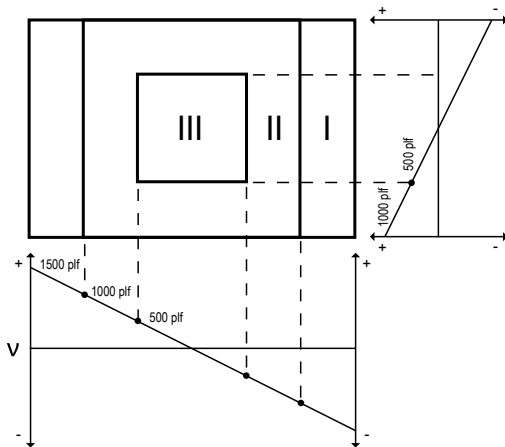


Figure 1.10.2: DIAPHRAGM SHEAR ZONING

Diaphragm Deflection

Diaphragms in plane deflections should be based on the shear deflection of the diaphragm. For diaphragms that do not have a large aspect ratio of length to depth, flexural deflection should not be considered. Flexural deflection equations based on slender beams do not apply to deflection of deep beams, which are generally considered beams with a length to depth ratio of 5:1 or less. Diaphragms with length to depth ratios greater than 5:1 probably do not meet the requirements for flexural deflections because the diaphragm, acting as the web of the beam, is orders of magnitude more flexible than the diaphragm cords, acting as the flanges of the beam.

Typical lengths of steel deck panels that are safe and efficient for erection are in the 20 to 35 foot range. For erection safety, 3 span sheets are the desirable minimum sheet length. A minimum 3 span condition should not be specified because single and double spans are required for layout in most buildings. For design purposes a ratio of span to length, R, from 1/3 to 1/5 is appropriate for general design.

$$F = \# \cdot \# + \# \cdot \# R \quad R = \frac{L_v}{L}$$

- F = Diaphragm stiffness in micro inches per lbs
- L_v = Vertical load span, which is the support spacing
- L = Deck panel length, which is a multiple of the vertical load span

Example:

DGB-36, 20 gage, 36/7/4 attachment pattern, DeltaGrip® spacing of 12 inches, Vertical load span of 5 feet $F=7.1+19.6R$
 Assume $R = 1/5$, a 25 foot long panel with 5 foot vertical load span

$$F = 7.1 + 19.6R = 7.1 + 19.6(1/5) = 11$$

Figure 1.10.3: DIAPHRAGM STIFFNESS FACTOR

Diaphragm Deflection Concept

The deflection of a diaphragm that is zoned for shear can be approximated by summing the deflection of each deck zone, based on the diaphragm stiffness of each zone (see Figure 1.10.4). For zone 3 in the figure, the diaphragm stiffness of the least stiff zone is applied to the entire building depth.

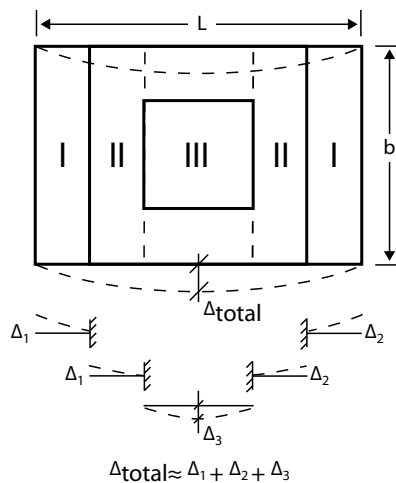


Figure 1.10.4: DIAPHRAGM DEFLECTION CONCEPT

Diaphragm Deflection Equations

Determination of diaphragm shear (web) deflections shall be based on the shear Stiffness, G' and equations of engineering mechanics. The diaphragm deflection is determined by one of the following equations.

Relationship between Flexibility Factor and Stiffness Factor
When F is in micro-inches per pound and G' is in kips per foot

$$F = \frac{1000}{G'}$$

Figure 1.10.5: DIAPHRAGM SHEAR DEFLECTION EQUATIONS

Type of Loading	Loading Condition	Shear Deflection	Load Diaphragm
Simple Beam at Center	Uniform Load, w	$\Delta_w = \frac{wL^2}{8bG'}$	
Simple Beam at L ₁	Uniform Load, w	$\Delta_w = \frac{q_{ave}L_1}{G'}$	
Simple Beam at Center	Point Load, P	$\Delta_w = \frac{PL}{4bG'}$	
Simple Beam at 1/3 Points	Point Load, P	$\Delta_w = \frac{PL}{3bG'}$	
Cantilever Beam at End	Uniform Load, P	$\Delta_w = \frac{PL}{bG'}$	
Cantilever Beam at End	Uniform Load, W	$\Delta_w = \frac{WL^2}{2bG'}$	

- b = Depth of diaphragm
- F = Flexibility factor (typically micro in/lbs)
- G' = Stiffness factor (typically kips/in)
- L = Diaphragm length
- L₁ = Distance to point where deflection is calculated

- P = Concentrated load
- q_{ave} = Average diaphragm shear (typically lbs/ft)
- w = Uniform load
- Δw = Web deflection

1.11 Support Fastening

Support Fastening

A variety of fastening systems may be used to connect steel deck to the supporting steel members. The type of fastening system used depends on the required diaphragm shear capacity, uplift capacity, and the thickness of the supporting steel members. These fastening systems include arc spot welds, arc seam welds, self-drilling screws, and power-actuated fasteners (PAF).

The strength of each fastener type is mathematically derived from specified standards and testing. The shear strength for arc spot and arc seam welds is derived from the equations in Section E2.6 of AISI S100-2007. The strength for self-drilling screws and PAF is determined in accordance with the *Steel Deck Institute Diaphragm Design Manual DDM-03*. The strengths for these fasteners are listed in the Weld and Shear capacities (see *Figure 1.11.10* and *Figure 1.11.11*). The pull-out and pull-over capacity for fasteners are in accordance with Sections E4.4.1 and E4.4.2 of AISI S100-2007. The pull-out for PAF's should be obtained from the manufacturer's data for the selected fastener.

Fastener Selection

To ensure quality fastening to supports, the fastener, weld, screw, or PAF must be compatible with the thickness of the steel support member. Arc spot and arc seam welds do not have a mandatory minimum support member thickness. Experience has shown that a support thickness as thin as 10 gage is reasonable. Welders with light gage welding experience can

weld steel deck to thinner gage supports. Self-drilling screws are suitable for use with supporting members from 0.0385 inches gage to 1/2", depending on thread pitch and drill point configuration. The fastener manufacturer should be consulted to determine which screw is appropriate. PAFs are selected based on a range of support thickness for a given fastener. Follow the PAF manufacturer's support thickness recommendations. The fastener selection chart (see *Figure 1.11.1*) provides a quick and easy guide to help select the appropriate fastening system for the support member thickness.

Minimum Fastener Edge Distance

The minimum edge distance for fasteners used with ASC Steel Deck profiles has been verified through full-scale diaphragm shear testing. The minimum edge distance for self-drilling screws and PAFs is 1/2". The minimum edge distance for arc spot and arc seam welds is 3/4". Edge distance is measured from the center of the fastener or the center of the radius of an arc spot or seam weld.

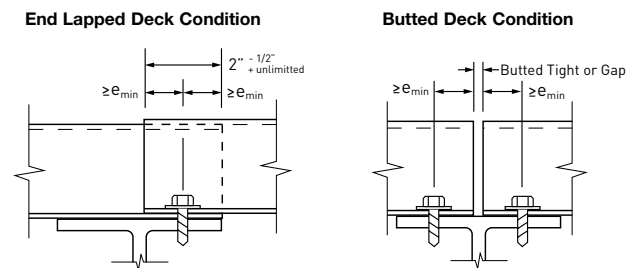
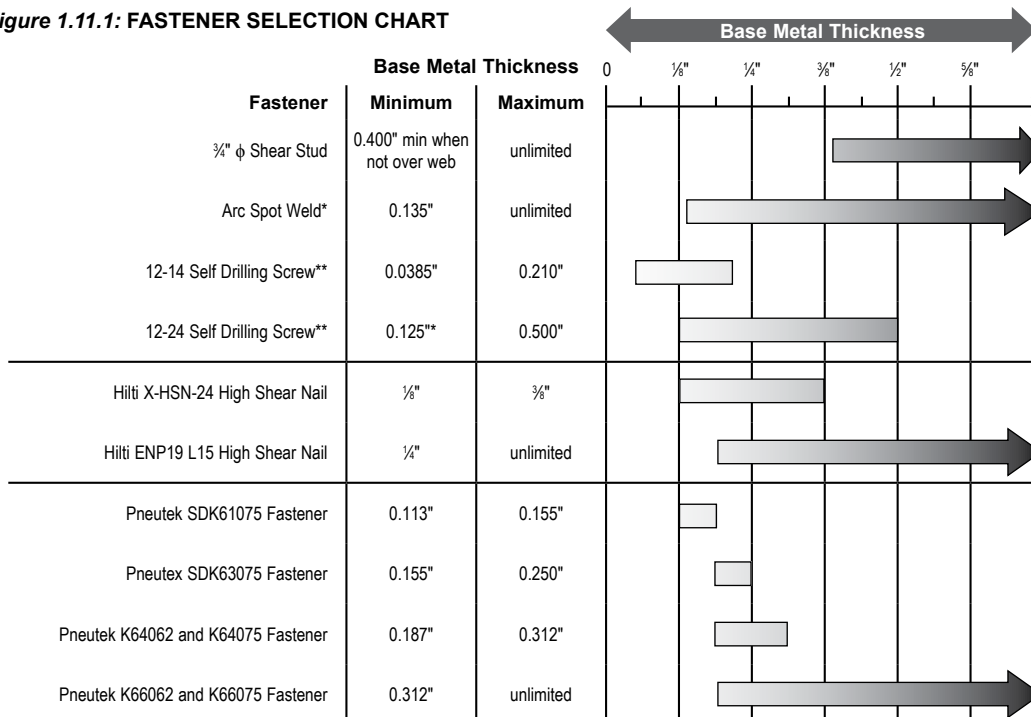


Figure 1.11.2: END LAP AND BUTTED DECK

Figure 1.11.1: FASTENER SELECTION CHART



*Below 10 gage is not recommended due to the difficulty of producing a good quality weld.

**Correct drill point must be selected for the base material thickness.

Power-Actuated Fasteners, PAF

Power-actuated fasteners, PAFs, are an excellent fastening system. Commonly referred to as high shear nails or pins, they can be used to achieve mid to high range diaphragm shear capacities depending on the fastener selected and the support thickness. The benefits of using PAFs is that they can be installed without skilled qualified welders, are efficient to install, do not pose a jobsite fire risk, and do not leave any burn marks associated with welding. This makes PAFs an attractive option for architecturally exposed steel deck.

A drawback of PAF systems is that it may be difficult for the design engineer to select the fastener size when designing with open-web steel joists because the thickness of the top chord maybe unknown. Good practice would be to design the diaphragm with the minimum expected substrate steel thickness and indicate a range of acceptable fasteners based on the thickness of the supporting steel member. The inspection process on the jobsite should be tasked with ensuring that the correct fastener is used based on the substrate thickness.

Pneutek

Pneutek’s PAF system uses a pneumatic actuated tool. This system does not use a powder charge to drive the fastener. Contact Pneutek for fastener installation instructions and for additional technical support relating to their fastening systems. www.pneutek.com 800-431-8665

Pneutek Fasteners

SDK61075, SDK63075, K64062, K66075, K66056, K66062, K66075

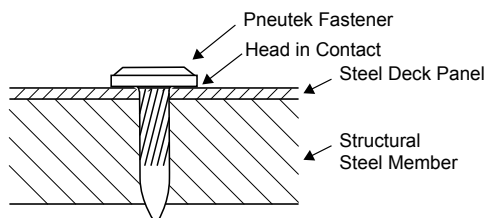


Figure 1.11.3: PNEUTEK K64062

Hilti, Inc.

Hilti, Inc.’s PAF system includes powder fired tools to install their high shear nails (HSN) and ENP fasteners. The operator of the powder-fired tools must have OSHA compliant safety training. Contact Hilti, Inc. for fastener installation instructions and for additional technical support relating to their fastening systems. www.us.hilti.com 800-879-8000

Hilti Inc. Fasteners

X-ENP-19 L15, X-EDN-19 THQ12, X-EDNK-22 THQ12

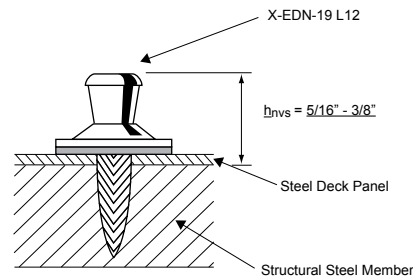


Figure 1.11.4: HILTI X-ENP-19

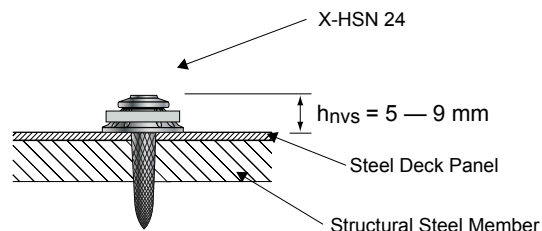


Figure 1.11.5: HILTI X-HSN 24

1.11 Support Fastening

Arc Spot and Arc Seam Welds

Traditionally, arc spot welds and arc seam welds are used to attach the steel deck to supports. The arc welds have high shear capacity leading to diaphragms with high shear capacities and low diaphragm flexibilities. Significant drawbacks of welded connections include cost of the required skilled labor and lengthy time to install. Additionally, welding cannot be performed in the rain or if standing water is present on the deck. Welding often results in burn marks visible from the underside of the deck and supporting members. Jobsite safety is of great concern as welding also creates a fire risk. Many specifications require the weld to receive touch-up paint after slagging the welds.

Arc spot and seam welds for ASC Steel Decks are specified based on the effective diameter or length and width. This is approximately the diameter or width and length of a weld at the interface between the deck and supporting member. The effective weld size is less than the visible weld size and is verified through the development of weld qualifications and procedures. See AISI S100-2007 Section E2 for more information regarding weld design. Weld inspection, procedures, and qualifications should be in accordance with AWS D1.3

Arc spot welds in deck less than 0.028 inches thick require weld washers in accordance with AWS D1.3. Weld washers are not recommended for thicker decks.

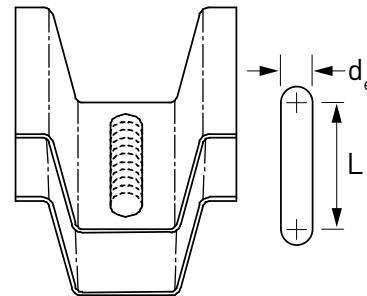
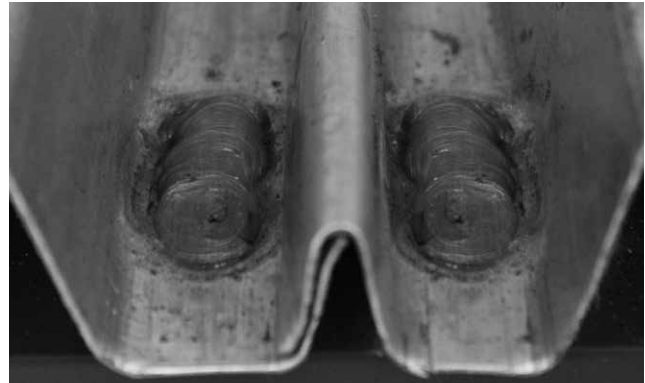


Figure 1.11.7: ARC SEAM WELD (weld to support)

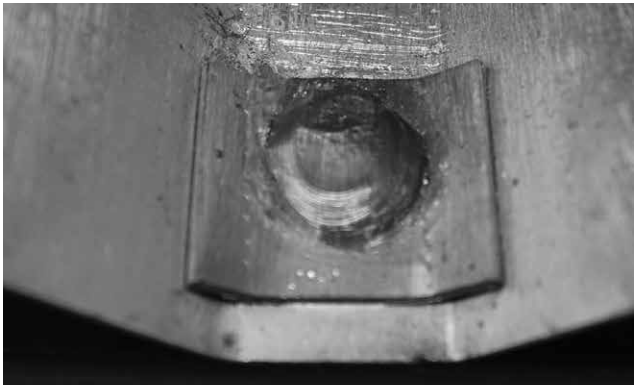


Figure 1.11.6: WELD WASHER

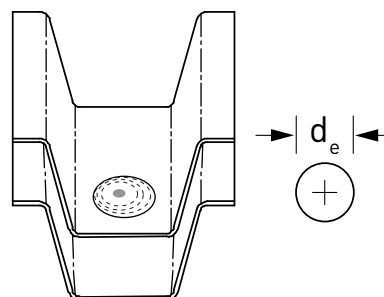
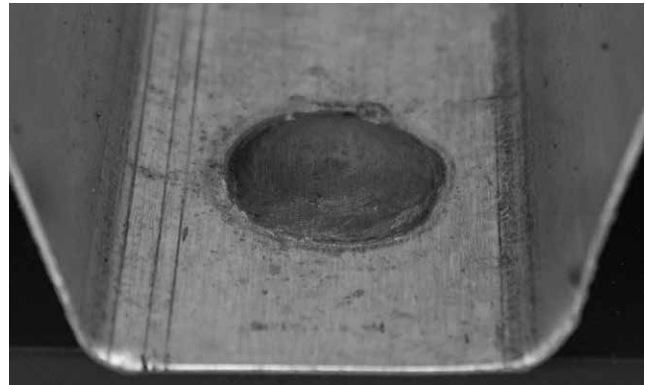


Figure 1.11.8: ARC SPOT WELD (weld to support)

Self-Drilling Screws

Self-drilling screws are an excellent option for attaching deck to thin-gage metal supporting members. Although diaphragms that are attached with screws tend to have a lower shear capacity than other support fastening systems, screws install quickly with lower skilled labor and do not leave any burn marks on the deck or supporting members. This makes them an attractive option for architecturally exposed steel deck. Self drilling screws may not be practical on heavier structural steel support members because it can be time consuming to drill through the steel deck panel into the supporting member. When installed, the driven screw penetrates both the steel deck panel and the supporting member; as a result, the screw points are visible from the underside of the roof structure.

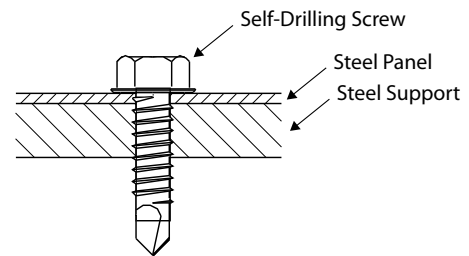


Figure 1.11.9: #12-24R1-1/4 SCREW



1.11 Support Fastening



Figure 1.11.10

Nominal Strength	WELDING CAPACITIES				
	Deck Panel	Gage	Arc Spot (puddle) Weld (1/2 in effective diameter)		Arc Seam Weld (3/8 in x 1 in effective width & length)
			Shear (lbs)	Tensile (lbs)	Shear (lbs)
				IBC	
B, DGB	22	2116	2048	3098	
	20	2955	2442	3751	
	18	4710	3207	5075	
	16	5810	3956	6452	
N, DGN	22	2416	2310	3873	
	20	3364	2755	4688	
	18	5701	3618	6344	
	16	7263	4463	8065	
2W, DG2W, 3W, DG3W	22	2002	1988	3001	
	21	2532	2252	3434	
	20	2820	2383	3652	
	19	3950	2837	4425	
	18	4635	3156	4985	
	16	5738	3907	6359	
Deep Deck	20	2595	2048	3161	
	18	4011	2717	4314	
	16	4965	338/	5503	
	14	6193	4188	7143	
BF, DGBF	20/20	6886	4689	7881	
	20/18	7835	5335	9217	
	20/16	8836	6082	10714	
	18/20	7912	5387	9328	
	18/18	8836	6075	10701	
	18/16	8836	6958	12238	
	16/20	8836	6148	10827	
	16/18	8836	6958	12238	
	16/16	8836	7867	13817	
NF, DGNF	20/20	8608	5290	9851	
	20/18	8836	6019	11521	
	20/16	8836	6862	13392	
	18/20	8836	6078	11660	
	18/18	8836	6853	13376	
	18/16	8836	7850	15298	
	16/20	8836	6935	13534	
	16/18	8836	7850	15298	
	16/16	8836	8875	17271	
2WF, DG2WF, 3WF, DG3WF	20/20	6807	4635	7773	
	20/18	7759	5283	9106	
	20/16	8836	6017	10600	
	18/20	7844	5341	9229	
	18/18	8836	6017	10600	
	18/16	8836	6898	12134	
	16/20	8836	6089	10600	
	16/18	8836	6898	10600	
	16/16	8836	7805	13710	
Cellular Deep Deck	20/20	5815	3932	6624	
	20/18	6714	4540	7780	
	20/16	7647	5171	9173	
	18/20	6714	4540	7780	
	18/18	7647	5171	9173	
	18/16	8767	5928	10501	
	16/20	7647	5171	9173	
	16/18	8767	5928	10501	
	16/16	8836	6708	11865	

Calculated in accordance with section E of the *AISI Cold Formed Steel Design Manual 2004 supplement to the 2001 & 2007 NASPEC, AISI S100-2012*

Figure 1.11.11

Nominal Strength		MECHANICAL FASTENER CAPACITIES							
Deck Panel	Gage	Nominal Shear Strength (lbs)							
		Screws	Hilti			Pneutek			
		#12 Self Drill	X-ENP-19 L15	X-EDN 19 THQ 12	X-EDNK22 THQ12 X-HSN-24	K64062 K64075	K63062 K63075	SDK63075	SDK61075
B, DGB, N, DGN	22	1150	1624	1604	1508	1841	1735	1728	1546
	20	1381	1938	1914	1800	2258	2216	1977	1833
	18	1839	2549	2517	2367	3132	3009	2417	2378
	16	2301	3149	3109	2924	4076	3686	2812	2896
2W, DG2W, 3W, DG3W	22	1116	1577	1557	1464	1780	1655	1689	1502
	21	1270	1787	1765	1659	2055	1993	1860	1695
	20	1347	1891	1868	1756	2195	2149	1941	1790
	19	1616	2253	2225	2092	2698	2642	2210	2116
	18	1808	2508	2477	2329	3071	2960	2389	2342
	16	2270	3109	3070	2887	4011	3644	2787	2862
Deep Deck	20	1206	1891	1868	1756	2195	2149	1941	1790
	18	1619	2508	2477	2329	3071	2960	2389	2342
	16	2032	3109	3070	2887	4011	3644	2787	2862
	14	2583	3885	3836	3608	5363	4440	3265	3506
BF, DGBF, NF, DGNF	20/20	2766	3737	3690	3470	5092	4294	3176	3386
	20/18	3190	4258	4204	3953	6071	4800	3485	3804
	20/16	3651	4810	4750	4466	7201	5314	3801	4229
	18/20	3224	4300	4246	3992	6154	4840	3509	3837
	18/18	3647	4806	4745	4462	7191	5310	3799	4225
	18/16	4109	5342	5275	4960	8383	5793	4099	4619
	16/20	3686	4851	4790	4504	7288	5351	3824	4259
	16/18	4109	5342	5275	4960	8383	5793	4099	4619
	16/16	4571	5862	5789	5444	9639	6251	4385	4982
2WF, DG2WF, 3WF, DG3WF	20/20	2732	3694	3648	3430	5014	4250	3150	3350
	20/18	3155	4215	4163	3914	5989	4760	3460	3770
	20/16	3617	4769	4710	4429	7114	5277	3778	4198
	18/20	3193	4262	4209	3958	6081	4804	3487	3807
	18/18	3617	4769	4710	4429	7114	5277	3778	4198
	18/16	4078	5307	5240	4928	8302	5762	4079	4594
	16/20	3655	4815	4754	4471	7211	5318	3804	4232
	16/18	4078	5307	5240	4928	8302	5762	4079	4594
	16/16	4540	5828	5755	5412	9553	6221	4367	4958
Cellular Deep Deck	20/20	2411	3646	3600	3385	4928	4202	3121	3311
	20/18	2824	4215	4163	3914	5989	4760	3460	3770
	20/16	3238	4769	4710	4429	7114	5277	3778	4198
	18/20	2824	4215	4163	3914	5989	4760	3460	3770
	18/18	3238	4769	4710	4429	7114	5277	3778	4198
	18/16	3651	5307	5240	4928	8302	5762	4079	4594
	16/20	3238	4769	4710	4429	7114	5277	3778	4198
	16/18	3651	5307	5240	4928	8302	5762	4079	4594
	16/16	4064	5828	5755	5412	9553	6221	4367	4958

Calculated in accordance with the *Steel Deck Institute Diaphragm Design Manual*

Side Seam Attachment

Side seam attachment is an integral part of developing the shear resistance and flexibility of a diaphragm system. The side seam attachment also creates a positive connection, limiting differential movement between the sheets of deck under out-of-plane loads. Limiting differential movement between the sheets helps to prevent damage to the roof system installed on the top side of the steel deck. The common side seam attachment systems are the button punch, top seam weld, and DeltaGrip® system for standing seam interlock side seams. Self-drilling screws are used for nestable side seams. The two common types of side seams are the standing seam interlock and the nestable side seam (see Figure 1.12.1).

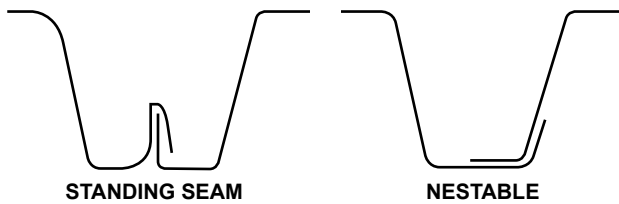


Figure 1.12.1: STANDING SEAM AND NESTABLE DIAGRAM

Button Punch

The button punch attachment is used to connect standing seam side seams. This low cost attachment uses a pneumatic or hand-operated button punch tool that clinches the seam together. The button punch option is used for low shear diaphragms that generally have high flexibilities. For architecturally exposed deck, the button punch system is a good option because no unsightly burn marks occur, which are typically associated with welded connections. Although skilled labor is not required, the quality of the button punch that has been installed with a hand-operated tool is dependent on the operator. A “good” button punch should not become disengaged when a person jumps on the adjacent sheet of deck.



Figure 1.12.2: BUTTON PUNCH SIDE LAPS

Self-Drilling Screws

Self-drilling screws are used to attach nestable side lap steel decks. The screws have a mid range shear strength compared to button punches and top seam welds making them suitable for mid range diaphragm shears. The screws can be easily installed with low-skill labor using screw guns that are readily available. The screws do not leave burn marks associated with welding, but the screw points do protrude through the underside of the steel deck. As a result, screws may not be acceptable for some architecturally exposed steel decks.



Figure 1.12.3: SIDE SEAM SELF-DRILLING SCREW

Top Seam Weld

The top seam weld connects the standing seam deck side seams by welding the three layers of steel deck together. This is done after the hem is crimped using a hand or pneumatically operated crimping tool. Top seam welds can be used to produce high diaphragm shears and low flexibilities. Top seam welding is a slow process requiring skilled welders, leading to increased installation costs. The welding creates burn marks on the underside of the deck and occasional burn-through holes. Top seam welds are not recommended for architecturally exposed steel deck. Weld inspection, procedures, and qualifications should be in accordance with AWS D1.3. Due to the high cost associated with installation and inspection, top seam weld connections have been largely replaced by the DeltaGrip side lap connection.



Figure 1.12.4: TOP SEAM WELD

DeltaGrip®

The DeltaGrip system was developed in 2003 to reduce the installed costs of high shear diaphragms by eliminating the costly top seam weld. This revolutionary clinching system punches three triangular tabs through the standing seam interlock side seam. This interlock creates the equivalent strength of a time consuming top seam weld with the rapid action of a pneumatically powered DeltaGrip tool. High-quality DeltaGrip connections can be installed with low-skill labor compared to the skilled welders required to make top seam welds.

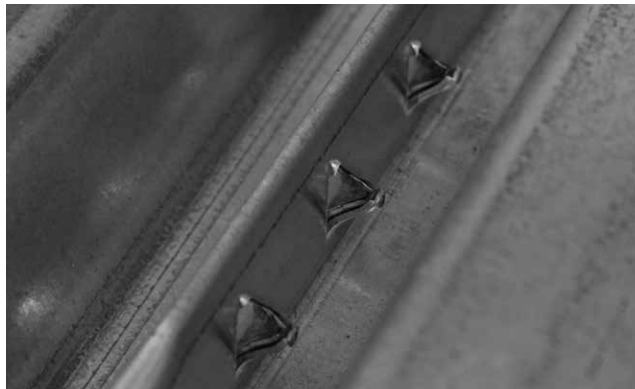


Figure 1.12.5: DELTAGRIP PUNCH

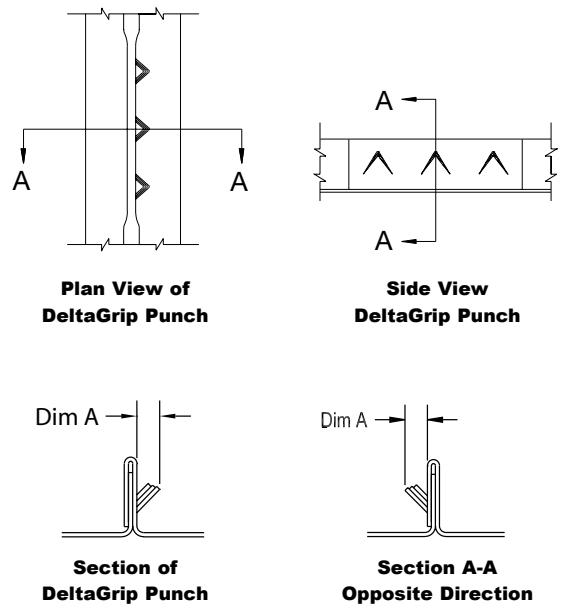


Figure 1.12.7: DELTAGRIP PUNCH VIEWS

DeltaGrip Inspection

The DeltaGrip system can be visually inspected from the top side of the steel deck by observing that all three layers of the side lap are engaged and that the punch-out distance meets the minimum offset required (Figure 1.12.6 and 1.12.7). To assist with this task, ASC Steel Deck has developed a Go/No-Go gage to provide a rapid jobsite check of the punch-out distances (Figure 1.12.8).

Schedule Minimum Offset	
Gage	Dim A (in)
22	0.19
21	0.19
20	0.19
19	0.16
18	0.16
16	0.16
For SI 1 inch = 25.4mm	



Figure 1.12.6: DELTAGRIP PUNCH OUT DISTANCES

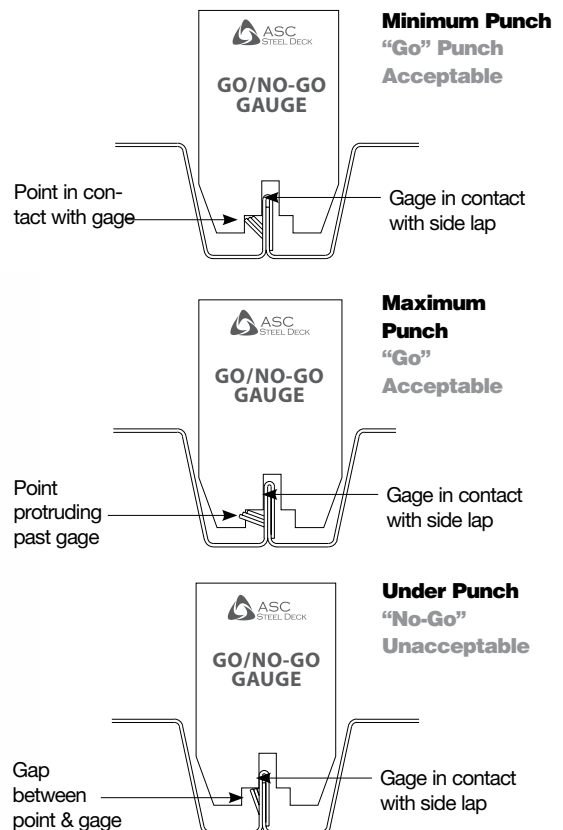


Figure 1.12.8: DELTAGRIP GO/NO-GO GAUGE

ASC Steel Deck offers a variety of accessories to complement our steel deck offer. These include flashings, sump pans, weld washers, and profile cut top (small void) and bottom (large void) neoprene foam and galvanized steel closures.

When accessories are called for in the specifications, the location must be clearly shown on the structural and architectural drawings. Specifications that call for the use of profile cut closures where walls meet the metal deck may lead to unnecessary construction costs if they are only needed at exterior walls or specific interior locations.

B36 DECK NEOPRENE AND METAL CLOSURES

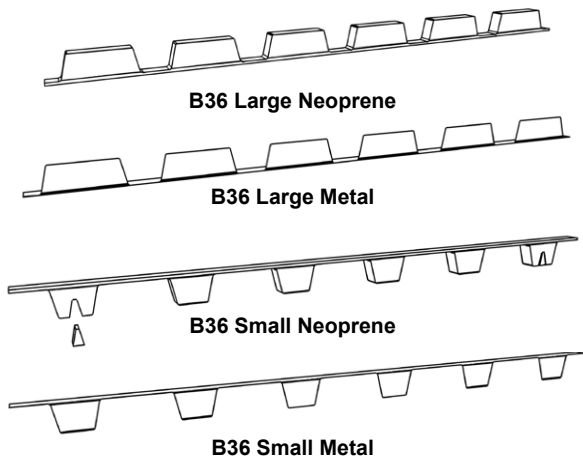


Figure 1.13.1

N32 DECK NEOPRENE AND METAL CLOSURES

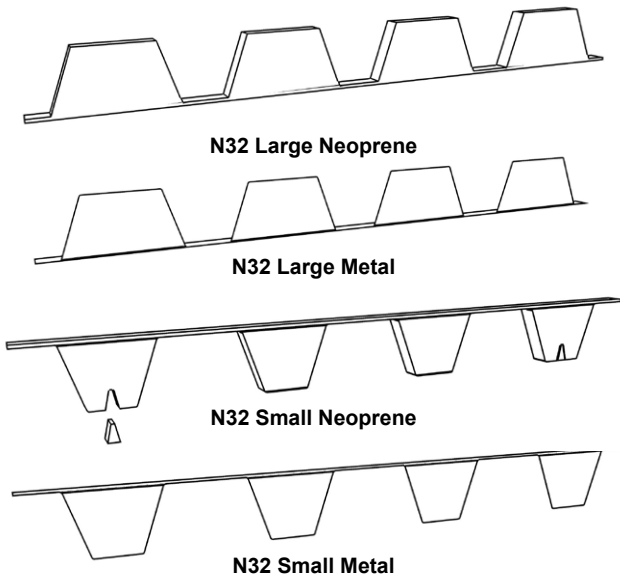


Figure 1.13.2

Profile Cut Neoprene Closures.

Neoprene closures may be used on the top and bottom of the steel deck to reduce vapor, moisture, and air from infiltrating into the building or roof assembly. These are die-cut from black closed cell neoprene foam. The foam is manufactured in accordance with ASTM D-1056 and passes the FM VSS No. 302, UL 94HBF, and UL 94 HF1 flammability tests.

Profile Cut Metal Closures.

Metal closures may be used to control animal nesting within the building structure. Metal closures may be used in combination with neoprene closures. Metal closures with caulking can also be used to reduce noise infiltration as part of an acoustically engineered system. The metal closures are stamped out of 22 gage galvanized sheet steel.

2W NEOPRENE AND METAL CLOSURES

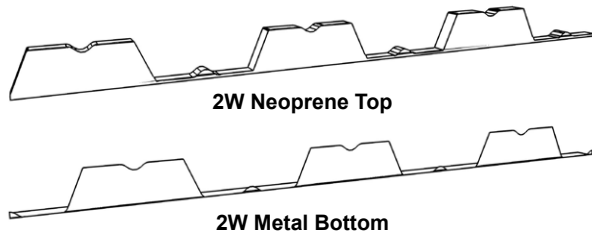


Figure 1.13.3

3W NEOPRENE AND METAL CLOSURES

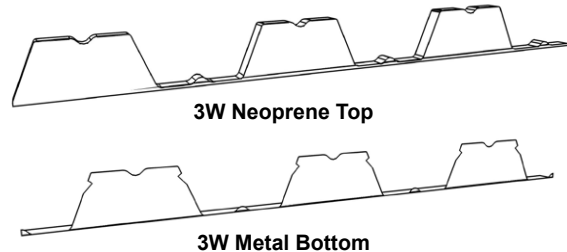


Figure 1.13.4

DEEP DECK NEOPRENE CLOSURES

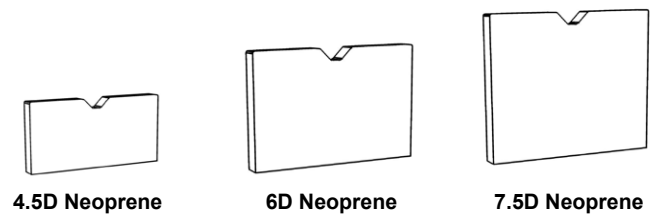


Figure 1.13.5

Weld Washers.

14 gauge x 3/8" dia. hole for welded attachment of CP-32. For use with 26 and 24 gage CP32 only.

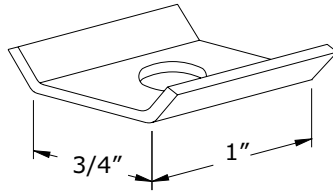


Figure 1.13.6

Anchor Washers

16 gauge x 7/16" dia. hole for welded attachment of CP-32 where higher diaphragm shear values must be achieved.

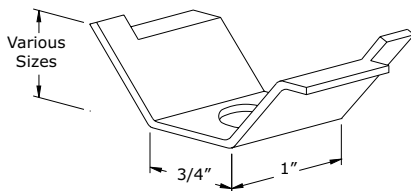


Figure 1.13.7

Sump Pans.

Sump pans are a common part of many low slope roof systems. These may be provided as part of the metal deck scope of work or may be provided by the roof or mechanical trade(s) installing the drainage system.

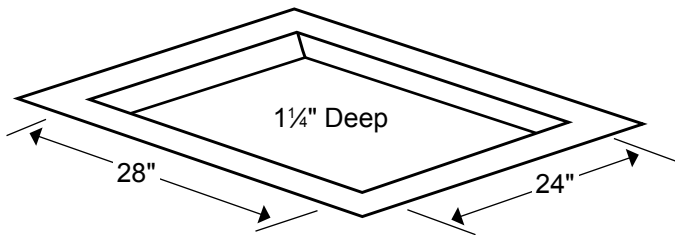


Figure 1.13.8

FLASHING THICKNESS BY GAGE	
Gage	Base Steel Thickness
22	0.0290
20	0.0350
18	0.0470
16	0.0590
14	0.0700
12	0.1050
10	0.1350

Figure 1.13.9

Flashings.

Galvanized steel flashings are custom manufactured by ASC Steel Deck to meet the project requirements. The flashings are formed from ASTM A653 SS Grade 33 galvanized steel sheets. Flashings are available in most common structural shapes in 7 gages. (Figure 1.13.9 and 1.13.10). The standard length is 10 feet, shorter lengths available upon request. The minimum width of any stiffener or flat cross section width is 3/4". Channels, Hats, and Cee's web must be 3/4" wider than the flange width, see figures below.

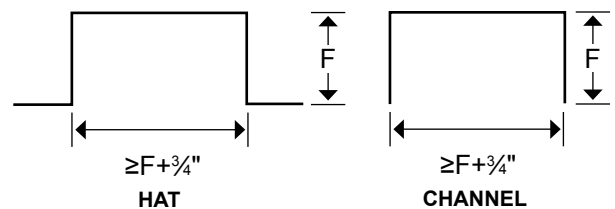
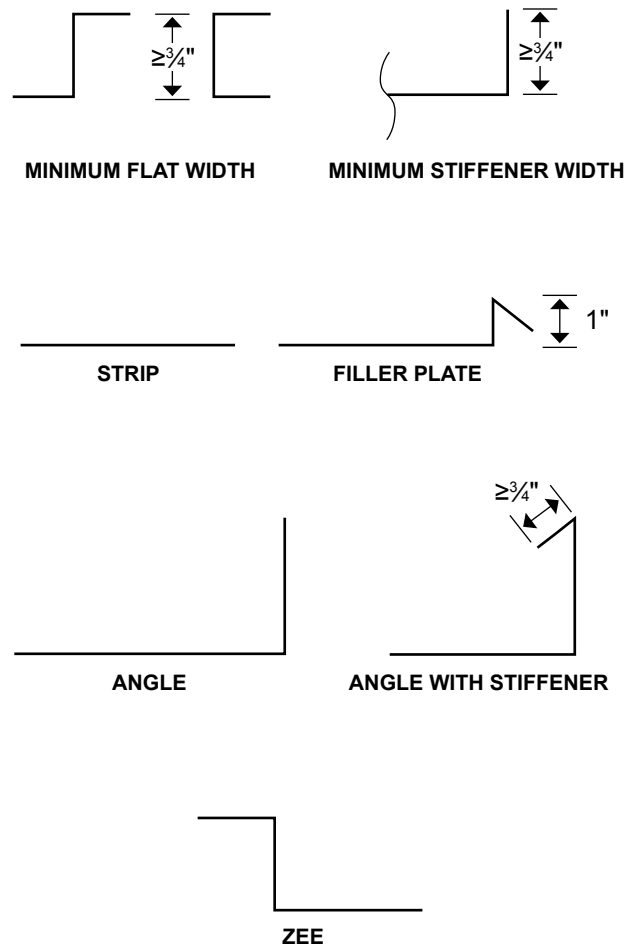
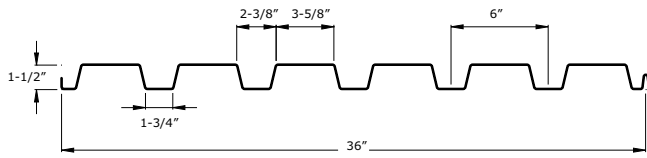


Figure 1.13.10

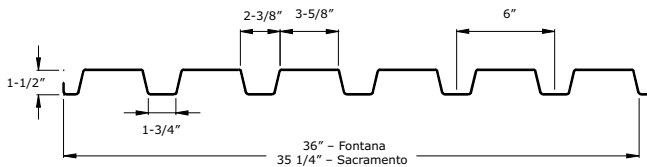
2.1 DGB-36, B-36 & BN-36



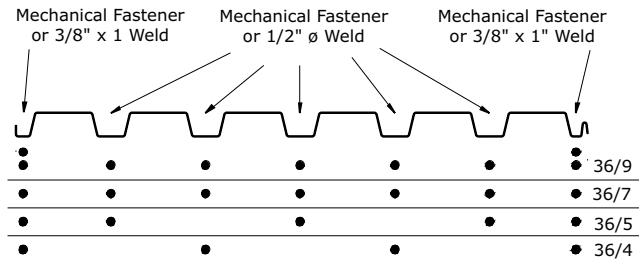
DGB-36 & B-36



BN-36 Nestable



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
22	1.67	0.0299	38	52	0.514	0.200	0.94	0.213	0.625
20	1.99	0.0359	38	52	0.615	0.240	0.94	0.253	0.623
18	2.63	0.0478	38	52	0.814	0.313	0.95	0.340	0.619
16	3.27	0.0598	38	52	1.012	0.383	0.95	0.404	0.615

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _d = (2I _e +I _g)/3	
	A _e ⁺ in ² /ft	S _e ⁺ in ³ /ft	y _b in	S _e ⁻ in ³ /ft	y _b in	I _e ⁺ in ⁴ /ft	I _e ⁻ in ⁴ /ft	I _d ⁺ in ⁴ /ft	I _d ⁻ in ⁴ /ft
22	0.397	0.187	0.77	0.195	0.97	0.163	0.200	0.175	0.200
20	0.522	0.233	0.80	0.246	0.95	0.207	0.240	0.218	0.240
18	0.720	0.316	0.87	0.329	0.94	0.300	0.313	0.304	0.313
16	0.936	0.397	0.91	0.404	0.95	0.383	0.383	0.383	0.383

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	586	664	730	840	897	1016	1117	1285
	Interior	934	1038	1126	1273	1390	1544	1675	1894
20	End	822	927	1016	1164	1258	1418	1554	1781
	Interior	1320	1461	1579	1778	1964	2173	2349	2644
18	End	1393	1561	1701	1938	2132	2388	2603	2965
	Interior	2268	2491	2679	2994	3374	3705	3985	4454
16	End	2106	2345	2547	2885	3222	3588	3897	4415
	Interior	3462	3781	4050	4501	5150	5624	6065	6696

Web Crippling Constraints

h=1.32"

r=0.125"

θ=78.3°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

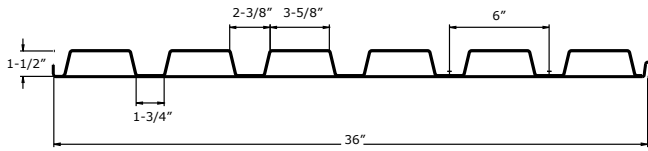
Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	5' - 0"	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"
22	SS	f_b / Ω	177	113	79	58	44	35	28	23	20
		Φf_b	281	180	125	92	70	56	45	37	31
		L/360	120	61	35	22	15	11	8	6	4
		L/240	-	92	53	34	22	16	11	9	7
		L/180	-	-	71	45	30	21	15	12	9
	L/120	-	-	-	-	-	32	23	17	13	
	DS	f_b / Ω	185	118	82	60	46	37	30	24	21
		Φf_b	293	188	130	96	73	58	47	39	33
		L/360	-	-	-	54	36	25	18	14	11
		L/240	-	-	-	-	-	-	28	21	16
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	231	148	103	75	58	46	37	31	26
		Φf_b	367	235	163	120	92	72	59	48	41
		L/360	-	135	78	49	33	23	17	13	10
L/240		-	-	-	74	50	35	25	19	15	
L/180		-	-	-	-	-	-	34	25	20	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	221	141	98	72	55	44	35	29	25
		Φf_b	350	224	156	114	88	69	56	46	39
		L/360	149	76	44	28	19	13	10	7	6
		L/240	-	114	66	42	28	20	14	11	8
		L/180	-	-	88	56	37	26	19	14	11
	L/120	-	-	-	-	-	39	29	21	17	
	DS	f_b / Ω	233	149	104	76	58	46	37	31	26
		Φf_b	370	237	164	121	93	73	59	49	41
		L/360	-	-	-	67	45	31	23	17	13
		L/240	-	-	-	-	-	-	34	26	20
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	292	187	130	95	73	58	47	39	32
		Φf_b	463	296	206	151	116	91	74	61	51
		L/360	-	168	97	61	41	29	21	16	12
L/240		-	-	-	92	62	43	32	24	18	
L/180		-	-	-	-	-	-	42	32	24	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	300	192	133	98	75	59	48	40	33
		Φf_b	475	304	211	155	119	94	76	63	53
		L/360	208	106	62	39	26	18	13	10	8
		L/240	-	160	92	58	39	27	20	15	12
		L/180	-	-	123	78	52	36	27	20	15
	L/120	-	-	-	-	-	55	40	30	23	
	DS	f_b / Ω	312	200	139	102	78	62	50	41	35
		Φf_b	495	317	220	162	124	98	79	65	55
		L/360	-	-	-	93	63	44	32	24	19
		L/240	-	-	-	-	-	-	48	36	28
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	390	250	173	127	97	77	62	52	43
		Φf_b	619	396	275	202	155	122	99	82	69
		L/360	-	235	136	86	57	40	29	22	17
L/240		-	-	-	-	86	60	44	33	25	
L/180		-	-	-	-	-	-	59	44	34	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	376	241	167	123	94	74	60	50	42
		Φf_b	597	382	265	195	149	118	96	79	66
		L/360	262	134	78	49	33	23	17	13	10
		L/240	-	201	116	73	49	34	25	19	15
		L/180	-	-	155	98	65	46	33	25	19
	L/120	-	-	-	-	-	69	50	38	29	
	DS	f_b / Ω	383	245	170	125	96	76	61	51	43
		Φf_b	608	389	270	198	152	120	97	80	68
		L/360	-	-	-	118	79	55	40	30	23
		L/240	-	-	-	-	-	-	61	45	35
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	479	306	213	156	120	95	77	63	53
		Φf_b	760	486	338	248	190	150	122	100	84
		L/360	-	296	171	108	72	51	37	28	21
L/240		-	-	-	-	108	76	55	42	32	
L/180		-	-	-	-	-	-	74	56	43	
L/120	-	-	-	-	-	-	-	-	-		

B PANELS

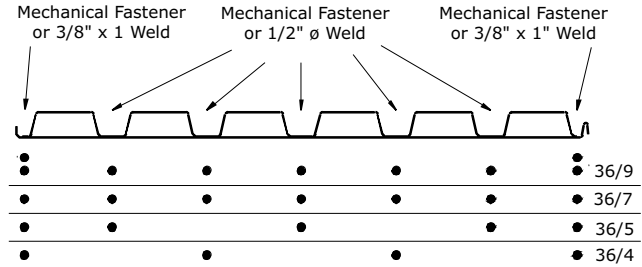
2.1 DGBF-36 & BF-36



BF-36



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
20/20	3.54	0.0359/0.036	40	55	1.047	0.460	0.58	0.462	0.663
20/18	4.01	0.0359/0.047	40	55	1.190	0.503	0.52	0.472	0.650
20/16	4.68	0.0359/0.059	40	55	1.330	0.535	0.48	0.479	0.634
18/20	4.35	0.0478/0.036	40	55	1.231	0.564	0.65	0.601	0.677
18/18	4.83	0.0478/0.047	40	55	1.370	0.614	0.59	0.613	0.670
18/16	5.35	0.0478/0.059	40	55	1.521	0.661	0.55	0.624	0.659
16/20	5.03	0.0598/0.036	40	55	1.423	0.661	0.70	0.736	0.682
16/18	5.51	0.0598/0.047	40	55	1.562	0.721	0.65	0.752	0.679
16/16	6.03	0.0598/0.059	40	55	1.713	0.777	0.60	0.767	0.674

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _d = (2I _e +I _g)/3	I _d = (2I _e +I _g)/3
20/20	0.691	0.288	0.44	0.442	0.71	0.370	0.402	0.401	0.421
20/18	0.797	0.294	0.39	0.456	0.63	0.401	0.462	0.435	0.475
20/16	0.914	0.299	0.36	0.468	0.55	0.423	0.517	0.461	0.523
18/20	0.906	0.433	0.54	0.573	0.76	0.508	0.496	0.526	0.519
18/18	1.016	0.443	0.50	0.590	0.70	0.550	0.560	0.572	0.578
18/16	1.141	0.451	0.46	0.608	0.63	0.590	0.632	0.613	0.642
16/20	1.141	0.596	0.63	0.701	0.80	0.639	0.592	0.646	0.615
16/18	1.252	0.610	0.58	0.723	0.74	0.695	0.660	0.704	0.681
16/16	1.377	0.622	0.54	0.744	0.68	0.749	0.741	0.758	0.753

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	586	664	730	840	897	1016	1117	1285
	Interior	934	1038	1126	1273	1390	1544	1675	1894
20	End	822	927	1016	1164	1258	1418	1554	1781
	Interior	1320	1461	1579	1778	1964	2173	2349	2644
18	End	1393	1561	1701	1938	2132	2388	2603	2965
	Interior	2268	2491	2679	2994	3374	3705	3985	4454
16	End	2106	2345	2547	2885	3222	3588	3897	4415
	Interior	3462	3781	4050	4501	5150	5624	6065	6696

Web Crippling Constraints

h=1.32"

r=0.125"

θ=78.3°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
20/20	SS	f_b / Ω	287	128	72	46	32	23	18	14	11
		Φf_b	456	203	114	73	51	37	29	23	18
		L/360	274	81	34	18	10	6	4	3	2
		L/240	-	122	51	26	15	10	6	5	3
		L/180	-	-	68	35	20	13	9	6	4
	L/120	-	-	-	-	30	19	13	9	7	
	DS	f_b / Ω	441	196	110	71	49	36	28	22	18
		Φf_b	700	311	175	112	78	57	44	35	28
		L/360	-	-	87	44	26	16	11	8	6
		L/240	-	-	-	66	38	24	16	11	8
		L/180	-	-	-	-	-	32	22	15	11
	L/120	-	-	-	-	-	-	-	-	-	17
	TS	f_b / Ω	449	200	112	72	50	37	28	22	18
		Φf_b	713	317	178	114	79	58	45	35	29
		L/360	-	188	79	41	23	15	10	7	5
L/240		-	-	-	61	35	22	15	10	8	
L/180		-	-	-	-	47	30	20	14	10	
L/120	-	-	-	-	-	-	-	-	21	15	
20/18	SS	f_b / Ω	293	130	73	47	33	24	18	14	12
		Φf_b	465	207	116	74	52	38	29	23	19
		L/360	-	88	37	19	11	7	5	3	2
		L/240	-	-	56	29	17	10	7	5	4
		L/180	-	-	-	38	22	14	9	7	5
	L/120	-	-	-	-	-	21	14	10	7	
	DS	f_b / Ω	455	202	114	73	51	37	28	22	18
		Φf_b	722	321	181	116	80	59	45	36	29
		L/360	-	-	98	50	29	18	12	9	6
		L/240	-	-	-	-	43	27	18	13	9
		L/180	-	-	-	-	-	36	24	17	13
	L/120	-	-	-	-	-	-	-	-	-	-
	TS	f_b / Ω	458	204	114	73	51	37	29	23	18
		Φf_b	726	323	182	116	81	59	45	36	29
		L/360	-	-	89	46	27	17	11	8	6
L/240		-	-	-	69	40	25	17	12	9	
L/180		-	-	-	-	-	33	22	16	11	
L/120	-	-	-	-	-	-	-	-	-	17	
20/16	SS	f_b / Ω	299	133	75	48	33	24	19	15	12
		Φf_b	474	211	118	76	53	39	30	23	19
		L/360	-	93	39	20	12	7	5	3	3
		L/240	-	-	59	30	17	11	7	5	4
		L/180	-	-	-	40	23	15	10	7	5
	L/120	-	-	-	-	-	22	15	10	8	
	DS	f_b / Ω	467	208	117	75	52	38	29	23	19
		Φf_b	741	329	185	119	82	61	46	37	30
		L/360	-	-	108	55	32	20	13	9	7
		L/240	-	-	-	-	48	30	20	14	10
		L/180	-	-	-	-	-	-	27	19	14
	L/120	-	-	-	-	-	-	-	-	-	-
	TS	f_b / Ω	467	207	117	75	52	38	29	23	19
		Φf_b	740	329	185	118	82	60	46	37	30
		L/360	-	-	99	50	29	18	12	9	6
L/240		-	-	-	-	44	28	18	13	9	
L/180		-	-	-	-	-	37	25	17	13	
L/120	-	-	-	-	-	-	-	-	-	-	

2.1 DGBF-36 & BF-36



Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
18/20	SS	f_b / Ω	432	192	108	69	48	35	27	21	17
		Φf_b	686	305	171	110	76	56	43	34	27
		L/360	359	107	45	23	13	8	6	4	3
		L/240	-	160	67	35	20	13	8	6	4
		L/180	-	-	90	46	27	17	11	8	6
	L/120	-	-	-	69	40	25	17	12	9	
	DS	f_b / Ω	572	254	143	91	64	47	36	28	23
		Φf_b	907	403	227	145	101	74	57	45	36
		L/360	-	253	107	55	32	20	13	9	7
		L/240	-	-	-	82	47	30	20	14	10
		L/180	-	-	-	-	63	40	27	19	14
	L/120	-	-	-	-	-	-	-	28	20	
	TS	f_b / Ω	675	300	169	108	75	55	42	33	27
		Φf_b	1072	476	268	171	119	87	67	53	43
		L/360	-	232	98	50	29	18	12	9	6
L/240		-	-	147	75	43	27	18	13	9	
L/180		-	-	-	100	58	36	24	17	13	
L/120	-	-	-	-	-	55	37	26	19		
18/18	SS	f_b / Ω	442	196	110	71	49	36	28	22	18
		Φf_b	701	312	175	112	78	57	44	35	28
		L/360	390	116	49	25	14	9	6	4	3
		L/240	-	174	73	37	22	14	9	6	5
		L/180	-	-	98	50	29	18	12	9	6
	L/120	-	-	-	-	43	27	18	13	9	
	DS	f_b / Ω	589	262	147	94	65	48	37	29	24
		Φf_b	934	415	234	149	104	76	58	46	37
		L/360	-	-	119	61	35	22	15	10	8
		L/240	-	-	-	91	53	33	22	16	11
		L/180	-	-	-	-	-	44	30	21	15
	L/120	-	-	-	-	-	-	-	-	23	
	TS	f_b / Ω	690	307	173	110	77	56	43	34	28
		Φf_b	1095	487	274	175	122	89	68	54	44
		L/360	-	258	109	56	32	20	14	10	7
L/240		-	-	163	84	48	30	20	14	10	
L/180		-	-	-	-	65	41	27	19	14	
L/120	-	-	-	-	-	-	41	29	21		
18/16	SS	f_b / Ω	450	200	113	72	50	37	28	22	18
		Φf_b	714	318	179	114	79	58	45	35	29
		L/360	419	124	52	27	16	10	7	5	3
		L/240	-	186	79	40	23	15	10	7	5
		L/180	-	-	105	54	31	20	13	9	7
	L/120	-	-	-	-	47	29	20	14	10	
	DS	f_b / Ω	606	270	152	97	67	50	38	30	24
		Φf_b	962	428	241	154	107	79	60	48	38
		L/360	-	-	132	68	39	25	16	12	8
		L/240	-	-	-	-	59	37	25	17	13
		L/180	-	-	-	-	-	49	33	23	17
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	704	313	176	113	78	57	44	35	28
		Φf_b	1116	496	279	179	124	91	70	55	45
		L/360	-	287	121	62	36	23	15	11	8
L/240		-	-	-	93	54	34	23	16	12	
L/180		-	-	-	-	72	45	30	21	15	
L/120	-	-	-	-	-	-	-	32	23		

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
16/20	SS	f_b / Ω	595	264	149	95	66	49	37	29	24
		Φf_b	944	419	236	151	105	77	59	47	38
		L/360	441	131	55	28	16	10	7	5	4
		L/240	-	196	83	42	25	15	10	7	5
		L/180	-	262	110	56	33	21	14	10	7
	L/120	-	-	-	85	49	31	21	15	11	
	DS	f_b / Ω	700	311	175	112	78	57	44	35	28
		Φf_b	1110	493	278	178	123	91	69	55	44
		L/360	-	300	126	65	37	24	16	11	8
		L/240	-	-	-	97	56	35	24	17	12
		L/180	-	-	-	-	75	47	32	22	16
	L/120	-	-	-	-	-	-	-	33	24	
	TS	f_b / Ω	875	389	219	140	97	71	55	43	35
		Φf_b	1388	617	347	222	154	113	87	69	56
		L/360	-	275	116	59	34	22	14	10	7
L/240		-	-	174	89	52	32	22	15	11	
L/180		-	-	-	119	69	43	29	20	15	
L/120	-	-	-	-	-	65	43	31	22		
16/18	SS	f_b / Ω	608	270	152	97	68	50	38	30	24
		Φf_b	965	429	241	154	107	79	60	48	39
		L/360	481	142	60	31	18	11	8	5	4
		L/240	-	214	90	46	27	17	11	8	6
		L/180	-	-	120	62	36	22	15	11	8
	L/120	-	-	-	92	53	34	23	16	12	
	DS	f_b / Ω	722	321	180	115	80	59	45	36	29
		Φf_b	1145	509	286	183	127	93	72	57	46
		L/360	-	-	140	72	41	26	17	12	9
		L/240	-	-	-	107	62	39	26	18	13
		L/180	-	-	-	-	-	52	35	25	18
	L/120	-	-	-	-	-	-	-	-	27	
	TS	f_b / Ω	902	401	226	144	100	74	56	45	36
		Φf_b	1431	636	358	229	159	117	89	71	57
		L/360	-	304	128	66	38	24	16	11	8
L/240		-	-	192	98	57	36	24	17	12	
L/180		-	-	-	131	76	48	32	23	16	
L/120	-	-	-	-	-	72	48	34	25		
16/16	SS	f_b / Ω	620	276	155	99	69	51	39	31	25
		Φf_b	984	437	246	157	109	80	62	49	39
		L/360	518	153	65	33	19	12	8	6	4
		L/240	-	230	97	50	29	18	12	9	6
		L/180	-	-	129	66	38	24	16	11	8
	L/120	-	-	-	-	58	36	24	17	12	
	DS	f_b / Ω	742	330	186	119	82	61	46	37	30
		Φf_b	1178	524	294	188	131	96	74	58	47
		L/360	-	-	155	79	46	29	19	14	10
		L/240	-	-	-	-	69	43	29	20	15
		L/180	-	-	-	-	-	58	39	27	20
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	928	412	232	148	103	76	58	46	37
		Φf_b	1472	654	368	236	164	120	92	73	59
		L/360	-	336	142	73	42	26	18	12	9
L/240		-	-	213	109	63	40	27	19	14	
L/180		-	-	-	145	84	53	35	25	18	
L/120	-	-	-	-	-	-	53	37	27		

B PANELS

2.2 DGB-36 & DGBF-36

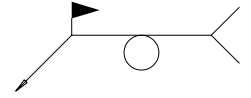
Arc Spot/Seam Welds to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Welds	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7/4	4"	q_a	1835	1764	1713	1674	1457	1151	932	771	647
		F, lap	7.3-0.9R	7.6-0.9R	7.8-0.8R	7.9-0.8R	8-0.7R	8.1-0.7R	8.2-0.6R	8.3-0.6R	8.3-0.6R
	F, no lap	4.5+36.2R	5.3+28.8R	5.9+23.9R	6.2+20.6R	6.5+18.2R	6.7+16.1R	6.9+14.5R	7.1+13.2R	7.9+10.4R	
	6"	q_a	1587	1491	1422	1370	1330	1151	932	771	647
		F, lap	8.2-1.4R	8.6-1.4R	8.9-1.4R	9.2-1.3R	9.4-1.3R	9.6-1.2R	9.7-1.2R	9.8-1.1R	9.9-1R
	F, no lap	5.3+35.7R	6.3+28.3R	7+23.4R	7.5+20.1R	7.8+17.6R	8.2+15.6R	8.4+14R	8.7+12.7R	9.5+10R	
	8"	q_a	1432	1357	1243	1212	1138	1125	932	771	647
		F, lap	8.8-1.8R	9.2-1.8R	9.8-1.9R	10-1.8R	10.5-1.8R	10.6-1.7R	11-1.7R	11-1.6R	11.3-1.4R
	F, no lap	5.9+35.3R	6.9+28R	7.9+22.9R	8.3+19.7R	8.9+17.1R	9.2+15.1R	9.7+13.5R	9.9+12.2R	10.9+9.5R	
	12"	q_a	1255	1129	1040	962	900	851	813	771	647
F, lap		9.6-2.4R	10.4-2.6R	11.1-2.7R	11.7-2.8R	12.1-2.7R	12.6-2.8R	13-2.7R	13.3-2.7R	13.4-2.2R	
F, no lap	6.8+34.7R	8.1+27.1R	9.2+22R	10-18.7R	10.6+16.1R	11.2+14R	11.7+12.5R	12.2+11.1R	13.1+8.7R		
18"	q_a	1157	1046	863	806	763	669	649	632	572	
	F, lap	10.2-2.9R	11-3.1R	12.3-3.7R	12.9-3.6R	13.4-3.5R	14.5-4R	14.8-3.8R	15.1-3.7R	15.8-3.3R	
F, no lap	7.3+34.3R	8.7+26.7R	10.5+21.1R	11.2+17.8R	11.8+15.4R	13.1+12.8R	13.6+11.4R	14.1+10.1R	15.4+7.7R		
24"	q_a	1054	943	772	728	626	608	539	532	481	
	F, lap	10.8-3.4R	11.7-3.6R	13.2-4.3R	13.7-4.2R	15-4.7R	15.4-4.6R	16.6-4.9R	16.8-4.7R	17.5-4.1R	
F, no lap	8+33.7R	9.4+26.1R	11.3+20.5R	12+17.2R	13.5+14.2R	14+12.2R	15.3+10.2R	15.6+9R	17.1+6.9R		
36"	q_a	1054	833	680	649	558	487	484	433	390	
	F, lap	10.8-3.4R	12.5-4.3R	14.1-5.2R	14.6-4.9R	16.1-5.5R	17.6-6.2R	17.7-5.7R	19-6.3R	19.7-5.2R	
F, no lap	8+33.7R	10.2+25.4R	12.2+19.6R	12.9+16.5R	14.5+13.4R	16.2+10.6R	16.4+9.4R	17.9+7.5R	19.3+5.7R		
48"	q_a	925	833	680	571	489	487	430	383	344	
	F, lap	11.6-4.2R	12.5-4.3R	14.1-5.2R	15.8-5.9R	17.4-6.6R	17.6-6.2R	19-6.7R	20.5-7.4R	21.1-6R	
F, no lap	8.8+33R	10.2+25.4R	12.2+19.6R	14.1+15.5R	15.8+12.3R	16.2+10.6R	17.7+8.5R	19.3+6.4R	20.7+4.9R		
60"	q_a	925	724	680	571	489	426	375	383	344	
	F, lap	11.6-4.2R	13.5-5.2R	14.1-5.2R	15.8-5.9R	17.4-6.6R	17-7.4R	20.6-8R	20.5-7.4R	21.1-6R	
F, no lap	8.8+33R	11.2+24.5R	12.2+19.6R	14.1+15.5R	15.8+12.3R	17.6+9.4R	19.3+7.2R	19.3+6.4R	20.7+4.9R		
22	4"	q_a	1511	1470	1441	1418	1400	1151	932	771	647
		F, lap	7.5-0.9R	7.8-0.8R	7.9-0.8R	8.1-0.7R	8.2-0.7R	8.3-0.6R	8.3-0.6R	8.4-0.5R	8.4-0.5R
	F, no lap	-9.4+220R	-5.8+175.9R	-3.4+146.5R	-2+126.6R	-1+111.7R	0.1+99.2R	0.8+89.6R	1.6+81.5R	6.3+64.6R	
	6"	q_a	1351	1289	1244	1209	1181	1151	932	771	647
		F, lap	8.5-1.4R	8.9-1.4R	9.2-1.3R	9.5-1.3R	9.7-1.2R	9.8-1.1R	10-1.1R	10.1-1R	10.1-0.9R
	F, no lap	-8.4+219.5R	-4.6+175.3R	-2.1+145.9R	-0.7+126.1R	0.4+111.1R	1.6+98.7R	2.4+89.1R	3.2+81R	8+64.2R	
	8"	q_a	1242	1192	1109	1088	1032	1024	932	771	647
		F, lap	9.2-1.9R	9.6-1.8R	10.2-1.9R	10.4-1.7R	10.9-1.7R	11-1.6R	11.4-1.6R	11.4-1.5R	11.6-1.3R
	F, no lap	-7.7+219R	-4+175R	-1+145.4R	0.3+125.6R	1.7+110.6R	2.8+98.2R	3.8+88.6R	4.5+80.5R	9.5+63.7R	
	12"	q_a	1107	1013	945	893	852	819	787	758	647
F, lap		10.3-2.6R	11.1-2.7R	11.8-2.8R	12.4-2.8R	12.8-2.8R	13.3-2.7R	13.6-2.7R	14-2.6R	14.1-2.2R	
F, no lap	-6.7+218.3R	-2.4+174R	0.5+144.5R	2.2+124.6R	3.6+109.6R	5.1+97.1R	6.1+87.6R	7.1+79.4R	11.9+62.9R		
18"	q_a	1029	944	817	769	731	641	623	608	551	
	F, lap	11-3.1R	11.8-3.2R	13.3-3.9R	13.9-3.8R	14.3-3.6R	15.6-4.1R	15.8-3.9R	16.1-3.7R	16.8-3.3R	
F, no lap	-6+217.8R	-1.7+173.5R	2+143.4R	3.8+123.6R	5.1+108.7R	7.4+95.8R	8.3+86.4R	9.2+78.3R	14.7+61.7R		
24"	q_a	942	869	729	691	594	580	513	509	460	
	F, lap	11.8-3.8R	12.7-3.9R	14.4-4.7R	14.8-4.5R	16.3-5R	16.6-4.8R	17.9-5.2R	18.1-4.9R	18.9-4.3R	
F, no lap	-5.1+217.1R	-0.9+172.8R	3.1+142.6R	4.7+122.9R	7.1+107.3R	8.4+95.1R	10.4+85R	11.2+77.1R	16.7+60.8R		
36"	q_a	942	782	638	613	526	458	459	410	368	
	F, lap	11.8-3.8R	13.7-4.8R	15.7-5.8R	16.5-4R	17.7-6R	19.4-6.8R	19.3-6.1R	20.8-6.7R	21.7-5.7R	
F, no lap	-5.1+217.1R	0.2+171.9R	4.4+141.5R	5.9+122R	8.5+106.3R	11.2+93.1R	11.8+84.1R	14+75.3R	19.5+59.4R		
48"	q_a	848	782	638	535	457	458	404	360	323	
	F, lap	12.9-4.8R	13.7-4.8R	15.7-5.8R	17.5-6.6R	19.4-7.4R	19.4-6.8R	21-7.3R	22.7-8R	23.5-6.7R	
F, no lap	-4+216.1R	0.2+171.9R	4.4+141.5R	7.4+120.8R	10.2+105R	11.2+93.1R	13.5+82.9R	15.8+74R	21.3+58.4R		
60"	q_a	848	673	638	535	457	397	360	323	323	
	F, lap	12.9-4.8R	15.1-6R	15.7-5.8R	17.5-6.6R	19.4-7.4R	21.3-8.3R	23.1-8.9R	22.7-8R	23.5-6.7R	
F, no lap	-4+216.1R	1.6+170.7R	4.4+141.5R	7.4+120.8R	10.2+105R	13.1+91.6R	15.5+81.3R	15.8+74R	21.3+58.4R		
36/4	4"	q_a	1270	1246	1229	1216	1206	1151	932	771	647
		F, lap	7.8-0.8R	8-0.8R	8.1-0.7R	8.2-0.6R	8.3-0.6R	8.4-0.5R	8.5-0.5R	8.5-0.5R	8.6-0.4R
	F, no lap	-16.2+311.9R	-11.2+249.5R	-7.9+207.8R	-6.1+179.7R	-4.7+158.5R	-3.2+140.8R	-2.2+127.2R	-1.2+115.6R	5.5+91.7R	
	6"	q_a	1143	1103	1075	1053	1035	1021	932	771	647
		F, lap	8.9-1.4R	9.3-1.3R	9.6-1.2R	9.8-1.2R	10-1.1R	10.1-1R	10.2-1R	10.3-0.9R	10.4-0.8R
	F, no lap	-15.1+311.4R	-9.9+248.9R	-6.4+207.3R	-4.5+179.2R	-3.1+158R	-1.5+140.3R	-0.4+126.8R	0.7+115.2R	7.3+91.3R	
	8"	q_a	1049	1021	961	951	909	907	876	771	647
		F, lap	9.8-1.9R	10.1-1.7R	10.8-1.8R	10.9-1.6R	11.4-1.6R	11.4-1.5R	11.8-1.5R	11.8-1.4R	12-1.2R
	F, no lap	-14.2+310.9R	-9.1+248.5R	-5.2+206.7R	-3.4+178.7R	-1.7+157.4R	-0.2+139.9R	1.1+126.3R	2.1+114.8R	9+90.9R	
	12"	q_a	927	861	813	776	747	724	705	688	647
F, lap		11.1-2.7R	12-2.8R	12.6-2.8R	13.2-2.8R	13.6-2.7R	14.1-2.6R	14.4-2.5R	14.7-2.5R	14.8-2.1R	
F, no lap	-12.9+310R	-7.2+247.4R	-3.3+205.7R	-1.1+177.5R	0.6+156.3R	2.5+138.7R	3.7+125.2R	5+113.6R	11.8+90R		
18"	q_a	853	796	692	660	635	555	546	539	487	
	F, lap	12.3-4R	12.9-3.4R	14.6-4.1R	15.1-3.9R	15.4-3.7R	16.8-4.1R	17-3.8R	17.2-3.7R	18.1-3.3R	
F, no lap	-12+309.4R	-6.3+246.8R	-1.4+204.4R	0.7+176.4R	2.4+155.4R	5.2+137.2R	6.4+123.9R	7.5+112.5R	15+88.8R		
24"	q_a	770	724	601	581	498	494	437	439	396	
	F, lap	13.2-4.3R	14.4-2R	16.5-1R	16.3-4.7R	18-5.3R	18.1-4.9R	19.7-5.4R	19.6-5R	20.6-4.4R	
F, no lap	-10.8+308.4R	-5.2+246R	0+203.4R	2+175.6R	5+153.7R	6.6+136.4R	9+122.4R	9.9+111.2R	17.5+87.7R		
36"	q_a	770	628	510	503	430	373	382	340	304	
	F, lap	13.2-4.3R	15.5-5.4R	17.7-6.5R	17.9-5.9R	19.8-6.6R	21.8-7.4R	21.4-6.5R	23.1-7.1R	24.2-6.1R	
F, no lap	-10.8+308.4R	-3.7+244.8R	1.7+202R	3.6+174.5R	6.8+152.5R	10.2+134R	10.8+121.3R	13.5+109R	21.1+86R		
48"	q_a	670	628	510	425	362	373	290	290	259	
	F, lap	14.8-5.7R	15.5-5.4R	17.7-6.5R	19.9-7.4R	22.1-8.3R	21.8-7.4R	23.6-8R	25.6-8.8R	26.6-7.4R	
F, no lap	-9.2+307.1R	-3.7+244.8R	1.7+202R	5.6+172.9R	9.1+150.7R	10.2+134R	13+119.7R	15.9+107.3R	23.5+84.7R		
60"	q_a	670	519	510	425	362	312	290	290	259	
	F, lap	14.8-5.7R	17.4-7.1R	17.7-6.5R	19.9-7.4R	22.1-8.3R	24.4-9.4R	26.5-10.1R	25.6-8.8R	26.6-7.4R	
F, no lap	-9.2+307.1R	-1.8+243.1R	1.7+202R	5.6+172.9R	9.1+150.7R	12.8+132R	15.8+117.6R	15.9+107.3R	23.5+84.7R		



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Welds	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/7/4	4"	q_a	2332	2261	2211	2173	1916	1514	1226	1013	852			
		F, lap	5.9-0.6R	6-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R
	6"	q_a	2025	1924	1851	1796	1754	1514	1226	1013	852			
		F, lap	6.6-1R	6.9-0.9R	7.1-0.9R	7.2-0.9R	7.4-0.8R	7.5-0.8R	7.6-0.7R	7.6-0.7R	7.6-0.7R	7.7-0.6R	7.7-0.6R	7.7-0.6R
	8"	q_a	1825	1751	1618	1590	1503	1493	1226	1013	852			
		F, lap	7.1-1.3R	7.4-1.2R	7.8-1.3R	7.9-1.2R	8.3-1.2R	8.3-1.1R	8.3-1.1R	8.6-1.1R	8.6-1.1R	8.8-0.9R	8.8-0.9R	8.8-0.9R
	12"	q_a	1587	1445	1344	1269	1211	1160	1114	1013	852			
		F, lap	7.9-1.8R	8.5-1.9R	9-2R	9.4-1.9R	9.7-1.9R	10-1.9R	10-1.9R	10.2-1.8R	10.5-1.8R	10.6-1.5R	10.6-1.5R	10.6-1.5R
	18"	q_a	1452	1329	1128	1066	1020	897	877	861	781			
		F, lap	8.5-2.2R	9.1-2.3R	10.2-2.8R	10.5-2.7R	10.8-2.5R	11.7-2.9R	11.9-2.7R	12-2.6R	12-2.6R	12.6-2.3R	12.6-2.3R	12.6-2.3R
24"	q_a	1308	1207	996	954	823	809	719	717	650				
	F, lap	9.1-2.8R	9.7-2.8R	11-3.4R	11.3-3.2R	12.4-3.6R	12.5-3.4R	13.5-3.7R	13.5-3.4R	13.5-3.4R	14.2-3R	14.2-3R	14.2-3R	
36"	q_a	1308	1056	865	841	724	634	640	574	519				
	F, lap	9.1-2.8R	10.6-3.5R	12.4-2R	12.2-3.9R	13.4-4.3R	14.7-4.9R	14.5-4.3R	14.5-4.3R	15.7-4.8R	16.3-4.1R	16.3-4.1R	16.3-4.1R	
48"	q_a	1145	1056	865	728	626	634	561	502	453				
	F, lap	10-3.6R	10.6-3.5R	12.4-2R	13.4-4.8R	14.7-5.4R	14.7-4.9R	15.8-5.3R	17.1-5.8R	17.1-5.8R	17.7-4.8R	17.7-4.8R	17.7-4.8R	
60"	q_a	1145	898	865	728	626	546	483	502	453				
	F, lap	10-3.6R	11.7-4.5R	12.4-2R	13.4-4.8R	14.7-5.4R	16.2-6R	16.2-6R	17.5-6.5R	17.1-5.8R	17.7-4.8R	17.7-4.8R	17.7-4.8R	
20	4"	q_a	1884	1847	1820	1799	1782	1514	1226	1013	852			
		F, lap	6-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R
	6"	q_a	1699	1637	1592	1557	1530	1507	1226	1013	852			
		F, lap	6.8-0.9R	7.1-0.9R	7.3-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.8-0.6R	7.8-0.5R	7.8-0.5R	7.8-0.5R
	8"	q_a	1564	1518	1426	1409	1345	1340	1226	1013	852			
		F, lap	7.5-1.3R	7.7-1.2R	8.1-1.2R	8.2-1.1R	8.5-1.1R	8.5-1R	8.8-1R	8.8-0.9R	8.8-0.9R	9-0.8R	9-0.8R	9-0.8R
	12"	q_a	1390	1288	1212	1155	1110	1074	1044	1013	852			
		F, lap	8.4-1.9R	9-2R	9.5-2R	9.8-1.9R	10.2-1.9R	10.4-1.8R	10.7-1.7R	10.9-1.7R	10.9-1.7R	11-1.4R	11-1.4R	11-1.4R
	18"	q_a	1285	1194	1039	1001	971	863	846	833	756			
		F, lap	9.1-2.4R	9.7-2.4R	10.9-2.9R	11.2-2.7R	11.4-2.5R	12.4-2.9R	12.6-2.7R	12.7-2.5R	12.7-2.5R	13.3-2.3R	13.3-2.3R	13.3-2.3R
24"	q_a	1166	1092	943	910	785	775	689	690	625				
	F, lap	9.9-3.1R	10.5-3R	11.9-3.6R	12.1-3.3R	13.3-3.7R	13.4-3.4R	14.5-3.7R	14.4-3.4R	14.4-3.4R	15.1-3.1R	15.1-3.1R	15.1-3.1R	
36"	q_a	1166	980	814	797	686	600	610	546	493				
	F, lap	9.9-3.1R	11.6-3.8R	13.2-4.6R	13.3-4.1R	14.6-4.6R	16-5.2R	15.7-4.5R	17-5R	17-5R	17.7-4.3R	17.7-4.3R	17.7-4.3R	
48"	q_a	1034	980	814	685	588	531	474	427	427				
	F, lap	11.1-4.1R	11.6-3.8R	13.2-4.6R	14.8-5.3R	16.3-5.9R	16-5.2R	17.4-5.6R	18.8-6.2R	18.8-6.2R	19.5-5.2R	19.5-5.2R	19.5-5.2R	
60"	q_a	1034	837	814	685	588	512	452	474	427				
	F, lap	11.1-4.1R	13-5.1R	13.2-4.6R	14.8-5.3R	16.3-5.9R	18-6.6R	19.5-7.2R	18.8-6.2R	18.8-6.2R	19.5-5.2R	19.5-5.2R	19.5-5.2R	
36/4	4"	q_a	1575	1555	1540	1528	1520	1513	1226	1013	852			
		F, lap	6.1-0.5R	6.3-0.5R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	6.6-0.2R
	6"	q_a	1434	1397	1369	1348	1332	1319	1226	1013	852			
		F, lap	7.1-0.9R	7.3-0.8R	7.5-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	7.9-0.6R	7.9-0.6R	8-0.5R	8-0.5R	8-0.5R
	8"	q_a	1323	1300	1234	1228	1182	1184	1149	1013	852			
		F, lap	7.8-1.3R	8-1.1R	8.5-1.2R	8.5-1R	8.8-1R	8.8-0.9R	9.1-0.9R	9-0.8R	9-0.8R	9.2-0.7R	9.2-0.7R	9.2-0.7R
	12"	q_a	1170	1099	1047	1008	977	952	931	914	852			
		F, lap	9-2R	9.6-2R	10-1.9R	10.4-1.8R	10.7-1.8R	10.9-1.7R	11.1-1.6R	11.3-1.6R	11.3-1.6R	11.4-1.3R	11.4-1.3R	11.4-1.3R
	18"	q_a	1073	1014	887	865	849	761	750	680	680			
		F, lap	9.9-2.5R	10.4-2.4R	11.8-2.9R	12-2.7R	12.2-2.5R	13.3-2.8R	13.3-2.6R	13.4-2.4R	13.4-2.4R	14.1-2.2R	14.1-2.2R	14.1-2.2R
24"	q_a	960	917	793	779	671	674	597	606	548				
	F, lap	11-3.4R	11.5-3.2R	13.1-3.8R	13.1-3.4R	14.5-3.8R	14.4-3.4R	15.6-3.7R	15.5-3.4R	15.5-3.4R	16.3-3.1R	16.3-3.1R	16.3-3.1R	
36"	q_a	960	809	661	667	572	498	518	463	417				
	F, lap	11-3.4R	12.9-4.2R	14.8-5.1R	14.6-4.4R	16.2-4.9R	17.8-5.5R	17.2-4.7R	18.6-5.1R	18.6-5.1R	19.5-4.5R	19.5-4.5R	19.5-4.5R	
48"	q_a	829	809	661	554	473	498	440	391	351				
	F, lap	12.6-4.7R	12.9-4.2R	14.8-5.1R	16.6-5.8R	18.5-6.5R	17.8-5.5R	19.3-6R	20.9-6.6R	20.9-6.6R	21.9-5.6R	21.9-5.6R	21.9-5.6R	
60"	q_a	829	654	661	554	473	411	361	391	351				
	F, lap	12.6-4.7R	14.9-5.9R	14.8-5.1R	16.6-5.8R	18.5-6.5R	20.3-7.3R	22.1-7.9R	20.9-6.6R	20.9-6.6R	21.9-5.6R	21.9-5.6R	21.9-5.6R	

B PANELS

2.2 DGB-36 & DGBF-36

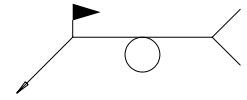
Arc Spot/Seam Welds to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Welds	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7/4	4"	q_a	3345	3283	3238	3204	2932	2317	1877	1551	1303
		F, lap	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R
	F, no lap	3.2+11.2R	3.5+8.9R	3.6+7.4R	3.7+6.4R	3.8+5.7R	3.9+5R	4+4.5R	4+4.1R	4.3+3.3R	4.3+3.3R
	6"	q_a	2951	2849	2775	2719	2676	2317	1877	1551	1303
		F, lap	4.6-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.1-0.3R
	F, no lap	3.8+11R	4.1+8.7R	4.3+7.2R	4.4+6.2R	4.5+5.5R	4.6+4.9R	4.7+4.4R	4.8+4R	4.8+4R	5+3.1R
	8"	q_a	2667	2605	2441	2425	2315	2316	1877	1551	1303
		F, lap	5.1-0.7R	5.2-0.6R	5.4-0.6R	5.4-0.6R	5.6-0.6R	5.6-0.5R	5.8-0.5R	5.7-0.5R	5.9-0.4R
	F, no lap	4.2+10.8R	4.5+8.6R	4.8+7R	4.9+6.1R	5.2+5.3R	5.2+4.7R	5.4+4.2R	5.4+3.8R	5.7+3R	5.7+3R
	12"	q_a	2304	2138	2019	1931	1862	1807	1762	1551	1303
F, lap		5.8-1.1R	6.1-1.1R	6.3-1.1R	6.5-1R	6.7-1R	6.8-1R	7-0.9R	7.1-0.9R	7.1-0.8R	
F, no lap	4.9+10.4R	5.4+8.1R	5.7+6.6R	6+5.6R	6.2+4.9R	6.4+4.2R	6.6+3.8R	6.7+3.4R	7+2.6R	7+2.6R	
18"	q_a	2088	1952	1684	1635	1598	1434	1420	1409	1283	
	F, lap	6.2-1.4R	6.5-1.4R	7.3-1.7R	7.5-1.5R	7.6-1.4R	8.2-1.6R	8.2-1.4R	8.2-1.3R	8.7-1.3R	
F, no lap	5.4+10.1R	5.8+7.8R	6.7+6R	6.9+5.1R	7.1+4.4R	7.8+3.6R	7.8+3.3R	7.9+2.9R	8.5+2.1R	8.5+2.1R	
24"	q_a	1848	1751	1499	1473	1276	1278	1140	1154	1050	
	F, lap	6.9-1.9R	7.2-1.8R	8.1-2.1R	8.1-1.9R	8.9-2.2R	8.8-1.9R	9.5-2.1R	9.4-1.9R	9.9-1.7R	
F, no lap	6+9.6R	6.4+7.4R	7.5+5.5R	7.6+4.7R	8.4+3.7R	8.4+3.3R	9.1+2.6R	9.1+2.4R	9.8+1.6R	9.8+1.6R	
36"	q_a	1848	1533	1270	1274	1102	968	1001	900	817	
	F, lap	6.9-1.9R	8-2.4R	9.1-2.9R	9-2.5R	9.8-2.8R	10.8-3.1R	10.4-2.6R	11.2-2.9R	11.8-2.6R	
F, no lap	6+9.6R	7.3+6.8R	8.5+4.8R	8.4+4.2R	9.4+3.1R	10.3+2.1R	10.2+1R	10.9+1.4R	11.6+0.8R	11.6+0.8R	
48"	q_a	1583	1533	1270	1074	927	968	861	773	700	
	F, lap	7.9-2.7R	8-2.4R	9.1-2.9R	10.1-3.3R	11.2-3.7R	10.8-3.1R	11.6-3.4R	12.5-3.7R	13.1-3.2R	
F, no lap	7+8.8R	7.3+6.8R	8.5+4.8R	9.6+3.3R	10.7+2.1R	10.3+2.1R	11.2+1.3R	12.2+0.5R	13+0.2R	13+0.2R	
60"	q_a	1583	1265	1270	1074	927	812	721	773	700	
	F, lap	7.9-2.7R	9.2-3.4R	9.1-2.9R	10.1-3.3R	11.2-3.7R	12.2-4.2R	13.2-4.5R	12.5-3.7R	13.1-3.2R	
F, no lap	7+8.8R	8.5+5.8R	8.5+4.8R	9.6+3.3R	10.7+2.1R	11.8+1R	12.9+0.2R	12.2+0.5R	13+0.2R	13+0.2R	
18 36/5	4"	q_a	2624	2594	2573	2556	2543	2317	1877	1551	1303
		F, lap	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R
	F, no lap	-1.1+68.1R	0+54.5R	0.8+45.4R	1.2+39.2R	1.5+34.6R	1.8+30.7R	2+27.8R	2.3+25.2R	3.7+20R	3.7+20R
	6"	q_a	2408	2352	2311	2279	2254	2234	1877	1551	1303
		F, lap	4.8-0.5R	4.9-0.4R	5-0.4R	5-0.4R	5-0.3R	5-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.3R
	F, no lap	-0.5+67.9R	0.7+54.3R	1.5+45.2R	1.9+39.1R	2.2+34.4R	2.6+30.6R	2.8+27.6R	3.1+25.1R	4.5+19.9R	4.5+19.9R
	8"	q_a	2234	2200	2096	2089	2016	2019	1877	1551	1303
		F, lap	5.2-0.7R	5.3-0.6R	5.6-0.6R	5.6-0.5R	5.8-0.5R	5.7-0.5R	5.9-0.5R	5.8-0.4R	6-0.4R
	F, no lap	0+67.7R	1.1+54.1R	2.1+45R	2.4+38.9R	2.9+34.2R	3.2+30.4R	3.5+27.5R	3.7+25R	5.3+19.8R	5.3+19.8R
	12"	q_a	1988	1875	1792	1729	1679	1639	1605	1551	1303
F, lap		6-1.1R	6.3-1.1R	6.6-1R	6.8-1R	6.9-0.9R	7-0.9R	7.2-0.8R	7.2-0.8R	7.3-0.7R	
F, no lap	0.8+67.3R	2.1+53.6R	3.1+44.5R	3.6+38.4R	4.1+33.8R	4.5+30R	4.8+27.1R	5.1+24.6R	6.6+19.4R	6.6+19.4R	
18"	q_a	1828	1734	1525	1490	1464	1335	1329	1323	1232	
	F, lap	6.6-1.5R	6.9-1.4R	7.7-1.7R	7.8-1.5R	7.9-1.4R	8.5-1.5R	8.5-1.4R	8.5-1.3R	9-1.2R	
F, no lap	1.4+66.9R	2.7+53.3R	4.2+43.9R	4.7+37.9R	5+33.4R	6+29.4R	6.2+26.5R	6.4+24.1R	8.3+18.9R	8.3+18.9R	
24"	q_a	1639	1572	1369	1355	1215	1221	1100	1118	1016	
	F, lap	7.4-2R	7.6-1.8R	8.6-2.2R	8.6-1.9R	9.4-2.2R	9.3-1.9R	10-2.1R	9.9-1.8R	10.4-1.7R	
F, no lap	2.2+66.3R	3.4+52.9R	5.1+43.4R	5.5+37.5R	6.6+32.6R	6.8+29R	7.7+25.8R	7.7+23.5R	9.7+18.4R	9.7+18.4R	
36"	q_a	1639	1388	1197	1207	1052	923	961	864	783	
	F, lap	7.4-2R	8.6-2.5R	9.8-3.1R	9.6-2.5R	10.6-2.8R	11.6-3.2R	11.1-2.6R	12.2-2.9R	12.6-2.6R	
F, no lap	2.2+66.3R	4.4+52.1R	6.3+42.5R	6.5+36.9R	7.7+31.9R	9+27.7R	8.8+25.3R	9.8+22.5R	11.9+17.5R	11.9+17.5R	
48"	q_a	1418	1388	1197	1017	877	923	821	737	667	
	F, lap	8.7-3R	8.6-2.5R	9.8-3.1R	11-3.5R	12.2-3.9R	11.6-3.2R	12.5-3.5R	13.5-3.8R	14.2-3.4R	
F, no lap	3.4+65.3R	4.4+52.1R	6.3+42.5R	7.9+35.9R	9.3+30.8R	9+27.7R	10.2+24.4R	11.4+21.5R	13.5+16.8R	13.5+16.8R	
60"	q_a	1418	1183	1197	1017	877	768	681	737	667	
	F, lap	8.7-3R	10.2-3.8R	9.8-3.1R	11-3.5R	12.2-3.9R	13.4-4.4R	14.5-4.8R	13.5-3.8R	14.2-3.4R	
F, no lap	3.4+65.3R	6+50.9R	6.3+42.5R	7.9+35.9R	9.3+30.8R	10.9+26.5R	12.2+23.1R	11.4+21.5R	13.5+16.8R	13.5+16.8R	
36/4	4"	q_a	2172	2157	2146	2138	2131	2126	1877	1551	1303
		F, lap	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R
	F, no lap	-3.2+96.6R	-1.6+77.2R	-0.6+64.4R	-0.1+55.6R	0.3+49.1R	0.8+43.6R	1.1+39.4R	1.4+35.8R	3.5+28.4R	3.5+28.4R
	6"	q_a	2019	1988	1965	1947	1933	1922	1877	1551	1303
		F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.2R	5.2-0.2R	5.3-0.2R
	F, no lap	-2.5+96.4R	-1+77R	0.1+64.2R	0.7+55.5R	1.1+48.9R	1.6+43.5R	1.9+39.3R	2.3+35.7R	4.3+28.3R	4.3+28.3R
	8"	q_a	1885	1873	1802	1805	1754	1762	1723	1551	1303
		F, lap	5.4-0.6R	5.4-0.5R	5.7-0.5R	5.7-0.5R	5.9-0.5R	5.8-0.4R	6-0.4R	5.9-0.4R	6-0.3R
	F, no lap	-2+96.1R	-0.5+76.9R	0.8+64R	1.3+55.3R	1.8+48.8R	2.2+43.4R	2.7+39.1R	2.9+36.9R	5.1+28.2R	5.1+28.2R
	12"	q_a	1680	1607	1552	1511	1478	1452	1430	1412	1303
F, lap		6.3-1.1R	6.6-1R	6.8-1R	7-0.9R	7.2-0.8R	7.3-0.8R	7.4-0.8R	7.4-0.7R	7.5-0.6R	
F, no lap	-1.1+95.7R	0.7+76.4R	1.9+63.6R	2.6+54.9R	3.1+48.4R	3.7+42.9R	4.1+38.8R	4.5+35.2R	6.5+27.9R	6.5+27.9R	
18"	q_a	1539	1482	1314	1300	1289	1182	1185	1187	1110	
	F, lap	7.1-5R	7.3-1.3R	8.2-1.6R	8.2-1.4R	8.3-1.3R	9-1.4R	8.9-1.3R	8.9-1.2R	9.4-1.1R	
F, no lap	-0.4+95.3R	1.3+76.1R	3.3+62.9R	3.8+54.4R	4.2+47.9R	5.4+42.3R	5.6+38.3R	5.9+34.8R	8.4+27.4R	8.4+27.4R	
24"	q_a	1364	1335	1169	1175	1058	1076	981	1009	917	
	F, lap	8.1-2.1R	8.2-1.8R	9.3-2.2R	9.1-1.9R	10.1-2.1R	9.8-1.8R	10.6-2R	10.4-1.7R	11-1.6R	
F, no lap	0.7+94.6R	2.2+75.6R	4.3+62.3R	4.7+53.9R	6+47.1R	6.3+41.9R	7.3+37.5R	7.4+34.2R	10+26.9R	10+26.9R	
36"	q_a	1364	1161	1004	1035	902	790	841	755	684	
	F, lap	8.1-2.1R	9.4-2.7R	10.8-3.2R	10.4-2.6R	11.5-2.9R	12.6-3.2R	11.9-2.6R	12.8-2.9R	13.6-2.6R	
F, no lap	0.7+94.6R	3.5+74.8R	5.9+61.3R	5.9+53.2R	7.4+46.3R	9+40.5R	8.6+36.9R	9.8+33.1R	12.6+25.9R	12.6+25.9R	
48"	q_a	1149	1161	1004	846	727	701	628	567		
	F, lap	9.7-3.4R	9.4-2.7R	10.8-3.2R	12.2-3.7R	13.5-4.2R	12.6-3.2R	13.7-3.5R	14.8-3.9R	15.5-3.5R	
F, no lap	2.3+93.4R	3.5+74.8R	5.9+61.3R	7.7+52.1R	9.5+45.1R	9+40.5R	10.4+36R	11.8+32.1R	14.6+25R	14.6+25R	
60"	q_a	1149	946	1004	846	727	635	561	628	567	
	F, lap	9.7-3.4R	11.5-4.3R	10.8-3.2R	12.2-3.7R	13.5-4.2R	14.9-4.7R	16.2-5.1R	14.8-3.9R	15.5-3.5R	
F, no lap	2.3+93.4R	5.6+73.2R	5.9+61.3R	7.7+52.1R	9.5+45.1R	11.3+39.1R	12.9+34.4R	11.8+32.1R	14.6+25R	14.6+25R	



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Welds	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/7/4	4"	q_a	4369	4317	4280	4251	4088	3230	2617	2162	1817			
		F, lap	3.1-0.2R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R
	6"	q_a	3923	3827	3758	3706	3665	3230	2617	2162	1817			
		F, lap	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.1R	3.8-0.1R	
	8"	q_a	3572	3528	3345	3344	3218	3230	2617	2162	1817			
		F, lap	3.8-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4-1-0.3R	4-1-0.3R	4-2-0.3R	4-2-0.3R	4-2-0.2R	4-3-0.2R	4-3-0.2R	
	12"	q_a	3090	2910	2781	2684	2609	2548	2499	2162	1817			
		F, lap	4.4-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	5-0.5R	5-1-0.5R	5-1-0.5R	5-1-0.5R	5-2-0.4R	5-2-0.4R	
	18"	q_a	2787	2649	2303	2263	2233	2025	2024	2023	1817			
		F, lap	4.8-0.9R	5-0.9R	5.6-1.9R	5.6-0.9R	5.6-0.8R	6.1-0.9R	6-0.8R	6-0.8R	6-0.8R	6-3-0.7R	6-3-0.7R	
24"	q_a	2438	2357	2031	2028	1808	1831	1650	1689	1539				
	F, lap	5.4-1.4R	5.5-1.2R	6.2-1.4R	6.1-1.2R	6.7-1.4R	6.6-1.2R	7.1-1.3R	6.9-1.1R	7.3-1.1R	7.3-1.1R	7.3-1.1R		
36"	q_a	2438	2034	1732	1777	1544	1360	1431	1291	1174				
	F, lap	5.4-1.4R	6.3-1.7R	7.1-2R	6.9-1.6R	7.6-1.8R	8.2-2.1R	7.9-1.7R	8.4-1.8R	8.9-1.7R	8.9-1.7R	8.9-1.7R		
48"	q_a	2039	2034	1732	1468	1270	1092	1213	1092	992				
	F, lap	6.4-2.1R	6.3-1.7R	7.1-2R	7.9-2.3R	8.8-2.6R	8.2-2.1R	8.9-2.3R	9.6-2.5R	10.1-2.2R	10.1-2.2R	10.1-2.2R		
60"	q_a	2039	1663	1732	1468	1270	1117	994	1092	992				
	F, lap	6.4-2.1R	7.5-2.6R	7.1-2R	7.9-2.3R	8.8-2.6R	9.6-2.9R	10.4-3.2R	9.6-2.5R	10.1-2.2R	10.1-2.2R	10.1-2.2R		
16	4"	q_a	3353	3330	3313	3300	3291	3230	2617	2162	1817			
		F, lap	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3-0.1R	
	6"	q_a	3127	3079	3044	3017	2995	2978	2617	2162	1817			
		F, lap	3.6-0.3R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q_a	2928	2908	2801	2803	2726	2737	2617	2162	1817			
		F, lap	3.9-0.4R	3.9-0.3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	
	12"	q_a	2623	2509	2424	2360	2308	2267	2233	2162	1817			
		F, lap	4.6-0.7R	4.7-0.6R	4.9-0.6R	5-0.6R	5.1-0.5R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.3-0.4R	5.3-0.4R	5.3-0.4R	
	18"	q_a	2411	2321	2064	2039	2020	1855	1858	1860	1741			
		F, lap	5.1-0.9R	5.2-0.8R	5.8-1.9R	5.8-0.9R	5.8-0.8R	6.3-0.9R	6.2-0.8R	6.2-0.7R	6.5-0.7R	6.5-0.7R	6.5-0.7R	
24"	q_a	2147	2098	1842	1848	1667	1692	1554	1586	1476				
	F, lap	5.8-1.4R	5.8-1.2R	6.5-1.4R	6.4-1.2R	7-1.3R	6.9-1.1R	7.4-1.2R	7.2-1.1R	7.6-1.1R	7.6-1.1R	7.6-1.1R		
36"	q_a	2147	1834	1590	1634	1464	1305	1382	1246	1133				
	F, lap	5.8-1.4R	6.7-1.7R	7.6-2.1R	7.3-1.6R	8-1.8R	8.8-2.1R	8.3-1.6R	8.9-1.8R	9.4-1.7R	9.4-1.7R	9.4-1.7R		
48"	q_a	1822	1834	1590	1398	1209	1305	1164	1047	951				
	F, lap	7-2.3R	6.7-1.7R	7.6-2.1R	8.6-2.4R	9.5-2.7R	8.8-2.1R	9.5-2.2R	10.2-2.5R	10.8-2.2R	10.8-2.2R	10.8-2.2R		
60"	q_a	1822	1526	1590	1398	1209	1062	945	1047	951				
	F, lap	7-2.3R	8.2-2.9R	7.6-2.1R	8.6-2.4R	9.5-2.7R	10.4-3R	11.3-3.3R	10.2-2.5R	10.8-2.2R	10.8-2.2R	10.8-2.2R		
36/4	4"	q_a	2753	2742	2734	2728	2723	2720	2617	2162	1817			
		F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3-0.1R	3.3+0R	3.3+0R	
	6"	q_a	2602	2577	2558	2544	2533	2525	2517	2162	1817			
		F, lap	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q_a	2458	2455	2386	2395	2344	2357	2317	2162	1817			
		F, lap	4-0.4R	4-0.3R	4.2-0.3R	4.1-0.2R	4.3-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.2R	
	12"	q_a	2218	2146	2093	2053	2021	1996	1974	1957	1817			
		F, lap	4.7-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.3-0.4R	5.3-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	
	18"	q_a	2038	1989	1786	1782	1779	1646	1657	1667	1568			
		F, lap	5.3-0.9R	5.4-0.8R	6.1-1.9R	6-0.8R	6-0.7R	6.5-0.8R	6.4-0.7R	6.3-0.6R	6.7-0.6R	6.7-0.6R	6.7-0.6R	
24"	q_a	1801	1792	1586	1612	1463	1499	1383	1422	1328				
	F, lap	6.2-1.4R	6.1-1.1R	6.9-1.4R	6.7-1.1R	7.4-1.2R	7.2-1R	7.7-1.1R	7.5-1R	7.9-0.9R	7.9-0.9R	7.9-0.9R		
36"	q_a	1801	1549	1349	1415	1273	1142	1226	1113	1010				
	F, lap	6.2-1.4R	7.2-1.8R	8.3-2.1R	7.7-1.6R	8.5-1.8R	9.4-2R	8.7-1.5R	9.4-1.7R	9.9-1.6R	9.9-1.6R	9.9-1.6R		
48"	q_a	1491	1549	1349	1188	1025	1142	1016	914	828				
	F, lap	7.8-2.5R	7.2-1.8R	8.3-2.1R	9.3-2.4R	10.3-2.8R	9.4-2R	10.1-2.2R	11-2.4R	11.6-2.2R	11.6-2.2R	11.6-2.2R		
60"	q_a	1491	1252	1349	1188	1025	899	797	914	828				
	F, lap	7.8-2.5R	9.2-3.1R	8.3-2.1R	9.3-2.4R	10.3-2.8R	11.3-3.1R	12.3-3.4R	11-2.4R	11.6-2.2R	11.6-2.2R	11.6-2.2R		

B PANELS

2.3 DGB-36 & DGBF-36

No. 12 Self-Drilling Screws to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Screws	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	F, lap	q_a	1438	1415	1398	1385	1375	1151	932	771	647
			F, no lap	7.0-9R	7.2-0.9R	7.5-0.9R	7.6-0.9R	7.8-0.8R	7.9-0.8R	8.0-7R	8.1-0.7R	8.1-0.7R
	6"	F, lap	q_a	1303	1262	1232	1210	1192	1151	932	771	647
			F, no lap	7.6-1.4R	8.1-1.4R	8.4-1.4R	8.7-1.4R	8.9-1.3R	9.1-1.3R	9.3-1.3R	9.4-1.2R	9.5-1R
	8"	F, lap	q_a	1200	1172	1107	1098	1052	1051	932	771	647
			F, no lap	8.1-1.7R	8.5-1.7R	9.1-1.9R	9.3-1.8R	9.8-1.8R	10-1.8R	10.3-1.8R	10.4-1.7R	10.6-1.5R
	12"	F, lap	q_a	1063	992	939	899	868	843	822	771	647
			F, no lap	8.7-2.2R	9.4-2.4R	10.1-2.5R	10.6-2.6R	11.1-2.7R	11.5-2.7R	11.9-2.7R	12.3-2.7R	12.4-2.2R
	18"	F, lap	q_a	979	917	801	776	757	668	659	651	590
			F, no lap	9.2-5R	9.8-2.7R	10.9-3.2R	11.5-3.3R	12-3.3R	13-3.7R	13.3-3.6R	13.7-3.6R	14.2-3.1R
24"	F, lap	q_a	883	834	715	695	598	595	527	532	480	
		F, no lap	9.5-2.9R	10.3-3.1R	11.5-3.7R	12.1-3.7R	13.1-4.2R	13.6-4.1R	14.6-4.5R	14.9-4.4R	15.4-3.7R	15.4-3.7R
36"	F, lap	q_a	883	743	605	601	516	449	462	412	371	
		F, no lap	9.5-2.9R	10.8-3.6R	12.1-4.3R	12.7-4.3R	13.9-4.7R	15.1-5.3R	15.3-5.1R	16.5-5.6R	16.9-4.5R	16.9-4.5R
48"	F, lap	q_a	773	743	605	507	434	449	396	353	316	
		F, no lap	10.3-3.3R	10.8-3.6R	12.1-4.3R	13.4-4.9R	14.7-5.5R	15.1-5.3R	16.2-5.7R	17.4-6.3R	17.9-5.1R	17.9-5.1R
60"	F, lap	q_a	773	612	605	507	434	376	330	353	316	
		F, no lap	10.3-3.3R	11.4-4.2R	12.1-4.3R	13.4-4.9R	14.7-5.5R	16-6.1R	17.2-6.6R	17.4-6.3R	17.9-5.1R	17.9-5.1R
22 36/7/4	4"	F, lap	q_a	1161	1151	1144	1139	1134	1131	932	771	647
			F, no lap	7.5-0.9R	7.7-0.8R	7.9-0.8R	8-0.7R	8.1-0.7R	8.2-0.6R	8.3-0.6R	8.4-0.6R	8.4-0.5R
	6"	F, lap	q_a	1056	1036	1022	1011	1002	995	932	771	647
			F, no lap	8.4-1.4R	8.8-1.4R	9.1-1.3R	9.4-1.3R	9.6-1.2R	9.7-1.2R	9.9-1.1R	10-1.1R	10.1-0.9R
	8"	F, lap	q_a	968	962	918	920	890	895	872	771	647
			F, no lap	9.1-1.9R	9.5-1.8R	10.1-1.9R	10.3-1.7R	10.8-1.8R	10.8-1.6R	11.2-1.6R	11.3-1.5R	11.5-1.4R
	12"	F, lap	q_a	841	799	769	746	729	715	703	693	647
			F, no lap	10.1-2.5R	10.9-2.7R	11.6-2.8R	12.1-2.8R	12.6-2.8R	13-2.7R	13.4-2.7R	13.7-2.6R	13.9-2.2R
	18"	F, lap	q_a	758	727	636	629	624	568	570	572	532
			F, no lap	10.7-3R	11.5-3.2R	13-3.8R	13.5-3.7R	14-3.6R	15.2-4.1R	15.5-3.8R	15.7-3.7R	16.5-3.3R
24"	F, lap	q_a	659	645	558	563	502	513	459	474	431	
		F, no lap	11.5-3.7R	12.3-3.8R	14.4-6R	14.5-4.4R	15.9-4.9R	16.2-4.7R	17.5-5.1R	17.6-4.8R	18.4-4.2R	18.4-4.2R
36"	F, lap	q_a	659	552	465	486	420	369	394	354	321	
		F, no lap	11.5-3.7R	13.3-4.6R	15.1-5.6R	15.6-5.2R	17.1-5.9R	18.8-6.6R	18.8-6R	20.2-6.6R	21-5.5R	21-5.5R
48"	F, lap	q_a	543	552	465	393	338	369	328	295	267	
		F, no lap	12.5-4.6R	13.3-4.6R	15.1-5.6R	16.9-6.4R	18.7-7.1R	18.8-6.6R	20.3-7.1R	21.9-7.8R	22.7-6.4R	22.7-6.4R
60"	F, lap	q_a	543	435	465	393	338	296	267	295	267	
		F, no lap	12.5-4.6R	14.6-5.8R	15.1-5.6R	16.9-6.4R	18.7-7.1R	20.5-8R	22.2-8.6R	21.9-7.8R	22.7-6.4R	22.7-6.4R
36/4	4"	F, lap	q_a	719	717	716	715	714	713	713	712	647
			F, no lap	7.9-0.8R	8.1-0.7R	8.2-0.7R	8.3-0.6R	8.4-0.5R	8.5-0.5R	8.5-0.5R	8.5-0.5R	8.6-0.4R
	6"	F, lap	q_a	687	682	678	676	673	672	670	669	647
			F, no lap	9.1-1.3R	9.5-1.3R	9.7-1.2R	10-1.1R	10.1-1R	10.3-1R	10.4-0.9R	10.5-0.9R	10.5-0.7R
	8"	F, lap	q_a	654	654	639	642	631	634	626	629	622
			F, no lap	10.1-1.9R	10.4-1.7R	11-1.7R	11.1-1.6R	11.6-1.6R	11.6-1.4R	12-1.4R	12-1.3R	12.2-1.2R
	12"	F, lap	q_a	595	580	569	560	553	548	543	539	536
			F, no lap	11.6-2.8R	12.4-2.8R	13.1-2.8R	13.6-2.7R	14.1-2.6R	14.5-2.6R	14.8-2.5R	15.1-2.4R	15.2-2R
	18"	F, lap	q_a	549	540	489	490	491	457	465	465	439
			F, no lap	12.6-3.5R	13.4-3.5R	15.3-4.2R	15.7-3.9R	16-3.7R	17.5-4.1R	17.6-3.8R	17.8-3.8R	18.8-3.3R
24"	F, lap	q_a	486	488	435	445	406	417	387	399	374	
		F, no lap	14.4-6R	14.7-4.4R	16.9-5.3R	17.1-4.8R	18.9-5.4R	19.6R	20.6-5.4R	20.4-4.9R	21.5-4.5R	21.5-4.5R
36"	F, lap	q_a	486	421	369	390	353	313	343	308	279	
		F, no lap	14-4.6R	16.5-5.7R	18.9-6.9R	18.9-6.1R	21-6.8R	23.1-7.7R	22.6-6.6R	24.4-7.3R	25.6-6.3R	25.6-6.3R
48"	F, lap	q_a	399	421	369	320	275	313	278	249	224	
		F, no lap	15.9-6.2R	16.5-5.7R	18.9-6.9R	21.3-7.9R	23.7-8.8R	23.1-7.7R	25.1-8.3R	27.2-9.1R	28.4-7.7R	28.4-7.7R
60"	F, lap	q_a	399	334	369	320	275	249	212	249	224	
		F, no lap	15.9-6.2R	18.8-7.8R	18.9-6.9R	21.3-7.9R	23.7-8.8R	26.1-9.9R	28.5-10.7R	27.2-9.1R	28.4-7.7R	28.4-7.7R



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Screws	Spacing	Span																
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"								
36/9	4"	q_a	1790	1770	1755	1744	1735	1514	1226	1013	852								
		F, lap	5.6-0.6R	5.8-0.6R	6-0.6R	6.1-0.5R	6.1-0.5R	6.2-0.5R	6.2-0.5R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R	6.3-0.4R
	6"	q_a	1640	1602	1573	1551	1534	1514	1226	1013	852								
		F, lap	6.2-1R	6.5-1R	6.7-1R	6.9-0.9R	7.1-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R	7.4-0.8R
	8"	q_a	1519	1496	1425	1420	1370	1372	1226	1013	852								
		F, lap	6.7-1.3R	6.9-1.2R	7.4-1.3R	7.5-1.2R	7.8-1.2R	7.9-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R	8.2-1.2R
	12"	q_a	1348	1272	1215	1172	1138	1111	1088	1013	852								
		F, lap	7.2-1.7R	7.8-1.8R	8.3-1.9R	8.7-1.9R	9-1.9R	9.3-1.9R	9.6-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R	9.8-1.9R
	18"	q_a	1238	1174	1032	1008	991	903	899	895	822								
		F, lap	7.6-2R	8.2-2.1R	9.1-2.5R	9.5-2.5R	9.8-2.4R	10.6-2.8R	10.8-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R	11-2.6R
	24"	q_a	1108	1063	925	916	805	811	721	733	665								
		F, lap	8.1-2.4R	8.6-2.5R	9.7-3R	10.1-2.9R	11-3.3R	11-3.3R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R	12-3.4R
	36"	q_a	1108	937	788	798	687	601	626	561	507								
		F, lap	8.1-2.4R	9.2-3R	10.4-3.6R	10.7-3.4R	11.7-3.8R	12.7-4.3R	12.8-4R	13.7-4.4R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R	14.2-3.6R
	48"	q_a	956	788	663	663	569	601	532	475	428								
		F, lap	8.6-2.9R	9.2-3R	10.4-3.6R	11.5-4.1R	12.6-4.6R	12.7-4.3R	13.7-4.6R	14.7-5.1R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R
	60"	q_a	956	775	788	663	569	496	437	475	428								
		F, lap	8.6-2.9R	9.9-3.6R	10.4-3.6R	11.5-4.1R	12.6-4.6R	13.7-5.1R	14.8-5.5R	14.7-5.1R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R	15.2-4.2R
20 36/7/4	4"	q_a	1439	1431	1425	1420	1417	1414	1226	1013	852								
		F, lap	6-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.5-0.3R
	6"	q_a	1329	1311	1298	1288	1280	1274	1226	1013	852								
		F, lap	6.7-1R	7-0.9R	7.2-0.9R	7.4-0.8R	7.5-0.8R	7.6-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R	7.7-0.7R
	8"	q_a	1230	1228	1183	1188	1156	1163	1138	1013	852								
		F, lap	7.4-1.3R	7.6-1.2R	8-1.3R	8.1-1.1R	8.4-1.1R	8.5-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R	8.7-1R
	12"	q_a	1078	1034	1003	980	961	946	934	924	852								
		F, lap	8.3-1.9R	8.8-2R	9.3-2R	9.7-1.9R	10-1.9R	10.3-1.8R	10.5-1.8R	10.7-1.7R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R	10.8-1.5R
	18"	q_a	972	944	832	829	828	757	763	768	717								
		F, lap	8.9-2.3R	9.4-2.4R	10.6-2.8R	11-2.7R	11-2.6R	12-2.2R	12.3-2.7R	12.5-2.5R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R	13.1-2.3R
	24"	q_a	841	836	728	741	665	683	625	644	598								
		F, lap	9.7-3R	10.2-2.9R	11.6-3.5R	11.8-3.3R	13-3.7R	13-3.7R	14.1-3.7R	14.1-3.7R	14.1-3.7R	14.8-3.1R	14.8-3.1R	14.8-3.1R	14.8-3.1R	14.8-3.1R	14.8-3.1R	14.8-3.1R	14.8-3.1R
	36"	q_a	841	709	610	642	568	500	540	487	443								
		F, lap	9.7-3R	11.2-3.7R	12.8-4.5R	12.9-4R	14.2-4.5R	15.6-5.1R	15.3-4.5R	16.5-4.9R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R	17.2-4.2R
	48"	q_a	681	709	610	521	450	446	500	461	364								
		F, lap	10.7-3.9R	11.2-3.7R	12.8-4.5R	14.3-5.1R	15.8-5.7R	15.6-5.1R	16.9-5.5R	18.2-6.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R
	60"	q_a	681	558	610	521	450	395	401	364	364								
		F, lap	10.7-3.9R	12.6-4.9R	12.8-4.5R	14.3-5.1R	15.8-5.7R	17.3-6.4R	18.8-6.9R	18.2-6.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R	18.9-5.1R
36/4	4"	q_a	876	874	873	872	872	871	871	871	852								
		F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R	6.6-0.2R
	6"	q_a	844	840	838	835	834	832	831	830	830								
		F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	7.9-0.5R	8-0.5R	8-0.5R	8-0.4R	8-0.4R	8-0.4R	8-0.4R	8-0.4R	8-0.4R	8-0.4R	8-0.4R
	8"	q_a	811	813	799	802	792	795	787	791	784								
		F, lap	8-1.3R	8.1-1.1R	8.6-1.1R	8.6-1.1R	9-1R	8.9-0.9R	9.2-0.8R	9.1-0.8R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R	9.3-0.7R
	12"	q_a	748	734	723	715	709	704	699	699	693								
		F, lap	9.3-2R	9.9-1.9R	10.3-1.9R	10.7-1.8R	10.9-1.7R	11.2-1.6R	11.4-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R	11.6-1.5R
	18"	q_a	695	688	631	635	637	605	598	610	580								
		F, lap	10.3-2.6R	10.8-2.5R	12.3-2.9R	12.4-2.7R	12.6-2.4R	13.7-2.8R	13.7-2.5R	13.7-2.5R	13.7-2.5R	14.5-2.2R	14.5-2.2R	14.5-2.2R	14.5-2.2R	14.5-2.2R	14.5-2.2R	14.5-2.2R	14.5-2.2R
	24"	q_a	617	625	563	579	532	549	512	529	498								
		F, lap	11.6-3.5R	12.3-2.2R	13.7-3.9R	13.7-3.4R	15.1-3.8R	15-3.4R	16.3-3.7R	16.3-3.7R	16.3-3.7R	16.9-3.1R	16.9-3.1R	16.9-3.1R	16.9-3.1R	16.9-3.1R	16.9-3.1R	16.9-3.1R	16.9-3.1R
	36"	q_a	617	540	476	509	463	423	455	423	392								
		F, lap	11.6-3.5R	13.6-4.4R	15.7-5.3R	15.4-4.4R	17-5R	18.7-5.6R	18-4.7R	19.5-5.2R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R	20.5-4.6R
	48"	q_a	502	540	476	424	374	423	385	346	313								
		F, lap	13.6-5.1R	13.6-4.4R	15.7-5.3R	17.7-6.1R	19.7-6.8R	18.7-5.6R	20.4-6.1R	22.1-6.7R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R
	60"	q_a	502	426	476	424	374	328	290	346	313								
		F, lap	13.6-5.1R	16.1-6.4R	15.7-5.3R	17.7-6.1R	19.7-6.8R	21.7-7.7R	23.6-8.3R	22.1-6.7R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R	23.1-5.8R

B PANELS

2.3 DGB-36 & DGBF-36

No. 12 Self-Drilling Screws to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Screws	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	q_a	2494	2478	2467	2459	2452	2317	1877	1551	1303
		F, lap	4.0-3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R
	F, no lap	3.1+11.2R	3.4+8.9R	3.6+7.4R	3.7+6.4R	3.8+5.6R	3.8+5.6R	3.9+5.5R	3.9+4.5R	4+4.1R	4.2+3.2R
	6"	q_a	2330	2296	2272	2253	2239	2227	1877	1551	1303
		F, lap	4.5-0.5R	4.6-0.5R	4.7-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5-0.4R	5-0.4R	5-0.4R
	F, no lap	3.6+11R	3.9+8.7R	4.1+7.2R	4.3+6.2R	4.4+5.4R	4.5+4.8R	4.6+4.3R	4.7+3.9R	4.7+3.9R	4.9+3.1R
	8"	q_a	2183	2171	2094	2097	2042	2051	1877	1551	1303
		F, lap	4.8-0.7R	4.9-0.7R	5.2-0.7R	5.2-0.6R	5.4-0.6R	5.4-0.6R	5.6-0.6R	5.6-0.5R	5.7-0.5R
	F, no lap	3.9+10.8R	4.2+8.5R	4.6+7R	4.7+6R	4.9+5.2R	5+4.6R	5.2+4.1R	5.2+3.7R	5.2+3.7R	5.6+2.9R
	12"	q_a	1955	1873	1813	1767	1731	1702	1678	1551	1303
		F, lap	5.3-1.1R	5.7-1.1R	5.9-1.1R	6.2-1.1R	6.3-1.1R	6.5-1R	6.6-1R	6.7-1R	6.8-0.8R
	F, no lap	4.5+10.4R	5+8.1R	5.3+6.6R	5.6+5.5R	5.9+4.8R	6.1+4.2R	6.2+3.7R	6.4+3.3R	6.4+3.3R	6.7+2.6R
	18"	q_a	1795	1732	1541	1526	1514	1392	1396	1399	1303
		F, lap	5.7-1.3R	6-1.3R	6.7-1.6R	6.9-1.5R	7-1.4R	7.6-1.6R	7.7-1.5R	7.7-1.4R	8.1-1.3R
	F, no lap	4.8+10.2R	5.3+7.9R	6.1+6.1R	6.4+5.1R	6.6+4.4R	7.2+3.6R	7.3+3.2R	7.4+2.8R	7.4+2.8R	8+2.1R
	24"	q_a	1593	1563	1373	1381	1246	1268	1165	1191	1109
		F, lap	6.2-1.7R	6.5-1.7R	7.3-2R	7.4-1.9R	8.1-2.1R	8.1-1.9R	8.7-2.1R	8.7-1.9R	9.1-1.7R
	F, no lap	5.3+9.8R	5.8+7.5R	6.7+5.7R	6.9+4.8R	7.6+3.8R	7.7+3.3R	8.3+2.6R	8.3+2.3R	8.3+2.3R	9+1.7R
36"	q_a	1593	1361	1180	1218	1087	955	1017	915	830	
	F, lap	6.2-1.7R	7.1-2.1R	8-2.6R	8-2.3R	8.8-2.6R	9.5-2.9R	9.4-2.5R	10.1-2.8R	10.5-2.4R	
F, no lap	5.3+9.8R	6.4+7.1R	7.4+5.1R	7.5+4.3R	8.3+3.3R	9.1+2.3R	9+2.2R	9.7-1.5R	10.4+1R		
48"	q_a	1344	1361	1180	1018	878	955	849	763	690	
	F, lap	6.8-2.3R	7.1-2.1R	8-2.6R	8.8-2.9R	9.7-3.3R	9.5-2.9R	10.3-3.1R	11-3.5R	11.5-2.9R	
F, no lap	5.9+9.2R	6.4+7.1R	7.4+5.1R	8.3+3.7R	9.2+2.6R	9.1+2.3R	9.9+1.6R	10.7+0.8R	11.3+0.5R		
60"	q_a	1344	1125	1180	1018	878	769	681	763	690	
	F, lap	6.8-2.3R	7.8-2.8R	8-2.6R	8.8-2.9R	9.7-3.3R	10.6-3.7R	11.4-4R	11-3.5R	11.5-2.9R	
F, no lap	5.9+9.2R	7.1+6.4R	7.4+5.1R	8.3+3.7R	9.2+2.6R	10.2+1.5R	11+0.7R	10.7+0.8R	11.3+0.5R		
18 36/7/4	4"	q_a	1989	1983	1979	1976	1974	1972	1877	1551	1303
		F, lap	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R
	F, no lap	3.3+11.2R	3.5+9R	3.7+7.5R	3.8+6.4R	3.8+5.7R	3.9+5R	4+4.5R	4+4.5R	4.4+3.3R	
	6"	q_a	1879	1864	1854	1846	1841	1836	1832	1551	1303
		F, lap	4.7-0.5R	4.8-0.4R	4.9-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.2R
	F, no lap	3.8+11R	4.1+8.8R	4.3+7.3R	4.5+6.3R	4.6+5.5R	4.7+4.9R	4.7+4.4R	4.8+4R	5.1+3.1R	
	8"	q_a	1769	1774	1728	1738	1704	1716	1689	1551	1303
		F, lap	5.2-0.7R	5.3-0.6R	5.5-0.6R	5.5-0.5R	5.7-0.5R	5.7-0.5R	5.8-0.5R	5.8-0.4R	5.9-0.4R
	F, no lap	4.3+10.8R	4.5+8.6R	4.9+7R	5+6.1R	5.2+5.3R	5.3+4.7R	5.4+4.2R	5.5+3.8R	5.8+3R	
	12"	q_a	1580	1537	1506	1482	1464	1449	1437	1303	1303
		F, lap	5.9-1.1R	6.2-1.1R	6.5-1.1R	6.7-1R	6.8-1R	7-0.9R	7.1-0.9R	7.2-0.8R	7.2-0.7R
	F, no lap	5+10.4R	5.5+8.1R	5.9+6.6R	6.2+5.6R	6.4+4.9R	6.6+4.3R	6.7+3.8R	6.8+3.4R	7.1+2.7R	
	18"	q_a	1434	1413	1266	1273	1279	1183	1197	1209	1138
		F, lap	6.5-1.5R	6.8-1.4R	7.6-1.7R	7.7-1.5R	7.8-1.4R	8.4-1.5R	8.4-1.4R	8.4-1.3R	8.9-1.2R
	F, no lap	5.6+10R	6.1+7.8R	7+6R	7.3+5.1R	7.3+4.5R	8+3.6R	8+3.3R	8.1+3R	8.8+2.2R	
	24"	q_a	1240	1256	1107	1140	1033	1069	987	1022	954
		F, lap	7.2-2R	7.5-1.8R	8.4-2.2R	8.4-1.9R	9.2-2.2R	9.2-1.9R	9.9-2.1R	9.7-1.9R	10.2-1.7R
	F, no lap	6.4+9.5R	6.7+7.4R	7.8+5.5R	7.9+4.7R	8.8+3.7R	8.7+3.3R	9.5+2.6R	9.4+2.4R	10.1+1.7R	
36"	q_a	1240	1059	918	985	885	801	864	797	737	
	F, lap	7.2-2R	8.4-2.5R	9.6-3R	9.4-2.5R	10.3-2.8R	11.3-3.2R	10.9-2.6R	11.7-2.9R	12.3-2.6R	
F, no lap	6.4+9.5R	7.7+6.7R	9+4.7R	8.9+4.1R	9.9+3R	10.9+2R	10.5+2R	11.4+1.4R	12.2+0.8R		
48"	q_a	982	1059	918	807	712	801	727	656	597	
	F, lap	8.4-2.9R	8.4-2.5R	9.6-3R	10.7-3.4R	11.8-3.9R	11.3-3.2R	12.2-3.5R	13.2-3.8R	13.8-3.3R	
F, no lap	7.5+8.6R	7.7+6.7R	9+4.7R	10.2+3.2R	11.4+2R	10.9+2R	11.8+1.2R	12.8+0.5R	13.7+0.1R		
60"	q_a	982	818	918	807	712	627	559	656	597	
	F, lap	8.4-2.9R	9.8-3.6R	9.6-3R	10.7-3.4R	11.8-3.9R	13.4-3R	14.1-4.7R	13.2-3.8R	13.8-3.3R	
F, no lap	7.5+8.6R	9.1+5.6R	9+4.7R	10.2+3.2R	11.4+2R	12.6+0.9R	13.7+0R	12.8+0.5R	13.7+0.1R		
36/4	4"	q_a	1184	1183	1182	1182	1182	1181	1181	1181	1181
		F, lap	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R
	F, no lap	-3.2+96.6R	-1.6+77.2R	-0.6+64.4R	-0.1+55.7R	0.4+49.1R	0.8+43.6R	1.1+39.4R	1.4+35.8R	1.4+35.8R	
	6"	q_a	1156	1153	1151	1150	1149	1148	1147	1147	1146
		F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R
	F, no lap	-2.5+96.4R	-0.9+77.1R	0.2+64.2R	0.7+55.5R	1.2+49R	1.6+43.5R	2+39.3R	2.3+35.7R	4.3+28.3R	
	8"	q_a	1124	1128	1115	1119	1110	1114	1107	1111	1105
		F, lap	5.5-0.6R	5.5-0.5R	5.8-0.5R	5.7-0.4R	5.9-0.4R	6-0.4R	6-0.3R	6-0.3R	6.1-0.3R
	F, no lap	-1.9+96.2R	-0.4+76.9R	0.8+64R	1.3+55.4R	1.9+48.8R	2.3+43.4R	2.7+39.2R	3+35.6R	5.1+28.2R	
	12"	q_a	1058	1046	1037	1030	1025	1021	1018	1015	1012
		F, lap	6.5-1.1R	6.8-1R	7-0.9R	7.1-0.9R	7.3-0.8R	7.4-0.8R	7.5-0.7R	7.5-0.7R	7.6-0.6R
	F, no lap	-0.9+95.7R	0.8+76.4R	2+63.6R	2.7+54.9R	3.2+48.4R	3.8+43R	4.2+38.8R	4.5+35.3R	6.6+27.9R	
	18"	q_a	996	993	928	937	943	897	908	916	880
		F, lap	7.3-1.5R	7.5-1.3R	8.5-1.6R	8.4-1.4R	8.4-1.2R	9.2-1.4R	9.1-1.2R	9.1-1.1R	9.6-1.1R
	F, no lap	-0.1+95.3R	1.5+76.1R	3.5+62.9R	4+54.4R	4.4+48R	5.6+42.4R	5.8+38.3R	6+34.8R	8.6+27.4R	
	24"	q_a	895	915	839	866	807	834	787	811	772
		F, lap	8.4-2.2R	8.4-1.8R	9.6-2.2R	9.4-1.8R	10.4-2.1R	10.1-1.8R	10.9-1.9R	10.6-1.7R	11.3-1.6R
	F, no lap	1+94.6R	2.5+75.6R	4.7+62.3R	5+54R	6.4+47.2R	6.5+42R	7.6+37.6R	7.6+34.3R	10.3+26.9R	
36"	q_a	895	798	714	770	708	653	705	660	620	
	F, lap	8.4-2.2R	9.9-2.7R	11.4-3.3R	10.8-2.5R	11.9-2.9R	13.1-3.2R	12.3-2.5R	13.3-2.8R	14.1-2.6R	
F, no lap	1+94.6R	4+74.7R	6.4+61.3R	6.3+53.3R	7.9+46.4R	9.5+40.5R	9+37R	10.3+33.1R	13.1+25.9R		
48"	q_a	726	798	714	642	581	605	562	524	524	
	F, lap	10.4-3.6R	9.9-2.7R	11.4-3.3R	12.8-3.8R	14.2-4.2R	13.1-3.2R	14.2-3.5R	15.4-3.9R	16.3-3.5R	
F, no lap	2.9+93.2R	4+74.7R	6.4+61.3R	8.4+52R	10.2+45R	9.5+40.5R	10.9+36R	12.4+32.1R	15.3+25R		
60"	q_a	726	622	714	642	581	530	478	562	524	
	F, lap	10.4-3.6R	12.3-4.5R	11.4-3.3R	12.8-3.8R	14.2-4.2R	15.7-4.8R	17.1-5.2R	15.4-3.9R	16.3-3.5R	
F, no lap	2.9+93.2R	6.4+72.9R	6.4+61.3R	8.4+52R	10.2+45R	12.1+39R	13.8+34.3R	12.4+32.1R	15.3+25R		



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Screws	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	3203	3191	3182	3176	3171	3167	2617	2162	1817			
		F, lap	3.1-0.2R	3.1-0.2R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R
	6"	q _a	3037	3009	2988	2973	2961	2951	2617	2162	1817			
		F, lap	3.4-0.3R	3.5-0.3R	3.5-0.3R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	
	8"	q _a	2876	2874	2796	2806	2750	2764	2617	2162	1817			
		F, lap	3.7-0.5R	3.7-0.4R	3.9-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	
	12"	q _a	2605	2524	2465	2419	2383	2354	2330	2162	1817			
		F, lap	4.1-0.7R	4.3-0.7R	4.5-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	4.9-0.6R	5-0.5R	5-0.5R	5-0.5R	
	18"	q _a	2400	2344	2112	2108	2104	1950	1964	1975	1817			
		F, lap	4.5-0.9R	4.7-0.9R	5.2-1.1R	5.3-1R	5.3-0.9R	5.7-1R	5.7-0.9R	5.7-0.9R	5.7-0.8R	6-0.8R	6-0.8R	
24"	q _a	2127	2118	1879	1910	1736	1779	1644	1689	1580				
	F, lap	4.9-1.3R	5.1-1.2R	5.7-1.4R	5.7-1.2R	6.2-1.4R	6.2-1.4R	6.6-1.3R	6.5-1.2R	6.8-1.1R	6.8-1.1R	6.8-1.1R		
36"	q _a	2127	1835	1601	1679	1513	1374	1458	1347	1228				
	F, lap	4.9-1.3R	5.6-1.6R	6.4-1.9R	6.3-1.6R	6.9-1.8R	7.4-2R	7.2-1.7R	7.7-1.9R	8.1-1.6R	8.1-1.6R	8.1-1.6R		
48"	q _a	1766	1835	1601	1414	1244	1374	1234	1111	1009				
	F, lap	5.6-1.8R	5.6-1.6R	6.4-1.9R	7.1-2.2R	7.7-2.4R	7.4-2R	8-2.2R	8.6-2.4R	9-2.1R	9-2.1R	9-2.1R		
60"	q _a	1766	1486	1601	1414	1244	1092	972	1111	1009				
	F, lap	5.6-1.8R	6.5-2.2R	6.4-1.9R	7.1-2.2R	7.7-2.4R	8.5-2.7R	9.1-2.9R	8.6-2.4R	9-2.1R	9-2.1R	9-2.1R		
16 36/7/4	4"	q _a	2540	2535	2532	2530	2528	2527	2526	2162	1817			
		F, lap	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	
	6"	q _a	2435	2423	2415	2409	2405	2401	2398	2162	1817			
		F, lap	3.5-0.3R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q _a	2323	2333	2288	2301	2269	2256	2162	1817				
		F, lap	3.9-0.4R	3.9-0.3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	
	12"	q _a	2112	2072	2043	2021	2004	1990	1979	1817				
		F, lap	4.5-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.1-0.5R	5.2-0.4R	5.2-0.4R	5.2-0.4R	5.2-0.4R	
	18"	q _a	1936	1923	1749	1767	1780	1663	1686	1704	1616			
		F, lap	5-0.9R	5.1-0.9R	5.7-1.1R	5.7-0.9R	5.7-0.8R	6.2-0.9R	6.2-0.8R	6.1-0.7R	6.5-0.7R	6.5-0.7R	6.5-0.7R	
24"	q _a	1682	1723	1538	1594	1457	1513	1406	1458	1370				
	F, lap	5.7-1.4R	5.7-1.2R	6.4-1.4R	6.3-1.2R	6.9-1.3R	6.8-1.1R	7.3-1.3R	7.1-1.1R	7.5-1R	7.5-1R	7.5-1R		
36"	q _a	1682	1455	1272	1381	1249	1137	1235	1144	1065				
	F, lap	5.7-1.4R	6.6-1.7R	7.5-2.1R	7.1-1.6R	7.9-1.8R	8.6-2.1R	8.1-1.6R	8.7-1.8R	9.2-1.7R	9.2-1.7R	9.2-1.7R		
48"	q _a	1318	1455	1272	1125	1006	1137	1042	960	886				
	F, lap	6.8-2.2R	6.6-1.7R	7.5-2.1R	8.3-2.4R	9.2-2.7R	8.6-2.1R	9.3-2.3R	10-2.5R	10.5-2.2R	10.5-2.2R	10.5-2.2R		
60"	q _a	1318	1104	1272	1125	1006	908	812	960	886				
	F, lap	6.8-2.2R	8-2.8R	7.5-2.1R	8.3-2.4R	9.2-2.7R	10.1-3R	11-3.3R	10-2.5R	10.5-2.2R	10.5-2.2R	10.5-2.2R		
36/4	4"	q _a	1493	1492	1492	1492	1491	1491	1491	1491	1491			
		F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3-0.1R	3.3-0.1R	3.3-0R	3.3-0R	3.3-0R	
	6"	q _a	1468	1466	1465	1464	1463	1463	1462	1462	1461			
		F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q _a	1439	1443	1432	1436	1428	1432	1426	1430	1424			
		F, lap	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	
	12"	q _a	1373	1363	1356	1351	1347	1344	1341	1339	1337			
		F, lap	4.8-0.6R	5-0.6R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.3-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.4-0.3R	5.4-0.3R	
	18"	q _a	1307	1309	1241	1253	1262	1213	1226	1236	1198			
		F, lap	5.5-0.9R	5.5-0.8R	6.2-0.9R	6.1-0.8R	6.1-0.7R	6.6-0.7R	6.5-0.6R	6.4-0.6R	6.8-0.6R	6.8-0.6R	6.8-0.6R	
24"	q _a	1191	1222	1137	1172	1106	1140	1086	1118	1072				
	F, lap	6.4-1.4R	6.3-1.1R	7.1-1.3R	6.9-1.1R	7.6-1.2R	7.3-1R	7.9-1.1R	7.6-0.9R	8.1-0.9R	8.1-0.9R	8.1-0.9R		
36"	q _a	1191	1080	979	1057	982	914	984	929	879				
	F, lap	6.4-1.4R	7.5-1.8R	8.6-2.1R	8-1.5R	8.8-1.7R	9.7-2R	9-1.5R	9.6-1.6R	10.2-1.6R	10.2-1.6R	10.2-1.6R		
48"	q _a	971	1080	979	889	812	914	853	797	748				
	F, lap	8.2-2.6R	7.5-1.8R	8.6-2.1R	9.7-2.4R	10.8-2.8R	9.7-2R	10.5-2.1R	11.3-2.4R	12-2.2R	12-2.2R	12-2.2R		
60"	q _a	971	842	979	889	812	744	686	797	748				
	F, lap	8.2-2.6R	9.7-3.2R	8.6-2.1R	9.7-2.4R	10.8-2.8R	11.9-3.1R	12.9-3.4R	11.3-2.4R	12-2.2R	12-2.2R	12-2.2R		

B PANELS

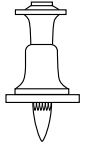
2.4 DGB-36 & DGBF-36

Hilti X-EDNK-22 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	q_a	1506	1479	1459	1444	1432	1151	932	771	647
		F, lap	6.9-0.9R	7.2-0.9R	7.4-0.9R	7.6-0.9R	7.7-0.8R	7.8-0.8R	7.9-0.8R	8-0.7R	8.1-0.6R
	F, no lap	4.1+36.2R	4.9+28.8R	5.5+23.9R	5.9+20.6R	6.2+18.1R	6.5+16R	6.7+14.4R	6.9+13.1R	7.7+10.3R	7.7+10.3R
	6"	q_a	1359	1314	1280	1254	1234	1151	932	771	647
		F, lap	7.6-1.4R	8-1.4R	8.3-1.4R	8.6-1.4R	8.8-1.4R	9-1.3R	9.2-1.3R	9.4-1.3R	9.4-1.1R
	F, no lap	4.7+35.8R	5.7+28.3R	6.4+23.4R	6.9+20R	7.3+17.5R	7.7+15.5R	7.9+13.9R	8.2+12.5R	9.1+9.9R	9.1+9.9R
	8"	q_a	1251	1218	1147	1135	1086	1084	932	771	647
		F, lap	8-1.7R	8.4-1.7R	9-1.8R	9.2-1.8R	9.7-1.8R	9.9-1.8R	10.2-1.8R	10.3-1.7R	10.5-1.5R
	F, no lap	5.1+35.5R	6.1+28R	7.1+22.9R	7.5+19.6R	8.1+17.1R	8.5+15R	9+13.4R	9.2+12.1R	10.2+9.5R	10.2+9.5R
	12"	q_a	1109	1030	973	929	895	867	845	771	647
F, lap		8.6-2.1R	9.3-2.4R	9.9-2.5R	10.5-2.6R	10.9-2.6R	11.4-2.7R	11.8-2.7R	12.1-2.7R	12.2-2.2R	12.2-2.2R
F, no lap	5.7+35.9R	7.2+27.4R	8+22.3R	8.8+18.8R	9.4+16.3R	10+14.1R	10.5+12.5R	11+11.1R	11.9+8.7R	11.9+8.7R	
18"	q_a	1022	954	831	802	778	682	671	662	599	
	F, lap	8.9-2.4R	9.7-2.7R	10.8-3.2R	11.3-3.2R	11.8-3.2R	12.8-3.6R	13-3.6R	13.5-3.5R	14-3R	14-3R
F, no lap	6.1+34.7R	7.4+27.1R	8.9+21.6R	9.6+18.2R	10.3+15.7R	11.4+13.1R	11.8+11.6R	12.3+10.3R	13.6+7.9R	13.6+7.9R	
24"	q_a	924	869	738	714	614	609	539	542	490	
	F, lap	9.3-2.8R	10.1-3R	11.3-3.6R	11.8-3.7R	12.9-4.1R	13.3-4.1R	14.3-4.4R	14.6-4.3R	15.1-3.6R	15.1-3.6R
F, no lap	6.5+34.4R	7.8+26.7R	9.4+21.1R	10.1+17.8R	11.4+14.8R	12+12.7R	13+10.8R	13.5+9.5R	14.8+7.3R	14.8+7.3R	
36"	q_a	924	772	629	620	532	463	474	423	380	
	F, lap	9.3-2.8R	10.6-3.5R	11.9-4.2R	12.4-4.2R	13.6-4.6R	14.8-5.2R	15-5R	16.1-5.4R	16.6-4.4R	16.6-4.4R
F, no lap	6.5+34.4R	8.3+26.2R	10+20.6R	10.7+17.3R	12+14.3R	13.4+11.6R	13.8+10.2R	15+8.3R	16.2+6.5R	16.2+6.5R	
48"	q_a	813	772	629	527	450	463	408	363	326	
	F, lap	9.8-3.2R	10.6-3.5R	11.9-4.2R	13.1-4.8R	14.4-5.3R	14.8-5.2R	15.9-5.6R	17-6.2R	17.5-4.9R	17.5-4.9R
F, no lap	6.9+33.9R	8.3+26.2R	10+20.6R	11.4+16.7R	12.8+13.6R	13.4+11.6R	14.6+9.6R	15.9+7.6R	17.1+6R	17.1+6R	
60"	q_a	813	641	629	527	450	390	342	363	326	
	F, lap	9.8-3.2R	11.2-4R	11.9-4.2R	13.1-4.8R	14.4-5.3R	15.6-6R	16.8-6.4R	17-6.2R	17.5-4.9R	17.5-4.9R
F, no lap	6.9+33.9R	8.9+25.7R	10+20.6R	11.4+16.7R	12.8+13.6R	14.3+10.8R	15.6+8.8R	15.9+7.6R	17.1+6R	17.1+6R	
36/7/4	4"	q_a	1218	1206	1197	1191	1185	1151	932	771	647
		F, lap	7.4-0.9R	7.7-0.9R	7.8-0.8R	8-0.8R	8.1-0.7R	8.2-0.7R	8.3-0.6R	8.3-0.6R	8.4-0.5R
	F, no lap	4.6+36.2R	5.4+28.9R	5.9+24R	6.3+20.7R	6.5+18.2R	6.8+16.1R	7+14.6R	7.2+13.2R	8+10.4R	8+10.4R
	6"	q_a	1102	1079	1062	1049	1040	1032	932	771	647
		F, lap	8.3-1.4R	8.7-1.4R	9-1.4R	9.3-1.3R	9.5-1.2R	9.7-1.2R	9.8-1.1R	9.9-1.1R	10-0.9R
	F, no lap	5.5+35.7R	6.4+28.3R	7.1+23.4R	7.6+20.1R	8+17.7R	8.3+15.6R	8.6+14R	8.8+12.7R	9.6+10R	9.6+10R
	8"	q_a	1007	998	951	952	919	924	899	771	647
		F, lap	9-1.8R	9.4-1.8R	10-1.9R	10.2-1.7R	10.7-1.8R	10.8-1.7R	11-1.7R	11.2-1.6R	11.4-1.4R
	F, no lap	6.1+35.3R	7.1+28R	8.1+22.9R	8.5+19.7R	9.1+17.1R	9.4+15.1R	9.9+13.5R	10+12.2R	11.1+9.6R	11.1+9.6R
	12"	q_a	873	827	794	769	749	734	710	647	647
F, lap		9.9-2.5R	10.7-2.7R	11.4-2.8R	12-2.8R	12.5-2.8R	12.9-2.8R	13.3-2.7R	13.6-2.7R	13.7-2.2R	13.7-2.2R
F, no lap	7.1+34.6R	8.4+27R	9.5+22R	10.3+18.6R	10.9+16.1R	11.5+14R	12+12.5R	12.4+11.1R	13.4+8.7R	13.4+8.7R	
18"	q_a	787	753	657	648	642	583	584	585	544	
	F, lap	10.5-3R	11.4-3.1R	12.8-3.8R	13.3-3.7R	13.8-3.6R	15-4R	15.3-3.8R	15.5-3.7R	16.3-3.3R	16.3-3.3R
F, no lap	7.7+34.2R	9.1+26.6R	10.9+21R	11.6+17.7R	12.2+15.3R	13.6+12.8R	14+11.3R	14.4+10.1R	15.9+7.6R	15.9+7.6R	
24"	q_a	686	668	577	580	513	524	467	481	437	
	F, lap	11.3-3.6R	12.1-3.7R	13.7-4.5R	14.2-4.3R	15.6-4.9R	15.9-4.7R	17.2-5.1R	17.4-4.8R	18.1-4.2R	18.1-4.2R
F, no lap	8.4+33.5R	9.8+26R	11.8+20.3R	12.5+17.1R	14.1+14R	14.5+12.1R	15.9+10.1R	16.2+9R	17.7+6.8R	17.7+6.8R	
36"	q_a	686	574	480	499	431	378	402	361	328	
	F, lap	11.3-3.6R	13.4-5R	14.8-5.4R	15.3-5.1R	16.8-5.8R	18.4-6.5R	18.4-6.5R	19.8-6.5R	20.6-5.4R	20.6-5.4R
F, no lap	8.4+33.5R	10.8+25.2R	12.9+19.3R	13.6+16.3R	15.2+13.1R	17+10.3R	17.1+9.3R	18.7+7.3R	20.2+5.5R	20.2+5.5R	
48"	q_a	568	574	480	405	349	378	336	302	273	
	F, lap	12.2-4.5R	13.4-5R	14.8-5.4R	16.5-6.2R	18.3-6.9R	18.4-6.5R	19.9-7R	21.4-7.7R	22.2-6.3R	22.2-6.3R
F, no lap	9.3+32.7R	10.8+25.2R	12.9+19.3R	14.8+15.2R	16.7+12R	17+10.3R	18.6+8.2R	20.3+6.1R	21.8+4.6R	21.8+4.6R	
60"	q_a	568	453	480	405	349	305	270	302	273	
	F, lap	12.2-4.5R	14.2-5.6R	14.8-5.4R	16.5-6.2R	18.3-6.9R	20-7.8R	21.7-8.4R	21.4-7.7R	22.2-6.3R	22.2-6.3R
F, no lap	9.3+32.7R	11.9+24.1R	12.9+19.3R	14.8+15.2R	16.7+12R	18.6+9R	20.4+6.8R	20.3+6.1R	21.8+4.6R	21.8+4.6R	
36/4	4"	q_a	759	757	755	754	753	752	751	751	647
		F, lap	7.8-0.8R	8-0.7R	8.2-0.7R	8.3-0.6R	8.4-0.6R	8.5-0.5R	8.5-0.5R	8.6-0.4R	8.6-0.4R
	F, no lap	-16.1+312R	-11.1+249.5R	-7.8+207.8R	-6+179.7R	-4.7+158.5R	-3.1+140.9R	-2.1+127.3R	-1.1+115.7R	5.5+91.7R	5.5+91.7R
	6"	q_a	722	716	712	709	706	704	703	701	647
		F, lap	9.1-1.4R	9.4-1.3R	9.7-1.2R	9.9-1.1R	10.1-1R	10.2-1R	10.3-0.9R	10.4-0.9R	10.5-0.8R
	F, no lap	-14.9+311.4R	-9.8+248.9R	-6.3+207.3R	-4.4+179.2R	-3+158R	-1.4+140.4R	-0.3+126.8R	0.7+115.2R	7.4+91.3R	7.4+91.3R
	8"	q_a	685	685	668	671	658	662	652	656	647
		F, lap	10-1.9R	10.3-1.7R	11-1.8R	11-1.6R	11.5-1.6R	11.5-1.4R	11.9-1.4R	11.9-1.3R	12.2-1.2R
	F, no lap	-14+310.9R	-8.9+248.5R	-5+206.8R	-3.3+178.8R	-1.5+157.5R	0+139.9R	1.3+126.3R	2.2+114.8R	9.1+90.9R	9.1+90.9R
	12"	q_a	622	604	591	581	574	567	558	558	544
F, lap		11.4-2.8R	12.3-2.8R	12.9-2.8R	13.5-2.8R	13.9-2.7R	14.3-2.6R	14.7-2.5R	15-2.4R	15-2.1R	15-2.1R
F, no lap	-12.6+310R	-6.9+247.4R	-3+205.7R	-0.8+177.6R	0.9+156.4R	2.7+138.8R	4+125.2R	5.3+113.7R	12+90.1R	12+90.1R	
18"	q_a	573	561	507	507	507	471	475	478	451	
	F, lap	12.4-3.5R	13.2-3.5R	15.1-4.2R	15.5-3.9R	15.8-3.7R	17.3-4.1R	17.4-3.8R	17.6-3.6R	18.6-3.3R	18.6-3.3R
F, no lap	-11.6+309.3R	-5.9+246.7R	-0.9+204.4R	1.2+176.4R	2.8+155.4R	5.7+137.2R	6.8+123.9R	7.9+112.5R	15.5+88.8R	15.5+88.8R	
24"	q_a	506	507	450	459	418	430	398	409	383	
	F, lap	13.7-4.5R	14.5-4.4R	16.6-5.2R	16.9-4.8R	18.6-5.4R	18.7-5R	20.3-5.4R	20.2-5R	21.2-4.5R	21.2-4.5R
F, no lap	-10.2+308.3R	-4.7+245.9R	0.6+203.3R	2.5+175.5R	5.6+153.7R	7.1+136.4R	9.6+122.3R	10.5+111.2R	18.2+87.7R	18.2+87.7R	
36"	q_a	506	437	382	403	364	319	348	312	283	
	F, lap	13.7-4.5R	16.1-5.6R	18.5-6.7R	18.6-6R	20.6-6.7R	22.7-6.6R	22.2-6.6R	24-7.2R	25.1-6.3R	25.1-6.3R
F, no lap	-10.2+308.3R	-3.1+244.6R	2.5+201.8R	4.3+174.3R	7.6+152.3R	11.1+133.8R	11.6+121.2R	14.3+108.9R	22.1+85.8R	22.1+85.8R	
48"	q_a	417	437	382	328	282	319	282	253	228	
	F, lap	15.5-6R	16.1-5.6R	18.5-6.7R	20.9-7.7R	23.2-8.7R	22.7-7.6R	24.6-8.2R	26.7-9R	27.8-7.6R	27.8-7.6R
F, no lap	-8.5+306.7R	-3.1+244.6R	2.5+201.8R	6.6+172.6R	10.1+150.4R	11.1+133.8R	14+119.5R	17+107.1R	24.8+84.5R	24.8+84.5R	
60"	q_a	417	346	382	328	282	246	217	253	228	
	F, lap	15.5-6R	18.4-7.5R	18.5-6.7R	20.9-7.7R	23.2-8.7R	25.6-9.7R	27.8-10.5R	26.7-9R	27.8-7.6R	27.8-7.6R
F, no lap	-8.5+306.7R	-0.8+242.7R	2.5+201.8R	6.6+172.6R	10.1+150.4R	14+131.6R	17.2+117.2R	17+107.1R	24.8+84.5R	24.8+84.5R	



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span																																
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"																								
36/9	4"	q _a	1869	1845	1828	1815	1805	1514	1226	1013	852	F, lap	5.6-0.6R	5.8-0.6R	5.9-0.6R	6-0.5R	6.1-0.5R	6.2-0.5R	6.2-0.5R	6.3-0.4R	6.3-0.4R	6.3-0.4R	F, no lap	3.8+22.9R	4.3+18.2R	4.7+15.1R	5+13R	5.1+11.4R	5.3+10.1R	5.4+9.1R	5.6+8.3R	6.1+6.5R	6.1+6.5R		
		q _a	1706	1663	1631	1606	1586	1514	1226	1013	852	F, lap	6.2-1R	6.5-1R	6.7-1R	6.9-0.9R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.4-0.7R	7.4-0.7R	F, no lap	4.4+22.5R	5+17.8R	5.5+14.7R	5.8+12.6R	6+11.1R	6.3+9.8R	6.5+8.8R	6.6+7.9R	7.2+6.2R	7.2+6.2R		
	6"	q _a	1578	1550	1473	1466	1411	1411	1411	1226	1013	852	F, lap	6.6-1.3R	6.9-1.2R	7.3-1.3R	7.4-1.2R	7.8-1.3R	7.9-1.2R	8.1-1.2R	8.2-1.1R	8.2-1.1R	8.3-1R	F, no lap	4.8+22.3R	5.4+17.6R	6.1+14.4R	6.4+12.3R	6.8+10.7R	7+9.4R	7.3+8.4R	7.4+7.6R	8.1+5.9R	8.1+5.9R	
		q _a	1399	1315	1254	1207	1170	1115	1115	1115	1013	852	F, lap	7.1-1.7R	7.7-1.8R	8.2-1.9R	8.5-1.9R	8.9-1.9R	9.2-1.9R	9.5-1.9R	9.7-1.9R	9.8-1.5R	9.8-1.5R	F, no lap	5.3+21.9R	6.2+17R	7+13.8R	7.5+11.7R	7.9+10.1R	8.3+8.7R	8.7+7.7R	9+6.9R	9.6+5.4R	9.6+5.4R	
	12"	q _a	1286	1215	1065	1039	1018	927	927	921	916	833	F, lap	7.5-2R	8.1-2.1R	9.2-5R	9.4-2.5R	9.7-2.4R	10.5-2.7R	10.7-2.6R	10.9-2.6R	11.4-2.2R	11.4-2.2R	F, no lap	5.7+21.6R	6.6+16.7R	7.8+13.2R	8.3+11.1R	8.7+9.5R	9.6+7.9R	9.9+7R	10.2+6.2R	11.1+4.7R	11.1+4.7R	
		q _a	1153	1101	956	944	823	826	826	734	745	675	F, lap	7.9-2.3R	8.5-2.4R	9.5-2.9R	9.9-2.9R	10.8-3.2R	11-3.1R	11.8-3.4R	12.3-3R	12.5-2.8R	12.5-2.8R	F, no lap	6.1+21.2R	7.1+16.4R	8.3+12.8R	8.8+10.7R	9.8+8.8R	10.2+7.5R	11+6.2R	11.3+5.5R	12.2+4.1R	12.2+4.1R	
	18"	q _a	1153	974	814	819	705	616	616	640	573	517	F, lap	7.9-2.3R	9.2-9R	10.2-3.5R	10.5-3.4R	11.5-3.7R	12.6-4.2R	12.6-3.9R	13.5-4.3R	13.9-3.6R	13.9-3.6R	F, no lap	6.1+21.2R	7.6+15.9R	9+12.2R	9.4+10.2R	10.5+8.2R	11.6+6.4R	11.8+5.7R	12.7+4.4R	13.7+3.4R	13.7+3.4R	
		q _a	999	974	814	684	587	587	587	545	487	438	F, lap	8.4-2.8R	9.2-9R	10.2-3.5R	11.2-4R	12.3-4.4R	12.5-4.2R	13.4-4.5R	14.4-5R	14.8-4.1R	14.8-4.1R	F, no lap	6.6+20.7R	7.6+15.9R	9+12.2R	10.2+9.6R	11.3+7.5R	11.6+6.4R	12.6+5.1R	13.7+3.7R	14.6+2.9R	14.6+2.9R	
	24"	q _a	999	806	814	684	587	511	450	487	438	438	F, lap	8.4-2.8R	9.7-3.5R	10.2-3.5R	11.2-4R	12.3-4.4R	13.4-5R	14.4-5.4R	14.4-5R	14.8-4.1R	14.8-4.1R	F, no lap	6.6+20.7R	8.3+15.3R	9+12.2R	10.2+9.6R	11.3+7.5R	12.5+5.6R	13.6+4.2R	13.7+3.7R	14.6+2.9R	14.6+2.9R	
		q _a	1505	1495	1488	1482	1478	1475	1226	1013	852	F, lap	5.9-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	F, no lap	4.1+22.9R	4.6+18.3R	5+15.2R	5.2+13.1R	5.4+11.5R	5.5+10.2R	5.6+9.2R	5.7+8.4R	6.3+6.6R	6.3+6.6R		
	20 36/7/4	4"	q _a	1383	1362	1347	1336	1327	1320	1226	1013	852	F, lap	6.7-1R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.7R	7.7-0.7R	7.7-0.6R	7.7-0.6R	F, no lap	4.9+22.6R	5.5+17.9R	6+14.8R	6.2+12.7R	6.5+11.2R	6.7+9.9R	6.8+8.9R	7+8.1R	7.5+6.4R	7.5+6.4R	
			q _a	1277	1273	1223	1228	1192	1200	1173	1013	852	F, lap	7.3-1.3R	7.5-1.2R	8-1.3R	8-1.1R	8.4-1.2R	8.4-1.1R	8.7-1R	8.7-1R	8.9-0.9R	8.9-0.9R	F, no lap	5.5+22.2R	6.1+17.6R	6.8+14.4R	7+12.4R	7.4+10.8R	7.5+9.6R	7.9+8.6R	8+7.8R	8.6+6.1R	8.6+6.1R	
6"		q _a	1115	1067	1033	1007	987	970	946	852	732	732	F, lap	8.1-1.9R	8.7-1.9R	9.2-2R	9.6-1.9R	9.9-1.9R	10.2-1.9R	10.4-1.8R	10.7-1.7R	10.7-1.5R	10.7-1.5R	F, no lap	6.3+21.6R	7.3+16.9R	8+13.7R	8.5+11.6R	8.9+10.1R	9.3+8.8R	9.6+7.8R	9.9+7R	10.5+5.5R	10.5+5.5R	
		q _a	1005	973	856	851	848	775	780	784	732	732	F, lap	8.7-2.3R	9.3-2.3R	10.5-2.8R	10.8-2.7R	11.1-2.5R	12.1-2.9R	12.2-2.7R	12.3-2.8R	12.9-2.3R	12.9-2.3R	F, no lap	6.9+21.2R	7.9+16.5R	9.3+12.9R	9.8+10.9R	10.1+9.4R	11.2+7.8R	11.4+6.9R	11.6+6.2R	12.7+4.6R	12.7+4.6R	
12"		q _a	871	862	749	760	682	699	657	607	607	607	F, lap	9.5-2.9R	10.1-2.9R	11.4-3.5R	11.7-3.2R	12.8-3.6R	12.9-3.4R	13.9-3.7R	13.9-3.4R	14.6-3R	14.6-3R	F, no lap	7.7+20.6R	8.6+15.9R	10.2+12.2R	10.6+10.3R	11.8+8.3R	12+7.2R	13.1+5.9R	13.2+5.3R	14.4+3.9R	14.4+3.9R	
		q _a	871	733	629	660	580	510	549	495	450	450	F, lap	9.5-2.9R	11-3.7R	12.5-4.4R	12.7-4R	14-4.5R	15.3-5R	15.1-4.4R	16.3-4.4R	16.9-4.2R	16.9-4.2R	F, no lap	7.7+20.6R	9.6+15.2R	11.3+11.3R	11.6+9.5R	13+7.5R	14.4+5.6R	14.3+5.2R	15.5+3.8R	16.7+2.7R	16.7+2.7R	
18"		q _a	709	733	629	534	462	510	454	409	371	371	F, lap	10.5-3.8R	11-3.7R	12.5-4.4R	14-5R	15.5-5.6R	15.3-5R	16.5-5.4R	17.8-6R	18.5-5R	18.5-5R	F, no lap	8.7+19.7R	9.6+15.2R	11.3+11.3R	12.9+8.5R	14.5+6.3R	14.4+5.6R	15.7+4.2R	17.1+2.8R	18.3+1.9R	18.3+1.9R	
		q _a	709	578	629	534	462	405	360	409	371	371	F, lap	10.5-3.8R	12.3-4.8R	12.5-4.4R	14-5R	15.5-5.6R	17-6.3R	18.4-6.8R	17.8-6R	18.5-5R	18.5-5R	F, no lap	8.7+19.7R	10.8+14.1R	11.3+11.3R	12.9+8.5R	14.5+6.3R	16.1+4.3R	17.6+2.8R	17.1+2.8R	18.3+1.9R	18.3+1.9R	
36/4		4"	q _a	920	918	917	916	915	915	914	914	852	F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	F, no lap	-9+197.5R	-5.8+158R	-3.7+131.6R	-2.6+113.8R	-1.8+100.4R	-0.8+89.2R	-0.2+80.6R	0.5+73.3R	4.7+58.1R	4.7+58.1R	
			q _a	885	880	876	874	872	870	869	868	852	852	F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	7.9-0.5R	8-0.5R	8-0.4R	8-0.4R	F, no lap	-8+197.1R	-4.8+157.6R	-2.6+131.3R	-1.4+113.5R	-0.5+100.1R	0.5+88.9R	1.2+80.3R	1.9+73R	6.1+57.9R	6.1+57.9R
		6"	q _a	847	849	833	837	825	829	823	823	816	816	F, lap	8-1.3R	8.1-1.1R	8.6-1.1R	8.6-1R	8.9-1R	8.9-0.9R	9.2-0.9R	9.1-0.8R	9.3-0.7R	9.3-0.7R	F, no lap	-7.2+196.7R	-4.1+157.3R	-1.6+130.9R	-0.5+113.2R	0.7+99.7R	1.5+88.6R	2.4+80R	3+72.7R	7.4+57.6R	7.4+57.6R
			q _a	779	762	750	741	734	728	719	716	716	716	F, lap	9.2-2R	9.8-1.9R	10.2-1.9R	10.6-1.8R	10.9-1.7R	11.1-1.7R	11.3-1.6R	11.5-1.5R	11.6-1.3R	11.6-1.3R	F, no lap	-6+196R	-2.4+156.5R	0.1+130.1R	1.5+112.3R	2.6+99R	3.8+87.8R	4.6+79.3R	5.4+72R	9.6+57R	9.6+57R
	12"	q _a	722	713	652	655	657	622	622	622	596	596	F, lap	10.1-2.6R	10.7-2.5R	12.1-2.9R	12.3-2.7R	12.5-2.5R	13.6-2.8R	13.6-2.5R	13.6-2.2R	14.4-2.2R	14.4-2.2R	F, no lap	-5+195.4R	-1.5+155.9R	2+129.1R	3.2+111.5R	4.2+98.2R	6.3+86.7R	6.9+78.3R	7.5+71.2R	12.5+56.1R	12.5+56.1R	
		q _a	640	647	581	596	547	564	525	542	510	510	F, lap	11.4-3.5R	11.8-3.2R	13.5-3.8R	13.5-3.4R	14.9-3.8R	14.8-3.4R	16.1-3.7R	15.8-3.3R	16.7-3.1R	16.7-3.1R	F, no lap	-3.8+194.5R	-0.3+155.2R	3.4+128.2R	4.5+110.8R	6.7+96.9R	7.5+86.1R	9.3+77.1R	9.7+70.2R	14.8+55.2R	14.8+55.2R	
	18"	q _a	640	558	492	524	476	434	466	432	396	396	F, lap	11.4-3.5R	13.4-4.3R	15.4-5.2R	15.1-4.4R	16.8-5R	18.4-5.6R	17.8-4.7R	19.2-5.2R	20.2-4.6R	20.2-4.6R	F, no lap	-3.8+194.5R	1.3+154.1R	5.3+126.8R	6.1+109.7R	8.5+95.7R	11.1+83.9R	11+76.2R	13.1+68.4R	18.3+53.7R	18.3+53.7R	
		q _a	522	558	492	437	382	434	390	351	317	317	F, lap	13.3-5R	13.4-4.3R	15.4-5.2R	17.3-6R	19.3-6.7R	18.4-5.6R	20-6.1R	21.7-6.7R	22.7-5.8R	22.7-5.8R	F, no lap	-1.9+193R	1.3+154.1R	5.3+126.8R	8.3+108.2R	11+94R	11.1+83.9R	13.3+74.8R	15.6+66.8R	20.8+52.5R	20.8+52.5R	
	24"	q _a	522	442	492	437	382	334	296	351	317	317	F, lap	13.3-5R	15.7-6.2R	15.4-5.2R	17.3-6R	19.3-6.7R	21.2-7.6R	23.1-8.2R	21.7-6.7R	22.7-5.8R	22.7-5.8R	F, no lap	-1.9+193R	3.6+152.2R	5.3+126.8R	8.3+108.2R	11+94R	13.9+81.9R	16.4+72.7R	15.6+66.8R	20.8+52.5R	20.8+52.5R	

B PANELS

2.4 DGB-36 & DGBF-36

Hilti X-EDNK-22 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"		
18	36/9	4"	q_a	2582	2565	2552	2542	2535	2317	1877	1551	1303	
			F, lap	4.0-3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R
		F, no lap	3.1+11.2R	3.4+8.9R	3.6+7.4R	3.7+6.4R	3.7+5.6R	3.8+5R	3.9+4.5R	3.9+4.1R	4.2+3.2R		
		6"	q_a	2406	2369	2341	2321	2304	2291	1877	1551	1303	
			F, lap	4.4-0.5R	4.6-0.5R	4.7-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5.0-4R	5.0-4R	5.0-3R	5.0-3R
		F, no lap	3.6+11R	3.9+8.7R	4.1+7.2R	4.3+6.2R	4.4+5.4R	4.5+4.8R	4.6+4.3R	4.6+3.9R	4.9+3.1R		
		8"	q_a	2250	2235	2152	2154	2095	2103	1877	1551	1303	
			F, lap	4.8-0.7R	4.9-0.7R	5.2-0.7R	5.2-0.6R	5.4-0.6R	5.4-0.6R	5.6-0.6R	5.6-0.5R	5.7-0.5R	5.7-0.5R
		F, no lap	3.9+10.8R	4.2+8.5R	4.6+7R	4.7+6R	4.9+5.2R	5+4.6R	5.2+4.1R	5.2+3.7R	5.6+2.9R		
		12"	q_a	2011	1924	1859	1809	1770	1738	1712	1551	1303	
			F, lap	5.3-1.1R	5.6-1.1R	5.9-1.1R	6.1-1.1R	6.3-1.1R	6.4-1R	6.6-1R	6.7-1R	6.7-0.8R	6.7-0.8R
		F, no lap	4.4+10.4R	4.9+8.1R	5.3+6.6R	5.6+5.5R	5.8+4.8R	6+4.2R	6.2+3.7R	6.3+3.3R	6.6+2.6R		
	18"	q_a	1846	1777	1579	1560	1546	1420	1422	1424	1303		
		F, lap	5.6-1.3R	6.1-3R	6.6-1.6R	6.8-1.5R	7-1.4R	7.5-1.6R	7.6-1.5R	7.6-1.4R	8-1.3R	8-1.3R	
	F, no lap	4.7+10.2R	5.2+7.9R	6+6.1R	6.3+5.1R	6.5+4.4R	7.1+3.6R	7.2+3.2R	7.3+2.8R	7.9+2.1R			
	24"	q_a	1640	1604	1407	1412	1273	1293	1187	1213	1121		
		F, lap	6.1-1.7R	6.4-1.6R	7.1-2R	7.3-1.8R	7.9-2.1R	8-1.9R	8.6-2.1R	8.6-1.9R	9-1.7R	9-1.7R	
	F, no lap	5.2+9.8R	5.7+7.6R	6.6+5.7R	6.8+4.8R	7.5+3.8R	7.6+3.3R	8.2+2.6R	8.2+2.3R	8.8+1.7R			
	36"	q_a	1640	1399	1212	1247	1106	971	1031	928	841		
		F, lap	6.1-1.7R	6.9-2.1R	7.8-2.5R	7.9-2.3R	8.6-2.5R	9.4-2.9R	9.3-2.5R	9.9-2.8R	10.3-2.4R	10.3-2.4R	
	F, no lap	5.2+9.8R	6.2+7.1R	7.2+5.2R	7.4+4.4R	8.1+3.3R	9+2.3R	8.9+2.2R	9.6+1.5R	10.2+1R			
	48"	q_a	1387	1399	1212	1040	897	971	863	775	701		
		F, lap	6.7-2.2R	6.9-2.1R	7.8-2.5R	8.7-2.9R	9.5-3.2R	9.4-2.9R	10.1-3.1R	10.8-3.4R	11.2-2.9R	11.2-2.9R	
	F, no lap	5.8+9.3R	6.2+7.1R	7.2+5.2R	8.1+3.8R	9+2.3R	9+2.3R	9.7+1.6R	10.5+0.9R	11.1+0.5R			
60"	q_a	1387	1161	1212	1040	897	785	696	701	701			
	F, lap	6.7-2.2R	7.7-2.7R	7.8-2.5R	8.7-2.9R	9.5-3.2R	10.4-3.6R	11.2-3.9R	10.8-3.4R	11.2-2.9R	11.2-2.9R		
F, no lap	5.8+9.3R	7+6.5R	7.2+5.2R	8.1+3.8R	9+2.6R	9.9+1.6R	10.8+0.8R	10.5+0.9R	11.1+0.5R				
36/7/4	18	4"	q_a	2062	2055	2050	2047	2044	2042	1877	1551	1303	
			F, lap	4.1-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	
		F, no lap	3.3+11.2R	3.5+9R	3.7+7.4R	3.8+6.4R	3.8+5.7R	3.9+5R	4+4.5R	4+4.1R	4.4+3.3R		
		6"	q_a	1942	1926	1914	1905	1899	1893	1877	1551	1303	
			F, lap	4.7-0.5R	4.8-0.5R	4.9-0.4R	5-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.3R	
		F, no lap	3.8+11R	4.1+8.7R	4.3+7.3R	4.5+6.2R	4.6+5.5R	4.7+4.9R	4.7+4.4R	4.8+4R	5.1+3.1R		
		8"	q_a	1824	1828	1778	1788	1752	1764	1735	1551	1303	
			F, lap	5.2-0.7R	5.2-0.6R	5.5-0.6R	5.5-0.5R	5.7-0.5R	5.7-0.5R	5.8-0.5R	5.8-0.4R	5.9-0.4R	
		F, no lap	4.3+10.8R	4.5+8.6R	4.9+7R	5+6.1R	5.2+5.3R	5.2+4.7R	5.4+4.2R	5.4+3.8R	5.8+3R		
		12"	q_a	1624	1577	1543	1517	1497	1481	1468	1457	1303	
			F, lap	5.9-1.1R	6.2-1.1R	6.4-1.1R	6.6-1R	6.8-1R	6.9-0.9R	7-0.9R	7.1-0.8R	7.2-0.7R	7.2-0.7R
		F, no lap	5+10.4R	5.5+8.1R	5.9+6.6R	6.1+5.6R	6.3+4.9R	6.5+4.3R	6.7+3.8R	6.8+3.4R	7.1+2.7R		
18"	q_a	1472	1447	1294	1300	1305	1205	1219	1230	1157			
	F, lap	6.4-1.4R	6.7-1.4R	7.5-1.7R	7.6-1.5R	7.7-1.4R	8.4-1.6R	8.4-1.4R	8.4-1.3R	8.8-1.2R	8.8-1.2R		
F, no lap	5.5+10R	6+7.8R	6.9+6R	7.1+5.1R	7.2+4.5R	7.9+3.6R	8+3R	8.3-3R	8.7+2.1R				
24"	q_a	1272	1285	1131	1163	1053	1088	1003	1038	969			
	F, lap	7.1-2R	7.4-1.8R	8.3-2.2R	8.3-1.9R	9.1-2.2R	9.1-1.9R	9.8-2.1R	9.6-1.9R	10.1-1.7R	10.1-1.7R		
F, no lap	6.3+9.5R	6.6+7.4R	7.7+5.5R	7.8+4.7R	8.7+3.7R	8.6+3.3R	9.4+2.6R	9.3+2.4R	10+1.7R				
36"	q_a	1272	1084	939	1005	902	816	879	810	744			
	F, lap	7.1-2R	8.3-2.5R	9.4-3R	9.2-2.5R	10.2-2.8R	11.1-3.2R	10.7-2.6R	11.6-2.9R	12.1-2.6R	12.1-2.6R		
F, no lap	6.3+9.5R	7.6+6.7R	8.8+4.7R	8.7+4.1R	9.7+3R	10.7+2R	10.4+2.1R	11.2+1.4R	12+0.8R				
48"	q_a	1010	1084	939	825	724	816	736	664	604			
	F, lap	8.2-2.9R	8.3-2.5R	9.4-3R	10.5-3.4R	11.6-3.8R	11.1-3.2R	12.3-4R	13-3.8R	13.6-3.3R	13.6-3.3R		
F, no lap	7.3+8.6R	7.6+6.7R	8.8+4.7R	10+3.2R	11.1+2R	10.7+2R	11.6+1.3R	12.6+0.5R	13.5+0.1R				
60"	q_a	1010	841	939	825	724	637	568	664	604			
	F, lap	8.2-2.9R	9.6-3.6R	9.4-3R	10.5-3.4R	11.6-3.8R	12.7-4.3R	13.8-4.6R	13-3.8R	13.6-3.3R	13.6-3.3R		
F, no lap	7.3+8.6R	8.9+5.6R	8.8+4.7R	10+3.2R	11.1+2R	12.3+0.9R	13.4+0.1R	12.6+0.5R	13.5+0.1R				
36/4	18	4"	q_a	1231	1230	1229	1228	1228	1227	1227	1227	1227	
			F, lap	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	
		F, no lap	-3.2+96.6R	-1.6+77.2R	-0.6+64.4R	-0.1+55.7R	0.4+49.1R	0.8+43.6R	1.1+39.4R	1.4+35.8R	3.5+28.4R		
		6"	q_a	1200	1197	1194	1193	1192	1190	1190	1189	1188	
			F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.2R	5.2-0.2R	5.3-0.2R	5.3-0.2R	
		F, no lap	-2.5+96.4R	-0.9+77.1R	0.1+64.2R	0.7+55.5R	1.1+49R	1.6+43.5R	1.9+39.3R	2.3+35.7R	4.3+28.3R		
		8"	q_a	1165	1169	1154	1159	1149	1153	1145	1149	1142	
			F, lap	5.5-0.6R	5.5-0.5R	5.8-0.5R	5.7-0.4R	5.9-0.4R	6-0.4R	6-0.4R	6-0.3R	6.1-0.3R	
		F, no lap	-1.9+96.2R	-0.4+76.9R	0.8+64R	1.3+55.4R	1.9+48.8R	2.3+43.4R	2.7+39.2R	3+35.6R	5.1+28.2R		
		12"	q_a	1093	1080	1070	1062	1057	1052	1048	1045	1042	
			F, lap	6.4-1.1R	6.7-1R	6.9-0.9R	7.1-0.9R	7.2-0.8R	7.3-0.8R	7.4-0.7R	7.5-0.7R	7.6-0.6R	
		F, no lap	-1+95.7R	0.8+76.4R	2+63.6R	2.7+54.9R	3.2+48.4R	3.8+43R	4.1+38.8R	4.5+35.3R	6.6+27.9R		
18"	q_a	1027	1023	954	963	969	920	931	939	901			
	F, lap	7.2-1.5R	7.4-1.3R	8.4-1.6R	8.4-1.4R	8.4-1.2R	9.1-1.4R	9.1-1.2R	9.1-1R	9.5-1.1R			
F, no lap	-0.2+95.3R	1.5+76.1R	3.4+62.9R	4+54.4R	4.4+48R	5.5+42.4R	5.7+38.3R	6+34.8R	8.6+27.4R				
24"	q_a	921	941	861	888	826	853	803	829	788			
	F, lap	8.3-2.2R	8.4-1.8R	9.5-2.2R	9.3-1.8R	10.3-2.1R	10.1-1.8R	10.8-1.9R	10.6-1.7R	11.2-1.6R			
F, no lap	0.9+94.6R	2.4+75.6R	4.6+62.3R	4.9+54R	6.2+47.1R	6.4+42R	7.6+37.6R	7.6+34.3R	10.2+26.9R				
36"	q_a	921	819	731	788	723	666	718	672	631			
	F, lap	8.3-2.2R	9.8-2.7R	11.2-3.3R	10.6-2.5R	11.8-2.9R	12.9-3.2R	12.2-2.6R	13.1-2.8R	13.9-2.6R			
F, no lap	0.9+94.6R	3.8+74.7R	6.2+61.3R	6.2+53.3R	7.7+46.3R	9.3+40.5R	8.9+37R	10.2+33.1R	13+25.9R				
48"	q_a	747	819	731	657	594	666	616	572	533			
	F, lap	10.2-3.5R	9.8-2.7R	11.2-3.3R	12.6-3.8R	14-4.2R	12.9-3.2R	14.1-3.5R	15.2-3.9R	16-3.5R			
F, no lap	2.7+93.3R	3.8+74.7R	6.2+61.3R	8.2+52R	10+45R	9.3+40.5R	10.8+36R	12.2+32.1R	15.1+25R				
60"	q_a	747	639	731	657	594	540	572	533				
	F, lap	10.2-3.5R	12-4.4R	11.2-3.3R	12.6-3.8R	14-4.2R	15.4-4.7R	16.8-5.2R	15.2-3.9R	16-3.5R			
F, no lap	2.7+93.3R	6.1+73R	6.2+61.3R	8.2+52R	10+45R	11.8+39R	13.5+34.4R	12.2+32.1R	15.1+25R				



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	3284	3270	3261	3254	3249	3230	2617	2162	1817			
		F, lap	3-0.2R	3.1-0.2R	3.1-0.1R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R
	6"	q _a	3108	3077	3055	3039	3025	3015	2617	2162	1817			
		F, lap	3.4-0.3R	3.5-0.3R	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	
	8"	q _a	2940	2935	2853	2863	2803	2817	2617	2162	1817			
		F, lap	3.7-0.5R	3.7-0.4R	3.9-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	4-0.3R	
	12"	q _a	2658	2572	2509	2461	2423	2392	2366	2162	1817			
		F, lap	4.1-0.7R	4.3-0.7R	4.5-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	4.9-0.6R	4.9-0.6R	5-0.5R	5-0.5R	
	18"	q _a	2447	2387	2147	2141	2136	1977	1990	2001	1817			
		F, lap	4.4-0.9R	4.6-0.9R	5.1-1.1R	5.2-1R	5.3-0.9R	5.7-1R	5.7-0.9R	5.7-0.9R	5.7-0.9R	6-0.8R	6-0.8R	
24"	q _a	2169	2156	1910	1939	1761	1803	1665	1710	1598				
	F, lap	4.9-1.2R	5-1.1R	5.6-1.4R	5.6-1.2R	6.1-1.4R	6.1-1.2R	6.5-1.3R	6.5-1.2R	6.8-1.1R	6.8-1.1R	6.8-1.1R		
36"	q _a	2169	1868	1629	1706	1536	1393	1477	1361	1238				
	F, lap	4.9-1.2R	5.6-1.5R	6.2-1.8R	6.2-1.6R	6.8-1.8R	7.3-2R	7.1-1.7R	7.6-1.9R	8-1.6R	8-1.6R	8-1.6R		
48"	q _a	1804	1868	1629	1438	1260	1393	1247	1123	1019				
	F, lap	5.5-1.7R	5.6-1.5R	6.2-1.8R	6.9-2.1R	7.6-2.4R	7.3-2R	7.9-2.2R	8.5-2.4R	8.8-2.1R	8.8-2.1R	8.8-2.1R		
60"	q _a	1804	1517	1629	1438	1260	1107	984	1123	1019				
	F, lap	5.5-1.7R	6.3-2.2R	6.2-1.8R	6.9-2.1R	7.6-2.4R	8.3-2.7R	9-2.9R	8.5-2.4R	8.8-2.1R	8.8-2.1R	8.8-2.1R		
16 36/7/4	4"	q _a	2605	2601	2597	2595	2593	2591	2590	2162	1817			
		F, lap	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	
	6"	q _a	2493	2481	2472	2466	2461	2457	2454	2162	1817			
		F, lap	3.5-0.3R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q _a	2375	2385	2337	2351	2316	2330	2303	2162	1817			
		F, lap	3.9-0.4R	3.9-0.3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.1-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	
	12"	q _a	2155	2112	2081	2057	2039	2025	2013	2003	1817			
		F, lap	4.5-0.7R	4.7-0.7R	4.8-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.2-0.4R	5.2-0.4R	
	18"	q _a	1973	1957	1777	1794	1807	1686	1709	1728	1637			
		F, lap	4.9-0.9R	5.1-0.9R	5.7-1R	5.7-0.9R	5.7-0.8R	6.2-0.9R	6.1-0.8R	6.1-0.7R	6.4-0.7R	6.4-0.7R	6.4-0.7R	
24"	q _a	1712	1751	1561	1617	1477	1533	1423	1476	1386				
	F, lap	5.6-1.4R	5.6-1.2R	6.4-1.4R	6.3-1.2R	6.9-1.3R	6.7-1.2R	7.2-1.3R	7.1-1.1R	7.4-1R	7.4-1R	7.4-1R		
36"	q _a	1712	1478	1291	1400	1265	1151	1249	1157	1076				
	F, lap	5.6-1.4R	6.5-1.7R	7.4-2.1R	7.1-1.6R	7.8-1.8R	8.5-2.1R	8-1.7R	8.6-1.7R	9.1-1.7R	9.1-1.7R	9.1-1.7R		
48"	q _a	1342	1478	1291	1141	1020	1151	1054	970	892				
	F, lap	6.7-2.2R	6.5-1.7R	7.4-2.1R	8.2-2.4R	9.1-2.7R	8.5-2.1R	9.2-2.3R	9.9-2.5R	10.34-2.2R	10.34-2.2R	10.34-2.2R		
60"	q _a	1342	1124	1291	1141	1020	820	970	892	892				
	F, lap	6.7-2.2R	7.8-2.7R	7.4-2.1R	8.2-2.4R	9.1-2.7R	10-3R	10.8-3.3R	9.9-2.5R	10.4-2.2R	10.4-2.2R	10.4-2.2R		
36/4	4"	q _a	1534	1533	1532	1532	1532	1532	1531	1531	1531			
		F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3-0.1R	3.3-0.1R	3.3-0R	3.3-0R	3.3-0R	
	6"	q _a	1507	1505	1503	1502	1501	1501	1500	1500	1499			
		F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	8"	q _a	1476	1480	1468	1473	1464	1468	1461	1465	1460			
		F, lap	4.1-0.3R	4-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.2R	
	12"	q _a	1406	1395	1388	1382	1377	1374	1371	1368	1366			
		F, lap	4.8-0.6R	5-0.6R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.3-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.4-0.3R	5.4-0.3R	
	18"	q _a	1337	1337	1266	1279	1288	1236	1249	1260	1220			
		F, lap	5.4-0.9R	5.5-0.8R	6.2-0.9R	6.1-0.8R	6.1-0.7R	6.6-0.8R	6.5-0.7R	6.4-0.6R	6.8-0.6R	6.8-0.6R	6.8-0.6R	
24"	q _a	1215	1247	1158	1194	1125	1160	1104	1137	1089				
	F, lap	6.4-1.4R	6.2-1.1R	7.1-1.3R	6.8-1.1R	7.5-1.2R	7.3-1R	7.8-1.1R	7.6-0.9R	8.0-0.9R	8.0-0.9R	8.0-0.9R		
36"	q _a	1215	1100	995	1075	997	927	999	942	890				
	F, lap	6.4-1.4R	7.4-1.8R	8.5-2.1R	7.9-1.6R	8.7-1.8R	9.6-2R	8.9-1.5R	9.6-1.6R	10.1-1.6R	10.1-1.6R	10.1-1.6R		
48"	q _a	990	1100	995	903	823	864	807	756	756				
	F, lap	8.1-2.6R	7.4-1.8R	8.5-2.1R	9.6-2.4R	10.6-2.8R	9.6-2R	10.4-2.2R	11.2-2.4R	11.9-2.2R	11.9-2.2R	11.9-2.2R		
60"	q _a	990	857	995	903	823	754	694	807	756				
	F, lap	8.1-2.6R	9.6-3.2R	8.5-2.1R	9.6-2.4R	10.6-2.8R	11.7-3.1R	12.7-3.4R	11.2-2.4R	11.9-2.2R	11.9-2.2R	11.9-2.2R		

B PANELS

2.4 DGB-36 & DGBF-36

Hilti X-EDN-19 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	q_a	1579	1548	1525	1507	1457	1151	932	771	647
		F, lap	6.9-0.9R	7.2-0.9R	7.4-0.9R	7.6-0.9R	7.7-0.8R	7.8-0.8R	7.9-0.8R	8-0.7R	8.1-0.6R
	F, no lap	4.1+36.2R	4.9+28.8R	5.5+23.9R	5.9+20.6R	6.2+18.1R	6.5+16R	6.7+14.4R	6.9+13.1R	7.7+10.3R	7.7+10.3R
	6"	q_a	1421	1369	1331	1301	1278	1151	932	771	647
		F, lap	7.6-1.4R	8-1.4R	8.3-1.4R	8.6-1.4R	8.8-1.4R	9-1.3R	9.2-1.3R	9.4-1.3R	9.4-1.1R
	F, no lap	4.7+35.8R	5.7+28.3R	6.4+23.4R	6.9+20R	7.3+17.5R	7.7+15.5R	7.9+13.9R	8.2+12.5R	9.1+9.9R	9.1+9.9R
	8"	q_a	1306	1268	1190	1176	1122	1118	932	771	647
		F, lap	8-1.7R	8.4-1.7R	9-1.8R	9.2-1.8R	9.7-1.8R	9.9-1.8R	10.2-1.8R	10.3-1.7R	10.5-1.5R
	F, no lap	5.1+35.5R	6.1+28R	7.1+22.9R	7.5+19.6R	8.1+17.1R	8.5+15R	9+13.4R	9.2+12.1R	10.2+9.5R	10.2+9.5R
	12"	q_a	1158	1072	1009	962	924	894	869	771	647
		F, lap	8.6-2.1R	9.3-2.4R	9.9-2.5R	10.5-2.6R	10.9-2.6R	11.4-2.7R	11.8-2.7R	12.1-2.7R	12.2-2.2R
	F, no lap	5.7+35.9R	7.2+27.4R	8.2+23.3R	8.8+18.8R	9.4+16.3R	10-14.1R	10.5+12.5R	11+11.1R	11.9+8.7R	11.9+8.7R
18"	q_a	1069	993	864	830	796	698	684	673	609	
	F, lap	8.9-2.4R	9.7-2.7R	10.8-3.2R	11.3-3.2R	11.8-3.2R	12.8-3.6R	13.1-3.6R	13.5-3.5R	14-3R	14-3R
F, no lap	6.1+34.7R	7.4+27.1R	8.9+21.6R	9.6+18.2R	10.3+15.7R	11.4+13.1R	11.8+11.6R	12.3+10.3R	13.6+7.9R	13.6+7.9R	
24"	q_a	969	907	764	736	632	625	553	554	500	
	F, lap	9.3-2.8R	10.1-3R	11.3-3.6R	11.8-3.7R	12.9-4.1R	13.3-4.1R	14.3-4.4R	14.6-4.3R	15.1-3.6R	15.1-3.6R
F, no lap	6.5+34.4R	7.8+26.7R	9.4+21.1R	10.1+17.8R	11.4+14.8R	12+12.7R	13+10.8R	13.5+9.5R	14.8+7.3R	14.8+7.3R	
36"	q_a	969	805	655	642	550	479	487	434	391	
	F, lap	9.3-2.8R	10.6-3.5R	11.9-4.2R	12.4-4.2R	13.6-4.6R	14.8-5.2R	15-5R	16.1-5.4R	16.6-4.4R	16.6-4.4R
F, no lap	6.5+34.4R	8.3+26.2R	10.2+20.6R	10.7+17.3R	12+14.3R	13.4+11.6R	13.8+10.2R	15+8.3R	16.2+6.5R	16.2+6.5R	
48"	q_a	857	805	655	548	468	479	422	375	336	
	F, lap	9.8-3.2R	10.6-3.5R	11.9-4.2R	13.1-4.8R	14.4-5.3R	14.8-5.2R	15.9-5.6R	17-6.2R	17.5-4.9R	17.5-4.9R
F, no lap	6.9+33.9R	8.3+26.2R	10.2+20.6R	11.4+16.7R	12.8+13.6R	13.4+11.6R	14.6+9.6R	15.9+7.6R	17.1+6R	17.1+6R	
60"	q_a	857	673	655	548	468	356	375	336	336	
	F, lap	9.8-3.2R	11.2-4R	11.9-4.2R	13.1-4.8R	14.4-5.3R	15.6-6R	16.8-6.4R	17-6.2R	17.5-4.9R	17.5-4.9R
F, no lap	6.9+33.9R	8.9+25.7R	10.2+20.6R	11.4+16.7R	12.8+13.6R	14.3+10.8R	15.6+8.8R	15.9+7.6R	17.1+6R	17.1+6R	
36/7/4	4"	q_a	1278	1264	1254	1246	1240	1151	932	771	647
		F, lap	7.4-0.9R	7.7-0.9R	7.8-0.8R	8-0.8R	8.1-0.7R	8.2-0.7R	8.3-0.6R	8.3-0.6R	8.4-0.5R
	F, no lap	4.6+36.2R	5.4+28.9R	5.9+24R	6.3+20.7R	6.5+18.2R	6.8+16.1R	7+14.6R	7.2+13.2R	8+10.4R	8+10.4R
	6"	q_a	1151	1124	1105	1090	1079	1070	932	771	647
		F, lap	8.3-1.4R	8.7-1.4R	9-1.4R	9.3-1.3R	9.5-1.2R	9.7-1.2R	9.8-1.1R	9.9-1.1R	10-0.9R
	F, no lap	5.5+35.7R	6.4+28.3R	7.1+23.4R	7.6+20.1R	8+17.7R	8.3+15.6R	8.6+14R	8.8+12.7R	9.6+10R	9.6+10R
	8"	q_a	1049	1038	985	986	949	954	926	771	647
		F, lap	9-1.8R	9.4-1.8R	10-1.9R	10.2-1.7R	10.7-1.8R	10.8-1.7R	11-1.7R	11.2-1.6R	11.4-1.4R
	F, no lap	6.1+35.3R	7.1+28R	8.1+22.9R	8.5+19.7R	9.1+17.1R	9.4+15.1R	9.9+13.5R	10+12.2R	11.1+9.6R	11.1+9.6R
	12"	q_a	908	857	820	793	771	754	728	647	647
		F, lap	9.9-2.5R	10.7-2.7R	11.4-2.8R	12-2.8R	12.5-2.8R	12.9-2.8R	13.3-2.7R	13.6-2.7R	13.7-2.2R
	F, no lap	7.1+34.6R	8.4+27R	9.5+22R	10.3+18.6R	10.9+16.1R	11.5+14R	12+12.5R	12.4+11.1R	13.4+8.7R	13.4+8.7R
18"	q_a	819	780	679	668	660	599	599	599	553	
	F, lap	10.5-3R	11.4-3.1R	12.8-3.8R	13.3-3.7R	13.8-3.6R	15-4R	15.3-3.8R	15.5-3.7R	16.3-3.3R	16.3-3.3R
F, no lap	7.7+34.2R	9.1+26.6R	10.9+21R	11.6+17.7R	12.2+15.3R	13.6+12.8R	14+11.3R	14.4+10.1R	15.9+7.6R	15.9+7.6R	
24"	q_a	715	694	598	598	525	534	476	488	444	
	F, lap	11.3-3.6R	12.1-3.7R	13.7-4.5R	14.2-4.3R	15.6-4.9R	15.9-4.7R	17.2-5.1R	17.4-4.8R	18.1-4.2R	18.1-4.2R
F, no lap	8.4+33.5R	9.8+26R	11.8+20.3R	12.5+17.1R	14.1+14R	14.5+12.1R	15.9+10.1R	16.2+9R	17.7+6.8R	17.7+6.8R	
36"	q_a	715	597	496	513	443	388	411	369	334	
	F, lap	11.3-3.6R	13.4-5R	14.8-5.4R	15.3-5.1R	16.8-5.8R	18.4-6.5R	18.4-6.5R	19.8-6.5R	20.6-5.4R	20.6-5.4R
F, no lap	8.4+33.5R	10.8+25.2R	12.9+19.3R	13.6+16.3R	15.2+13.1R	17+10.3R	17.1+9.3R	18.7+7.3R	20.2+5.5R	20.2+5.5R	
48"	q_a	596	597	496	419	361	388	345	309	280	
	F, lap	12.2-4.5R	13.4-5R	14.8-5.4R	16.5-6.2R	18.3-6.9R	18.4-6.5R	19.9-7R	21.4-7.7R	22.2-6.3R	22.2-6.3R
F, no lap	9.3+32.7R	10.8+25.2R	12.9+19.3R	14.8+15.2R	16.7+12R	17+10.3R	18.6+8.2R	20.3+6.1R	21.8+4.6R	21.8+4.6R	
60"	q_a	596	474	496	419	361	315	279	280	280	
	F, lap	12.2-4.5R	14.2-5.6R	14.8-5.4R	16.5-6.2R	18.3-6.9R	20-7.8R	21.7-8.4R	21.4-7.7R	22.2-6.3R	22.2-6.3R
F, no lap	9.3+32.7R	11.9+24.1R	12.9+19.3R	14.8+15.2R	16.7+12R	18.6+9R	20.4+6.8R	20.3+6.1R	21.8+4.6R	21.8+4.6R	
36/4	4"	q_a	802	799	797	796	794	793	793	771	647
		F, lap	7.8-0.8R	8-0.7R	8.2-0.7R	8.3-0.6R	8.4-0.6R	8.5-0.5R	8.5-0.5R	8.6-0.4R	8.6-0.4R
	F, no lap	-16.1+312R	-11.1+249.5R	-7.8+207.8R	-6+179.7R	-4.7+158.5R	-3.1+140.9R	-2.1+127.3R	-1.1+115.7R	5.5+91.7R	5.5+91.7R
	6"	q_a	760	753	748	744	741	739	737	735	647
		F, lap	9.1-1.4R	9.4-1.3R	9.7-1.2R	9.9-1.1R	10.1-1R	10.2-1R	10.3-0.9R	10.4-0.9R	10.5-0.8R
	F, no lap	-14.9+311.4R	-9.8+248.9R	-6.3+207.3R	-4.4+179.2R	-3+158R	-1.4+140.4R	-0.3+126.8R	0.7+115.2R	7.4+91.3R	7.4+91.3R
	8"	q_a	719	719	699	712	688	691	680	684	647
		F, lap	10-1.9R	10.3-1.7R	11-1.8R	11-1.8R	11.5-1.6R	11.5-1.6R	11.9-1.4R	11.9-1.3R	12.2-1.2R
	F, no lap	-14+310.9R	-8.9+248.5R	-5+206.8R	-3.3+178.8R	-1.5+157.5R	0+139.9R	1.3+126.3R	2.2+114.8R	9.1+90.9R	9.1+90.9R
	12"	q_a	650	630	615	604	595	588	582	577	573
		F, lap	11.4-2.8R	12.3-2.8R	12.9-2.8R	13.5-2.8R	13.9-2.7R	14.3-2.6R	14.7-2.5R	15-2.4R	15.1-2.1R
	F, no lap	-12.6+310R	-6.9+247.4R	-3+205.7R	-0.8+177.6R	0.9+156.4R	2.7+138.8R	4+125.2R	5.3+113.7R	12.9+90.1R	12.9+90.1R
18"	q_a	598	584	526	525	525	486	490	492	464	
	F, lap	12.4-3.5R	13.2-3.5R	15.1-4.2R	15.5-3.9R	15.8-3.7R	17.3-4.1R	17.4-3.8R	17.6-3.6R	18.6-3.3R	18.6-3.3R
F, no lap	-11.6+309.3R	-5.9+246.7R	-0.9+204.4R	1.2+176.4R	2.8+155.4R	5.7+137.2R	6.8+123.9R	7.9+112.5R	15.5+88.8R	15.5+88.8R	
24"	q_a	528	527	467	475	432	443	409	421	393	
	F, lap	13.7-4.5R	14.5-4.4R	16.6-5.2R	16.9-4.8R	18.6-5.4R	18.7-5R	20.3-5.4R	20.2-5R	21.2-4.5R	21.2-4.5R
F, no lap	-10.2+308.3R	-4.7+245.9R	0.6+203.3R	2.5+175.5R	5.6+153.7R	7.1+136.4R	9.6+122.3R	10.5+111.2R	18.2+87.7R	18.2+87.7R	
36"	q_a	528	455	397	417	371	325	354	317	287	
	F, lap	13.7-4.5R	16.1-5.6R	18.5-6.7R	18.6-6R	20.6-6.7R	22.7-7.6R	22.2-6.6R	24-7.2R	25.1-6.3R	25.1-6.3R
F, no lap	-10.2+308.3R	-3.1+244.6R	2.5+201.8R	4.3+174.3R	7.6+152.3R	11.1+133.8R	11.6+121.2R	14.3+108.9R	22.1+85.8R	22.1+85.8R	
48"	q_a	436	455	397	337	289	325	288	257	232	
	F, lap	15.5-6R	16.1-5.6R	18.5-6.7R	20.9-7.7R	23.2-8.7R	22.7-7.6R	24.6-8.2R	26.7-9R	27.8-7.6R	27.8-7.6R
F, no lap	-8.5+306.7R	-3.1+244.6R	2.5+201.8R	6.6+172.6R	10.1+150.4R	11.1+133.8R	14+119.5R	17+107.1R	24.8+84.5R	24.8+84.5R	
60"	q_a	436	360	397	337	289	252	232	232	232	
	F, lap	15.5-6R	18.4-7.5R	18.5-6.7R	20.9-7.7R	23.2-8.7R	25.6-9.7R	27.8-10.5R	26.7-9R	27.8-7.6R	27.8-7.6R
F, no lap	-8.5+306.7R	-0.8+242.7R	2.5+201.8R	6.6+172.6R	10.1+150.4R	14+131.6R	17.2+117.2R	17+107.1R	24.8+84.5R	24.8+84.5R	



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span																			
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"											
36/9	4"	q _a	1964	1936	1915	1900	1888	1514	1226	1013	852	q _a	1964	1936	1915	1900	1888	1514	1226	1013	852	
		F, lap	5.6-0.6R	5.8-0.6R	5.9-0.6R	6-0.5R	6.1-0.5R	6.2-0.5R	6.2-0.5R	6.2-0.5R	6.3-0.4R	6.3-0.4R	F, lap	5.6-0.6R	5.8-0.6R	5.9-0.6R	6-0.5R	6.1-0.5R	6.2-0.5R	6.2-0.5R	6.2-0.5R	6.3-0.4R
	6"	q _a	1786	1736	1699	1670	1648	1514	1226	1013	852	q _a	1786	1736	1699	1670	1648	1514	1226	1013	852	
		F, lap	6.2-1R	6.5-1R	6.7-1R	6.9-0.9R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.4-0.7R	7.4-0.7R	F, lap	6.2-1R	6.5-1R	6.7-1R	6.9-0.9R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.4-0.7R
	8"	q _a	1648	1615	1530	1520	1461	1461	1226	1013	852	q _a	1648	1615	1530	1520	1461	1461	1226	1013	852	
		F, lap	6.6-1.3R	6.9-1.2R	7.3-1.3R	7.4-1.2R	7.8-1.3R	7.9-1.2R	8.1-1.2R	8.2-1.1R	8.2-1.1R	8.3-1R	F, lap	6.6-1.3R	6.9-1.2R	7.3-1.3R	7.4-1.2R	7.8-1.3R	7.9-1.2R	8.1-1.2R	8.1-1.1R	8.2-1.1R
	12"	q _a	1461	1368	1300	1249	1208	1175	1148	1013	852	q _a	1461	1368	1300	1249	1208	1175	1148	1013	852	
		F, lap	7.1-1.7R	7.7-1.8R	8.2-1.9R	8.5-1.9R	8.9-1.9R	9.2-1.9R	9.5-1.9R	9.7-1.9R	9.8-1.5R	9.8-1.5R	F, lap	7.1-1.7R	7.7-1.8R	8.2-1.9R	8.5-1.9R	8.9-1.9R	9.2-1.9R	9.5-1.9R	9.7-1.9R	9.8-1.5R
	18"	q _a	1344	1264	1106	1075	1052	951	940	932	846	q _a	1344	1264	1106	1075	1052	951	940	932	846	
		F, lap	7.5-2R	8.1-2.1R	9.2-5R	9.4-2.5R	9.7-2.4R	10.5-2.7R	10.7-2.6R	10.9-2.6R	11.4-2.2R	11.4-2.2R	F, lap	7.5-2R	8.1-2.1R	9.2-5R	9.4-2.5R	9.7-2.4R	10.5-2.7R	10.7-2.6R	10.9-2.6R	11.4-2.2R
	24"	q _a	1208	1148	995	979	846	846	751	760	688	q _a	1208	1148	995	979	846	846	751	760	688	
		F, lap	7.9-2.3R	8.5-2.4R	9.5-2.9R	9.9-2.9R	10.8-3.2R	11-3.1R	11.8-3.4R	12.3-3R	12.5-2.8R	12.5-2.8R	F, lap	7.9-2.3R	8.5-2.4R	9.5-2.9R	9.9-2.9R	10.8-3.2R	11-3.1R	11.8-3.4R	12.3-3R	12.5-2.8R
36"	q _a	1208	1018	846	846	727	635	656	587	530	q _a	1208	1018	846	846	727	635	656	587	530		
	F, lap	7.9-2.3R	9-2.9R	10.2-3.5R	10.5-3.4R	11.5-3.7R	12.6-4.2R	12.6-3.9R	13.5-4.3R	13.9-3.6R	13.9-3.6R	F, lap	7.9-2.3R	9-2.9R	10.2-3.5R	10.5-3.4R	11.5-3.7R	12.6-4.2R	12.6-3.9R	13.5-4.3R	13.9-3.6R	13.9-3.6R
48"	q _a	1052	1018	846	710	609	635	562	501	451	q _a	1052	1018	846	710	609	635	562	501	451		
	F, lap	8.4-2.8R	9-2.9R	10.2-3.5R	11.2-4R	12.3-4.4R	12.5-4.2R	13.4-4.5R	14.4-5R	14.8-4.1R	14.8-4.1R	F, lap	8.4-2.8R	9-2.9R	10.2-3.5R	11.2-4R	12.3-4.4R	12.5-4.2R	13.4-4.5R	14.4-5R	14.8-4.1R	14.8-4.1R
60"	q _a	1052	846	846	710	609	530	467	501	451	q _a	1052	846	846	710	609	530	467	501	451		
	F, lap	8.4-2.8R	9.7-3.5R	10.2-3.5R	11.2-4R	12.3-4.4R	13.4-5R	14.4-5.4R	14.4-5R	14.8-4.1R	14.8-4.1R	F, lap	8.4-2.8R	9.7-3.5R	10.2-3.5R	11.2-4R	12.3-4.4R	13.4-5R	14.4-5.4R	14.4-5R	14.8-4.1R	14.8-4.1R
20 36/7/4	4"	q _a	1583	1571	1563	1556	1551	1514	1226	1013	852	q _a	1583	1571	1563	1556	1551	1514	1226	1013	852	
		F, lap	5.9-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	F, lap	5.9-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.5R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R
	6"	q _a	1448	1424	1406	1393	1382	1374	1226	1013	852	q _a	1448	1424	1406	1393	1382	1374	1226	1013	852	
		F, lap	6.7-1R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.7R	7.7-0.7R	7.7-0.6R	7.7-0.6R	F, lap	6.7-1R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.7R	7.7-0.7R	7.7-0.6R
	8"	q _a	1332	1326	1270	1274	1235	1243	1213	1013	852	q _a	1332	1326	1270	1274	1235	1243	1213	1013	852	
		F, lap	7.3-1.3R	7.5-1.2R	8-1.3R	8-1.1R	8.4-1.2R	8.4-1.1R	8.7-1R	8.7-1R	8.9-0.9R	8.9-0.9R	F, lap	7.3-1.3R	7.5-1.2R	8-1.3R	8-1.1R	8.4-1.2R	8.4-1.1R	8.7-1R	8.7-1R	8.9-0.9R
	12"	q _a	1160	1107	1068	1039	1017	998	984	971	852	q _a	1160	1107	1068	1039	1017	998	984	971	852	
		F, lap	8.1-1.9R	8.7-1.9R	9.2-2R	9.6-1.9R	9.9-1.9R	10.2-1.9R	10.4-1.8R	10.7-1.7R	10.7-1.5R	10.7-1.5R	F, lap	8.1-1.9R	8.7-1.9R	9.2-2R	9.6-1.9R	9.9-1.9R	10.2-1.9R	10.4-1.8R	10.7-1.7R	10.7-1.5R
	18"	q _a	1046	1008	884	877	872	796	800	803	748	q _a	1046	1008	884	877	872	796	800	803	748	
		F, lap	8.7-2.3R	9.3-2.3R	10.5-2.8R	10.8-2.7R	11.1-2.5R	12.1-2.9R	12.2-2.7R	12.3-2.3R	12.9-2.3R	12.9-2.3R	F, lap	8.7-2.3R	9.3-2.3R	10.5-2.8R	10.8-2.7R	11.1-2.5R	12.1-2.9R	12.2-2.7R	12.3-2.3R	12.9-2.3R
	24"	q _a	907	893	775	784	702	717	655	673	616	q _a	907	893	775	784	702	717	655	673	616	
		F, lap	9.5-2.9R	10.1-2.9R	11.4-3.5R	11.7-3.2R	12.8-3.6R	12.9-3.4R	13.9-3.7R	13.9-3.4R	14.6-3R	14.6-3R	F, lap	9.5-2.9R	10.1-2.9R	11.4-3.5R	11.7-3.2R	12.8-3.6R	12.9-3.4R	13.9-3.7R	13.9-3.4R	14.6-3R
36"	q _a	907	762	651	681	594	523	504	504	458	q _a	907	762	651	681	594	523	504	504	458		
	F, lap	9.5-2.9R	11-3.7R	12.5-4.4R	12.7-4R	14-4.5R	15.3-5R	15.1-4.4R	16.4-4.9R	16.9-4.2R	16.9-4.2R	F, lap	9.5-2.9R	11-3.7R	12.5-4.4R	12.7-4R	14-4.5R	15.3-5R	15.1-4.4R	16.4-4.9R	16.9-4.2R	16.9-4.2R
48"	q _a	742	762	651	551	476	523	465	418	379	q _a	742	762	651	551	476	523	465	418	379		
	F, lap	10.5-3.8R	11-3.7R	12.5-4.4R	14-5R	15.5-5.6R	15.3-5R	16.5-5.4R	17.8-6R	18.5-5R	18.5-5R	F, lap	10.5-3.8R	11-3.7R	12.5-4.4R	14-5R	15.5-5.6R	15.3-5R	16.5-5.4R	17.8-6R	18.5-5R	18.5-5R
60"	q _a	742	603	651	551	476	371	418	379	379	q _a	742	603	651	551	476	371	418	379	379		
	F, lap	10.5-3.8R	12.3-4.8R	12.5-4.4R	14-5R	15.5-5.6R	17-6.3R	18.4-6.8R	17.8-6R	18.5-5R	18.5-5R	F, lap	10.5-3.8R	12.3-4.8R	12.5-4.4R	14-5R	15.5-5.6R	17-6.3R	18.4-6.8R	17.8-6R	18.5-5R	18.5-5R
36/4	4"	q _a	974	972	970	969	968	967	966	966	852	q _a	974	972	970	969	968	967	966	966	966	852
		F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.4R	6.5-0.3R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R
	6"	q _a	933	927	923	920	918	916	914	913	852	q _a	933	927	923	920	918	916	914	913	852	
		F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	7.9-0.5R	8-0.5R	8-0.4R	8-0.4R	F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	7.9-0.5R	8-0.5R	8-0.4R
	8"	q _a	891	893	874	878	864	869	858	862	852	q _a	891	893	874	878	864	869	858	862	852	
		F, lap	8-1.3R	8.1-1.1R	8.6-1.1R	8.6-1R	8.9-1R	8.9-0.9R	9.2-0.9R	9.1-0.8R	9.3-0.7R	9.3-0.7R	F, lap	8-1.3R	8.1-1.1R	8.6-1.1R	8.6-1R	8.9-1R	8.9-0.9R	9.2-0.9R	9.1-0.8R	9.3-0.7R
	12"	q _a	816	797	783	772	764	757	747	747	743	q _a	816	797	783	772	764	757	747	747	743	
		F, lap	9.2-2R	9.8-1.9R	10.2-1.9R	10.6-1.8R	10.9-1.7R	11.1-1.7R	11.3-1.6R	11.5-1.5R	11.6-1.3R	11.6-1.3R	F, lap	9.2-2R	9.8-1.9R	10.2-1.9R	10.6-1.8R	10.9-1.7R	11.1-1.7R	11.3-1.6R	11.5-1.5R	11.6-1.3R
	18"	q _a	754	743	677	679	681	636	642	613	613	q _a	754	743	677	679	681	636	642	613	613	
		F, lap	10.1-2.6R	10.7-2.5R	12.1-2.9R	12.3-2.7R	12.5-2.5R	13.6-2.8R	13.6-2.5R	13.6-2.5R	14.4-2.2R	14.4-2.2R	F, lap	10.1-2.6R	10.7-2.5R	12.1-2.9R	12.3-2.7R	12.5-2.5R	13.6-2.8R	13.6-2.5R	13.6-2.5R	14.4-2.2R
	24"	q _a	668	673	602	617	565	582	540	557	523	q _a	668	673	602	617	565	582	540	557	523	
		F, lap	11.4-3.5R	11.8-3.2R	13.5-3.8R	13.5-3.4R	14.9-3.8R	14.8-3.4R	16.1-3.7R	15.8-3.3R	16.7-3.1R	16.7-3.1R	F, lap	11.4-3.5R	11.8-3.2R	13.5-3.8R	13.5-3.4R	14.9-3.8R	14.8-3.4R	16.1-3.7R	15.8-3.3R	16.7-3.1R
36"	q _a	668	581	510	542	491	457	479	443	402	q _a	668	581	510	542	491	457	479	443	402		
	F, lap	11.4-3.5R	13.4-4.3R	15.4-5.2R	15.1-4.4R	16.8-5R	18.4-5.6R	17.8-4.7R	19.2-5.2R	20.2-4.6R	20.2-4.6R	F, lap	11.4-3.5R									

2.4 DGB-36 & DGBF-36

Hilti X-EDN-19 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
18	36/9	4"	q_a	2722	2701	2685	2673	2664	2317	1877	1551	1303
			F, lap	4-0.3R	4-1.0.3R	4-1-0.3R	4-2-0.3R	4-2-0.2R	4-3-0.2R	4-3-0.2R	4-3-0.2R	4-3-0.2R
		F, no lap	3.1+11.2R	3.4+8.9R	3.6+7.4R	3.7+6.4R	3.7+5.6R	3.8+5R	3.9+4.5R	3.9+4.1R	4.2+3.2R	
		6"	q_a	2525	2481	2449	2425	2406	2317	1877	1551	1303
			F, lap	4.4-0.5R	4.6-0.5R	4.7-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5-0.4R	5-0.4R	5-0.3R
		F, no lap	3.6+11R	3.9+8.7R	4.1+7.2R	4.3+6.2R	4.4+5.4R	4.5+4.8R	4.6+4.3R	4.6+3.9R	4.9+3.1R	
		8"	q_a	2355	2335	2242	2243	2177	2185	1877	1551	1303
			F, lap	4.8-0.7R	4.9-0.7R	5.2-0.7R	5.2-0.6R	5.4-0.6R	5.4-0.6R	5.6-0.6R	5.6-0.5R	5.7-0.5R
		F, no lap	3.9+10.8R	4.2+8.5R	4.6+7R	4.7+6R	4.9+5.2R	5+4.6R	5.2+4.1R	5.2+3.7R	5.6+2.9R	
		12"	q_a	2100	2002	1929	1874	1830	1795	1766	1551	1303
			F, lap	5.3-1.1R	5.6-1.1R	5.9-1.1R	6.1-1.1R	6.3-1.1R	6.4-1R	6.6-1R	6.7-1R	6.7-0.8R
		F, no lap	4.4+10.4R	4.9+8.1R	5.3+6.6R	5.6+5.5R	5.8+4.8R	6+4.2R	6.2+3.7R	6.3+3.3R	6.6+2.6R	
	18"	q_a	1927	1849	1637	1614	1597	1463	1463	1464	1303	
		F, lap	5.6-1.3R	6-1.3R	6.6-1.6R	6.8-1.5R	7-1.4R	7.5-1.6R	7.6-1.5R	7.6-1.4R	8-1.3R	
	F, no lap	4.7+10.2R	5.2+7.9R	6+6.1R	6.3+5.1R	6.5+4.4R	7.1+3.6R	7.2+3.2R	7.3+2.8R	7.9+2.1R		
	24"	q_a	1715	1669	1461	1462	1316	1333	1222	1246	1139	
		F, lap	6.1-1.7R	6.4-1.6R	7.1-2R	7.3-1.8R	7.9-2.1R	8-1.9R	8.6-2.1R	8.6-1.9R	9-1.7R	
	F, no lap	5.2+9.8R	5.7+7.6R	6.6+5.7R	6.8+4.8R	7.5+3.8R	7.6+3.3R	8.2+2.6R	8.2+2.3R	8.8+1.7R		
	36"	q_a	1715	1460	1262	1293	1137	998	1054	948	859	
		F, lap	6.1-1.7R	6.9-2.1R	7.8-2.5R	7.9-2.3R	8.6-2.5R	9.4-2.9R	9.3-2.5R	9.9-2.8R	10.3-2.4R	
	F, no lap	5.2+9.8R	6.2+7.1R	7.2+5.2R	7.4+4.4R	8.1+3.3R	9+2.3R	8.9+2.2R	9.6+1.5R	10.2+1R		
	48"	q_a	1458	1460	1262	1076	927	998	886	795	719	
		F, lap	6.7-2.2R	6.9-2.1R	7.8-2.5R	8.7-2.9R	9.5-3.2R	9.4-2.9R	10.1-3.1R	10.8-3.4R	11.2-2.9R	
	F, no lap	5.8+9.3R	6.2+7.1R	7.2+5.2R	8.1+3.8R	9+2.6R	9+2.3R	9.7+1.6R	10.5+0.9R	11.1+0.5R		
60"	q_a	1458	1216	1076	927	811	718	795	719	719		
	F, lap	6.7-2.2R	7.7-2.7R	7.8-2.5R	8.7-2.9R	9.5-3.2R	10.4-3.6R	11.2-3.9R	10.8-3.4R	11.2-2.9R		
F, no lap	5.8+9.3R	7+6.5R	7.2+5.2R	8.1+3.8R	9+2.6R	9.9+1.6R	10.8+0.8R	10.5+0.9R	11.1+0.5R			
36/7/4	4"	q_a	2177	2169	2163	2159	2155	2152	1877	1551	1303	
		F, lap	4-1-0.3R	4-2-0.2R	4-3-0.2R	4-3-0.2R	4-3-0.2R	4-3-0.2R	4-4-0.2R	4.4-0.1R	4.4-0.1R	
		F, no lap	3.3+11.2R	3.5+9R	3.7+7.4R	3.8+6.4R	3.8+5.7R	3.9+5R	4+4.1R	4+4.1R	4.3+3.3R	
		6"	q_a	2041	2021	2007	1997	1989	1982	1877	1551	1303
			F, lap	4.7-0.5R	4.8-0.5R	4.9-0.4R	5-0.4R	5-0.4R	5-1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.3R
		F, no lap	3.8+11R	4.1+8.7R	4.3+7.3R	4.5+6.2R	4.6+5.5R	4.7+4.9R	4.7+4.4R	4.8+4R	5.1+3.1R	
	8"	q_a	1910	1913	1855	1866	1825	1837	1805	1551	1303	
		F, lap	5.2-0.7R	5.2-0.6R	5.5-0.6R	5.5-0.5R	5.7-0.5R	5.7-0.5R	5.8-0.5R	5.8-0.4R	5.9-0.4R	
	F, no lap	4.3+10.8R	4.5+8.6R	4.9+7R	5+6.1R	5.2+5.3R	5.2+4.7R	5.4+4.2R	5.4+3.8R	5.8+3R		
	12"	q_a	1692	1639	1600	1571	1548	1530	1515	1503	1303	
		F, lap	5.9-1.1R	6.2-1.1R	6.4-1.1R	6.6-1R	6.8-1R	6.9-0.9R	7-0.9R	7.1-0.8R	7.2-0.7R	
	F, no lap	5+10.4R	5.5+8.1R	5.9+6.6R	6.1+5.6R	6.3+4.9R	6.5+4.3R	6.7+3.8R	6.8+3.4R	7.1+2.7R		
18"	q_a	1532	1501	1337	1341	1345	1238	1252	1263	1185		
	F, lap	6.4-1.4R	6.7-1.4R	7.5-1.7R	7.6-1.5R	7.7-1.4R	8.4-1.6R	8.4-1.4R	8.4-1.3R	8.8-1.2R		
F, no lap	5.5+10R	6+7.8R	6.9+6R	7.1+5.1R	7.2+4.5R	7.9+3.6R	8+3R	8+3R	8.7+2.1R			
24"	q_a	1323	1332	1169	1199	1083	1118	1028	1063	991		
	F, lap	7.1-2R	7.4-1.8R	8.3-2.2R	8.3-1.9R	9.1-2.2R	9.1-1.9R	9.8-2.1R	9.6-1.9R	10.1-1.7R		
F, no lap	6.3+9.5R	6.6+7.4R	7.7+5.5R	7.8+4.7R	8.7+3.7R	8.6+3.3R	9.4+2.6R	9.3+2.4R	10+1.7R			
36"	q_a	1323	1125	972	1036	928	839	901	830	756		
	F, lap	7.1-2R	8.3-2.5R	9.4-3R	9.2-2.5R	10.2-2.8R	11.1-3.2R	10.7-2.6R	11.6-2.9R	12.1-2.6R		
F, no lap	6.3+9.5R	7.6+6.7R	8.8+4.7R	8.7+4.1R	9.7+3R	10.7+2R	10.4+2.1R	11.2+1.4R	12+0.8R			
48"	q_a	1056	1125	972	853	743	839	751	677	616		
	F, lap	8.2-2.9R	8.3-2.5R	9.4-3R	10.5-3.4R	11.6-3.8R	11.1-3.2R	12-3.4R	13-3.8R	13.6-3.3R		
F, no lap	7.3+8.6R	7.6+6.7R	8.8+4.7R	10+3.2R	11.1+2R	10.7+2R	11.6+1.3R	12.6+0.5R	13.5+0.1R			
60"	q_a	1056	877	972	853	743	654	583	677	616		
	F, lap	8.2-2.9R	9.6-3.6R	9.4-3R	10.5-3.4R	11.6-3.8R	12.7-4.3R	13.8-4.6R	13-3.8R	13.6-3.3R		
F, no lap	7.3+8.6R	8.9+5.6R	8.8+4.7R	10+3.2R	11.1+2R	12.3+0.9R	13.4+0.1R	12.6+0.5R	13.5+0.1R			
36/4	4"	q_a	1305	1304	1303	1302	1301	1301	1301	1300	1300	
		F, lap	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	
		F, no lap	-3.2+96.6R	-1.6+77.2R	-0.6+64.4R	-0.1+55.7R	0.4+49.1R	0.8+43.6R	1.1+39.4R	1.4+35.8R	3.5+28.4R	
		6"	q_a	1269	1265	1262	1260	1259	1258	1257	1256	1255
			F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.1-0.3R	5.2-0.3R	5.2-0.2R	5.2-0.2R	5.3-0.2R	5.3-0.2R
		F, no lap	-2.5+96.4R	-0.9+77.1R	0.1+64.2R	0.7+55.5R	1.1+49R	1.6+43.5R	1.9+39.3R	2.3+35.7R	4.3+28.3R	
	8"	q_a	1229	1233	1216	1221	1209	1214	1205	1210	1202	
		F, lap	5.5-0.6R	5.5-0.5R	5.8-0.5R	5.7-0.4R	5.9-0.4R	5.9-0.4R	6-0.4R	6-0.3R	6.1-0.3R	
	F, no lap	-1.9+96.2R	-0.4+76.9R	0.8+64R	1.3+55.4R	1.9+48.8R	2.3+43.4R	2.7+39.2R	3+35.6R	5.1+28.2R		
	12"	q_a	1148	1132	1121	1112	1105	1100	1095	1091	1088	
		F, lap	6.4-1.1R	6.7-1R	6.9-0.9R	7.1-0.9R	7.2-0.8R	7.3-0.8R	7.4-0.7R	7.5-0.7R	7.6-0.6R	
	F, no lap	-1+95.7R	0.8+76.4R	2+63.6R	2.7+54.9R	3.2+48.4R	3.8+43R	4.1+38.8R	4.5+35.3R	6.6+27.9R		
18"	q_a	1075	1070	994	1002	1008	955	966	974	933		
	F, lap	7.2-1.5R	7.4-1.3R	8.4-1.6R	8.4-1.4R	8.4-1.2R	9.1-1.4R	9-1.2R	9-1.1R	9.5-1.1R		
F, no lap	-0.2+95.3R	1.5+76.1R	3.4+62.9R	4+54.4R	4.4+48R	5.5+42.4R	5.7+38.3R	6+34.8R	8.6+27.4R			
24"	q_a	961	981	894	921	855	883	829	856	811		
	F, lap	8.3-2.2R	8.4-1.8R	9.5-2.2R	9.3-1.8R	10.3-2.1R	10-1.8R	10.8-1.9R	10.6-1.7R	11.2-1.6R		
F, no lap	0.9+94.6R	2.4+75.6R	4.6+62.3R	4.9+54R	6.2+47.1R	6.4+42R	7.6+37.6R	7.6+34.3R	10.2+26.9R			
36"	q_a	961	852	758	816	747	686	740	691	647		
	F, lap	8.3-2.2R	9.8-2.7R	11.2-3.3R	10.6-2.5R	11.8-2.9R	12.9-3.2R	12.2-2.6R	13.1-2.8R	13.9-2.6R		
F, no lap	0.9+94.6R	3.8+74.7R	6.2+61.3R	6.2+53.3R	7.7+46.3R	9.3+40.5R	8.9+37R	10.2+33.1R	13+25.9R			
48"	q_a	780	852	758	679	613	686	634	588	541		
	F, lap	10.2-3.5R	9.8-2.7R	11.2-3.3R	12.6-3.8R	14.4-2R	12.9-3.2R	14.1-3.5R	15.2-3.9R	16-3.5R		
F, no lap	2.7+93.3R	3.8+74.7R	6.2+61.3R	8.2+52R	10+45R	9.3+40.5R	10.8+36R	12.2+32.1R	15.1+25R			
60"	q_a	780	666	758	679	613	555	493	588	541		
	F, lap	10.2-3.5R	12-4.4R	11.2-3.3R	12.6-3.8R	14.4-2R	15.4-4.7R	16.8-5.2R	15.2-3.9R	16-3.5R		
F, no lap	2.7+93.3R	6.1+73R	6.2+61.3R	8.2+52R	10+45R	11.8+39R	13.5+34.4R	12.2+32.1R	15.1+25R			



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	3469	3453	3441	3432	3426	3230	2617	2162	1817			
		F, lap	3.0-2R	3.1-0.2R	3.1-0.1R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R
	6"	q _a	3270	3234	3207	3187	3172	3159	2617	2162	1817			
		F, lap	3.4-0.3R	3.5-0.3R	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R
	8"	q _a	3084	3075	2983	2991	2924	2938	2617	2162	1817			
		F, lap	3.7-0.5R	3.7-0.4R	3.9-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4-0.3R	4-1-0.3R	4-1-0.3R	4-2-0.3R	4-2-0.3R	4-2-0.3R
	12"	q _a	2779	2681	2610	2555	2511	2476	2447	2162	1817			
		F, lap	4.1-0.7R	4.3-0.7R	4.5-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	4.9-0.6R	4.9-0.6R	5-0.5R	5-0.5R	5-0.5R
	18"	q _a	2556	2485	2227	2216	2208	2039	2050	2059	1817			
		F, lap	4.4-0.9R	4.6-0.9R	5.1-1.1R	5.2-1R	5.3-0.9R	5.7-1R	5.7-0.9R	5.7-0.9R	5.7-0.9R	6-0.8R	6-0.8R	6-0.8R
24"	q _a	2265	2243	1981	2006	1818	1858	1713	1757	1640				
	F, lap	4.9-1.2R	5-1.1R	5.6-1.4R	5.6-1.2R	6.1-1.4R	6.1-1.2R	6.5-1.3R	6.5-1.2R	6.8-1.1R	6.8-1.1R	6.8-1.1R	6.8-1.1R	
36"	q _a	2265	1946	1694	1766	1587	1432	1521	1387	1261				
	F, lap	4.9-1.2R	5.6-1.5R	6.2-1.8R	6.2-1.6R	6.8-1.8R	7.3-2R	7.1-1.7R	7.6-1.9R	8-1.6R	8-1.6R	8-1.6R	8-1.6R	
48"	q _a	1892	1946	1694	1493	1298	1432	1276	1148	1042				
	F, lap	5.5-1.7R	5.6-1.5R	6.2-1.8R	6.9-2.1R	7.6-2.4R	7.3-2R	7.9-2.2R	8.5-2.4R	8.8-2.1R	8.8-2.1R	8.8-2.1R	8.8-2.1R	
60"	q _a	1892	1588	1694	1493	1298	1140	1013	1148	1042				
	F, lap	5.5-1.7R	6.3-2.2R	6.2-1.8R	6.9-2.1R	7.6-2.4R	8.3-2.7R	9-2.9R	8.5-2.4R	8.8-2.1R	8.8-2.1R	8.8-2.1R	8.8-2.1R	
16 36/7/4	4"	q _a	2757	2751	2746	2743	2741	2739	2617	2162	1817			
		F, lap	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R
	6"	q _a	2628	2613	2602	2594	2588	2583	2579	2162	1817			
		F, lap	3.5-0.3R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R
	8"	q _a	2494	2504	2449	2464	2424	2439	2408	2162	1817			
		F, lap	3.9-0.4R	3.9-0.3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.1-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R
	12"	q _a	2251	2202	2166	2139	2118	2101	2087	2075	1817			
		F, lap	4.5-0.7R	4.7-0.7R	4.8-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.2-0.4R	5.2-0.4R	5.2-0.4R
	18"	q _a	2055	2035	1840	1856	1868	1737	1761	1779	1682			
		F, lap	4.9-0.9R	5.1-0.9R	5.7-1R	5.7-0.9R	5.7-0.8R	6.2-0.9R	6.1-0.8R	6.1-0.7R	6.4-0.7R	6.4-0.7R	6.4-0.7R	6.4-0.7R
24"	q _a	1780	1816	1613	1668	1520	1576	1460	1514	1419				
	F, lap	5.6-1.4R	5.6-1.2R	6.4-1.4R	6.3-1.2R	6.9-1.3R	6.7-1.2R	7.2-1.3R	7.1-1.1R	7.4-1R	7.4-1R	7.4-1R	7.4-1R	
36"	q _a	1780	1532	1335	1443	1301	1182	1281	1184	1100				
	F, lap	5.6-1.4R	6.5-1.7R	7.4-2.1R	7.1-1.6R	7.8-1.8R	8.5-2.1R	8-1.7R	8.6-1.8R	9.1-1.7R	9.1-1.7R	9.1-1.7R	9.1-1.7R	
48"	q _a	1400	1532	1335	1178	1051	1182	1081	995	907				
	F, lap	6.7-2.2R	6.5-1.7R	7.4-2.1R	8.2-2.4R	9.1-2.7R	8.5-2.1R	9.2-2.3R	9.9-2.5R	10.4-2.2R	10.4-2.2R	10.4-2.2R	10.4-2.2R	
60"	q _a	1400	1170	1335	1178	1051	838	995	907	907				
	F, lap	6.7-2.2R	7.8-2.7R	7.4-2.1R	8.2-2.4R	9.1-2.7R	10-3R	10.8-3.3R	9.9-2.5R	10.4-2.2R	10.4-2.2R	10.4-2.2R	10.4-2.2R	
36/4	4"	q _a	1628	1627	1626	1626	1625	1625	1625	1625	1625			
		F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3-0.1R	3.3-0.1R	3.3-0R	3.3-0R	3.3-0R	3.3-0R
	6"	q _a	1597	1594	1592	1591	1590	1589	1588	1588	1587			
		F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R
	8"	q _a	1560	1565	1551	1556	1546	1551	1543	1547	1540			
		F, lap	4.1-0.3R	4-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.2R
	12"	q _a	1481	1468	1459	1452	1447	1442	1439	1436	1433			
		F, lap	4.8-0.6R	5-0.6R	5.1-0.5R	5.2-0.5R	5.2-0.4R	5.3-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.4-0.3R	5.4-0.3R	5.4-0.3R
	18"	q _a	1403	1403	1323	1336	1346	1288	1302	1313	1269			
		F, lap	5.4-0.9R	5.5-0.8R	6.2-0.9R	6.1-0.8R	6.1-0.7R	6.6-0.8R	6.5-0.7R	6.4-0.6R	6.8-0.6R	6.8-0.6R	6.8-0.6R	6.8-0.6R
24"	q _a	1271	1303	1206	1244	1168	1205	1144	1178	1126				
	F, lap	6.4-1.4R	6.2-1.1R	7.1-1.3R	6.8-1.1R	7.5-1.2R	7.3-1R	7.8-1.1R	7.6-0.9R	8-0.9R	8-0.9R	8-0.9R	8-0.9R	
36"	q _a	1271	1145	1032	1115	1032	957	1031	971	915				
	F, lap	6.4-1.4R	7.4-1.8R	8.5-2.1R	7.9-1.6R	8.7-1.8R	9.6-2R	8.9-1.5R	9.6-1.6R	10.1-1.6R	10.1-1.6R	10.1-1.6R	10.1-1.6R	
48"	q _a	1034	1145	1032	934	850	957	890	830	776				
	F, lap	8.1-2.6R	7.4-1.8R	8.5-2.1R	9.6-2.4R	10.6-2.8R	9.6-2R	10.4-2.2R	11.2-2.4R	11.9-2.2R	11.9-2.2R	11.9-2.2R	11.9-2.2R	
60"	q _a	1034	892	1032	934	850	777	714	830	776				
	F, lap	8.1-2.6R	9.6-3.2R	8.5-2.1R	9.6-2.4R	10.6-2.8R	11.7-3.1R	12.7-3.4R	11.2-2.4R	11.9-2.2R	11.9-2.2R	11.9-2.2R	11.9-2.2R	

B PANELS

2.4 DGB-36 & DGBF-36

Hilti X-ENP-19 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	q_a	1595	1562	1538	1520	1457	1151	932	771	647
		F, lap	6.3-0.9R	6.6-0.9R	6.8-0.9R	7-0.9R	7.1-0.9R	7.3-0.9R	7.4-0.9R	7.5-0.9R	7.6-0.9R
	F, no lap	3.4+36.3R	4.3+28.8R	4.9+23.8R	5.3+20.5R	5.6+18R	5.9+15.9R	6.1+14.3R	6.4+12.9R	7.2+10.2R	
	6"	q_a	1434	1381	1341	1311	1287	1151	932	771	647
		F, lap	6.6-1.2R	7-1.3R	7.4-1.3R	7.6-1.4R	7.9-1.4R	8.1-1.4R	8.3-1.4R	8.5-1.4R	8.5-1.1R
	F, no lap	3.8+36R	4.8+28.5R	5.5+23.4R	5.9+20.1R	6.3+17.5R	6.7+15.4R	7+13.8R	7.3+12.4R	8.2+9.8R	
	8"	q_a	1318	1278	1199	1184	1130	1125	932	771	647
		F, lap	6.9-1.3R	7.3-1.4R	7.7-1.6R	8-1.6R	8.4-1.7R	8.6-1.7R	9-1.8R	9.1-1.7R	9.3-1.4R
	F, no lap	4+35.8R	5+28.3R	5.9+23.2R	6.3+19.8R	6.9+17.2R	7.3+15.1R	7.7+13.4R	8+12.1R	8.9+9.5R	
	12"	q_a	1169	1081	1017	968	930	899	874	771	647
F, lap		7.1-1.6R	7.7-1.8R	8.2-2R	8.7-2.1R	9.1-2.2R	9.5-2.3R	9.9-2.4R	10.2-2.4R	10.3-2R	
F, no lap	4.3+35.6R	5.4+27.9R	6.3+22.8R	7+19.3R	7.6+16.7R	8.1+14.5R	8.6+12.8R	9.1+11.4R	9.9+9R		
18"	q_a	1079	1002	871	834	800	701	687	676	612	
	F, lap	7.3-1.7R	7.9-2R	8.6-2.4R	9.1-2.5R	9.6-2.6R	10.2-2.9R	10.6-2.9R	10.9-3R	11.2-2.5R	
F, no lap	4.4+35.4R	5.6+27.8R	6.7+22.4R	7.4+18.9R	8+16.3R	8.9+13.9R	9.3+12.3R	9.8+10.8R	10.9+8.5R		
24"	q_a	979	915	770	740	636	628	556	556	502	
	F, lap	7.5-1.9R	8.1-2.1R	8.9-2.6R	9.4-2.7R	10.1-3R	10.5-3.1R	11.2-3.4R	11.5-3.4R	11.8-2.8R	
F, no lap	4.6+35.3R	5.8+27.6R	7+22.2R	7.7+18.7R	8.5+15.9R	9.1+13.7R	9.9+11.8R	10.4+10.4R	11.4+8.2R		
36"	q_a	979	811	661	647	554	482	490	437	393	
	F, lap	7.5-1.9R	8.3-2.3R	9.1-2.8R	9.6-2.9R	10.4-3.3R	11.2-3.7R	11.5-3.6R	12.2-4R	12.5-3.2R	
F, no lap	4.6+35.3R	6+27.4R	7.2+22R	7.9+18.5R	8.8+15.6R	9.8+13.1R	10.2+11.5R	11.1+9.8R	12.1+7.8R		
48"	q_a	867	811	661	553	472	482	424	377	338	
	F, lap	7.7-2.1R	8.3-2.3R	9.1-2.8R	9.9-3.2R	10.7-3.6R	11.2-3.7R	11.9-4R	12.6-4.3R	12.9-3.4R	
F, no lap	4.8+35.1R	6+27.4R	7.2+22R	8.2+18.2R	9.2+15.3R	9.8+13.1R	10.6+11.2R	11.5+9.4R	12.5+7.5R		
60"	q_a	867	680	661	553	472	409	377	377	338	
	F, lap	7.7-2.1R	8.5-2.6R	9.1-2.8R	9.9-3.2R	10.7-3.6R	11.5-4R	12.3-4.3R	12.6-4.3R	12.9-3.4R	
F, no lap	4.8+35.1R	6.3+27.1R	7.2+22R	8.2+18.2R	9.2+15.3R	10.2+12.8R	11+10.9R	11.5+9.4R	12.5+7.5R		
36/7/4	4"	q_a	1291	1276	1265	1257	1251	1151	932	771	647
		F, lap	6.8-0.9R	7.1-0.9R	7.3-0.9R	7.5-0.9R	7.6-0.9R	7.7-0.8R	7.8-0.8R	7.9-0.8R	8-0.6R
	F, no lap	3.9+36.2R	4.8+28.8R	5.4+23.8R	5.8+20.5R	6.1+18R	6.4+16R	6.6+14.4R	6.8+13R	7.6+10.3R	
	6"	q_a	1161	1133	1114	1099	1087	1078	932	771	647
		F, lap	7.4-1.3R	7.8-1.4R	8.1-1.4R	8.4-1.4R	8.6-1.4R	8.8-1.4R	9-1.3R	9.2-1.3R	9.3-1.1R
	F, no lap	4.5+35.8R	5.5+28.3R	6.2+23.4R	6.7+20R	7.1+17.5R	7.5+15.4R	7.8+13.9R	8+12.5R	8.9+9.9R	
	8"	q_a	1058	1046	992	992	956	960	932	771	647
		F, lap	7.7-1.6R	8.2-1.7R	8.7-1.8R	9-1.8R	9.4-1.8R	9.6-1.8R	10-1.8R	10.1-1.7R	10.3-1.5R
	F, no lap	4.9+35.5R	5.9+28.1R	6.8+23R	7.3+19.7R	7.9+17.1R	8.2+15R	8.7+13.4R	8.9+12.1R	9.9+9.5R	
	12"	q_a	915	863	826	797	776	758	742	647	647
F, lap		8.2-2R	8.9-2.2R	9.5-2.4R	10.1-2.5R	10.5-2.6R	11-2.6R	11.3-2.6R	11.7-2.7R	11.8-2.2R	
F, no lap	5.4+35.1R	6.6+27.5R	7.6+22.3R	8.4+18.9R	9+16.3R	9.6+14.2R	10.1+12.5R	10.6+11.1R	11.5+8.8R		
18"	q_a	826	786	683	672	664	602	602	602	555	
	F, lap	8.5-2.3R	9.2-2.5R	10.3-3R	10.8-3.1R	11.3-3.1R	12.2-3.5R	12.5-3.4R	12.9-3.4R	13.4-2.9R	
F, no lap	5.7+34.9R	7+27.2R	8.4+21.8R	9.1+18.3R	9.7+15.8R	10.8+13.3R	11.3+11.7R	11.7+10.4R	13+8.8R		
24"	q_a	721	699	602	602	527	536	478	490	445	
	F, lap	8.9-2.6R	9.6-2.8R	10.7-3.4R	11.3-3.5R	12.2-3.9R	12.7-3.9R	13.6-4.2R	13.9-4.2R	14.4-3.5R	
F, no lap	6+34.6R	7.3+26.9R	8.8+21.4R	9.6+18R	10.7+15R	11.3+12.9R	12.3+11R	12.8+9.6R	14+7.5R		
36"	q_a	721	602	500	516	445	391	412	371	336	
	F, lap	8.9-2.6R	10-3.2R	11.2-3.8R	11.8-3.9R	12.8-4.3R	13.9-4.9R	14.2-4.7R	15.2-5.1R	15.6-4.2R	
F, no lap	6+34.6R	7.8+26.5R	9.3+20.9R	10.1+17.5R	11.3+14.6R	12.5+11.9R	12.9+10.5R	14.1+8.7R	15.2+6.8R		
48"	q_a	602	602	500	422	363	391	311	281	261	
	F, lap	9.2-2.9R	10-3.2R	11.2-3.8R	12.3-4.4R	13.5-4.9R	13.9-4.9R	14.9-5.2R	16-5.8R	16.4-4.6R	
F, no lap	6.4+34.2R	7.8+26.5R	9.3+20.9R	10.6+17R	11.9+14R	12.5+11.9R	13.6+9.9R	14.8+8R	16+6.3R		
60"	q_a	602	478	500	422	363	318	281	311	281	
	F, lap	9.2-2.9R	10.5-3.7R	11.2-3.8R	12.3-4.4R	13.5-4.9R	14.6-5.5R	15.7-5.9R	16-5.8R	16.4-4.6R	
F, no lap	6.4+34.2R	8.2+26R	9.3+20.9R	10.6+17R	11.9+14R	13.3+11.3R	14.4+9.3R	14.8+8R	16+6.3R		
36/4	4"	q_a	811	808	806	804	803	802	801	771	647
		F, lap	7.3-0.9R	7.5-0.9R	7.7-0.8R	7.9-0.8R	8-0.7R	8.1-0.7R	8.2-0.7R	8.3-0.6R	8.3-0.5R
	F, no lap	-16.7+311.8R	-11.6+249.3R	-8.2+207.7R	-6.4+179.5R	-5+158.3R	-3.5+140.7R	-2.5+127.1R	-1.4+115.5R	5.2+91.6R	
	6"	q_a	768	761	756	752	749	746	744	742	647
		F, lap	8.1-1.4R	8.5-1.4R	8.9-1.4R	9.1-1.3R	9.3-1.3R	9.5-1.2R	9.7-1.2R	9.8-1.1R	9.9-1R
	F, no lap	-15.8+311.4R	-10.6+248.8R	-7.1+207.1R	-5.2+179R	-3.7+157.8R	-2.1+140.1R	-1+126.6R	0.1+115R	6.8+91.1R	
	8"	q_a	726	726	706	708	694	697	686	690	647
		F, lap	8.7-1.8R	9.1-1.8R	9.8-1.9R	10-1.8R	10.4-1.8R	10.5-1.7R	10.9-1.7R	11-1.6R	11.2-1.4R
	F, no lap	-15.2+311R	-10.1+248.5R	-6.2+206.6R	-4.4+178.6R	-2.6+157.2R	-1+139.7R	0.3+126R	1.3+114.5R	8.2+90.7R	
	12"	q_a	656	635	620	609	599	592	586	581	577
F, lap		9.6-2.4R	10.4-2.6R	11-2.7R	11.6-2.8R	12.1-2.7R	12.5-2.8R	12.9-2.7R	13.2-2.7R	13.3-2.2R	
F, no lap	-14.4+310.3R	-8.8+247.6R	-5+205.8R	-2.7+177.6R	-1+156.3R	0.9+138.6R	2.2+125R	3.6+113.4R	10.3+89.9R		
18"	q_a	603	589	530	529	528	489	492	495	466	
	F, lap	10.1-2.9R	10.9-3R	12.3-3.6R	12.8-3.6R	13.3-3.5R	14.4-4R	14.7-3.8R	15-3.7R	15.7-3.3R	
F, no lap	-13.9+309.9R	-8.3+247.2R	-3.7+204.9R	-1.5+176.7R	0.2+155.5R	2.8+137.4R	4.1+123.9R	5.4+112.4R	12.6+88.9R		
24"	q_a	533	531	470	478	434	445	411	423	395	
	F, lap	10.7-3.4R	11.6-3.6R	13.1-4.3R	13.6-4.2R	14.9-4.7R	15.3-4.5R	16.4-4.9R	16.7-4.7R	17.3-4.1R	
F, no lap	-13.3+309.4R	-7.6+246.7R	-2.9+204.2R	-0.7+176.1R	1.9+154.4R	3.7+136.8R	5.8+122.8R	7+111.4R	14.3+88.1R		
36"	q_a	533	459	400	420	373	326	355	318	288	
	F, lap	10.7-3.4R	12.4-4.3R	14-5.1R	14.5-4.9R	15.9-5.5R	17.4-6.2R	17.5-5.7R	18.9-6.3R	19.5-5.2R	
F, no lap	-13.3+309.4R	-6.8+246R	-2+203.4R	0.2+175.4R	2.9+153.6R	5.8+135.2R	6.9+122R	9.2+109.9R	16.5+86.9R		
48"	q_a	441	459	400	339	291	326	289	258	233	
	F, lap	11.5-4.1R	12.4-4.3R	14-5.1R	15.6-5.8R	17.2-6.5R	17.4-6.2R	18.8-6.7R	20.3-7.3R	20.9-6R	
F, no lap	-12.5+308.6R	-6.8+246R	-2+203.4R	1.3+174.5R	4.2+152.5R	5.8+135.2R	8.2+121.1R	10.6+108.8R	17.8+86.1R		
60"	q_a	441	362	400	339	291	253	258	233	233	
	F, lap	11.5-4.1R	13.4-5.2R	14-5.1R	15.6-5.8R	17.2-6.5R	18.8-7.3R	20.3-7.9R	20.3-7.3R	20.9-6R	
F, no lap	-12.5+308.6R	-5.8+245.1R	-2+203.4R	1.3+174.5R	4.2+152.5R	7.2+134R	9.7+119.8R	10.6+108.8R	17.8+86.1R		



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span																		
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"										
36/9	4"	q _a	1984	1955	1933	1917	1905	1514	1226	1013	852	F, lap	5.2-0.6R	5.4-0.7R	5.5-0.7R	5.7-0.6R	5.8-0.6R	5.8-0.6R	5.9-0.6R	6-0.5R	6-0.5R
		F, no lap	3.4+22.9R	3.9+18.2R	4.3+15R	4.6+12.9R	4.8+11.4R	5+10R	5.1+9R	5.3+8.2R	5.8+6.5R		3.4+22.9R	3.9+18.2R	4.3+15R	4.6+12.9R	4.8+11.4R	5+10R	5.1+9R	5.3+8.2R	5.8+6.5R
	6"	q _a	1802	1751	1713	1684	1661	1514	1226	1013	852	F, lap	5.5-0.9R	5.8-0.9R	6-1R	6.2-1R	6.4-1R	6.6-1R	6.7-0.9R	6.8-0.9R	6.8-0.8R
		F, no lap	3.7+22.6R	4.4+17.9R	4.8+14.7R	5.2+12.6R	5.4+11R	5.7+9.7R	5.9+8.7R	6.1+7.8R	6.6+6.2R		3.7+22.6R	4.4+17.9R	4.8+14.7R	5.2+12.6R	5.4+11R	5.7+9.7R	5.9+8.7R	6.1+7.8R	6.6+6.2R
	8"	q _a	1663	1629	1542	1532	1471	1471	1226	1013	852	F, lap	5.7-1.1R	6-1.1R	6.4-1.2R	6.6-1.2R	6.9-1.3R	7-1.2R	7.3-1.2R	7.4-1.2R	7.5-1R
		F, no lap	3.9+22.5R	4.6+17.7R	5.2+14.5R	5.5+12.4R	5.9+10.7R	6.2+9.4R	6.5+8.4R	6.6+7.5R	7.3+5.9R		3.9+22.5R	4.6+17.7R	5.2+14.5R	5.5+12.4R	5.9+10.7R	6.2+9.4R	6.5+8.4R	6.6+7.5R	7.3+5.9R
	12"	q _a	1474	1380	1310	1257	1216	1182	1155	1013	852	F, lap	6-1.3R	6.5-1.5R	6.9-1.6R	7.2-1.7R	7.6-1.7R	7.9-1.8R	8.1-1.8R	8.4-1.8R	8.4-1.5R
		F, no lap	4.2+22.2R	5+17.4R	5.7+14.1R	6.2+11.9R	6.6+10.2R	7+8.9R	7.3+7.8R	7.6+6.9R	8.2+5.5R		4.2+22.2R	5+17.4R	5.7+14.1R	6.2+11.9R	6.6+10.2R	7+8.9R	7.3+7.8R	7.6+6.9R	8.2+5.5R
	18"	q _a	1356	1275	1115	1083	1059	955	944	935	848	F, lap	6.2-1.4R	6.7-1.6R	7.3-1.9R	7.7-2R	8-2R	8.6-2.3R	8.8-2.3R	9.1-2.3R	9.4-1.9R
		F, no lap	4.4+22.1R	5.2+17.2R	6.1+13.7R	6.6+11.5R	7+9.9R	7.7+8.3R	8+7.3R	8.4+6.4R	9.1+5.9R		4.4+22.1R	5.2+17.2R	6.1+13.7R	6.6+11.5R	7+9.9R	7.7+8.3R	8+7.3R	8.4+6.4R	9.1+5.9R
24"	q _a	1219	1158	1004	986	850	850	754	763	691	F, lap	6.4-1.6R	6.9-1.8R	7.6-2.2R	7.9-2.2R	8.6-2.5R	8.9-2.5R	9.4-2.7R	9.7-2.7R	9.9-2.3R	
	F, no lap	4.6+21.9R	5.4+17R	6.4+13.5R	6.9+11.3R	7.6+9.5R	8+8.1R	8.6+6.9R	9+6R	9.7+4.7R		4.6+21.9R	5.4+17R	6.4+13.5R	6.9+11.3R	7.6+9.5R	8+8.1R	8.6+6.9R	9+6R	9.7+4.7R	
36"	q _a	1219	1028	852	851	732	639	660	590	533	F, lap	6.4-1.6R	7.1-2R	7.8-2.4R	8.2-2.5R	8.9-2.8R	9.6-3.1R	9.8-3R	10.4-3.3R	10.7-2.7R	
	F, no lap	4.6+21.9R	5.7+16.8R	6.6+13.3R	7.1+11.1R	7.9+9.2R	8.7+7.5R	9+6.6R	9.7+5.4R	10.4+3.3R		4.6+21.9R	5.7+16.8R	6.6+13.3R	7.1+11.1R	7.9+9.2R	8.7+7.5R	9+6.6R	9.7+5.4R	10.4+3.3R	
48"	q _a	1063	1028	852	716	614	639	565	504	454	F, lap	6.6-1.8R	7.1-2R	7.8-2.4R	8.6-2.8R	9.2-3.1R	9.6-3.1R	10.2-3.3R	10.9-3.7R	11.1-2.9R	
	F, no lap	4.8+21.7R	5.7+16.8R	6.6+13.3R	7.5+10.8R	8.3+8.9R	8.7+7.5R	9.4+6.3R	10.1+5.1R	10.9+4R		4.8+21.7R	5.7+16.8R	6.6+13.3R	7.5+10.8R	8.3+8.9R	8.7+7.5R	9.4+6.3R	10.1+5.1R	10.9+4R	
60"	q _a	1063	854	852	716	614	534	470	504	454	F, lap	6.6-1.8R	7.4-2.3R	7.8-2.4R	8.6-2.8R	9.2-3.1R	10-3.5R	10.6-3.7R	10.9-3.7R	11.1-2.9R	
	F, no lap	4.8+21.7R	5.9+16.5R	6.6+13.3R	7.5+10.8R	8.3+8.9R	9.1+7.2R	9.8+5.9R	10.1+5.1R	10.9+4R		4.8+21.7R	5.9+16.5R	6.6+13.3R	7.5+10.8R	8.3+8.9R	9.1+7.2R	9.8+5.9R	10.1+5.1R	10.9+4R	
20	4"	q _a	1600	1587	1578	1572	1567	1514	1226	1013	852	F, lap	5.5-0.7R	5.7-0.6R	5.8-0.6R	6-0.6R	6-0.5R	6.1-0.5R	6.2-0.5R	6.2-0.5R	6.3-0.4R
		F, no lap	3.7+22.9R	4.3+18.2R	4.6+15.1R	4.9+13R	5.1+11.4R	5.2+10.1R	5.4+9.1R	5.5+8.3R	6.6+5R		3.7+22.9R	4.3+18.2R	4.6+15.1R	4.9+13R	5.1+11.4R	5.2+10.1R	5.4+9.1R	5.5+8.3R	6.6+5R
	6"	q _a	1462	1436	1418	1404	1394	1385	1226	1013	852	F, lap	6-1R	6.3-1R	6.6-1R	6.7-0.9R	6.9-0.9R	7-0.9R	7.1-0.9R	7.2-0.8R	7.3-0.7R
		F, no lap	4.2+22.6R	4.9+17.8R	5.4+14.7R	5.7+12.6R	5.9+11R	6.2+9.7R	6.3+8.8R	6.5+7.9R	7.1+6.2R		4.2+22.6R	4.9+17.8R	5.4+14.7R	5.7+12.6R	5.9+11R	6.2+9.7R	6.3+8.8R	6.5+7.9R	7.1+6.2R
	8"	q _a	1344	1337	1280	1284	1244	1252	1221	1013	852	F, lap	6.4-1.2R	6.7-1.2R	7.1-1.3R	7.3-1.2R	7.6-1.3R	7.7-1.2R	7.9-1.2R	8-1.2R	8.2-1R
		F, no lap	4.6+22.3R	5.2+17.6R	5.9+14.4R	6.2+12.3R	6.6+10.7R	6.8+9.4R	7.1+8.4R	7.3+7.6R	7.9+5.9R		4.6+22.3R	5.2+17.6R	5.9+14.4R	6.2+12.3R	6.6+10.7R	6.8+9.4R	7.1+8.4R	7.3+7.6R	7.9+5.9R
	12"	q _a	1170	1115	1076	1046	1023	1004	989	976	852	F, lap	6.9-1.6R	7.4-1.7R	7.9-1.8R	8.3-1.9R	8.6-1.9R	8.9-1.9R	9.2-1.9R	9.4-1.9R	9.5-1.5R
		F, no lap	5.1+21.9R	6+17.1R	6.7+13.8R	7.2+11.7R	7.6+10.1R	8+8.7R	8.4+7.7R	8.7+6.9R	9.3+5.4R		5.1+21.9R	6+17.1R	6.7+13.8R	7.2+11.7R	7.6+10.1R	8+8.7R	8.4+7.7R	8.7+6.9R	9.3+5.4R
	18"	q _a	1054	1015	890	883	877	800	804	807	752	F, lap	7.2-1.8R	7.7-2R	8.6-2.4R	9-2.4R	9.3-2.4R	10.1-2.7R	10.3-2.6R	10.5-2.5R	10.9-2.2R
		F, no lap	5.4+21.7R	6.3+16.8R	7.4+13.3R	7.9+11.2R	8.3+9.6R	9.2+8R	9.5+7.3R	9.8+6.2R	10.7+4.7R		5.4+21.7R	6.3+16.8R	7.4+13.3R	7.9+11.2R	8.3+9.6R	9.2+8R	9.5+7.3R	9.8+6.2R	10.7+4.7R
24"	q _a	915	900	780	789	706	721	657	677	618	F, lap	7.5-2.2R	8.1-2.3R	9.1-2.8R	9.4-2.7R	10.3-3.1R	10.5-3R	11.3-3.3R	11.5-3.2R	11.9-2.7R	
	F, no lap	5.7+21.4R	6.7+16.5R	7.9+12.9R	8.4+10.8R	9.3+8.9R	9.7+7.6R	10.5+6.3R	10.8+5.6R	11.7+4.2R		5.7+21.4R	6.7+16.5R	7.9+12.9R	8.4+10.8R	9.3+8.9R	9.7+7.6R	10.5+6.3R	10.8+5.6R	11.7+4.2R	
36"	q _a	915	768	656	686	597	525	562	506	460	F, lap	7.5-2.2R	8.6-2.7R	9.6-3.2R	10-3.2R	10.9-3.5R	11.8-4R	11.9-3.7R	12.8-4.1R	13.2-3.4R	
	F, no lap	5.7+21.4R	7.1+16.1R	8.4+12.4R	8.9+10.4R	9.9+8.4R	10.9+6.7R	11.1+5.9R	12+4.6R	12.9+3.6R		5.7+21.4R	7.1+16.1R	8.4+12.4R	8.9+10.4R	9.9+8.4R	10.9+6.7R	11.1+5.9R	12+4.6R	12.9+3.6R	
48"	q _a	750	768	656	555	479	525	468	420	381	F, lap	8-2.6R	8.6-2.7R	9.6-3.2R	10.6-3.7R	11.6-4.1R	11.8-4R	12.7-4.3R	13.6-4.7R	13.9-3.8R	
	F, no lap	6.2+21R	7.1+16.1R	8.4+12.4R	9.5+9.9R	10.6+7.8R	10.9+6.7R	11.9+5.3R	12.8+4R	13.7+3.1R		6.2+21R	7.1+16.1R	8.4+12.4R	9.5+9.9R	10.6+7.8R	10.9+6.7R	11.9+5.3R	12.8+4R	13.7+3.1R	
60"	q _a	750	608	656	555	479	420	373	420	381	F, lap	8-2.6R	9.1-3.2R	9.6-3.2R	10.6-3.7R	11.6-4.1R	12.6-4.6R	13.5-5R	13.6-4.7R	13.9-3.8R	
	F, no lap	6.2+21R	7.7+15.6R	8.4+12.4R	9.5+9.9R	10.6+7.8R	11.7+6R	12.7+4.6R	12.8+4R	13.7+3.1R		6.2+21R	7.7+15.6R	8.4+12.4R	9.5+9.9R	10.6+7.8R	11.7+6R	12.7+4.6R	12.8+4R	13.7+3.1R	
36/4	4"	q _a	985	983	981	980	979	978	978	977	852	F, lap	5.9-0.6R	6-0.6R	6.1-0.5R	6.2-0.5R	6.3-0.4R	6.3-0.4R	6.4-0.4R	6.4-0.4R	6.5-0.3R
		F, no lap	-9.3+19.4R	-6.1+15.8R	-4+13.1R	-2.9+11.3R	-2+10.2R	-1+8.9R	-0.3+8.0R	0.3+7.3R	4.5+5.8R		-9.3+19.4R	-6.1+15.8R	-4+13.1R	-2.9+11.3R	-2+10.2R	-1+8.9R	-0.3+8.0R	0.3+7.3R	4.5+5.8R
	6"	q _a	943	937	933	930	927	925	924	922	852	F, lap	6.6-1R	6.8-0.9R	7.1-0.9R	7.2-0.9R	7.3-0.8R	7.5-0.8R	7.5-0.7R	7.6-0.7R	7.7-0.6R
		F, no lap	-8.6+19.7R	-5.3+15.5R	-3.1+13.1R	-1.9+11.3R	-0.9+9.9R	0.1+8.8R	0.8+8.0R	1.5+7.2R	5.7+5.7R		-8.6+19.7R	-5.3+15.5R	-3.1+13.1R	-1.9+11.3R	-0.9+9.9R	0.1+8.8R	0.8+8.0R	1.5+7.2R	5.7+5.7R
	8"	q _a	901	902	883	887	873	877	866	870	852	F, lap	7.1-1.3R	7.3-1.2R	7.8-1.3R	7.9-1.2R	8.2-1.2R	8.3-1.2R	8.6-1.1R	8.6-1R	8.7-0.9R
		F, no lap	-8.1+19.6R	-4.8+15.2R	-2.3+13.0R	-1.2+11.3R	0+9.9R	0.9+8.8R	1.8+7.9R	2.4+7.2R	6.8+5.4R		-8.1+19.6R	-4.8+15.2R	-2.3+13.0R	-1.2+11.3R	0+9.9R	0.9+8.8R	1.8+7.9R	2.4+7.2R	6.8+5.4R
	12"	q _a	823	804	789	779	770	763	752	748	748	F, lap	7.9-1.8R	8.5-1.9R	8.9-2R	9.3-1.9R	9.7-1.9R	10-1.9R	10.2-1.8R	10.4-1.8R	10.5-1.5R
		F, no lap	-7.3+19.6R	-3.7+15.6R	-1.2+13.0R	0.3+11.2R	1.4+9.8R	2.6+8.6R	3.5+7.9R	4.3+7.1R	8.6+5.6R		-7.3+19.6R	-3.7+15.6R	-1.2+13.0R	0.3+11.2R	1.4+9.8R	2.6+8.6R	3.5+7.9R	4.3+7.1R	8.6+5.6R
	18"	q _a	761	750	682	684	686	640	652	617	617	F, lap	8.4-2.2R	9-2.3R	10.1-2.8R	10.5-2.7R	10.7-2.5R	11.7-2.9R	11.8-2.7R	12-2.6R	12.6-2.3R
		F, no lap	-6.8+19.5R	-3.1+15.6R	1.4+11.5R	2.5+9.8R	4.3+8.6R	5.1+7.8R	5.9+7.0R	10.6+5.6R	10.6+5.6R		-6.8+19.5R	-3.1+15.6R	1.4+11.5R	2.5+9.8R	4.3+8.6R	5.1+7.8R	5.9+7.0R	10.6+5.6R	10.6+5.6R
24"	q _a	674	679	607	622	568	585	544	561	526	F, lap	9.1-2.8R	9.7-2.8R	10.9-3.3R	11.2-3.2R	12.3-3.6R	12.4-3.4R	13.4-3.6R	13.5-3.4R	14.1-3R	
	F, no lap	-6.1+19.5R	-2.5+15.6R	0.8+12.8R	2.1+11.1R	4+9.7R	5.1+8.6R	6.7+7.7R	7.3+7.0R	12.1+5.3R		-6.1+19.5R	-2.5+15.6R	0.8+12.8R	2.1+11.1R	4+9.7R	5.1+8.6R	6.7+7.7R	7.3+7.0R	12.1+5.3R	
36"	q _a	674	585	514	546	494	449	482	444												

2.4 DGB-36 & DGBF-36

Hilti X-ENP-19 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"		
18	36/9	4"	q_a	2751	2729	2713	2701	2691	2317	1877	1551	1303	
			F, lap	3.8-0.4R	3.9-0.4R	4-0.3R	4-0.3R	4.1-0.3R	4.1-0.3R	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R
		F, no lap	2.9+11.1R	3.2+8.8R	3.4+7.3R	3.5+6.3R	3.6+5.5R	3.7+4.9R	3.7+4.4R	3.7+4.4R	3.8+4R	4.1+3.2R	
		6"	q_a	2550	2505	2472	2446	2427	2317	1877	1551	1303	1303
			F, lap	4.1-0.5R	4.2-0.6R	4.4-0.5R	4.5-0.5R	4.6-0.5R	4.6-0.5R	4.7-0.5R	4.8-0.5R	4.8-0.4R	4.8-0.4R
		F, no lap	3.2+10.9R	3.5+8.6R	3.8+7.1R	3.9+6.1R	4.1+5.3R	4.2+4.7R	4.3+4.2R	4.4+3.8R	4.4+3.8R	4.7+3R	
		8"	q_a	2377	2356	2261	2261	2193	2201	1877	1551	1303	1303
			F, lap	4.3-0.7R	4.4-0.7R	4.7-0.7R	4.8-0.7R	5-0.7R	5-0.7R	5.2-0.7R	5.2-0.6R	5.3-0.6R	5.3-0.6R
		F, no lap	3.4+10.8R	3.7+8.5R	4.1+6.9R	4.2+5.9R	4.5+5.1R	4.6+4.5R	4.8+4R	4.8+3.6R	4.8+3.6R	5.2+2.8R	
		12"	q_a	2119	2018	1944	1887	1842	1806	1776	1551	1303	1303
			F, lap	4.6-0.9R	4.9-1R	5.1-1R	5.3-1.1R	5.5-1.1R	5.7-1.1R	5.9-1.1R	6-1.1R	6-0.9R	6-0.9R
		F, no lap	3.7+10.6R	4.2+8.2R	4.5+6.6R	4.8+5.6R	5.1+4.8R	5.3+4.1R	5.5+3.6R	5.6+3.2R	5.6+3.2R	5.9+2.5R	
	18"	q_a	1945	1864	1650	1626	1607	1472	1472	1472	1303	1303	
		F, lap	4.7-1.1R	5.1-1.1R	5.6-1.4R	5.8-1.4R	6-1.3R	6.4-1.5R	6.5-1.5R	6.6-1.4R	6.6-1.4R	6.9-1.2R	
	F, no lap	3.9+10.4R	4.4+8.1R	5+6.3R	5.2+5.3R	5.5+4.5R	5.9+3.7R	6.1+3.2R	6.3+2.8R	6.3+2.8R	6.8+2.1R		
	24"	q_a	1731	1683	1472	1472	1324	1341	1227	1253	1143	1143	
		F, lap	5-1.2R	5.3-1.3R	5.8-1.6R	6-1.6R	6.5-1.7R	6.7-1.7R	7.1-1.9R	7.2-1.8R	7.4-1.5R	7.4-1.5R	
	F, no lap	4.1+10.3R	4.6+7.9R	5.2+6.1R	5.5+5.1R	6+4.1R	6.2+3.5R	6.7+2.8R	6.8+2.5R	6.8+2.5R	7.3+1.9R		
	36"	q_a	1731	1472	1273	1302	1143	1003	1059	952	863	863	
		F, lap	5-1.2R	5.5-1.6R	6.1-1.9R	6.3-1.8R	6.9-2R	7.4-2.3R	7.5-2.1R	7.9-2.3R	8.2-1.9R	8.2-1.9R	
	F, no lap	4.1+10.3R	4.8+7.6R	5.5+5.8R	5.8+4.8R	6.4+3.8R	7+2.9R	7.1+2.6R	7.6+1.9R	8.1+1.5R	8.1+1.5R		
	48"	q_a	1473	1472	1273	1083	933	1003	891	799	723	723	
		F, lap	5.2-1.5R	5.5-1.6R	6.1-1.9R	6.7-2.1R	7.3-2.4R	7.4-2.3R	7.9-2.5R	8.4-2.7R	8.6-2.2R	8.6-2.2R	
	F, no lap	4.3+10R	4.8+7.6R	5.5+5.8R	6.2+4.5R	6.8+3.5R	7+2.9R	7.5+2.2R	8.1+1.6R	8.5+1.2R	8.5+1.2R		
60"	q_a	1473	1228	1273	1083	933	817	723	799	723	723		
	F, lap	5.2-1.5R	5.9-1.9R	6.1-1.9R	6.7-2.1R	7.3-2.4R	7.9-2.7R	8.4-2.9R	8.4-2.7R	8.6-2.2R	8.6-2.2R		
F, no lap	4.3+10R	5.2+7.3R	5.5+5.8R	6.2+4.5R	6.8+3.5R	7.4+2.5R	8+1.8R	8.1+1.6R	8.5+1.2R	8.5+1.2R			
36/7/4	18	4"	q_a	2201	2193	2186	2182	2178	2176	1877	1551	1303	
			F, lap	4-0.3R	4-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	
		F, no lap	3.1+11.2R	3.3+8.9R	3.5+7.4R	3.6+6.4R	3.7+5.6R	3.8+5R	3.9+4.5R	3.9+4.1R	4.2+3.2R		
		6"	q_a	2061	2041	2027	2016	2008	2001	1877	1551	1303	1303
			F, lap	4.4-0.5R	4.5-0.5R	4.6-0.5R	4.7-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5-0.4R	5-0.3R	
		F, no lap	3.5+10.9R	3.8+8.7R	4+7.2R	4.2+6.1R	4.3+5.4R	4.4+4.8R	4.5+4.3R	4.6+3.9R	4.9+3.1R		
		8"	q_a	1928	1930	1872	1882	1840	1853	1820	1551	1303	1303
			F, lap	4.7-0.7R	4.8-0.7R	5.1-0.7R	5.1-0.7R	5.3-0.7R	5.3-0.6R	5.5-0.6R	5.5-0.6R	5.6-0.5R	
		F, no lap	3.8+10.8R	4.1+8.5R	4.5+6.9R	4.6+6R	4.8+5.2R	4.9+4.6R	5.1+4.1R	5.1+3.7R	5.5+2.9R		
		12"	q_a	1707	1652	1612	1582	1559	1540	1525	1512	1303	1303
			F, lap	5.1-1R	5.5-1.1R	5.7-1.1R	5.9-1.1R	6.1-1.1R	6.3-1.1R	6.4-1R	6.6-1R	6.6-0.8R	
		F, no lap	4.2+10.5R	4.7+8.1R	5.1+6.6R	5.4+5.5R	5.6+4.8R	5.9+4.1R	6+3.7R	6.2+3.3R	6.5+2.5R		
18"	q_a	1544	1513	1346	1350	1353	1245	1259	1269	1191	1191		
	F, lap	5.4-1.3R	5.8-1.3R	6.4-1.6R	6.6-1.5R	6.7-1.4R	7.3-1.6R	7.4-1.5R	7.4-1.4R	7.8-1.3R			
F, no lap	4.5+10.2R	5.1+7.9R	5.8+6.1R	6.1+5.1R	6.3+4.4R	6.8+3.6R	7.1+2.8R	7.1+2.8R	7.7+2.1R				
24"	q_a	1334	1341	1176	1207	1089	1124	1034	1069	996	996		
	F, lap	5.8-1.6R	6.1-1.6R	6.8-1.9R	7-1.8R	7.6-2R	7.7-1.9R	8.3-2.1R	8.3-1.9R	8.6-1.7R			
F, no lap	4.9+9.9R	5.4+7.6R	6.3+5.8R	6.5+4.8R	7.1+3.8R	7.3+3.3R	7.9+2.6R	7.9+2.3R	8.5+1.7R				
36"	q_a	1334	1133	979	1043	934	844	906	833	758	758		
	F, lap	5.8-1.6R	6.6-2R	7.4-2.4R	7.5-2.2R	8.2-2.4R	8.9-2.8R	8.9-2.5R	9.5-2.7R	9.8-2.3R			
F, no lap	4.9+9.9R	5.9+7.2R	6.8+5.3R	7+4.4R	7.7+3.4R	8.5+2.4R	8.5+2.2R	9.1+1.6R	9.7+1.1R				
48"	q_a	1065	1133	979	859	747	844	754	680	619	619		
	F, lap	6.3-2R	6.6-2R	7.4-2.4R	8.2-2.7R	9-3R	8.9-2.8R	9.6-3R	10.3-3.3R	10.6-2.7R			
F, no lap	5.4+9.5R	5.9+7.2R	6.8+5.3R	7.7+3.9R	8.5+2.8R	8.5+2.4R	9.2+1.7R	9.9+1R	10.5+0.7R				
60"	q_a	1065	885	979	859	747	658	586	680	619	619		
	F, lap	6.3-2R	7.2-2.5R	7.4-2.4R	8.2-2.7R	9-3R	9.8-3.4R	10.5-3.7R	10.3-3.3R	10.6-2.7R			
F, no lap	5.4+9.5R	6.5+6.7R	6.8+5.3R	7.7+3.9R	8.5+2.8R	9.3+1.8R	10.1+1R	9.9+1R	10.5+0.7R				
36/4	18	4"	q_a	1321	1319	1318	1317	1317	1316	1316	1316	1303	
			F, lap	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R		
		F, no lap	-3.3+96.5R	-1.8+77.2R	-0.7+64.3R	-0.2+55.6R	0.3+49R	0.7+43.6R	1+39.4R	1.4+35.8R	3.4+28.4R		
		6"	q_a	1284	1280	1277	1275	1273	1272	1271	1270	1269	1269
			F, lap	4.6-0.5R	4.8-0.5R	4.9-0.4R	4.9-0.4R	5-0.4R	5-0.3R	5.1-0.3R	5.1-0.3R	5.1-0.3R	
		F, no lap	-2.8+96.3R	-1.2+77R	-0.1+64.1R	0.5+55.4R	1+48.8R	1.5+43.4R	1.8+39.2R	2.1+35.6R	4.2+28.2R		
		8"	q_a	1242	1246	1229	1234	1222	1227	1217	1222	1214	1214
			F, lap	5.1-0.7R	5.1-0.6R	5.4-0.7R	5.4-0.6R	5.6-0.6R	5.6-0.5R	5.8-0.5R	5.7-0.5R	5.8-0.4R	
		F, no lap	-2.4+96.1R	-0.8+76.8R	0.5+63.9R	1+55.2R	1.6+48.6R	2+43.2R	2.5+39R	2.7+35.5R	4.9+28.1R		
		12"	q_a	1160	1143	1132	1122	1115	1110	1110	1105	1097	1097
			F, lap	5.7-1.1R	6.1-1.1R	6.3-1.1R	6.5-1R	6.7-1R	6.8-1R	6.9-0.9R	7-0.9R	7.1-0.8R	
		F, no lap	-1.7+95.7R	0.1+76.3R	1.4+63.4R	2.1+54.8R	2.6+48.2R	3.2+42.8R	3.6+38.6R	4+35.1R	6.1+27.7R		
18"	q_a	1086	1080	1002	1010	1017	962	973	982	940	940		
	F, lap	6.2-1.4R	6.5-1.4R	7.3-1.7R	7.4-1.5R	7.5-1.4R	8.1-1.6R	8.2-1.4R	8.2-1.4R	8.6-1.3R			
F, no lap	-1.2+95.4R	0.6+76.1R	2.3+62.9R	3+54.3R	3.5+47.8R	4.6+42.2R	4.9+38.1R	5.2+34.6R	7.7+27.2R				
24"	q_a	970	990	901	928	861	889	835	861	816	816		
	F, lap	6.9-1.9R	7.1-1.8R	8-2.1R	8.1-1.9R	8.8-2.2R	8.8-1.9R	9.5-2.1R	9.4-1.9R	9.8-1.7R			
F, no lap	-0.6+94.9R	1.2+75.7R	3.1+62.4R	3.6+53.9R	4.8+47.1R	5.2+41.8R	6.2+37.4R	6.4+34R	8.9+26.8R				
36"	q_a	970	859	764	821	752	691	744	695	651	651		
	F, lap	6.9-1.9R	7.9-2.4R	9-2.9R	8.9-2.5R	9.8-2.8R	10.7-3.1R	11.2-2.6R	11.2-2.9R	11.7-2.6R			
F, no lap	-0.6+94.9R	2+75.1R	4+61.7R	4.5+53.3R	5.7+46.5R	7.1+40.6R	7.1+36.9R	8.2+33R	10.7+26R				
48"	q_a	787	859	764	684	617	691	637	591	543	543		
	F, lap	7.8-2.7R	7.9-2.4R	9-2.9R	10-3.3R	11.1-3.7R	10.7-3.1R	11.5-3.4R	12.4-3.7R	13-3.2R			
F, no lap	0.4+94.1R	2+75.1R	4+61.7R	5.6+52.5R	7+45.5R	7.1+40.6R	8.3+36.2R	9.4+32.2R	12+25.3R				
60"	q_a	787	671	764	684	617	557	495	591	543	543		
	F, lap	7.8-2.7R	9.1-3.4R	9-2.9R	10-3.3R	11.1-3.7R	12.1-4.1R	13.1-4.5R	12.4-3.7R	13-3.2R			
F, no lap	0.4+94.1R	3.1+74.1R	4+61.7R	5.6+52.5R	7+45.5R	8.5+39.6R	9.8+35.1R	9.4+32.2R	12+25.3R				



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span																				
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"												
36/9	4"	q _a	3508	3491	3479	3470	3463	3230	2617	2162	1817	F, lap	2.9-0.2R	3-0.2R	3-0.2R	3-1-0.2R	3-1-0.2R	3-1-0.1R	3-1-0.1R	3-1-0.1R	3-1-0.1R		
		F, no lap	2.4+6.3R	2.6+5R	2.7+4.2R	2.8+3.6R	2.8+3.2R	2.9+2.8R	2.9+2.5R	2.9+2.3R	2.9+2.3R	3.1+1.8R	q _a	3304	3266	3239	3218	3202	3189	2617	2162	1817	
	6"	F, lap	3.2-0.4R	3.3-0.3R	3.4-0.3R	3.4-0.3R	3.5-0.3R	3.5-0.3R	3.5-0.3R	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.6-0.2R	F, no lap	2.7+6.2R	2.9+4.9R	3+4R	3.1+3.5R	3.2+3R	3.3+2.7R	3.3+2.4R	3.4+2.2R	3.5+1.7R
		q _a	3114	3105	3009	3018	2949	2963	2617	2162	1817	F, lap	3.4-0.5R	3.4-0.4R	3.6-0.5R	3.7-0.4R	3.8-0.4R	3.8-0.4R	3.9-0.4R	3.9-0.4R	3.9-0.4R	4-0.3R	
	8"	F, no lap	2.9+6.1R	3+4.8R	3.3+3.9R	3.4+3.4R	3.5+2.9R	3.5+2.6R	3.7+2.3R	3.7+2.1R	3.9+1.6R	q _a	2804	2704	2630	2574	2529	2493	2463	2162	1817		
		F, lap	3.6-0.7R	3.8-0.7R	4-0.7R	4.1-0.7R	4.3-0.7R	4.4-0.7R	4.5-0.7R	4.5-0.7R	4.5-0.7R	4.6-0.5R	F, no lap	3.1+5.9R	3.4+4.6R	3.7+3.7R	3.8+3.1R	4+2.7R	4.1+2.3R	4.2+2R	4.3+1.8R	4.5+1.4R	
	12"	q _a	2578	2505	2244	2232	2223	2051	2062	2071	1817	F, lap	3.8-0.8R	4-0.8R	4.4-1R	4.5-0.9R	4.6-0.9R	5-1R	5-1R	5-1-0.9R	5.1-0.9R	5.3-0.8R	
		F, no lap	3.3+5.8R	3.6+4.4R	4.1+3.4R	4.2+2.8R	4.4+2.4R	4.7+1.9R	4.8+1.7R	4.8+1.5R	5.2+1.1R	q _a	2286	2261	1996	2020	1830	1869	1723	1767	1649		
	18"	F, lap	4-1R	4.2-1R	4.7-1.2R	4.8-1.1R	5.2-1.3R	5.2-1.3R	5.6-1.3R	5.6-1.2R	5.8-1.1R	F, no lap	3.5+5.6R	3.8+4.3R	4.3+3.2R	4.5+2.7R	4.9+2.1R	5+1.8R	5.3+1.4R	5.4+1.2R	5.7+0.9R		
		q _a	2286	1962	1707	1778	1598	1439	1530	1393	1266	F, lap	4-1R	4.5-1.2R	5-1.5R	5.1-1.4R	5.5-1.5R	5.9-1.7R	5.9-1.5R	6.3-1.7R	6.5-1.4R		
	24"	F, no lap	3.5+5.6R	4.1+4R	4.7+2.9R	4.8+2.4R	5.2+1.8R	5.7+1.3R	5.7+1.1R	6.1+0.7R	6.5+0.5R	q _a	1910	1962	1707	1505	1306	1439	1282	1154	1047		
		F, lap	4.3-1.2R	4.5-1.2R	5-1.5R	5.5-1.7R	6-1.9R	5.9-1.7R	6.4-1.8R	6.8-2R	7-1.7R	F, no lap	3.8+5.3R	4.1+4R	4.7+2.9R	5.2+2.1R	5.7+1.5R	5.7+1.3R	6.1+0.8R	6.6+0.4R	6.9+0.2R		
36"	q _a	1910	1604	1707	1505	1306	1147	1019	1154	1047	F, lap	4.3-1.2R	4.9-1.5R	5-1.5R	5.5-1.7R	6-1.9R	6.4-2.1R	6.9-2.3R	6.8-2R	7-1.7R			
	F, no lap	3.8+5.3R	4.5+3.7R	4.7+2.9R	5.2+2.1R	5.7+1.5R	6.2+0.9R	6.7+0.4R	6.9+0.2R	7-1.7R	q _a	2788	2782	2778	2775	2772	2770	2617	2162	1817			
16 36/7/4	4"	F, lap	3-0.2R	3.1-0.2R	3.1-0.2R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	F, no lap	2.5+6.4R	2.7+5.1R	2.8+4.2R	2.8+3.6R	2.9+3.2R	2.9+2.8R	3+2.6R	3+2.3R	3.1+1.8R	
		q _a	2656	2640	2629	2621	2615	2610	2605	2162	1817	F, lap	3.3-0.3R	3.4-0.3R	3.5-0.3R	3.5-0.3R	3.6-0.2R	3.6-0.2R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	
	6"	F, no lap	2.8+6.2R	3+4.9R	3.2+4.1R	3.2+3.5R	3.3+3.1R	3.4+2.7R	3.4+2.5R	3.5+2.2R	3.6+1.8R	F, lap	2.8+6.2R	3+4.9R	3.2+4.1R	3.2+3.5R	3.3+3.1R	3.4+2.7R	3.4+2.5R	3.5+2.2R	3.6+1.8R		
		q _a	2519	2529	2473	2487	2446	2462	2430	2162	1817	F, lap	3.6-0.5R	3.7-0.4R	3.8-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4.1-0.3R	4.1-0.3R	4.1-0.3R		
	8"	F, no lap	3.1+6.1R	3.3+4.8R	3.5+4R	3.5+3.4R	3.7+3R	3.7+2.6R	3.8+2.3R	3.9+2.1R	4.1+1.7R	F, lap	3.1+6.1R	3.3+4.8R	3.5+4R	3.5+3.4R	3.7+3R	3.7+2.6R	3.8+2.3R	3.9+2.1R	4.1+1.7R		
		q _a	2271	2220	2183	2155	2134	2116	2102	2090	1817	F, lap	4-0.7R	4.2-0.7R	4.4-0.7R	4.5-0.7R	4.6-0.6R	4.7-0.6R	4.8-0.6R	4.9-0.6R	4.9-0.5R		
	12"	F, no lap	3.5+5.9R	3.8+4.5R	4+3.7R	4.2+3.1R	4.3+2.7R	4.5+2.3R	4.6+2.1R	4.7-1.9R	4.8+1.4R	F, lap	4.0-7R	4.2-0.7R	4.4-0.7R	4.5-0.7R	4.6-0.6R	4.7-0.6R	4.8-0.6R	4.9-0.6R	4.9-0.5R		
		q _a	2072	2051	1853	1868	1880	1748	1771	1790	1692	F, lap	4.3-0.9R	4.5-0.9R	5-1.1R	5.1-1R	5.1-0.9R	5.5-1R	5.5-0.9R	5.6-0.9R	5.8-0.8R		
	18"	F, no lap	3.8+5.7R	4.1+4.4R	4.6+3.3R	4.8+2.8R	4.9+2.4R	5.3+1.7R	5.3+1.7R	5.4+1.9R	5.8+1.1R	F, lap	4.3-0.9R	4.5-0.9R	5-1.1R	5.1-1R	5.1-0.9R	5.5-1R	5.5-0.9R	5.6-0.9R	5.8-0.8R		
		q _a	1795	1830	1624	1679	1529	1585	1468	1522	1426	F, lap	4.7-1.2R	4.8-1.1R	5.4-1.3R	5.4-1.2R	5.9-1.4R	5.9-1.4R	6.3-1.4R	6.3-1.2R	6.6-1.1R		
	24"	F, no lap	4.2+5.4R	4.4+4.1R	5.1+3R	5.1+2.6R	5.6+2R	5.7+1.7R	6.1+1.3R	6.1+1.2R	6.5+0.8R	F, lap	4.7-1.2R	4.8-1.1R	5.4-1.3R	5.4-1.2R	5.9-1.4R	5.9-1.4R	6.3-1.4R	6.3-1.2R	6.6-1.1R		
		q _a	1795	1543	1344	1452	1309	1188	1287	1190	1106	F, lap	4.7-1.2R	5.3-1.5R	6-1.8R	5.9-1.5R	6.5-1.7R	7-2R	6.9-1.7R	7.3-1.8R	7.7-1.6R		
36"	F, no lap	4.2+5.4R	4.9+3.8R	5.6+2.6R	5.6+2.2R	6.2+1.6R	6.8+1R	6.6+1R	7.1+0.6R	7.6+0.3R	F, lap	4.7-1.2R	5.3-1.5R	6-1.8R	5.9-1.5R	6.5-1.7R	7-2R	6.9-1.7R	7.3-1.8R	7.7-1.6R			
	q _a	1412	1543	1344	1185	1057	1188	1086	999	910	F, lap	4.7-1.2R	5.3-1.5R	6-1.8R	5.9-1.5R	6.5-1.7R	7-2R	6.9-1.7R	7.3-1.8R	7.7-1.6R			
48"	F, lap	5.2-1.6R	5.3-1.5R	6-1.8R	6.6-2R	7.2-2.3R	7-2R	7.6-2.1R	8.1-2.3R	8.4-2R	F, no lap	4.7+4.9R	4.9+3.8R	5.6+2.6R	6.3+1.8R	7+1.1R	6.8+1R	7.3+0.6R	7.9+0.1R	8.4-0.1R			
	q _a	1412	1180	1344	1185	1057	842	999	910	F, lap	5.2-1.6R	5.3-1.5R	6-1.8R	6.6-2R	7.2-2.3R	7-2R	7.6-2.1R	8.1-2.3R	8.4-2R				
60"	F, lap	5.2-1.6R	6-2R	6-1.8R	6.6-2R	7.2-2.3R	7.9-2.6R	8.5-2.8R	8.1-2.3R	8.4-2R	F, no lap	4.7+4.9R	5.6+3.2R	6.3+1.8R	7+1.1R	7.6+0.4R	8.3-0.1R	8.3-0.1R	7.9+0.1R	8.4-0.1R			
	q _a	1648	1647	1646	1646	1645	1645	1645	1644	1644	F, lap	3.1-0.2R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R			
36/4	4"	F, lap	-1.1+55.1R	-0.2+44.1R	0.3+36.7R	0.7+31.8R	0.9+28R	1.2+24.9R	1.3+22.5R	1.5+20.5R	1.7+16.2R	F, no lap	3.1-0.2R	3.1-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R		
		q _a	1616	1613	1611	1609	1608	1607	1607	1606	1605	F, lap	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.1R		
	6"	F, no lap	-0.7+55R	0.2+44R	0.8+36.6R	1.1+31.7R	1.4+27.9R	1.7+24.8R	1.9+22.4R	2+20.4R	3.2+16.1R	F, lap	3.5-0.3R	3.6-0.3R	3.6-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.2R	3.8-0.1R	3.8-0.1R		
		q _a	1578	1583	1568	1574	1563	1568	1560	1564	1557	F, lap	3.8-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R		
	8"	F, no lap	-0.4+54.9R	0.5+43.9R	1.2+36.5R	1.5+31.6R	1.8+27.8R	2.1+24.7R	2.3+22.3R	2.5+20.3R	3.7+16.1R	F, lap	3.8-0.4R	3.9-0.4R	4-0.4R	4-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.2R	4.2-0.2R	4.3-0.2R		
		q _a	1497	1483	1474	1467	1461	1456	1453	1450	1447	F, lap	4.4-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.1-0.5R	5.2-0.4R		
	12"	F, no lap	0.1+54.6R	1.2+43.6R	1.9+36.2R	2.3+31.3R	2.6+27.6R	3+24.5R	3.2+22.1R	3.4+20R	4.6+15.9R	F, lap	4.4-0.7R	4.6-0.7R	4.7-0.6R	4.8-0.6R	4.9-0.6R	5-0.5R	5.1-0.5R	5.1-0.5R	5.2-0.4R		
		q _a	1417	1417	1335	1348	1358	1299	1313	1325	1279	F, lap	4.8-0.9R	5-0.9R	5.5-1R	5.6-0.9R	5.6-0.8R	6-0.9R	6-0.8R	6-0.8R	6.3-0.7R		
	18"	F, no lap	0.6+54.3R	1.6+43.4R	2.7+35.8R	3+30.9R	3.3+27.3R	4+24.1R	4.1+21.7R	4.3+19.8R	5.8+15.5R	F, lap	4.8-0.9R	5-0.9R	5.5-1R	5.6-0.9R	5.6-0.8R	6-0.9R	6-0.8R	6-0.8R	6.3-0.7R		
		q _a	1283	1315	1216	1254	1177	1214	1152	1187	1134	F, lap	5.4-1.3R	5.5-1.2R	6.2-1.4R	6.1-1.2R	6.7-1.4R	6.6-1.2R	7.1-1.3R	6.9-1.1R	7.3-1.1R		
	24"	F, lap	1.2+53.9R	2.1+43.1R	3.3+35.4R	3.6+30.7R	4.4+26.8R	4.5+23.8R	5.2+21.3R	5.2+19.4R	6.7+15.2R	F, lap	5.4-1.3R	5.5-1.2R	6.2-1.4R	6.1-1.2R	6.7-1.4R	6.6-1.2R	7.1-1.3R	6.9-1.1R	7.3-1.1R		
		q _a	1283	1154	1040	1123	1039	963	1038	976	920	F, lap	5.4-1.3R	6.2-1.7R	7.1-2R	6.8-1.6R	7.5-1.8R	8.2-2.1R	7.8-1.7R	8.4-1.8R	8.8-1.7R		
36"	F, no lap	1.2+53.9R	2.8+42.5R	4.2+34.8R	4.3+30.2R	5.2+26.3R	6.1+22.9R	5.9+20.9R	6.7+18.7R	8.3+14.6R	F, lap	5.4-1.3R	6.2-1.7R	7.1-2R	6.8-1.6R	7.5-1.8R	8.2-2.1R	7.8-1.7R	8.4-1.8R	8.8-1.7R			
	q _a	1043	1154	1040	941	855	963	895	834	780	F, lap	6.3-2.1R	6.2-1.7R	7.1-2R	7.9-2.3R	8.7-2.6R	8.2-2.1R	8.9-2.2R	9.5-2.5R	10-2.2R			
48"	F, lap	2.1+53.2R	2.8+42.5R	4.2+34.8R	5.4+29.6R	6.4+25.5R	6.1+22.9R	7+20.3R	7.8+18.1R	9.5+14.1R	F, lap	6.3-2.1R	6.2-1.7R	7.1-2R	7.9-2.3R	8.7-2.6R	8.2-2.1R	8.9-2.2R	9.5-2.5R	10-2.2R			
	q _a	1043	899	1040	941	855	782	834	780	F, no lap	2.1+53.2R	2.8+42.5R	4.2+34.8R	5.4+29.6R	6.4+25.5R	6.1+22.9R	7+20.3R	7.8+18.1R	9.5+14.1R				
60"	F, lap	6.3-2.1R	7.4-2.6R	7.1-2R	7.9-2.3R	8.7-2.6R	8.2-2.1R	8.9-2.2R	9.5-2.5R														

2.5 DGB-36 & DGBF-36

Pneutek SDK61 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
36/9	4"	q_a F, lap		1535 7.9-0.8R 5.1+36.4R	1507 8.1-0.7R 5.8+29R	1486 8.2-0.6R 6.3+24.1R	1469 8.3-0.6R 6.6+20.8R	1457 8.4-0.5R 6.9+18.4R	1151 8.5-0.5R 7.1+16.3R	932 8.5-0.5R 7.3+14.7R	771 8.6-0.4R 7.4+13.4R	647 8.6-0.4R 8.3+10.6R	
				1384 9.2-1.3R 6.3+35.8R	1336 9.5-1.3R 7.2+28.5R	1300 9.8-1.2R 7.9+23.6R	1273 10.1-1.1R 8.3+20.3R	1252 10.1-1R 8.6+17.9R	1151 10.3-1R 8.9+15.8R	932 10.4-0.9R 9.1+14.3R	771 10.5-0.8R 9.3+13R	647 10.5-0.7R 10.2+10.2R	
	6"	q_a F, lap		1273 10.2-1.9R 7.3+35.3R	1238 10.4-1.7R 8.1+28R	1164 11.1-1.7R 9.2+23R	1152 11.2-1.5R 9.5+19.9R	1101 11.6-1.5R 10.1+17.3R	1098 11.6-1.4R 10.3+15.4R	854 12-1.4R 10.8+13.8R	771 12-1.3R 10.8+12.5R	647 12-1.3R 10.8+12.5R	647 12.3-1.1R 11.9+9.8R
				1128 11.7-2.8R 8.8+34.4R	1047 12.5-2.8R 10.2+26.9R	987 13.2-2.8R 11.3+22R	942 13.7-2.7R 12+18.7R	906 14.1-2.6R 12.6+16.3R	878 14.5-2.6R 13.2+14.2R	854 14.9-2.4R 13.6+12.7R	771 15.1-2.4R 14+11.4R	647 15.3-2R 14.9+8.9R	
	8"	q_a F, lap		1041 12.7-3.5R 9.9+33.6R	969 13.5-3.5R 11.3+26.2R	844 15.4-4.2R 13.5+20.6R	814 15.8-3.9R 14.1+17.5R	785 16.1-3.7R 14.6+15.2R	688 17.6-4.1R 16.3+12.7R	676 17.8-3.8R 16.5+11.4R	666 17.9-3.6R 16.7+10.2R	603 18.9-3.3R 18.5+7.6R	603 18.9-3.3R 18.5+7.6R
				942 14.1-4.6R 11.3+32.5R	884 14.9-4.4R 12.6+25.3R	749 17.5-3.3R 15.1+19.5R	723 17.3-4.8R 15.6+16.6R	621 19.1-5.4R 17.6+13.5R	615 19.1-5R 17.8+11.8R	545 20.8-5.4R 19.5+9.8R	547 20.6-4.9R 19.5+8.9R	494 21.7-4.5R 21.4+6.5R	
	12"	q_a F, lap		942 14.1-4.6R 11.3+32.5R	785 16.7-5.8R 14.4+23.9R	639 19.2-6.9R 17.3+17.8R	629 19.1-6.1R 17.4+15.3R	539 21.2-6.8R 19.7+12R	469 23.4-7.7R 22.9+1R	479 22.8-6.6R 21.5+8.5R	427 24.7-7.3R 23.5+6.5R	384 25.9-6.4R 25.5+4.6R	384 25.9-6.4R 25.5+4.6R
				831 16.1-6.3R 13.3+30.9R	785 16.7-5.8R 14.4+23.9R	639 19.2-6.9R 17.3+17.8R	535 21.6-8R 19.9+13.5R	457 24-8.9R 22.5+10R	469 23.4-7.7R 22+9.1R	413 25.4-8.3R 24.1+6.8R	368 27.5-9.2R 26.4+4.6R	330 28.7-7.8R 28.4+3.1R	
	18"	q_a F, lap		831 16.1-6.3R 13.3+30.9R	654 19.1-7.9R 16.8+21.8R	639 19.2-6.9R 17.3+17.8R	535 21.6-8R 19.9+13.5R	457 24-8.9R 22.5+10R	396 26.5-10R 25.1+6.8R	348 28.9-10.8R 27.6+4.4R	368 27.5-9.2R 26.4+4.6R	330 28.7-7.8R 28.4+3.1R	330 28.7-7.8R 28.4+3.1R
				800 14.7-3.8R 11.9+33.4R	764 15.4-3.5R 13.1+26.2R	665 17.7-4.2R 15.8+20.6R	656 17.8-3.8R 16.1+17.6R	649 18-3.4R 16.4+15.5R	589 19.7-3.8R 18.3+13R	590 19.6-3.4R 18.4+11.7R	591 19.6-3.2R 18.4+10.6R	549 20.8-3R 20.5+7.9R	
	24"	q_a F, lap		697 17-5.3R 14.2+31.8R	678 17.4-4.7R 15.1+25R	585 20.5-6R 18.1+19.1R	587 19.9-4.9R 18.2+16.6R	518 22.1-5.5R 20.6+13.4R	528 21.7-4.8R 20.4+12R	471 23.7-5.2R 22.4+9.9R	484 23.4-6.6R 22+9.2R	440 24.6-4.3R 24.2+6.6R	440 24.6-4.3R 24.2+6.6R
				579 20.5-8R 17.6+29.1R	583 20.2-6.6R 17.9+23.1R	486 23.4-8R 21.5+16.8R	410 26.6-9.1R 24.9+12.3R	354 29.7-10.3R 28.2+8.6R	382 27.9-8.2R 26.5+8.6R	340 30.5-9R 29.2+6.2R	305 33.1-9.9R 31.9+3.9R	276 34.9-8.7R 34.5+2.3R	
36"	q_a F, lap		579 20.5-8R 17.6+29.1R	461 24.5-10R 22.3+19.7R	486 23.4-8R 21.5+16.8R	410 26.6-9.1R 24.9+12.3R	354 29.7-10.3R 28.2+8.6R	354 32.9-11.5R 31.5+5.3R	309 36-12.5R 34.7+2.7R	274 33.1-9.9R 31.9+3.9R	276 34.9-8.7R 34.5+2.3R	276 34.9-8.7R 34.5+2.3R	
			424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
48"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	351 31.2-12.1R 12+238.1R	351 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	248 39.9-12.4R 28.3+129R	219 43.7-13.4R 33.1+114.3R	219 38.6-9.8R 29+106.4R	219 41.1-8.9R 38+83.2R	219 41.1-8.9R 38+83.2R	
			424 25.8-9.7R 1.8+30.3.1R	351 31.2-12.1R 12+238.1R	351 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	248 39.9-12.4R 28.3+129R	219 43.7-13.4R 33.1+114.3R	219 38.6-9.8R 29+106.4R	219 41.1-8.9R 38+83.2R		
60"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	351 31.2-12.1R 12+238.1R	351 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	248 39.9-12.4R 28.3+129R	219 43.7-13.4R 33.1+114.3R	219 38.6-9.8R 29+106.4R	219 41.1-8.9R 38+83.2R	219 41.1-8.9R 38+83.2R	
			424 25.8-9.7R 1.8+30.3.1R	351 31.2-12.1R 12+238.1R	351 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	248 39.9-12.4R 28.3+129R	219 43.7-13.4R 33.1+114.3R	219 38.6-9.8R 29+106.4R	219 41.1-8.9R 38+83.2R		
22	4"	q_a F, lap		1242 8.2-0.6R 5.4+36.5R	1229 8.4-0.6R 6.1+29.2R	1220 8.5-0.5R 6.6+24.3R	1213 8.6-0.4R 6.9+21R	1207 8.6-0.4R 7.1+18.5R	1151 8.7-0.4R 7.3+16.4R	932 8.7-0.3R 7.5+14.8R	771 8.8-0.3R 7.6+13.5R	647 8.8-0.3R 8.4+10.7R	
				1121 9.8-1.2R 6.9+36R	1097 10.1-1.1R 7.8+28.7R	1079 10.3-1R 8.4+23.8R	1066 10.4-0.9R 8.7+20.5R	1055 10.6-0.8R 9+18.1R	1047 10.7-0.7R 9.3+16R	932 10.7-0.7R 9.5+14.5R	771 10.8-0.6R 9.7+13.2R	647 10.9-0.6R 10.5+10.4R	
	6"	q_a F, lap		1024 11.1-1.7R 8.2+35.4R	1014 11.2-1.5R 8.9+28.2R	965 11.9-1.5R 10.2+23.3R	966 11.8-1.3R 10.1+20.1R	931 12.3-1.3R 10.8+17.6R	936 12.2-1.1R 10.9+15.7R	910 12.6-1.1R 11.4+14.1R	771 12.5-1R 11.4+12.8R	647 12.8-0.9R 12.4+10R	
				887 13.2-2.8R 10.3+34.3R	839 13.9-2.7R 11.7+27R	804 14.5-2.6R 12.6+22.2R	778 15-2.5R 13.3+19R	758 15.4-2.3R 13.8+16.6R	742 15.7-2.2R 14.3+14.6R	717 16.2-2.1R 14.7+13.1R	647 16.2-2R 15.1+11.8R	647 16.3-1.7R 16.9+2R	
	8"	q_a F, lap		800 14.7-3.8R 11.9+33.4R	764 15.4-3.5R 13.1+26.2R	665 17.7-4.2R 15.8+20.6R	656 17.8-3.8R 16.1+17.6R	649 18-3.4R 16.4+15.5R	589 19.7-3.8R 18.3+13R	590 19.6-3.4R 18.4+11.7R	591 19.6-3.2R 18.4+10.6R	549 20.8-3R 20.5+7.9R	
				697 17-5.3R 14.2+31.8R	678 17.4-4.7R 15.1+25R	585 20.5-6R 18.1+19.1R	587 19.9-4.9R 18.2+16.6R	518 22.1-5.5R 20.6+13.4R	528 21.7-4.8R 20.4+12R	471 23.7-5.2R 22.4+9.9R	484 23.4-6.6R 22+9.2R	440 24.6-4.3R 24.2+6.6R	
	12"	q_a F, lap		579 20.5-8R 17.6+29.1R	583 20.2-6.6R 17.9+23.1R	486 23.4-8R 21.5+16.8R	410 26.6-9.1R 24.9+12.3R	354 29.7-10.3R 28.2+8.6R	382 27.9-8.2R 26.5+8.6R	340 30.5-9R 29.2+6.2R	305 33.1-9.9R 31.9+3.9R	276 34.9-8.7R 34.5+2.3R	
				579 20.5-8R 17.6+29.1R	461 24.5-10R 22.3+19.7R	486 23.4-8R 21.5+16.8R	410 26.6-9.1R 24.9+12.3R	354 29.7-10.3R 28.2+8.6R	354 32.9-11.5R 31.5+5.3R	309 36-12.5R 34.7+2.7R	274 33.1-9.9R 31.9+3.9R	276 34.9-8.7R 34.5+2.3R	
	18"	q_a F, lap		579 20.5-8R 17.6+29.1R	461 24.5-10R 22.3+19.7R	486 23.4-8R 21.5+16.8R	410 26.6-9.1R 24.9+12.3R	354 29.7-10.3R 28.2+8.6R	354 32.9-11.5R 31.5+5.3R	309 36-12.5R 34.7+2.7R	274 33.1-9.9R 31.9+3.9R	276 34.9-8.7R 34.5+2.3R	
				424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R	
	24"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R	
				424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R	
36"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
			424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
48"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
			424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
60"	q_a F, lap		424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		
			424 25.8-9.7R 1.8+30.3.1R	444 24.1-7.1R 4.9+24.3.2R	388 28.1-8.5R 12.1+20.0R	332 32-9.8R 17.7+17.0.6R	285 35.9-11R 22.9+148.1R	321 32.4-8.1R 20.8+133.3R	285 35.5-8.9R 24.9+118.9R	255 38.6-9.8R 29+106.4R	255 41.1-8.9R 38+83.2R		



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span																														
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"																						
36/9	4"	q _a	1897	1872	1854	1840	1829	1514	1226	1013	852	F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	F, no lap	4.4+23R	4.9+18.4R	5.2+15.3R	5.4+13.2R	5.5+11.7R	5.7+10.3R	5.8+9.3R	5.9+8.5R	6.4+6.7R		
		q _a	1729	1684	1650	1625	1605	1514	1226	1013	852	F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8-0.5R	8-0.4R	8-0.4R	F, no lap	5.4+22.7R	6+18R	6.4+15R	6.7+12.9R	6.8+11.4R	7+10.1R	7.2+9.1R	7.3+8.2R	7.8+6.5R	
	6"	q _a	1598	1569	1489	1482	1426	1426	1226	1013	852	F, lap	8.1-1.2R	8.2-1.1R	8.6-1.1R	8.6-0.9R	9-0.9R	8.9-0.8R	9.2-0.8R	9.2-0.7R	9.4-0.7R	9.4-0.7R	F, no lap	6.3+22.3R	6.7+17.7R	7.4+14.6R	7.6+12.6R	8+11R	8.1+9.8R	8.4+8.8R	8.4+8R	9.1+6.2R	
		q _a	1417	1331	1267	1219	1181	1150	1125	1013	852	F, lap	9.4-2R	9.9-1.9R	10.4-1.9R	10.7-1.8R	11-1.7R	11.2-1.6R	11.4-1.5R	11.6-1.5R	11.7-1.3R	11.7-1.3R	F, no lap	7.6+21.6R	8.5+16.9R	9.2+13.8R	9.6+11.8R	10+10.3R	10.4+9.3R	10.6+8.1R	10.9+7.3R	11.5+5.7R	
	12"	q _a	1302	1229	1077	1049	1028	936	928	921	836	F, lap	10.4-2.6R	10.9-2.5R	12.3-2.9R	12.5-2.7R	12.7-2.4R	13.8-2.7R	13.8-2.5R	13.8-2.3R	14.6-2.2R	14.6-2.2R	F, no lap	8.6+20.9R	9.4+16.4R	11.1+12.7R	11.4+10.9R	11.7+9.5R	12.9+7.9R	13+7.1R	13.1+6.4R	14.4+4.7R	
		q _a	1169	1115	968	954	830	832	739	749	679	F, lap	11.7-3.5R	12.1-3.2R	13.8-3.9R	13.8-3.4R	15.3-3.8R	15.1-3.4R	16.4-3.7R	16.1-3.3R	17-3.1R	17-3.1R	F, no lap	9.9+20R	10.6+15.6R	12.6+11.8R	12.7+10.2R	14.3+8.1R	14.2+7.2R	15.6+5.9R	15.4+5.4R	16.8+3.9R	
	18"	q _a	1169	987	823	827	711	622	644	577	521	F, lap	11.7-3.5R	13.8-4.4R	15.9-5.3R	15.5-4.5R	17.2-5R	18.9-5.6R	18.2-4.7R	19.7-5.2R	20.7-4.6R	20.7-4.6R	F, no lap	9.9+20R	12.3+14.4R	14.7+10.4R	14.4+9.1R	16.2+6.9R	18.1+5R	17.4+4.9R	18.9+3.6R	20.5+2.3R	
		q _a	1014	987	823	692	593	622	550	491	442	F, lap	13.7-5.2R	13.8-4.4R	15.9-5.3R	17.9-6.1R	19.9-6.9R	18.9-5.6R	20.6-6.1R	22.3-6.7R	23.4-5.9R	23.4-5.9R	F, no lap	11.9+18.3R	12.3+14.4R	14.7+10.4R	16.8+7.4R	18.9+5.1R	18.1+5R	19.8+3.5R	21.6+2R	23.2+1.1R	
	24"	q _a	1014	818	823	692	593	516	455	491	442	F, lap	13.7-5.2R	16.3-6.5R	15.9-5.3R	17.9-6.1R	19.9-6.9R	21.9-7.7R	23.9-8.4R	22.3-6.7R	23.4-5.9R	23.4-5.9R	F, no lap	11.9+18.3R	14.9+12.3R	14.7+10.4R	16.8+7.4R	18.9+5.1R	21.1+2.9R	23.1+1.3R	21.6+2R	23.2+1.1R	
		q _a	1528	1517	1510	1504	1500	1496	1226	1013	852	F, lap	6.4-0.4R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	F, no lap	4.6+23.1R	5.1+18.5R	5.4+15.4R	5.5+13.3R	5.7+11.7R	5.8+10.4R	5.9+9.4R	6+8.6R	6.5+6.8R	
	20	4"	q _a	1402	1380	1365	1353	1343	1336	1226	1013	852	F, lap	7.6-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8.1-0.4R	8.1-0.4R	8.2-0.4R	8.2-0.4R	8.2-0.3R	8.2-0.3R	F, no lap	5.8+22.8R	6.3+18.2R	6.7+15.1R	6.9+13R	7.1+11.5R	7.2+10.2R	7.4+9.2R	7.5+8.4R	8+6.6R
			q _a	1293	1288	1237	1241	1205	1213	1184	1013	852	F, lap	8.6-1.1R	8.6-0.9R	9.1-0.9R	9-0.8R	9.4-0.8R	9.3-0.7R	9.6-0.6R	9.5-0.6R	9.7-0.5R	9.7-0.5R	F, no lap	6.8+22.4R	7.2+17.9R	7.9+14.8R	8+12.8R	8.4+11.2R	8.4+10R	8.8+9R	8.7+8.2R	9.4+6.4R
6"		q _a	1128	1079	1043	1016	995	979	965	953	852	F, lap	10.4-1.9R	10.9-1.8R	11.2-1.6R	11.5-1.5R	11.7-1.4R	11.9-1.3R	12.1-1.2R	12.2-1.2R	12.3-1R	12.3-1R	F, no lap	8.6+21.7R	9.4+17.1R	10+14R	10.4+12R	10.8+10.5R	11.1+9.3R	11.3+8.4R	11.5+7.6R	12.1+5.9R	
		q _a	1017	983	864	859	855	781	786	790	737	F, lap	11.7-2.6R	12.1-2.3R	13.8-2.8R	13.8-2.4R	15.1-2.4R	15.1-2.4R	15.2-1R	14.9-1.9R	15.8-1.9R	15.8-1.9R	F, no lap	9.9+20.9R	10.7+16.5R	12.6+12.9R	12.7+11.1R	14.2+8.2R	14.2+8.2R	14.2+7.5R	14.1+6.8R	15.6+5.5R	
8"		q _a	881	871	756	767	687	704	644	662	610	F, lap	13.8-3.9R	13.8-3.3R	15.9-3.9R	15.5-3.2R	17.3-3.7R	16.8-3.1R	18.2-3.4R	17.7-2.9R	18.8-2.8R	18.8-2.8R	F, no lap	12+19.6R	12.4+15.6R	14.7+11.8R	14.5+10.3R	16.3+8.3R	15.9+7.5R	17.4+6.2R	17+5.8R	18.6+4.1R	
		q _a	718	741	636	636	539	466	514	412	373	F, lap	17.2-6.4R	16.4-4.8R	19.5-8R	21.5-6.7R	24.7-5R	22.1-5.7R	24.1-6.2R	26.1-6.9R	27.7-6.2R	27.7-6.2R	F, no lap	15.4+17.2R	14.9+14R	17.8+9.9R	16.9+9.1R	19.6+9R	21.2+4.9R	19.9+5.1R	21.7+3.8R	23.6+2.3R	
12"		q _a	718	585	636	539	466	409	363	412	373	F, lap	17.2-6.4R	20.6-8R	19.5-8R	21.5-6.7R	24.7-5R	26.6-8.5R	29.1-9.2R	26.1-6.9R	27.7-6.2R	27.7-6.2R	F, no lap	15.4+17.2R	19.2+10.9R	17.8+9.9R	20.4+6.9R	23.1+4.4R	25.8+2.2R	28.3+0.4R	25.4+1.9R	27.4+0.7R	
		q _a	936	934	932	931	930	930	929	929	852	F, lap	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.1R	6.8-0.1R	6.8-0.1R	6.8-0.1R	6.8-0.1R	F, no lap	-8.6+197.7R	-5.5+158.2R	-3.4+131.8R	-2.4+114R	-1.5+100.5R	-0.6+89.4R	0+80.7R	0.6+73.4R	4.8+58.2R	
18"		q _a	899	894	890	887	885	884	882	881	852	F, lap	7.9-0.6R	8-0.5R	8.1-0.4R	8.2-0.4R	8.2-0.3R	8.3-0.3R	8.3-0.3R	8.3-0.3R	8.4-0.2R	8.4-0.2R	F, no lap	-7.3+197.4R	-4.1+157.9R	-2+131.6R	-0.9+113.8R	0+100.3R	0.9+89.2R	1.6+80.6R	2.2+73.3R	6.4+58.1R	
		q _a	860	862	845	849	836	841	831	835	827	F, lap	9.1-0.9R	9-0.7R	9.5-0.7R	9.3-0.6R	9.7-0.6R	9.5-0.5R	9.8-0.5R	9.7-0.4R	9.9-0.4R	9.9-0.4R	F, no lap	-6.1+197.1R	-3.1+157.7R	-0.6+131.3R	0.3+113.6R	1.4+100.1R	2.2+89R	3.1+80.4R	3.5+73.1R	7.9+57.9R	
24"		q _a	789	772	760	750	737	727	724	724	724	F, lap	11.2-1.6R	11.7-1.5R	12-1.3R	12.2-1.2R	12.3-1.1R	12.5-1R	12.6-1R	12.7-0.9R	12.8-0.8R	12.8-0.8R	F, no lap	-3.9+196.4R	-0.5+156.9R	1.8+130.7R	3.1+112.9R	4.1+99.6R	5.2+88.5R	5.9+79.9R	6.6+72.6R	10.8+57.5R	
		q _a	731	722	659	662	664	622	633	601	601	F, lap	13-2.4R	13.2-2.1R	15.1-2.5R	14.9-2.1R	14.8-1.8R	16.2-2R	15.9-1.7R	15.7-1.5R	16.7-1.5R	16.7-1.5R	F, no lap	-2.1+195.6R	1.1+156.4R	5+129.5R	5.9+112.1R	6.5+98.9R	8.9+87.5R	9.9+79.1R	9.6+72R	14.4+56.8R	
36/4	4"	q _a	648	655	587	602	552	569	546	514	F, lap	15.9-3.9R	15.4-3R	17.8-3.6R	17.1-2.9R	19.3-2R	18.2-2.6R	19.8-2.9R	19.2-4R	20.3-2.4R	20.3-2.4R	F, no lap	0.7+194.1R	3.3+155.4R	7.7+128.4R	8+111.3R	10.8+97.5R	10.9+86.9R	13.1+78R	12.9+71.1R	18.4+55.9R		
		q _a	648	565	497	529	480	438	470	436	398	F, lap	15.9-3.9R	19.4-9R	22.1-5.8R	20.2-4.2R	22.6-4.7R	25-5.3R	22.9-4R	24.8-4.4R	26.5-4.2R	26.5-4.2R	F, no lap	0.7+194.1R	6.9+153.5R	12+126.2R	11.2+110R	14.3+95.9R	17.7+84.2R	16.2+76.9R	18.7+69.1R	24.6+54.1R	
18"	q _a	529	565	497	441	384	438	392	352	319	F, lap	21.2-7.3R	19.4-9R	22.1-5.8R	25.2-6.8R	28.3-7.6R	25-5.3R	27.4-5.8R	29.7-6.4R	31.7-6R	31.7-6R	F, no lap	6+190.7R	6.9+153.5R	12+126.2R	16.2+107.4R	20+93.1R	17.7+84.2R	20.6+75R	23.6+67.1R	29.8+52.3R		
	q _a	529	447	497	441	384	336	298	298	298	F, lap	21.2-7.3R	25.6-9.2R	22.1-5.8R	25.2-6.8R	28.3-7.6R	31.4-8.6R	34.4-9.3R	29.7-6.4R	31.7-6R	31.7-6R	F, no lap	6+190.7R	13.5+149.2R	12+126.2R	16.2+107.4R	20+93.1R	24.1+80.9R	27.7+71.5R	23.6+67.1R	29.8+52.3R		

B PANELS

2.5 DGB-36 & DGBF-36

Pneutek SDK61 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10^{-6} in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
18	36/9	4"	q_a	2593	2575	2562	2552	2544	2317	1877	1551	1303	
			F, lap	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R
		F, no lap	3.4+11.3R	3.6+9R	3.8+7.5R	3.9+6.5R	3.9+5.7R	4+5.1R	4+4.6R	4+4.2R	4+3.3R	4.3+3.3R	4.3+3.3R
		6"	q_a	2415	2377	2349	2328	2312	2298	1877	1551	1303	1303
			F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R
		F, no lap	4.1+11.1R	4.3+8.8R	4.5+7.4R	4.6+6.3R	4.7+5.6R	4.8+5R	4.9+4.5R	4.9+4.1R	5.2+3.2R	5.2+3.2R	5.2+3.2R
		8"	q_a	2258	2242	2159	2161	2101	2109	1877	1551	1303	1303
			F, lap	5.5-0.6R	5.5-0.5R	5.8-0.5R	5.8-0.4R	5.9-0.4R	5.9-0.4R	6-0.4R	6-0.3R	6.1-0.3R	6.1-0.3R
		F, no lap	4.7+10.9R	4.8+8.7R	5.2+7.2R	5.2+6.2R	5.5+5.4R	5.5+4.8R	5.7+4.3R	5.6+4R	6.3+1R	6.3+1R	6.3+1R
		12"	q_a	2018	1929	1864	1814	1774	1743	1716	1551	1303	1303
			F, lap	6.5-1R	6.8-1R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.7R	7.5-0.7R	7.6-0.7R	7.6-0.6R	7.6-0.6R
		F, no lap	5.6+10.5R	6.1+8.2R	6.4+6.7R	6.6+5.8R	6.8+5.1R	7-4.5R	7.1+4R	7.2+3.6R	7.5+2.8R	7.5+2.8R	7.5+2.8R
	18"	q_a	1852	1783	1583	1564	1550	1423	1425	1427	1303	1303	
		F, lap	7.3-1.5R	7.5-1.3R	8.5-1.6R	8.5-1.4R	8.5-1.2R	9.1-2.4R	9.1-1.2R	9.1-1.1R	9.6-1.1R	9.6-1.1R	
	F, no lap	6.4+10R	6.8+7.9R	8.5+6.1R	8.5+3R	8.4+6R	8.8+3.8R	8.7+3.5R	8.7+3.2R	9.5+2.3R	9.5+2.3R	9.5+2.3R	
	24"	q_a	1646	1609	1411	1416	1276	1296	1190	1215	1122	1122	
		F, lap	8.5-2.2R	8.5-1.8R	9.7-2.2R	9.5-1.8R	10.4-2.1R	10.2-1.7R	11-1.9R	10.7-1.6R	11.3-1.6R	11.3-1.6R	
	F, no lap	7.6+9.3R	7.8+7.4R	9.1+5.5R	8.9+4.8R	10+3.8R	9.7+3.5R	10.6+2.8R	10.3+2.6R	11.2+1.8R	11.2+1.8R		
	36"	q_a	1646	1404	1215	1250	1109	973	1033	929	843	843	
		F, lap	8.5-2.2R	10-2.7R	11.5-3.3R	10.9-2.5R	12-2.9R	13.2-3.2R	12.4-2.5R	13.4-2.8R	14.2-2.6R	14.2-2.6R	
	F, no lap	7.6+9.3R	9.3+6.5R	10.9+4.4R	10.3+4.1R	11.5+3R	12.8+2R	12+2.2R	13+1.5R	14.1+0.8R	14.1+0.8R		
	48"	q_a	1393	1404	1215	1043	899	973	865	777	703	703	
		F, lap	10.5-3.6R	10-2.7R	11.5-3.3R	12.9-3.8R	14.4-4.3R	13.2-3.2R	14.4-3.5R	15.5-3.9R	16.4-3.5R	16.4-3.5R	
	F, no lap	9.6+7.9R	9.3+6.5R	10.9+4.4R	12.4+2.8R	13.9+1.6R	12.8+2R	14+1.2R	15.2+0.4R	16.3-0.1R	16.3-0.1R		
60"	q_a	1393	1165	1215	1043	899	787	777	703	703			
	F, lap	10.5-3.6R	12.4-4.5R	11.5-3.3R	12.9-3.8R	14.4-4.3R	15.8-4.8R	17.3-5.2R	15.5-3.9R	16.4-3.5R	16.4-3.5R		
F, no lap	9.6+7.9R	11.7+4.7R	10.9+4.4R	12.4+2.8R	13.9+1.6R	15.4+0.4R	16.9-0.5R	15.2+0.4R	16.3-0.1R	16.3-0.1R			
36/7/4	4"	q_a	2071	2064	2059	2055	2052	2050	1877	1551	1303		
		F, lap	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	
	F, no lap	3.5+11.3R	3.7+9.1R	3.8+7.6R	3.9+6.5R	4+5.8R	4+5.1R	4+4.6R	4+4.2R	4+3.3R	4+3.3R		
	6"	q_a	1949	1933	1921	1912	1905	1900	1877	1551	1303		
		F, lap	5.1-0.3R	5.2-0.3R	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R	5.4-0.1R	5.4-0.1R	5.4-0.1R	
	F, no lap	4.2+11.2R	4.5+8.9R	4.6+7.4R	4.7+6.4R	4.8+5.7R	4.9+5R	4.9+4.5R	5+4.1R	5.3+3.3R	5.3+3.3R		
	8"	q_a	1830	1835	1783	1794	1757	1769	1740	1551	1303		
		F, lap	5.8-0.5R	5.7-0.4R	6-0.4R	5.9-0.3R	6.1-0.3R	6-0.3R	6.2-0.3R	6.1-0.2R	6.2-0.2R	6.2-0.2R	
	F, no lap	4.9+11R	5+8.8R	5.4+7.3R	5.4+6.3R	5.6+5.5R	5.6+4.9R	5.8+4.4R	5.8+4R	6.1+3.2R	6.1+3.2R		
	12"	q_a	1629	1581	1547	1521	1501	1485	1472	1460	1303		
		F, lap	7-0.9R	7.2-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.6R	7.7-0.6R	7.8-0.5R	7.8-0.5R	7.9-0.4R	7.9-0.4R	
	F, no lap	6.1+10.6R	6.5+8.4R	6.8+6.9R	7+5.9R	7.1+5.2R	7.3+4.6R	7.4+4.2R	7.5+3.8R	7.7+2.9R	7.7+2.9R		
18"	q_a	1477	1451	1297	1303	1308	1207	1221	1233	1159			
	F, lap	8.1-4R	8.1-1.1R	9.2-1.4R	9.1-1.2R	9-1R	9.8-1.1R	9.6-1R	9.5-0.9R	10.1-0.9R	10.1-0.9R		
F, no lap	7.2+10.1R	7.4+8.1R	8.6+6.3R	8.6+5.5R	8.5+4.9R	9.4+4.1R	9.2+3.7R	9.2+3.4R	10.2+5R	10.2+5R			
24"	q_a	1276	1289	1134	1166	1055	1091	1005	1040	970			
	F, lap	9.7-2.2R	9.4-1.7R	10.8-2R	10.3-1.6R	11.4-1.8R	10.9-1.5R	11.9-1.6R	11.4-1.4R	12.1-1.3R	12.1-1.3R		
F, no lap	8.8+9.3R	8.7+7.5R	10.2+5.6R	9.8+5R	10.9+4R	10.5+3.7R	11.5+3.1R	11+2.9R	12+2R	12+2R			
36"	q_a	1276	1087	941	1007	904	818	880	812	745			
	F, lap	9.7-2.2R	11.4-2.7R	13.2-3.3R	12.1-2.4R	13.5-2.7R	14.8-3R	13.6-2.2R	14.7-2.5R	15.7-2.4R	15.7-2.4R		
F, no lap	8.8+9.3R	10.7+6.5R	12.6+4.4R	11.6+4.3R	13.3+2.2R	14.4+2.2R	13.2+2.5R	14.4+1.8R	15.6+1R	15.6+1R			
48"	q_a	1014	1087	941	827	725	818	737	665	605			
	F, lap	12.7-4.2R	11.4-2.7R	13.2-3.3R	15-3.8R	16.7-4.3R	14.8-3R	16.2-3.3R	17.5-3.6R	18.6-3.4R	18.6-3.4R		
F, no lap	11.8+7.3R	10.7+6.5R	12.6+4.4R	14.4+2.8R	16.2+1.6R	14.4+2.2R	15.8+1.4R	17.2+0.7R	18.5+0R	18.5+0R			
60"	q_a	1014	843	941	827	725	639	665	605				
	F, lap	12.7-4.2R	15.2-5.2R	13.2-3.3R	15-3.8R	16.7-4.3R	18.5-4.8R	20.2-5.3R	17.5-3.6R	18.6-3.4R	18.6-3.4R		
F, no lap	11.8+7.3R	14.5+4R	12.6+4.4R	14.4+2.8R	16.2+1.6R	18.1+0.4R	19.8-0.6R	17.2+0.7R	18.5+0R	18.5+0R			
36/4	4"	q_a	1236	1235	1234	1234	1233	1233	1232	1232	1232		
		F, lap	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5+0R	4.5+0R	
	F, no lap	-3+96.7R	-1.5+77.3R	-0.5+64.4R	0+55.7R	0.4+49.2R	0.9+43.7R	1.2+39.5R	1.5+35.9R	3.5+28.5R	3.5+28.5R		
	6"	q_a	1205	1202	1199	1198	1196	1195	1195	1194	1193		
		F, lap	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	
	F, no lap	-2.2+96.6R	-0.7+77.2R	0.4+64.4R	0.9+55.7R	1.3+49.1R	1.8+43.6R	2.1+39.4R	2.4+35.8R	4.5+28.4R	4.5+28.4R		
	8"	q_a	1170	1173	1159	1164	1153	1158	1149	1154	1147		
		F, lap	6-0.4R	5.9-0.3R	6.2-0.3R	6-0.2R	6.2-0.2R	6.1-0.2R	6.3-0.2R	6.2-0.2R	6.3-0.2R	6.3-0.2R	
	F, no lap	-1.4+96.4R	0+77.1R	1.2+64.2R	1.6+55.6R	2.2+49R	2.5+43.6R	3+39.3R	3.2+35.8R	5.4+28.4R	5.4+28.4R		
	12"	q_a	1097	1083	1074	1066	1060	1055	1052	1048	1046		
		F, lap	7.4-0.7R	7.6-0.7R	7.7-0.6R	7.8-0.5R	7.9-0.5R	7.9-0.4R	8-0.4R	8-0.4R	8-0.3R	8-0.3R	
	F, no lap	0+96R	1.6+76.8R	2.8+63.9R	3.4+55.3R	3.8+48.7R	4.3+43.3R	4.7+39.1R	5+35.6R	7.1+28.2R	7.1+28.2R		
18"	q_a	1030	1027	957	965	972	923	933	941	904			
	F, lap	8.7-1.2R	8.6-0.9R	9.8-1.1R	9.6-0.9R	9.4-0.8R	10.3-0.9R	10-0.7R	9.8-0.6R	10.5-0.7R	10.5-0.7R		
F, no lap	1.2+95.6R	2.7+76.5R	4.9+63.4R	5.1+54.9R	5.4+48.5R	6.7+42.9R	6.7+38.8R	6.9+35.3R	9.5+27.8R	9.5+27.8R			
24"	q_a	924	944	863	890	828	855	805	831	789			
	F, lap	10.8-2R	10.2-1.4R	11.7-1.7R	11-1.3R	12.2-1.5R	11.6-1.2R	12.6-1.3R	12-1R	12.8-1.1R	12.8-1.1R		
F, no lap	3.3+94.8R	4.2+76R	6.7+62.8R	6.6+54.5R	8.2+47.7R	8+42.6R	9.3+38.2R	9+34.9R	11.8+27.4R	11.8+27.4R			
36"	q_a	924	821	733	790	725	668	720	674	632			
	F, lap	10.8-2R	12.8-2.5R	14.9-3R	13.2-2R	14.7-2.3R	16.2-2.6R	14.6-1.8R	15.8-2R	16.9-2R	16.9-2R		
F, no lap	3.3+94.8R	6.9+74.9R	9.9+61.5R	8.8+53.8R	10.7+46.9R	12.6+41.2R	11.3+37.7R	12.8+33.9R	16+25.5R	16+25.5R			
48"	q_a	749	821	733	658	595	668	617	573	534			
	F, lap	15.1-4.4R	12.8-2.5R	14.9-3R	16.9-3.5R	18.9-4R	16.2-2.6R	17.7-2.8R	19.2-3.1R	20.6-3R	20.6-3R		
F, no lap	7.7+92.4R	6.9+74.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	12.6+41.2R	14.4+36.7R	16.2+32.8R	19.6+25.5R	19.6+25.5R			
60"	q_a	749	641	733	658	595	542	485	573	534			
	F, lap	15.1-4.4R	18.3-5.5R	14.9-3R	16.9-3.5R	18.9-4R	21-4.5R	23-4.9R	19.2-3.1R	20.6-3R	20.6-3R		
F, no lap	7.7+92.4R	12.3+71.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	17.4+39.3R	19.7+34.6R	16.2+32.8R	19.6+25.5R	19.6+25.5R			



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	3255	3243	3234	3227	3221	3217	2617	2162	1817			
		F, lap F, no lap	3.2-0.1R 2.7+6.5R	3.2-0.1R 2.8+5.2R	3.2-0.1R 2.9+4.3R	3.2-0.1R 2.9+3.7R	3.2-0.1R 3+3.3R	3.3-0.1R 3+2.9R	3.3-0.1R 3+2.6R	3.3+0R 3+2.6R	3.3+0R 3.1+2.4R	3.3+0R 3.2+1.9R		
	6"	q _a	3083	3054	3032	3016	3003	2993	2617	2162	1817			
		F, lap F, no lap	3.7-0.2R 3.2+6.4R	3.7-0.2R 3.3+5.1R	3.7-0.2R 3.4+4.2R	3.8-0.1R 3.5+3.6R	3.8-0.1R 3.5+3.2R	3.8-0.1R 3.6+2.9R	3.8-0.1R 3.6+2.6R	3.8-0.1R 3.6+2.6R	3.8-0.1R 3.6+2.3R	3.8-0.1R 3.8+1.8R		
	8"	q _a	2918	2914	2833	2843	2785	2799	2617	2162	1817			
		F, lap F, no lap	4.1-0.3R 3.6+6.2R	4.1-0.3R 3.7+5R	4.2-0.3R 3.9+4.1R	4.2-0.3R 3.9+3.6R	4.3-0.2R 4+3.1R	4.3-0.2R 4+2.8R	4.4-0.2R 4.1+2.5R	4.4-0.2R 4.1+2.3R	4.4-0.2R 4.1+2.3R	4.4-0.1R 4.3+1.8R		
	12"	q _a	2639	2556	2494	2446	2409	2379	2354	2162	1817			
		F, lap F, no lap	4.8-0.6R 4.3+6R	5-0.5R 4.6+4.7R	5.1-0.5R 4.8+3.9R	5.2-0.5R 4.9+3.3R	5.3-0.4R 5+2.9R	5.3-0.4R 5.1+2.6R	5.4-0.4R 5.1+2.3R	5.4-0.3R 5.2+2.1R	5.4-0.3R 5.2+2.1R	5.4-0.3R 5.3+1.6R		
	18"	q _a	2431	2372	2135	2129	2125	1968	1981	1992	1817			
		F, lap F, no lap	5.5-0.9R 5+5.7R	5.5-0.8R 5.1+4.5R	6.2-0.9R 5.9+3.5R	6.2-0.8R 5.9+3R	6.1-0.7R 5.8+2.7R	6.6-0.7R 6.4+2.2R	6.5-0.6R 6.3+2R	6.4-0.6R 6.2+1.9R	6.4-0.6R 6.2+1.9R	6.8-0.6R 6.8+1.4R		
	24"	q _a	2154	2143	1899	1929	1752	1794	1658	1703	1592			
		F, lap F, no lap	6.5-1.4R 6+5.2R	6.3-1.1R 5.9+4.2R	7.2-1.3R 6.8+3.1R	6.9-1R 6.6+2.7R	7.6-1.2R 7.3+2.2R	7.3-1R 7.1+2R	7.9-1.1R 7.7+1.6R	7.6-0.9R 7.4+1.5R	7.6-0.9R 7.4+1.5R	8.1-0.9R 8+1.1R		
36"	q _a	2154	1857	1619	1696	1528	1386	1471	1357	1234				
	F, lap F, no lap	6.5-1.4R 6+5.2R	7.6-1.8R 7.2+3.5R	8.7-2.1R 8.3+2.3R	8-1.5R 7.7+2.3R	8.9-1.7R 8.6+1.6R	9.7-1.9R 9.5+1R	9-1.5R 8.8+1.2R	9-1.5R 9.5+0.8R	9-1.5R 9.5+0.8R	10.3-1.5R 10.2+0.4R			
48"	q _a	1790	1857	1619	1430	1254	1386	1242	1119	1016				
	F, lap F, no lap	8.3-2.6R 7.8+4R	7.6-1.8R 7.2+3.5R	8.7-2.1R 8.3+2.3R	9.8-2.4R 9.5+1.3R	10.9-2.8R 10.6+0.6R	9.7-1.9R 9.5+1R	10.6-2.1R 10.3+0.6R	11.4-2.3R 11.2+0.1R	11.4-2.3R 11.2+0.1R	12.1-2.2R 12-0.3R			
60"	q _a	1790	1506	1619	1430	1254	1102	980	1119	1016				
	F, lap F, no lap	8.3-2.6R 7.8+4R	9.9-3.3R 9.4+2R	8.7-2.1R 8.3+2.3R	9.8-2.4R 9.5+1.3R	10.9-2.8R 10.6+0.6R	12-3.1R 11.7-0.1R	13-3.4R 12.8-0.7R	11.4-2.3R 11.2+0.1R	11.4-2.3R 11.2+0.1R	12.1-2.2R 12-0.3R			
16 36/7/4	4"	q _a	2582	2578	2575	2572	2570	2569	2568	2162	1817			
		F, lap F, no lap	3.2-0.1R 2.7+6.5R	3.2-0.1R 2.8+5.2R	3.3-0.1R 2.9+4.3R	3.3+0R 3+3.7R	3.3+0R 3+3.3R	3.3+0R 3+2.9R	3.3+0R 3+2.6R	3.3+0R 3.1+2.6R	3.3+0R 3.1+2.4R	3.3+0R 3.2+1.9R		
	6"	q _a	2473	2461	2452	2446	2441	2437	2434	2162	1817			
		F, lap F, no lap	3.7-0.2R 3.2+6.4R	3.8-0.1R 3.4+5.1R	3.8-0.1R 3.5+4.3R	3.8-0.1R 3.5+3.7R	3.8-0.1R 3.6+3.2R	3.8-0.1R 3.6+2.9R	3.8-0.1R 3.6+2.6R	3.9-0.1R 3.7+2.4R	3.9-0.1R 3.7+2.4R	3.9-0.1R 3.8+1.9R		
	8"	q _a	2357	2367	2320	2334	2300	2313	2287	2162	1817			
		F, lap F, no lap	4.2-0.3R 3.7+6.3R	4.2-0.2R 3.8+5.1R	4.3-0.2R 4+4.2R	4.3-0.2R 4+3.6R	4.4-0.2R 4.1+3.2R	4.3-0.1R 4.1+2.8R	4.3-0.1R 4.2+2.6R	4.4-0.1R 4.2+2.3R	4.4-0.1R 4.2+2.3R	4.4-0.1R 4.4+1.8R		
	12"	q _a	2140	2098	2068	2045	2027	2013	2001	1991	1817			
		F, lap F, no lap	5.1-0.5R 4.6+6.1R	5.2-0.4R 4.8+4.8R	5.3-0.4R 5+4R	5.4-0.3R 5.1+3.4R	5.4-0.3R 5.1+3R	5.5-0.3R 5.2+2.7R	5.5-0.3R 5.3+2.4R	5.5-0.2R 5.3+2.2R	5.5-0.2R 5.3+2.2R	5.5-0.2R 5.5+1.7R		
	18"	q _a	1960	1945	1767	1785	1798	1678	1701	1720	1630			
		F, lap F, no lap	5.9-0.8R 5.4+5.8R	5.9-0.6R 5.5+4.6R	6.6-0.7R 6.3+3.6R	6.5-0.6R 6.2+3.2R	6.4-0.5R 6.1+2.8R	6.9-0.6R 6.7+2.4R	6.8-0.5R 6.5+2.2R	6.7-0.4R 6.5+2R	6.7-0.4R 6.5+2R	7.1-0.4R 7.1+5R		
	24"	q _a	1702	1741	1553	1609	1470	1526	1417	1470	1380			
		F, lap F, no lap	7.2-1.3R 6.7+5.2R	6.8-1R 6.4+4.3R	7.8-1.1R 7.4+3.2R	7.4-0.9R 7.1+2.9R	8.1-1R 7.9+2.4R	8.4-0.9R 8.1+1.8R	8.4-0.9R 8.1+1.8R	8.0-0.7R 7.8+1.7R	8.0-0.7R 7.8+1.7R	8.5-0.7R 8.5+1.2R		
36"	q _a	1702	1470	1285	1394	1259	1146	1244	1152	1072				
	F, lap F, no lap	7.2-1.3R 6.7+5.2R	8.5-1.7R 8+3.6R	9.7-2R 9.4+2.4R	8.7-1.3R 8.4+2.5R	9.7-1.5R 9.4+1.8R	10.6-1.7R 10.4+1.3R	9.6-1.2R 9.4+1.5R	10.4-1.3R 10.2+1.1R	10.4-1.3R 10.2+1.1R	11.1-1.3R 11+0.6R			
48"	q _a	1334	1470	1285	1136	1015	1146	1049	967	890				
	F, lap F, no lap	9.8-2.8R 9.3+3.8R	8.5-1.7R 8+3.6R	9.7-2R 9.4+2.4R	11-2.3R 10.7+1.5R	12.3-2.6R 12+0.7R	10.6-1.7R 10.4+1.3R	11.6-1.9R 11.3+0.8R	12.5-2.1R 12.3+0.4R	12.5-2.1R 12.3+0.4R	13.4-2R 13.3+0R			
60"	q _a	1334	1117	1285	1136	1015	917	817	967	890				
	F, lap F, no lap	9.8-2.8R 9.3+3.8R	11.7-3.5R 11.3+1.7R	9.7-2R 9.4+2.4R	11-2.3R 10.7+1.5R	12.3-2.6R 12+0.7R	13.5-2.9R 13.3+0R	14.8-3.2R 14.6-0.5R	12.5-2.1R 12.3+0.4R	12.5-2.1R 12.3+0.4R	13.4-2R 13.3+0R			
36/4	4"	q _a	1519	1519	1518	1518	1518	1517	1517	1517	1517			
		F, lap F, no lap	3.3-0.1R -1+5.5.2R	3.3+0R -0.1+4.4.2R	3.3+0R 0.4+3.6.8R	3.3+0R 0.8+3.1.8R	3.3+0R 1+2.8.1R	3.3+0R 1.2+2.5R	3.3+0R 1.4+2.2.6R	3.3+0R 1.6+2.0.5R	3.3+0R 1.6+2.0.5R	3.3+0R 2.8+1.6.3R		
	6"	q _a	1494	1491	1490	1489	1488	1487	1487	1486	1486			
		F, lap F, no lap	3.8-0.1R -0.4+5.5.2R	3.8-0.1R 0.4+4.4.1R	3.8-0.1R 1+3.6.8R	3.9-0.1R 1.3+3.1.8R	3.9-0.1R 1.6+2.8.1R	3.9-0.1R 1.8+2.4.9R	3.9-0.1R 2+2.2.5R	3.9-0.1R 2.2+2.0.5R	3.9-0.1R 2.2+2.0.5R	3.9+0R 3.3+1.6.2R		
	8"	q _a	1463	1467	1455	1460	1451	1456	1449	1453	1447			
		F, lap F, no lap	4.3-0.2R 0.1+5.5.1R	4.2-0.1R 0.8+4.4.1R	4.4-0.1R 1.6+3.6.7R	4.3-0.1R 1.8+3.1.8R	4.4-0.1R 2.1+2.8R	4.4-0.1R 2.3+2.4.9R	4.5-0.1R 2.6+2.2.5R	4.5-0.1R 2.7+2.0.4R	4.5-0.1R 2.7+2.0.4R	4.5-0.1R 3.9+1.6.2R		
	12"	q _a	1395	1384	1377	1371	1367	1363	1358	1358	1356			
		F, lap F, no lap	5.3-0.4R 1.1+5.4.9R	5.4-0.3R 2+4.3.9R	5.5-0.3R 2.6+3.6.6R	5.5-0.3R 3+3.1.6R	5.5-0.2R 3.2+2.7.9R	5.6-0.2R 3.5+2.4.8R	5.6-0.2R 3.7+2.2.4R	5.6-0.2R 3.9+2.0.4R	5.6-0.2R 3.9+2.0.4R	5.6-0.2R 5.1+1.6.1R		
	18"	q _a	1326	1327	1257	1270	1279	1228	1241	1251	1212			
		F, lap F, no lap	6.2-0.6R 2+5.4.7R	6.1-0.5R 2.7+4.3.7R	6.9-0.6R 4.1+3.6.3R	6.7-0.5R 4.2+3.1.4R	6.6-0.4R 4.3+2.7.7R	7.2-0.4R 5.1+2.4.6R	7-0.4R 5.1+2.2.2R	6.8-0.3R 5.1+2.0.2R	6.8-0.3R 5.1+2.0.2R	7.3-0.3R 6.7+1.6R		
	24"	q _a	1206	1238	1151	1187	1119	1153	1098	1130	1083			
		F, lap F, no lap	7.8-1.1R 3.6+5.4.1R	7.2-0.8R 3.9+4.3.5R	8.3-0.9R 5.5+3.5.9R	7.7-0.7R 5.2+3.1.2R	8.5-0.8R 6.2+2.7.3R	8.1-0.6R 6+2.4.4R	8.7-0.7R 6.8+2.1.9R	8.3-0.5R 6.6+2.0R	8.3-0.5R 6.6+2.0R	8.8-0.5R 8.3+1.5.7R		
36"	q _a	1206	1093	989	1068	992	923	994	938	886				
	F, lap F, no lap	7.8-1.1R 3.6+5.4.1R	9.2-1.4R 5.8+4.2.8R	10.6-1.7R 7.8+3.5.1R	9.3-1.1R 6.8+3.0.8R	10.3-1.2R 8+2.6.9R	11.4-1.4R 9.3+2.3.6R	10.2-1R 8.3+2.1.6R	11-1.1R 9.3+1.9.5R	11-1.1R 9.3+1.9.5R	11.7-1.1R 11.2+1.5.2R			
48"	q _a	984	1093	989	898	819	923	860	804	753				
	F, lap F, no lap	11.3-2.8R 7.1+5.2.5R	9.2-1.4R 5.8+4.2.8R	10.6-1.7R 7.8+3.5.1R	12.1-2R 9.5+2.9.9R	13.5-2.3R 11.2+2.5.9R	11.4-1.4R 9.3+2.3.6R	12.4-1.5R 10.5+2.1.1R	13.4-1.7R 11.7+1.8.9R	13.4-1.7R 11.7+1.8.9R	14.4-1.7R 13.9+1.4.6R			
60"	q _a	984	852	989	898	819	751	804	753	753				
	F, lap F, no lap	11.3-2.8R 7.1+5.2.5R	13.6-3.5R 10.2+4.0.7R	10.6-1.7R 7.8+3.5.1R	12.1-2R 9.5+2.9.9R	13.5-2.3R 11.2+2.5.9R	14.9-2.5R 12.9+2.2.4R	16.3-2.8R 14.5+1.9.8R	13.4-1.7R 11.7+1.8.9R	13.4-1.7R 11.7+1.8.9R	14.4-1.7R 13.9+1.4.6R			

B PANELS

2.5 DGB-36 & DGBF-36

Pneutek SDK63 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	F, lap	q_a	1672	1634	1606	1585	1457	1151	932	771	647
			F, no lap	7.9-0.8R 5.1+36.4R	8.1-0.7R 5.8+29R	8.2-0.6R 6.3+24.1R	8.3-0.6R 6.6+20.8R	8.4-0.5R 6.9+18.4R	8.5-0.5R 7.1+16.3R	8.5-0.5R 7.3+14.7R	8.6-0.4R 7.4+13.4R	8.6-0.4R 8.3+10.6R
	6"	F, lap	q_a	1499	1439	1394	1360	1333	1151	932	771	647
			F, no lap	9.2-1.3R 6.3+35.8R	9.5-1.3R 7.2+28.5R	9.8-1.2R 7.9+23.6R	10.1-1.1R 8.3+20.3R	10.1-1.1R 8.6+17.9R	10.3-1R 8.9+15.8R	10.4-0.9R 9.1+14.3R	10.5-0.8R 9.3+13R	10.5-0.7R 10.2+10.2R
	8"	F, lap	q_a	1376	1331	1244	1226	1167	1151	932	771	647
			F, no lap	10.2-1.9R 7.3+35.3R	10.4-1.7R 8.1+28R	11.1-1.7R 9.2+23R	11.2-1.5R 9.5+19.9R	11.6-1.5R 10.1+17.3R	11.6-1.4R 10.3+15.4R	12-1.4R 10.8+13.8R	12-1.3R 10.8+12.5R	12.3-1.1R 11.9+9.8R
	12"	F, lap	q_a	1222	1126	1056	1002	961	927	899	771	647
			F, no lap	11.7-2.8R 8.8+34.4R	12.5-2.8R 10.2+26.9R	13.2-2.8R 11.3+22R	13.7-2.7R 12+18.7R	14.1-2.6R 12.6+16.3R	14.5-2.6R 13.2+14.2R	14.9-2.4R 13.6+12.7R	15.1-2.4R 14+11.4R	15.3-2R 14.9+8.9R
	18"	F, lap	q_a	1130	1045	906	858	820	718	702	688	623
			F, no lap	12.7-3.5R 9.9+33.6R	13.5-3.5R 11.3+26.2R	15.4-4.2R 13.5+20.6R	15.8-3.9R 14.1+17.5R	16.1-3.7R 14.6+15.2R	17.6-4.1R 16.3+12.7R	17.8-3.8R 16.5+11.4R	17.9-3.6R 16.7+10.2R	18.9-3.3R 18.5+7.6R
	24"	F, lap	q_a	1028	956	798	764	656	645	570	569	513
			F, no lap	14.1-4.6R 11.3+32.5R	14.9-4.4R 12.6+25.3R	17-5.3R 15.1+19.5R	17.3-4.8R 15.6+16.6R	19.1-5.4R 17.6+13.5R	19.1-5.4R 17.8+11.8R	20.8-5.4R 19.5+9.8R	20.6-4.9R 19.5+8.9R	21.7-4.5R 21.4+6.5R
36"	F, lap	q_a	1028	847	689	670	574	499	505	450	404	
		F, no lap	14.1-4.6R 11.3+32.5R	16.7-5.8R 14.4+23.9R	19.2-6.9R 17.3+17.8R	19.1-6.1R 17.4+15.3R	21.2-6.8R 19.7+12R	23.4-7.7R 22.9+1R	22.8-6.6R 21.5+8.5R	24.7-7.3R 23.5+6.5R	25.9-6.4R 25.5+4.6R	
48"	F, lap	q_a	915	847	689	576	492	499	439	390	349	
		F, no lap	16.1-6.3R 13.3+30.9R	16.7-5.8R 14.4+23.9R	19.2-6.9R 17.3+17.8R	21.6-8R 19.9+13.5R	24-8.9R 22.5+10R	23.4-7.7R 22+9.1R	25.4-8.3R 24+6.8R	27.5-9.2R 26.4+4.6R	28.7-7.8R 28.4+3.1R	
60"	F, lap	q_a	915	715	689	576	492	426	373	390	349	
		F, no lap	16.1-6.3R 13.3+30.9R	19.1-7.9R 16.8+21.8R	19.2-6.9R 17.3+17.8R	21.6-8R 19.9+13.5R	24-8.9R 22.5+10R	26.5-10R 25.1+6.8R	28.9-10.8R 27.6+4.4R	27.5-9.2R 26.4+4.6R	28.7-7.8R 28.4+3.1R	
22	4"	F, lap	q_a	1354	1337	1324	1315	1307	1151	932	771	647
			F, no lap	8.2-0.6R 5.4+36.5R	8.4-0.6R 6.1+29.2R	8.5-0.5R 6.6+24.3R	8.6-0.4R 6.9+21R	8.6-0.4R 7.1+18.5R	8.7-0.4R 7.3+16.4R	8.7-0.3R 7.5+14.8R	8.8-0.3R 7.6+13.5R	8.8-0.3R 8.4+10.7R
	6"	F, lap	q_a	1212	1180	1158	1140	1127	1116	932	771	647
			F, no lap	9.8-1.2R 6.9+36R	10.1-1.1R 7.8+28.7R	10.3-1R 8.4+23.8R	10.4-0.9R 8.7+20.5R	10.6-0.8R 9+18.1R	10.7-0.7R 9.3+16R	10.7-0.7R 9.5+14.5R	10.8-0.6R 9.7+13.2R	10.9-0.6R 10.5+10.4R
	8"	F, lap	q_a	1102	1086	1028	1027	986	990	932	771	647
			F, no lap	11.1-1.7R 8.2+35.4R	11.2-1.5R 8.9+28.2R	11.9-1.5R 10+23.3R	11.8-1.3R 10.1+20.1R	12.3-1.3R 10.8+17.6R	12.2-1.1R 10.9+15.7R	12.6-1.1R 11.4+14.1R	12.5-1R 11.4+12.8R	12.8-0.9R 12.4+10R
	12"	F, lap	q_a	952	895	853	822	798	779	763	750	647
			F, no lap	13.2-2.8R 10.3+34.3R	13.9-2.7R 11.7+27R	14.5-2.6R 12.6+22.2R	15-2.5R 13.3+19R	15.4-2.3R 13.8+16.6R	15.7-2.2R 14.3+14.6R	16-2.1R 14.7+13.1R	16.2-2R 15.1+11.8R	16.3-1.7R 16.9+2R
	18"	F, lap	q_a	860	815	707	693	683	619	618	617	562
			F, no lap	14.7-3.8R 11.9+33.4R	15.4-3.5R 13.1+26.2R	17.7-4.2R 15.8+20.6R	17.8-3.8R 16.1+17.6R	18-3.4R 16.4+15.5R	19.7-3.8R 18.3+13R	19.6-3.4R 18.4+11.7R	19.6-3.2R 18.4+10.6R	20.8-3R 20.5+7.9R
	24"	F, lap	q_a	753	726	624	622	540	547	488	498	453
			F, no lap	17-5.3R 14.2+31.8R	17.4-4.7R 15.1+25R	20-5.6R 18.1+19.1R	19.9-4.9R 18.2+16.6R	22.1-5.5R 20.6+13.4R	21.7-4.8R 20.4+12R	23.7-5.2R 22.4+9.9R	23.4-4.6R 22+9.2R	24.6-4.3R 24.2+6.6R
36"	F, lap	q_a	753	628	518	531	458	402	422	379	343	
		F, no lap	17-5.3R 14.2+31.8R	20.2-6.6R 17.9+23.1R	23.4-8R 21.5+16.8R	22.7-6.5R 21+14.9R	25.3-7.3R 23.7+11.6R	27.9-8.2R 26.5+8.6R	26.6-6.7R 25.3+8.4R	28.8-7.4R 27.7+6.4R	30.5-6.7R 30.1+4.2R	
48"	F, lap	q_a	633	628	518	437	376	402	356	319	289	
		F, no lap	20.5-8R 17.6+29.1R	20.2-6.6R 17.9+23.1R	23.4-8R 21.5+16.8R	26.6-9.1R 24.9+12.3R	29.7-10.3R 28.2+8.6R	27.9-8.2R 26.5+8.6R	30.5-9R 29.2+6.2R	33.1-9.9R 31.9+3.9R	34.9-8.7R 34.5+2.3R	
60"	F, lap	q_a	633	500	518	437	376	329	319	289		
		F, no lap	20.5-8R 17.6+29.1R	24.5-10R 22.3+19.7R	23.4-8R 21.5+16.8R	26.6-9.1R 24.9+12.3R	29.7-10.3R 28.2+8.6R	32.9-11.5R 31.5+5.3R	36-12.5R 34.7+2.7R	33.1-9.9R 31.9+3.9R	34.9-8.7R 34.5+2.3R	
36/4	4"	F, lap	q_a	858	854	851	849	847	846	845	771	647
			F, no lap	8.5-0.5R -15.5+312.3R	8.6-0.4R -10.6+249.8R	8.7-0.4R -7.3+208.1R	8.7-0.3R -5.6+180R	8.8-0.3R -4.3+158.8R	8.8-0.3R -2.8+141.1R	8.9-0.2R -1.8+127.5R	8.9-0.2R -0.8+115.9R	8.9-0.2R 5.8+91.9R
	6"	F, lap	q_a	808	800	794	789	785	782	780	771	647
			F, no lap	10.3-1R -13.7+311.8R	10.5-0.8R -8.7+249.4R	10.7-0.7R -5.3+207.8R	10.8-0.7R -3.5+179.7R	10.9-0.6R -2.2+158.4R	11-0.6R -0.6+140.8R	11-0.5R 0.4+127.2R	11-0.5R 1.4+115.7R	11.1-0.4R 8+91.7R
	8"	F, lap	q_a	762	761	738	740	724	728	715	719	647
			F, no lap	11.9-1.5R -12.1+311.3R	11.8-1.2R -7.4+249R	12.5-1.2R -3.5+207.3R	12.4-1R -2+179.3R	12.8-1R -0.2+158.1R	12.7-0.9R 1.1+140.5R	13-0.8R 2.4+126.9R	12.9-0.7R 3.2+115.4R	13.2-0.7R 10.1+91.4R
	12"	F, lap	q_a	686	662	645	632	621	613	606	600	595
			F, no lap	14.6-2.6R -9.4+310.2R	15.2-2.4R -3.9+247.8R	15.7-2.2R -0.2+206.3R	16.1-2.1R 1.8+178.3R	16.4-1.9R 3.4+157.1R	16.7-1.8R 5.1+139.6R	16.9-1.7R 6.2+126.1R	17-1.6R 7.4+114.6R	17.2-1.4R 14.1+90.7R
	18"	F, lap	q_a	630	613	549	547	546	504	507	510	479
			F, no lap	16.7-3.7R -7.2+309.1R	17.2-3.3R -2+247R	19.8-3.9R 3.8+204.6R	19.7-3.4R 5.3+177R	19.6-2.9R 6.5+156.1R	21.5-3.3R 9.9+138.1R	21.2-2.9R 10.6+124.8R	21-2.6R 11.3+113.5R	22.4-2.6R 19.4+89.5R
	24"	F, lap	q_a	557	552	488	495	448	459	423	434	402
			F, no lap	20.1-5.6R -3.9+307.1R	19.9-4.6R 0.7+245.6R	23-5.5R 7.1+203R	22.4-4.5R 8+175.8R	24.9-5.1R 11.9+153.9R	24.1-4.3R 12.5+137.1R	26.3-4.7R 15.6+123R	25.4-4R 15.7+112.1R	27.1-3.9R 24+88.2R
36"	F, lap	q_a	557	478	415	435	381	333	361	323	292	
		F, no lap	20.1-5.6R -3.9+307.1R	24.1-7.1R 4.9+243.2R	28.1-8.5R 12.1+200R	26.2-6.4R 11.9+173.9R	29.3-7.2R 16.2+151.8R	32.4-8.1R 20.8+133.3R	30.1-6.3R 19.5+121.4R	32.7-6.9R 23+109.2R	34.8-6.5R 31.8+85.6R	
48"	F, lap	q_a	462	478	415	349	299	333	295	264	237	
		F, no lap	25.8-9.7R 1.8+303.1R	24.1-7.1R 4.9+243.2R	28.1-8.5R 12.1+200R	32-9.8R 17.7+170.6R	35.9-11R 22.9+148.1R	32.4-8.1R 20.8+133.3R	35.5-8.9R 24.9+118.9R	38.6-9.8R 29+106.4R	41.1-8.9R 38+83.2R	
60"	F, lap	q_a	462	377	415	349	299	260	229	264	237	
		F, no lap	25.8-9.7R 1.8+303.1R	31.2-12.1R 12+238.1R	28.1-8.5R 12.1+200R	32-9.8R 17.7+170.6R	35.9-11R 22.9+148.1R	39.9-12.4R 28.3+129R	43.7-13.4R 33.1+114.3R	38.6-9.8R 29+106.4R	41.1-8.9R 38+83.2R	



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	2015	1985	1962	1945	1916	1514	1226	1013	852			
		F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	6.4-6.7R	
	F, no lap	4.4+23R	4.9+18.4R	5.2+15.3R	5.4+13.2R	5.5+11.7R	5.7+10.3R	5.8+9.3R	5.9+8.5R	5.9+8.5R	6.4+6.7R			
	q _a	1829	1775	1735	1705	1681	1514	1226	1013	852				
	F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8-0.5R	8-0.5R	8-1.0.4R			
	F, no lap	5.4+22.7R	6+18R	6.4+15R	6.7+12.9R	6.8+11.4R	7+10.1R	7.2+9.1R	7.3+8.2R	7.3+8.2R	7.8+6.5R			
	q _a	1686	1650	1560	1549	1487	1486	1226	1013	852				
	F, lap	8.1-1.2R	8.2-1.1R	8.6-1.1R	8.6-0.9R	9-0.9R	8.9-0.8R	9.2-0.8R	9.2-0.7R	9.4-0.7R				
	F, no lap	6.3+22.3R	6.7+17.7R	7.4+14.6R	7.6+12.6R	8+11R	8.1+9.8R	8.4+8.8R	8.4+8R	9.1+6.2R				
	q _a	1495	1397	1326	1271	1228	1194	1165	1013	852				
F, lap	9.4-2R	9.9-1.9R	10.4-1.9R	10.7-1.8R	11-1.7R	11.2-1.6R	11.4-1.5F	11.6-1.5F	11.7-1.3R					
F, no lap	7.6+21.6R	8.5+16.9R	9.2+13.8R	9.6+11.8R	10+10.3R	10.4+9R	10.6+8.1R	10.9+7.3R	11.5+5.7R					
q _a	1375	1291	1128	1095	1070	961	949	940	852					
F, lap	10.4-2.6R	10.9-2.5R	12.3-2.9R	12.5-2.7R	12.7-2.4R	13.8-2.7R	13.8-2.5R	13.8-2.3R	14.6-2.2R					
F, no lap	8.6+20.9R	9.4+16.4R	11.1+12.7R	11.4+10.9R	11.7+9.5R	12.9+7.9R	13.7+7.1R	13.8+6.4R	14.4+4.7R					
q _a	1238	1173	1017	995	858	866	760	768	695					
F, lap	11.7-3.5R	12.1-3.2R	13.8-3.9R	13.8-3.4R	15.3-3.8R	15.1-3.4R	16.4-3.7R	16.1-3.3R	17.3-1R					
F, no lap	9.9+20R	10.6+15.6R	12.6+11.8R	12.7+10.2R	14.3+8.1R	14.2+7.2R	15.6+5.9R	15.4+5.4R	16.8+3.9R					
q _a	1238	1043	863	860	740	646	665	595	537					
F, lap	11.7-3.5R	13.8-4.4R	15.9-5.3R	15.5-4.5R	17.2-5R	18.9-5.6R	18.2-4.7R	19.7-5.2R	20.7-4.6R					
F, no lap	9.9+20R	12.3+14.4R	14.7+10.4R	14.4+9.1R	16.2+6.9R	18.1+5.9R	17.4+4.9R	18.9+3.6R	20.5+2.3R					
q _a	1081	1043	863	725	621	646	509	458	458					
F, lap	13.7-5.2R	13.8-4.4R	15.9-5.3R	17.9-6.1R	19.9-6.9R	18.9-5.6R	20.6-6.1R	22.3-6.7R	23.4-5.9R					
F, no lap	11.9+18.3R	12.3+14.4R	14.7+10.4R	16.8+7.4R	18.9+5.1R	18.1+5.9R	19.8+3.5R	21.6+2R	23.2+1.1R					
q _a	1081	867	863	725	621	541	509	458	458					
F, lap	13.7-5.2R	16.3-6.5R	15.9-5.3R	17.9-6.1R	19.9-6.9R	21.9-7.7R	23.9-8.4R	22.3-6.7R	23.4-5.9R					
F, no lap	11.9+18.3R	14.9+12.3R	14.7+10.4R	16.8+7.4R	18.9+5.1R	21.1+2.9R	23.1+1.3R	21.6+2R	23.2+1.1R					
20	4"	q _a	1626	1613	1603	1596	1591	1514	1226	1013	852			
		F, lap	6.4-0.4R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R		
	F, no lap	4.6+23.1R	5.1+18.5R	5.4+15.4R	5.5+13.3R	5.7+11.7R	5.8+10.4R	5.9+9.4R	6+8.6R	6+8.6R	6.5+6.8R			
	q _a	1483	1456	1437	1423	1412	1403	1226	1013	852				
	F, lap	7.6-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8.1-0.4R	8.1-0.4R	8.2-0.4R	8.2-0.4R	8.2-0.3R				
	F, no lap	5.8+22.8R	6.3+18.2R	6.7+15.1R	6.9+13R	7.1+11.5R	7.2+10.2R	7.4+9.2R	7.5+8.4R	8+6.6R				
	q _a	1362	1354	1295	1299	1258	1265	1226	1013	852				
	F, lap	8.6-1.1R	8.6-0.9R	9.1-0.9R	9-0.8R	9.4-0.8R	9.3-0.7R	9.6-0.6R	9.5-0.6R	9.7-0.5R				
	F, no lap	6.8+22.4R	7.2+17.9R	7.9+14.8R	8+12.8R	8.4+11.2R	8.4+10R	8.8+9R	8.7+8.2R	9.4+6.4R				
	q _a	1185	1128	1087	1056	1033	1013	998	985	852				
F, lap	10.4-1.9R	10.9-1.8R	11.2-1.6R	11.5-1.5R	11.7-1.4R	11.9-1.3R	12.1-1.2R	12.2-1.2R	12.3-1R					
F, no lap	8.6+21.7R	9.4+17.1R	10+14R	10.4+12R	10.8+10.5R	11.1+9.3R	11.3+8.4R	11.5+7.6R	12.1+5.9R					
q _a	1067	1027	899	891	885	807	810	813	757					
F, lap	11.7-2.6R	12.1-2.3R	13.8-2.8R	13.8-2.4R	15.1-2.4R	15.1-2.4R	15.2-1R	14.9-1.9R	15.8-1.9R					
F, no lap	9.9+20.9R	10.7+16.5R	12.6+12.9R	12.7+11.1R	12.8+9.8R	14.2+8.2R	14.2+7.5R	14.1+6.8R	15.6+5R					
q _a	927	911	789	796	713	728	661	682	621					
F, lap	13.8-3.9R	13.8-3.3R	15.9-3.9R	15.5-3.2R	17.3-3.7R	16.8-3.1R	18.2-3.4R	17.7-2.9R	18.8-2.8R					
F, no lap	12+19.6R	12.4+15.6R	14.7+11.8R	14.5+10.3R	16.3+8.3R	15.9+7.5R	17.4+6.2R	17+5.8R	18.6+4.1R					
q _a	927	778	662	693	602	529	566	510	463					
F, lap	13.8-3.9R	16.4-4.8R	19.5-8R	17.9-4.5R	20-5.1R	22.1-5.7R	20.7-4.5R	22.4-5R	23.8-4.6R					
F, no lap	12+19.6R	14.9+14R	17.8+9.9R	16.9+9.1R	19+6.9R	21.2+4.9R	19.9+5.1R	21.7+3.8R	23.6+2.3R					
q _a	761	778	662	560	484	529	471	424	384					
F, lap	17.2-6.4R	16.4-4.8R	19.5-8R	21.5-6.7R	24-7.5R	22.1-5.7R	24.1-6.2R	26.1-6.9R	27.7-6.2R					
F, no lap	15.4+17.2R	14.9+14R	17.8+9.9R	20.4+9.9R	23.1+4.4R	21.2+4.9R	23.3+3.4R	25.4+1.9R	27.4+0.7R					
q _a	761	616	662	560	484	424	377	424	384					
F, lap	17.2-6.4R	20.6-8R	19.5-8R	21.5-6.7R	24-7.5R	26.6-8.5R	29.1-9.2R	26.1-6.9R	27.7-6.2R					
F, no lap	15.4+17.2R	19.2+10.9R	17.8+9.9R	20.4+6.9R	23.1+4.4R	25.8+2.2R	28.3+0.4R	25.4+1.9R	27.4+0.7R					
36/4	4"	q _a	1003	1001	999	998	997	996	995	995	852			
		F, lap	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.1R	6.8-0.1R	6.8-0.1R	6.8-0.1R			
	F, no lap	-8.6+197.7R	-5.5+158.2R	-3.4+131.8R	-2.4+114R	-1.5+100.5R	-0.6+89.4R	0+80.7R	0.6+73.4R	4.8+58.2R				
	q _a	960	953	949	945	943	941	939	937	852				
	F, lap	7.9-0.6R	8-0.5R	8.1-0.4R	8.2-0.4R	8.2-0.3R	8.3-0.3R	8.3-0.3R	8.3-0.3R	8.4-0.2R				
	F, no lap	-7.3+197.4R	-4.1+157.9R	-2+131.6R	-0.9+113.8R	0+100.3R	0.9+89.2R	1.6+80.6R	2.2+73.3R	6.4+58.1R				
	q _a	915	916	896	900	886	890	879	883	852				
	F, lap	9.1-0.9R	9-0.7R	9.5-0.7R	9.3-0.6R	9.7-0.6R	9.5-0.5R	9.8-0.5R	9.7-0.4R	9.9-0.4R				
	F, no lap	-6.1+197.1R	-3.1+157.7R	-0.6+131.3R	0.3+113.6R	1.4+100.1R	2.2+89R	3.1+80.4R	3.5+73.1R	7.9+57.9R				
	q _a	835	815	800	789	772	766	761	757	757				
F, lap	11.2-1.6R	11.7-1.5R	12-1.3R	12.2-1.2R	12.3-1.1R	12.5-1R	12.6-1R	12.7-0.9R	12.8-0.8R					
F, no lap	-3.9+196.4R	-0.5+156.9R	1.8+130.7R	3.1+112.9R	4.1+99.6R	5.2+88.5R	5.9+79.9R	6.6+72.6R	10.8+57.5R					
q _a	772	760	690	692	694	647	653	658	623					
F, lap	13-2.4R	13.2-2.1R	15.1-2.5R	14.9-2.1R	14.8-1.8R	16.2-2R	15.9-1.7R	15.7-1.5R	16.7-1.5R					
F, no lap	-2.1+195.6R	1.1+156.4R	5+129.5R	5.9+112.1R	6.5+98.9R	8.9+87.5R	9.2+79.1R	9.6+72R	14.8+56.8R					
q _a	683	687	614	628	574	591	549	566	531					
F, lap	15.9-3.9R	15.4-3R	17.8-3.6R	17.1-2.9R	19-3.2R	18.2-2.6R	19.8-2.9R	19.2-4R	20.3-2.4R					
F, no lap	0.7+194.1R	3.3+155.4R	7.7+128.4R	8+111.3R	10.8+97.5R	10.9+86.9R	13.1+78R	12.9+71.1R	18.4+55.9R					
q _a	683	593	520	552	499	451	486	446	404					
F, lap	15.9-3.9R	19.4-9R	22.1-5.8R	20.2-4.2R	22.6-4.7R	25-5.3R	22.9-4R	24.8-4.4R	26.5-4.2R					
F, no lap	0.7+194.1R	6.9+153.5R	12+126.2R	11.2+110R	14.3+95.9R	17.7+84.2R	16.2+76.9R	18.7+69.1R	24.6+54.1R					
q _a	559	593	520	460	396	451	401	360	325					
F, lap	21.2-7.3R	19.4-9R	22.1-5.8R	25.2-6.8R	28.3-7.6R	25-5.3R	27.4-5.8R	29.7-6.4R	31.7-6R					
F, no lap	6+190.7R	6.9+153.5R	12+126.2R	16.2+107.4R	20+93.1R	17.7+84.2R	20.6+75R	23.6+67.1R	29.8+52.3R					
q _a	559	472	520	460	396	346	306	306	325					
F, lap	21.2-7.3R	25.6-9.2R	22.1-5.8R	25.2-6.8R	28.3-7.6R	31.4-8.6R	34.4-9.3R	29.7-6.4R	31.7-6R					
F, no lap	6+190.7R	13.5+149.2R	12+126.2R	16.2+107.4R	20+93.1R	24.1+80.9R	27.7+71.5R	23.6+67.1R	29.8+52.3R					

B PANELS

2.5 DGB-36 & DGBF-36

Pneutek SDK63 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
18	36/9	4"	q_a	2630	2611	2597	2587	2579	2317	1877	1551	1303	
			F, lap	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R
		F, no lap	3.4+11.3R	3.6+9R	3.8+7.5R	3.9+6.5R	3.9+5.7R	4+5.1R	4+4.6R	4+4.6R	4+4.6R	4+4.6R	4+4.6R
		6"	q_a	2446	2407	2378	2356	2339	2317	2317	1877	1551	1303
			F, lap	4.9-0.4R	5-0.4R	5.1-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.3R	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R
		F, no lap	4.1+11.1R	4.3+8.8R	4.5+7.4R	4.6+6.3R	4.7+5.6R	4.8+5R	4.9+4.5R	4.9+4.1R	4.9+4.1R	4.9+4.1R	4.9+4.1R
		8"	q_a	2286	2269	2183	2184	2123	2131	2131	1877	1551	1303
			F, lap	5.5-0.6R	5.5-1.3R	5.8-0.5R	5.8-0.4R	5.9-0.4R	5.9-0.4R	5.9-0.4R	6-0.4R	6-0.3R	6.1-0.3R
		F, no lap	4.7+10.9R	4.8+8.7R	5.2+7.2R	5.2+6.2R	5.5+5.4R	5.5+4.8R	5.5+4.8R	5.7+4.3R	5.6+4R	5.6+4R	6+3.1R
		12"	q_a	2041	1950	1883	1831	1790	1758	1758	1730	1551	1303
			F, lap	6.5-1R	6.8-1R	7-0.9R	7.2-0.9R	7.3-0.8R	7.4-0.7R	7.5-0.7R	7.5-0.7R	7.6-0.7R	7.6-0.6R
		F, no lap	5.6+10.5R	6.1+8.2R	6.4+6.7R	6.6+5.8R	6.8+5.1R	7-4.5R	7-4.5R	7.1+4R	7.2+3.6R	7.5+2.8R	7.5+2.8R
	18"	q_a	1873	1802	1599	1579	1564	1434	1434	1436	1438	1303	
		F, lap	7.3-1.5R	7.5-1.3R	8.5-1.6R	8.5-1.4R	8.5-1.2R	9.1-2.1R	9.1-1.2R	9.1-1.2R	9.1-1.1R	9.6-1.1R	
	F, no lap	6.4+10R	6.8+7.9R	8.5-1.6R	8.5-3R	8+4.6R	8.8+3.8R	8.7+3.5R	8.7+3.5R	8.7+3.2R	9.5+2.3R	9.5+2.3R	
	24"	q_a	1666	1626	1425	1429	1287	1307	1307	1199	1224	1127	
		F, lap	8.5-2.2R	8.5-1.8R	9.7-2.2R	9.5-1.8R	10.4-2.1R	10.2-1.7R	11-1.9R	10.7-1.6R	11.3-1.6R		
	F, no lap	7.6+9.3R	7.8+7.4R	9.1+5.5R	8.9+4.8R	10+3.8R	9.7+3.5R	10.6+2.8R	10.3+2.6R	11.2+1.8R	11.2+1.8R		
	36"	q_a	1666	1419	1229	1263	1116	980	1039	934	847		
		F, lap	8.5-2.2R	10-2.7R	11.5-3.3R	10.9-2.5R	12-2.9R	13.2-3.2R	12.4-2.5R	13.4-2.8R	14.2-2.6R		
	F, no lap	7.6+9.3R	9.3+6.5R	10.9+4.4R	10.3+4.1R	11.5+3R	12.8+2R	12+2.2R	13+1.5R	14.1+0.8R	14.1+0.8R		
	48"	q_a	1411	1419	1229	1052	907	980	871	782	707		
		F, lap	10.5-3.6R	10-2.7R	11.5-3.3R	12.9-3.8R	14.4-4.3R	13.2-3.2R	14.4-3.5R	15.5-3.9R	16.4-3.5R		
	F, no lap	9.6+7.9R	9.3+6.5R	10.9+4.4R	12.4+2.8R	13.9+1.6R	12.8+2R	14+1.2R	15.2+0.4R	16.3-0.1R	16.3-0.1R		
60"	q_a	1411	1180	1229	1052	907	794	707	782	707			
	F, lap	10.5-3.6R	12.4-4.5R	11.5-3.3R	12.9-3.8R	14.4-4.3R	15.8-4.8R	17.3-5.2R	15.5-3.9R	16.4-3.5R			
F, no lap	9.6+7.9R	11.7+4.7R	10.9+4.4R	12.4+2.8R	13.9+1.6R	15.4+0.4R	16.9-0.5R	15.2+0.4R	16.3-0.1R	16.3-0.1R			
36/7/4	18	4"	q_a	2101	2094	2088	2085	2082	2079	1877	1551	1303	
			F, lap	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	
		F, no lap	3.5+11.3R	3.7+9.1R	3.8+7.6R	3.9+6.5R	4+5.8R	4+5.1R	4+4.6R	4+4.6R	4+4.6R		
		6"	q_a	1975	1958	1946	1936	1929	1924	1877	1551	1303	
			F, lap	5.1-0.3R	5.2-0.3R	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.2R	5.4-0.1R	5.4-0.1R	
		F, no lap	4.2+11.2R	4.5+8.9R	4.6+7.4R	4.7+6.4R	4.8+5.7R	4.9+5R	4.9+4.5R	5+4.1R	5.3+3.3R		
		8"	q_a	1853	1857	1804	1815	1777	1789	1759	1551	1303	
			F, lap	5.8-0.5R	5.7-0.4R	6-0.4R	5.9-0.3R	6.1-0.3R	6-0.3R	6.2-0.3R	6.1-0.2R	6.2-0.2R	
		F, no lap	4.9+11R	5+8.8R	5.4+7.3R	5.4+6.3R	5.6+5.5R	5.6+4.9R	5.8+4.4R	5.8+4R	6.1+3.2R		
		12"	q_a	1647	1598	1562	1536	1515	1498	1484	1473	1303	
			F, lap	7-0.9R	7.2-0.8R	7.4-0.8R	7.5-0.7R	7.6-0.6R	7.7-0.6R	7.8-0.5R	7.8-0.5R	7.9-0.4R	
		F, no lap	6.1+10.6R	6.5+8.4R	6.8+6.9R	7+5.9R	7.1+5.2R	7.3+4.6R	7.4+4.2R	7.5+3.8R	7.7+2.9R		
18"	q_a	1493	1466	1309	1314	1318	1216	1230	1241	1166			
	F, lap	8.1-1.4R	8.1-1.1R	9.2-1.4R	9.1-1.2R	9-1R	9.8-1.1R	9.6-1R	9.5-0.9R	10.1-0.9R			
F, no lap	7.2+10.1R	7.4+8.1R	8.6+6.3R	8.6+5.5R	8.5+4.9R	9.4+4.1R	9.2+3.7R	9.2+3.4R	10.1+0.9R				
24"	q_a	1289	1301	1144	1175	1063	1098	1012	1047	976			
	F, lap	9.7-2.2R	9.4-1.7R	10.8-2R	10.3-1.6R	11.4-1.8R	10.9-1.5R	11.9-1.6R	11.4-1.4R	12.1-1.3R			
F, no lap	8.8+9.3R	8.7+7.5R	10.2+5.6R	9.8+5R	10.9+4R	10.5+3.7R	11.5+3.1R	11+2.9R	12+2R				
36"	q_a	1289	1098	950	1016	911	824	886	817	748			
	F, lap	9.7-2.2R	11.4-2.7R	13.2-3.3R	12.1-2.4R	13.5-2.7R	14.8-3R	13.6-2.2R	14.7-2.5R	15.7-2.4R			
F, no lap	8.8+9.3R	10.7+6.5R	12.6+4.4R	11.6+4.3R	13.3+2.2R	14.4+2.2R	13.2+2.5R	14.4+1.8R	15.6+1R				
48"	q_a	1026	1098	950	834	730	824	741	669	608			
	F, lap	12.7-4.2R	11.4-2.7R	13.2-3.3R	15-3.8R	16.7-4.3R	14.8-3R	16.2-3.3R	17.5-3.6R	18.6-3.4R			
F, no lap	11.8+7.3R	10.7+6.5R	12.6+4.4R	14.4+2.8R	16.2+1.6R	14.4+2.2R	15.8+1.4R	17.2+0.7R	18.5+0R				
60"	q_a	1026	853	950	834	730	643	573	669	608			
	F, lap	12.7-4.2R	15.2-5.2R	13.2-3.3R	15-3.8R	16.7-4.3R	18.5-4.8R	20.2-5.3R	17.5-3.6R	18.6-3.4R			
F, no lap	11.8+7.3R	14.5+4R	12.6+4.4R	14.4+2.8R	16.2+1.6R	18.1+0.4R	19.8-0.6R	17.2+0.7R	18.5+0R				
36/4	18	4"	q_a	1256	1255	1254	1253	1253	1252	1252	1252	1251	
			F, lap	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	4.5+0R	
		F, no lap	-3+96.7R	-1.5+77.3R	-0.5+64.4R	0+55.7R	0.4+49.2R	0.9+43.7R	1.2+39.5R	1.5+35.9R	3.5+28.5R		
		6"	q_a	1223	1220	1217	1216	1214	1213	1212	1211	1211	
			F, lap	5.2-0.2R	5.3-0.2R	5.3-0.2R	5.3-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	5.4-0.1R	
		F, no lap	-2.2+96.6R	-0.7+77.2R	0.4+64.4R	0.9+55.7R	1.3+49.1R	1.8+43.6R	2.1+39.4R	2.4+35.8R	4.5+28.4R		
		8"	q_a	1187	1190	1175	1180	1169	1174	1165	1170	1162	
			F, lap	6-0.4R	5.9-0.3R	6.2-0.3R	6-0.2R	6.2-0.2R	6.1-0.2R	6.3-0.2R	6.2-0.2R	6.3-0.2R	
		F, no lap	-1.4+96.4R	0+77.1R	1.2+64.2R	1.6+55.6R	2.2+49R	2.5+43.6R	3+39.3R	3.2+35.8R	5.4+28.4R		
		12"	q_a	1112	1097	1087	1079	1073	1068	1064	1061	1058	
			F, lap	7.4-0.7R	7.6-0.7R	7.7-0.6R	7.8-0.5R	7.9-0.5R	7.9-0.4R	8-0.4R	8-0.4R	8-0.3R	
		F, no lap	0+96R	1.6+76.8R	2.8+63.9R	3.4+55.3R	3.8+48.7R	4.3+43.3R	4.7+39.1R	5+35.6R	7.1+28.2R		
18"	q_a	1043	1039	967	976	982	932	943	951	912			
	F, lap	8.7-1.2R	8.6-0.9R	9.8-1.1R	9.6-0.9R	9.4-0.8R	10.3-0.9R	10-0.7R	9.8-0.6R	10.5-0.7R			
F, no lap	1.2+95.6R	2.7+76.5R	4.9+63.4R	5.1+54.9R	5.4+48.5R	6.7+42.9R	6.7+38.8R	6.9+35.3R	9.5+27.8R				
24"	q_a	934	955	872	899	836	863	812	838	796			
	F, lap	10.8-2R	10.2-1.4R	11.7-1.7R	11-1.3R	12.2-1.5R	11.6-1.2R	12.6-1.3R	12-1R	12.8-1.1R			
F, no lap	3.3+94.8R	4.2+76R	6.7+62.8R	6.6+54.5R	8.2+47.7R	8+42.6R	9.3+38.2R	9+34.9R	11.8+27.4R				
36"	q_a	934	830	740	797	731	673	726	679	636			
	F, lap	10.8-2R	12.8-2.5R	14.9-3R	13.2-2R	14.7-2.3R	16.2-2.6R	14.6-1.8R	15.8-2R	16.9-2R			
F, no lap	3.3+94.8R	6.9+74.9R	9.9+61.5R	8.8+53.8R	10.7+46.9R	12.6+41.2R	11.3+37.7R	12.8+33.9R	16+25.8R				
48"	q_a	758	830	740	664	600	673	622	577	537			
	F, lap	15.1-4.4R	12.8-2.5R	14.9-3R	16.9-3.5R	18.9-4R	16.2-2.6R	17.7-2.8R	19.2-3.1R	20.6-3R			
F, no lap	7.7+92.4R	6.9+74.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	12.6+41.2R	14.4+36.7R	16.2+32.8R	19.6+25.5R				
60"	q_a	758	648	740	664	600	546	577	537				
	F, lap	15.1-4.4R	18.3-5.5R	14.9-3R	16.9-3.5R	18.9-4R	21-4.5R	23-4.9R	19.2-3.1R	20.6-3R			
F, no lap	7.7+92.4R	12.3+71.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	17.4+39.3R	19.7+34.6R	16.2+32.8R	19.6+25.5R				



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span																														
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"																						
36/9	4"	q _a	3171	3160	3151	3145	3140	3136	2617	2162	1817	F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	F, no lap	2.7+6.5R	2.8+5.2R	2.9+4.3R	2.9+3.7R	3+3.3R	3+2.9R	3+2.6R	3.1+2.4R	3.2+1.9R		
		q _a	3009	2982	2962	2947	2935	2926	2617	2162	1817	F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	F, no lap	3.2+6.4R	3.3+5.1R	3.4+4.2R	3.5+3.6R	3.5+3.2R	3.6+2.9R	3.6+2.6R	3.6+2.3R	3.8+1.8R	
	6"	q _a	2851	2849	2773	2783	2728	2742	2617	2162	1817	F, lap	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.1R	F, no lap	3.6+6.2R	3.7+5R	3.9+4.1R	3.9+3.6R	4+3.1R	4+2.8R	4.1+2.5R	4.1+2.3R	4.3+1.8R	
		q _a	2584	2505	2447	2403	2367	2339	2315	2162	1817	F, lap	4.8-0.6R	5-0.5R	5.1-0.5R	5.2-0.5R	5.3-0.4R	5.3-0.4R	5.4-0.4R	5.4-0.3R	5.4-0.3R	5.4-0.3R	F, no lap	4.3+6R	4.6+4.7R	4.8+3.9R	4.9+3.5R	5+2.9R	5.1+2.6R	5.1+2.3R	5.2+2.1R	5.3+1.6R	
	8"	q _a	2381	2327	2098	2094	2092	1939	1953	1964	1817	F, lap	5.5-0.9R	5.5-0.8R	6.2-0.9R	6.2-0.8R	6.1-0.7R	6.6-0.7R	6.5-0.6R	6.4-0.6R	6.4-0.6R	6.8-0.6R	F, no lap	5+5.7R	5.1+4.5R	5.9+3.5R	5.9+3R	5.8+2.7R	6.4+2.2R	6.4+2.2R	6.2+1.9R	6.8+1.4R	
		q _a	2110	2103	1867	1898	1726	1769	1635	1681	1572	F, lap	6.5-1.4R	6.3-1.1R	7.2-1.3R	6.9-1R	7.6-1.2R	7.3-1R	7.9-1.1R	7.6-0.9R	8.1-0.9R	8.1-0.9R	F, no lap	6+5.2R	5.9+4.2R	6.8+3.1R	6.6+2.7R	7.3+2.2R	7.1+2R	7.7+1.6R	7.4+1.5R	8+1.1R	
	12"	q _a	2110	1821	1590	1669	1504	1366	1451	1341	1224	F, lap	6.5-1.4R	7.6-1.8R	8.7-2.1R	8-1.5R	8.9-1.7R	9.7-1.9R	9-1.5R	9-1.5R	9-1.5R	10.3-1.5R	F, no lap	6+5.2R	7.2+3.5R	8.3+2.3R	7.7+2.3R	8.6+1.6R	9.5+1R	8.8+1.2R	9.5+0.8R	10.2+0.4R	
		q _a	1751	1821	1590	1405	1237	1366	1229	1107	1005	F, lap	8.3-2.6R	7.6-1.8R	8.7-2.1R	9.8-2.4R	10.9-2.8R	9.7-1.9R	10.6-2.1R	11.4-2.3R	12.1-2.2R	12.1-2.2R	F, no lap	7.8+4R	7.2+3.5R	8.3+2.3R	9.5+1.3R	10.6+0.6R	9.5+1R	10.3+0.6R	11.2+0.1R	12-0.3R	
	18"	q _a	1751	1474	1590	1405	1237	1087	967	1107	1005	F, lap	8.3-2.6R	9.9-3.3R	8.7-2.1R	9.8-2.4R	10.9-2.8R	12-3.1R	13-3.4R	11.4-2.3R	12.1-2.2R	12.1-2.2R	F, no lap	7.8+4R	9.4+2R	8.3+2.3R	9.5+1.3R	10.6+0.6R	11.7-0.1R	12.8-0.7R	11.2+0.1R	12-0.3R	
		q _a	2514	2510	2507	2504	2503	2502	2500	2162	1817	F, lap	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	F, no lap	2.7+6.5R	2.8+5.2R	2.9+4.3R	3+3.7R	3+3.3R	3+2.9R	3.1+2.6R	3.1+2.4R	3.2+1.9R	
	16 36/7/4	4"	q _a	2411	2400	2393	2387	2383	2379	2376	2162	1817	F, lap	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	F, no lap	3.2+6.4R	3.4+5.1R	3.5+4.3R	3.5+3.7R	3.6+3.2R	3.6+2.9R	3.6+2.6R	3.7+2.4R	3.8+1.9R
			q _a	2302	2312	2268	2281	2250	2263	2238	2162	1817	F, lap	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	F, no lap	3.7+6.3R	3.8+5.1R	4+4.2R	4+3.6R	4.1+3.2R	4.1+2.8R	4.2+2.6R	4.2+2.3R	4.4+1.8R
6"		q _a	2095	2056	2028	2007	1990	1977	1966	1957	1817	F, lap	5.1-0.5R	5.2-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.5-0.2R	5.5-0.2R	F, no lap	4.6+6.1R	4.8+4.8R	5+4R	5.1+3.4R	5.1+3R	5.2+2.7R	5.3+2.4R	5.3+2.2R	5.5+1.7R	
		q _a	1922	1909	1738	1756	1769	1654	1677	1695	1608	F, lap	5.9-0.8R	5.9-0.6R	6.6-0.7R	6.5-0.6R	6.4-0.5R	6.9-0.6R	6.8-0.5R	6.7-0.4R	6.7-0.4R	7.1-0.4R	F, no lap	5.4+5.8R	5.5+4.6R	6.3+3.6R	6.2+3.2R	6.1+2.8R	6.7+2.4R	6.5+2.2R	6.5+2.2R	7.1-1.5R	
8"		q _a	1670	1711	1529	1584	1450	1505	1399	1452	1364	F, lap	7.2-1.3R	6.8-1R	7.8-1.1R	7.4-0.9R	8.1-1R	7.7-0.8R	8.4-0.9R	8-0.7R	8-0.7R	8.5-0.7R	F, no lap	6.7+5.2R	6.4+4.3R	7.4+3.2R	7.1+2.9R	7.9+2.4R	7.5+2.2R	8.1+1.8R	7.8+1.7R	8.5+1.2R	
		q _a	1670	1446	1265	1374	1243	1131	1229	1139	1060	F, lap	7.2-1.3R	8.5-1.7R	9.7-2R	8.7-1.3R	9.7-1.5R	10.6-1.7R	9.6-1.2R	10.4-1.3R	11.1-1.3R	11.1-1.3R	F, no lap	6.7+5.2R	8+3.6R	9.4+2.4R	8.4+2.5R	9.4+1.8R	10.4+1.3R	9.4+1.5R	10.2+1.1R	11+0.6R	
12"		q _a	1308	1446	1265	1119	1001	1131	1037	956	883	F, lap	9.8-2.8R	8.5-1.7R	9.7-2R	11-2.3R	12.3-2.6R	10.6-1.7R	11.6-1.9R	12.5-2.1R	13.4-2R	13.4-2R	F, no lap	9.3+3.8R	8+3.6R	9.4+2.4R	10.7+1.5R	12+0.7R	10.4+1.3R	11.3+0.8R	12.3+0.4R	13.3+0R	
		q _a	1308	1096	1265	1119	1001	808	956	883	883	F, lap	9.8-2.8R	11.7-3.5R	9.7-2R	11-2.3R	12.3-2.6R	13.5-2.9R	14.8-3.2R	12.5-2.1R	13.4-2R	13.4-2R	F, no lap	9.3+3.8R	11.3+1.7R	9.4+2.4R	10.7+1.5R	12+0.7R	13.3+0R	14.6-0.5R	12.3+0.4R	13.3+0R	
18"		q _a	1477	1476	1476	1476	1475	1475	1475	1475	1475	F, lap	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	F, no lap	-1+55.2R	-0.1+44.2R	0.4+36.8R	0.8+31.8R	1+28.1R	1.2+25R	1.4+22.6R	1.6+20.5R	2.8+16.3R	
		q _a	1453	1451	1450	1449	1448	1447	1447	1447	1446	F, lap	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	F, no lap	-0.4+55.2R	0.4+44.1R	1+36.8R	1.3+31.8R	1.6+28.1R	1.8+24.9R	2+22.5R	2.2+20.5R	3.3+16.2R	
24"		q _a	1424	1428	1418	1422	1414	1418	1412	1415	1410	F, lap	4.3-0.2R	4.2-0.1R	4.4-0.1R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	F, no lap	0.1+55.1R	0.8+44.1R	1.6+36.7R	1.8+31.8R	2.1+28R	2.3+24.9R	2.6+22.5R	2.7+20.4R	3.9+16.2R	
		q _a	1360	1351	1344	1339	1335	1332	1329	1325	1325	F, lap	5.3-0.4R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	F, no lap	1.1+54.9R	2+43.9R	2.6+36.6R	3+31.6R	3.2+27.9R	3.5+24.8R	3.7+22.4R	3.9+20.4R	5.1+16.1R	
36"	q _a	1296	1297	1231	1243	1252	1204	1216	1226	1189	F, lap	6.2-0.6R	6.1-0.5R	6.9-0.6R	6.7-0.5R	6.6-0.4R	7.2-0.4R	7-0.4R	6.8-0.3R	7.3-0.3R	7.3-0.3R	F, no lap	2+54.7R	2.7+43.7R	4.1+36.3R	4.2+31.4R	4.3+27.7R	5.1+24.6R	5.1+22.2R	5.1+20.2R	7.1+16R		
	q _a	1181	1212	1129	1164	1099	1132	1079	1110	1065	F, lap	7.8-1.1R	7.2-0.8R	8.3-0.9R	7.7-0.7R	8.5-0.8R	8.1-0.6R	8.7-0.7R	8.3-0.5R	8.8-0.5R	8.8-0.5R	F, no lap	3.6+54.1R	3.9+43.5R	5.5+35.9R	5.2+31.2R	6.2+27.3R	6+24.4R	6.8+21.9R	6.6+20R	8.3+15.7R		
48"	q _a	964	1072	972	1050	976	909	924	924	874	F, lap	7.8-1.1R	9.2-1.4R	10.6-1.7R	9.3-1.1R	10.3-1.2R	11.4-1.4R	10.2-1R	11.1-1R	11.7-1.1R	11.7-1.1R	F, no lap	3.6+54.1R	5.8+42.8R	7.8+35.1R	6.8+30.8R	8+26.9R	9.3+23.6R	8.3+21.6R	9.3+19.5R	11.2+15.2R		
	q _a	964	836	972	884	807	808	794	794	744	F, lap	11.3-2.8R	9.2-1.4R	10.6-1.7R	12.1-2R	13.5-2.3R	11.4-1.4R	12.4-1.5R	13.4-1.7R	14.4-1.7R	14.4-1.7R	F, no lap	7.1+52.5R	5.8+42.8R	7.8+35.1R	9.5+29.9R	11.2+25.9R	9.3+23.6R	10.5+21.1R	11.7+18.9R	13.9+14.6R		
60"	q _a	964	836	972	884	807	740	794	744	744	F, lap	11.3-2.8R	13.6-3.5R	10.6-1.7R	12.1-2R	13.5-2.3R	14.9-2.5R	16.3-2.8R	13.4-1.7R	14.4-1.7R	14.4-1.7R	F, no lap	7.1+52.5R	10.2+40.7R	7.8+35.1R	9.5+29.9R	11.2+25.9R	12.9+22.4R	14.5+19.8R	11.7+18.9R	13.9+14.6R		

B PANELS

2.5 DGB-36 & DGBF-36

Pneutek K64 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	q_a	1676	1638	1610	1589	1457	1151	932	771	647
		F, lap	7.9-0.8R	8.1-0.7R	8.2-0.6R	8.3-0.6R	8.4-0.5R	8.5-0.5R	8.5-0.5R	8.6-0.4R	8.6-0.4R
	F, no lap	5.1+36.4R	5.8+29R	6.3+24.1R	6.6+20.8R	6.9+18.4R	7.1+16.3R	7.3+14.7R	7.4+13.4R	8.3+10.6R	
	6"	q_a	1503	1442	1397	1363	1336	1151	932	771	647
		F, lap	9.2-1.3R	9.5-1.3R	9.8-1.2R	10.1-1.1R	10.1-1R	10.3-1R	10.4-0.9R	10.5-0.8R	10.5-0.7R
	F, no lap	6.3+35.8R	7.2+28.5R	7.9+23.6R	8.3+20.3R	8.6+17.9R	8.9+15.8R	9.1+14.3R	9.3+13R	10.2+10.2R	
	8"	q_a	1380	1334	1247	1229	1170	1151	932	771	647
		F, lap	10.2-1.9R	10.4-1.7R	11.1-1.7R	11.2-1.5R	11.6-1.5R	11.6-1.4R	12-1.4R	12-1.3R	12.3-1.1R
	F, no lap	7.3+35.3R	8.1+28R	9.2+23R	9.5+19.9R	10.1+17.3R	10.3+15.4R	10.8+13.8R	10.8+12.5R	11.9+9.8R	
	12"	q_a	1225	1128	1058	1004	963	929	899	771	647
		F, lap	11.7-2.8R	12.5-2.8R	13.2-2.8R	13.7-2.7R	14.1-2.6R	14.5-2.6R	14.9-2.4R	15.1-2.4R	15.3-2R
	F, no lap	8.8+34.4R	10.2+26.9R	11.3+22R	12-18.7R	12.6+16.3R	13.2+14.2R	13.6+12.7R	14-11.4R	14.9+8.9R	
18"	q_a	1133	1047	908	859	821	719	702	689	623	
	F, lap	12.7-3.5R	13.5-3.5R	15.4-4.2R	15.8-3.9R	16.1-3.7R	17.6-4.1R	17.8-3.8R	17.9-3.6R	18.9-3.3R	18.9-3.3R
F, no lap	9.9+33.6R	11.3+26.2R	13.5+20.6R	14.1+17.5R	14.6+15.2R	16.3+12.7R	16.5+11.4R	16.7+10.2R	18.5+7.6R		
24"	q_a	1031	959	800	765	657	646	571	570	514	
	F, lap	14.1-4.6R	14.9-4.4R	17-5.3R	17.3-4.8R	19.1-5.4R	19.1-5R	20.8-5.4R	20.6-4.9R	21.7-4.5R	21.7-4.5R
F, no lap	11.3+32.5R	12.6+25.3R	15.1+19.5R	15.6+16.6R	17.6+13.5R	17.8+11.8R	19.5+9.8R	19.5+8.9R	21.4+6.5R		
36"	q_a	1031	849	691	671	575	500	505	450	405	
	F, lap	14.1-4.6R	16.7-5.8R	19.2-6.9R	19.1-6.1R	21.2-6.8R	23.4-7.7R	22.8-6.6R	24.7-7.3R	25.9-6.4R	25.9-6.4R
F, no lap	11.3+32.5R	14.4+23.9R	17.3+17.8R	17.4+15.3R	19.7+12R	22.9-1R	21.5+8.5R	23.5+6.5R	25.5+4.6R		
48"	q_a	917	849	691	578	493	500	440	391	350	
	F, lap	16.1-6.3R	16.7-5.8R	19.2-6.9R	21.6-8R	24-8.9R	23.4-7.7R	25.4-8.3R	27.5-9.2R	28.7-7.8R	28.7-7.8R
F, no lap	13.3+30.9R	14.4+23.9R	17.3+17.8R	19.9+13.5R	22.5+10R	22.9-1R	24.1+6.8R	26.4+4.6R	28.4+3.1R		
60"	q_a	917	717	691	578	493	427	374	391	350	
	F, lap	16.1-6.3R	19.1-7.9R	19.2-6.9R	21.6-8R	24-8.9R	26.5-10R	28.9-10.8R	27.5-9.2R	28.7-7.8R	28.7-7.8R
F, no lap	13.3+30.9R	16.8+21.8R	17.3+17.8R	19.9+13.5R	22.5+10R	25.1+6.8R	27.6+4.4R	26.4+4.6R	28.4+3.1R		
22 36/7/4	4"	q_a	1358	1340	1328	1318	1311	1151	932	771	647
		F, lap	8.2-0.6R	8.4-0.6R	8.5-0.5R	8.6-0.4R	8.6-0.4R	8.7-0.4R	8.7-0.3R	8.8-0.3R	8.8-0.3R
	F, no lap	5.4+36.5R	6.1+29.2R	6.6+24.3R	6.9+21R	7.1+18.5R	7.3+16.4R	7.5+14.8R	7.6+13.5R	8.4+10.7R	
	6"	q_a	1215	1183	1160	1143	1129	1118	932	771	647
		F, lap	9.8-1.2R	10.1-1.1R	10.3-1R	10.4-0.9R	10.6-0.8R	10.7-0.7R	10.7-0.7R	10.8-0.6R	10.9-0.6R
	F, no lap	6.9+36R	7.8+28.7R	8.4+23.8R	8.7+20.5R	9+18.1R	9.3+16R	9.5+14.5R	9.7+13.2R	10.5+10.4R	
	8"	q_a	1104	1089	1030	1029	988	992	932	771	647
		F, lap	11.1-1.7R	11.2-1.5R	11.9-1.5R	11.8-1.3R	12.3-1.3R	12.2-1.1R	12.6-1.1R	12.5-1R	12.8-0.9R
	F, no lap	8.2+35.4R	8.9+28.2R	10+23.3R	10.1+20.1R	10.8+17.6R	10.9+15.7R	11.4+14.1R	11.4+12.8R	12.4+10R	
	12"	q_a	955	897	855	824	799	780	764	751	647
		F, lap	13.2-2.8R	13.9-2.7R	14.5-2.6R	15-2.5R	15.4-2.3R	15.7-2.2R	16-2.1R	16.2-2R	16.3-1.7R
	F, no lap	10.3+34.3R	11.7+27R	12.6+22.2R	13.3+19R	13.8+16.6R	14.3+14.6R	14.7+13.1R	15.1+11.8R	16.9+2R	
18"	q_a	862	816	708	695	684	620	619	618	563	
	F, lap	14.7-3.8R	15.4-3.5R	17.7-4.2R	17.8-3.8R	18-3.4R	19.7-3.8R	19.6-3.4R	19.6-3.2R	20.8-3R	20.8-3R
F, no lap	11.9+33.4R	13.1+26.2R	15.8+20.6R	16.1+17.6R	16.4+15.5R	18.3+13R	18.4+11.7R	18.4+10.6R	20.5+7.9R		
24"	q_a	755	727	626	623	541	548	488	499	453	
	F, lap	17-5.3R	17.4-4.7R	20-5.6R	19.9-4.9R	22.1-5.5R	21.7-4.8R	23.7-5.2R	23.4-4.6R	24.6-4.3R	24.6-4.3R
F, no lap	14.2+31.8R	15.1+25R	18.1+19.1R	18.2+16.6R	20.6+13.4R	20.4+12R	22.4+9.9R	22+9.2R	24.2+6.6R		
36"	q_a	755	629	519	531	459	402	423	380	344	
	F, lap	17-5.3R	20.2-6.6R	23.4-8R	22.7-6.5R	25.3-7.3R	27.9-8.2R	26.6-6.7R	28.8-7.4R	30.5-6.7R	30.5-6.7R
F, no lap	14.2+31.8R	17.9+23.1R	21.5+16.8R	21.4+19.9R	23.7+11.6R	26.5+8.6R	25.3+8.4R	27.7+6.4R	30.1+4.2R		
48"	q_a	634	629	519	438	377	402	357	320	289	
	F, lap	20.5-8R	20.2-6.6R	23.4-8R	26.6-9.1R	29.7-10.3R	27.9-8.2R	30.5-9R	33.1-9.9R	34.9-8.7R	34.9-8.7R
F, no lap	17.6+29.1R	17.9+23.1R	21.5+16.8R	24.9+12.3R	28.2+8.6R	26.5+8.6R	29.2+6.2R	31.9+3.9R	34.5+2.3R		
60"	q_a	634	501	519	438	377	329	320	289		
	F, lap	20.5-8R	24.5-10R	23.4-8R	26.6-9.1R	29.7-10.3R	32.9-11.5R	36-12.5R	33.1-9.9R	34.9-8.7R	34.9-8.7R
F, no lap	17.6+29.1R	22.3+19.7R	21.5+16.8R	24.9+12.3R	28.2+8.6R	31.5+5.3R	34.7+2.7R	31.9+3.9R	34.5+2.3R		
36/4	4"	q_a	860	857	854	852	850	849	848	771	647
		F, lap	8.5-0.5R	8.6-0.4R	8.7-0.4R	8.7-0.3R	8.8-0.3R	8.8-0.3R	8.8-0.3R	8.9-0.2R	8.9-0.2R
	F, no lap	-15.5+312.3R	-10.6+249.8R	-7.3+208.1R	-5.6+180R	-4.3+158.8R	-2.8+141.1R	-1.8+127.5R	-0.8+115.9R	5.8+91.9R	
	6"	q_a	811	802	796	791	787	784	782	771	647
		F, lap	10.3-1R	10.5-0.8R	10.7-0.7R	10.8-0.7R	10.9-0.6R	11-0.6R	11-0.5R	11-0.5R	11.1-0.4R
	F, no lap	-13.7+311.8R	-8.7+249.4R	-5.3+207.8R	-3.5+179.7R	-2.2+158.4R	-0.6+140.8R	0.4+127.2R	1.4+115.7R	8+91.7R	
	8"	q_a	764	763	740	742	726	730	717	721	647
		F, lap	11.9-1.5R	11.8-1.2R	12.5-1.2R	12.4-1R	12.8-1R	12.7-0.9R	13.1-0.8R	12.9-0.7R	13.2-0.7R
	F, no lap	-12.1+311.3R	-7.4+249R	-3.5+207.3R	-2+179.3R	-0.2+158.1R	1.1+140.5R	2.4+126.9R	3.2+115.4R	10.1+91.4R	
	12"	q_a	688	664	647	633	623	614	601	601	596
		F, lap	14.6-2.6R	15.2-2.4R	15.7-2.2R	16.1-2.1R	16.4-1.9R	16.7-1.8R	16.9-1.7R	17-1.6R	17.2-1.4R
	F, no lap	-9.4+310.2R	-3.9+247.8R	-0.2+206.3R	1.8+178.3R	3.4+157.1R	5.1+139.6R	6.2+126.1R	7.4+114.6R	14.1-90.7R	
18"	q_a	631	615	551	548	547	505	508	511	480	
	F, lap	16.7-3.7R	17.2-3.3R	19.8-3.9R	19.7-3.4R	19.6-2.9R	21.5-3.3R	21.2-2.9R	21-2.6R	22.4-2.6R	22.4-2.6R
F, no lap	-7.2+309.1R	-2+247R	3.8+204.6R	5.3+177R	6.5+156.1R	9.9+138.1R	10.6+124.8R	11.3+113.5R	19.4+89.5R		
24"	q_a	558	554	489	496	449	460	424	435	402	
	F, lap	20.1-5.6R	19.9-4.6R	23-5.5R	22.4-4.5R	24.9-5.1R	24.1-4.3R	26.3-4.7R	25.4-4R	27.1-3.9R	27.1-3.9R
F, no lap	-3.9+307.1R	0.7+245.6R	7.1+203R	8+175.8R	11.9+153.9R	12.5+137.1R	15.6+123R	15.7+112.1R	24+88.2R		
36"	q_a	558	479	416	435	382	334	361	324	292	
	F, lap	20.1-5.6R	24.1-7.1R	28.1-8.5R	26.2-6.4R	29.3-7.2R	32.4-8.1R	30.1-6.3R	32.7-6.9R	34.8-6.5R	34.8-6.5R
F, no lap	-3.9+307.1R	4.9+243.2R	12.1+200R	11.9+173.9R	16.2+151.8R	20.8+133.3R	19.5+121.4R	23+109.2R	31.8+85.6R		
48"	q_a	463	479	416	350	300	334	295	264	238	
	F, lap	25.8-9.7R	24.1-7.1R	28.1-8.5R	32-9.8R	35.9-11R	32.4-8.1R	35.5-8.9R	38.6-9.8R	41.1-8.9R	41.1-8.9R
F, no lap	1.8+303.1R	4.9+243.2R	12.1+200R	17.7+170.6R	22.9+148.1R	20.8+133.3R	24.9+118.9R	29+106.4R	38+83.2R		
60"	q_a	463	378	416	350	300	261	230	238		
	F, lap	25.8-9.7R	31.2-12.1R	28.1-8.5R	32-9.8R	35.9-11R	39.9-12.4R	43.7-13.4R	38.6-9.8R	41.1-8.9R	41.1-8.9R
F, no lap	1.8+303.1R	12+238.1R	12.1+200R	17.7+170.6R	22.9+148.1R	28.3+129R	33.1+114.3R	29+106.4R	38+83.2R		



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	2203	2163	2133	2110	1916	1514	1226	1013	852			
		F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	6.6-0.2R		
	F, no lap	4.4+23R	4.9+18.4R	5.2+15.3R	5.4+13.2R	5.5+11.7R	5.7+10.3R	5.8+9.3R	5.9+8.5R	6.4+6.7R	6.4+6.7R			
	6"	q _a	1987	1918	1868	1829	1798	1514	1226	1013	852			
		F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8-0.5R	8-0.4R			
	F, no lap	5.4+22.7R	6+18R	6.4+15R	6.7+12.9R	6.8+11.4R	7+10.1R	7.2+9.1R	7.3+8.2R	7.8+6.5R				
	8"	q _a	1828	1778	1672	1655	1582	1514	1226	1013	852			
		F, lap	8.1-1.2R	8.2-1.1R	8.6-1.1R	8.6-0.9R	9-0.9R	8.9-0.8R	9.2-0.8R	9.2-0.7R	9.4-0.7R			
	F, no lap	6.3+22.3R	6.7+17.7R	7.4+14.6R	7.6+12.6R	8+11R	8.1+9.8R	8.4+8.8R	8.4+8R	9.1+6.2R				
	12"	q _a	1620	1504	1419	1354	1303	1262	1013	852				
		F, lap	9.4-2R	9.9-1.9R	10.4-1.9R	10.7-1.8R	11-1.7R	11.2-1.6R	11.4-1.5R	11.6-1.5R	11.7-1.3R			
	F, no lap	7.6+21.6R	8.5+16.9R	9.2+13.8R	9.6+11.8R	10+10.3R	10.4+9R	10.6+8.1R	10.9+7.3R	11.5+5.7R				
	18"	q _a	1494	1392	1212	1170	1137	1001	984	970	852			
		F, lap	10.4-2.6R	10.9-2.5R	12.3-2.9R	12.5-2.7R	12.7-2.4R	13.8-2.7R	13.8-2.5R	13.8-2.3R	14.6-2.2R			
	F, no lap	8.6+20.9R	9.4+16.4R	11.1+12.7R	11.4+10.9R	11.7+9.5R	12.9+7.9R	13+7.1R	13.1+6.4R	14.4+4.7R				
	24"	q _a	1352	1270	1087	1050	904	896	795	798	722			
		F, lap	11.7-3.5R	12.1-3.2R	13.8-3.9R	13.8-3.4R	15.3-3.8R	15.1-3.4R	16.4-3.7R	16.1-3.3R	17.3-1.1R			
	F, no lap	9.9+20R	10.6+15.6R	12.6+11.8R	12.7+10.2R	14.3+8.1R	14.2+7.2R	15.6+5.9R	15.4+5.4R	16.8+3.9R				
36"	q _a	1352	1135	929	915	786	686	700	626	564				
	F, lap	11.7-3.5R	13.8-4.4R	15.9-5.3R	15.5-4.5R	17.2-5R	18.9-5.6R	18.2-4.7R	19.7-5.2R	20.7-4.6R				
F, no lap	9.9+20R	12.3+14.4R	14.7+10.4R	14.4+9.1R	16.2+6.9R	18.1+5.9R	17.4+4.9R	18.9+3.6R	20.5+2.3R					
48"	q _a	1191	1135	929	780	668	605	540	485					
	F, lap	13.7-5.2R	13.8-4.4R	15.9-5.3R	17.9-6.1R	19.9-6.9R	18.9-5.6R	20.6-6.1R	22.3-6.7R	23.4-5.9R				
F, no lap	11.9+18.3R	12.3+14.4R	14.7+10.4R	16.8+7.4R	18.9+5.1R	18.1+5.9R	19.8+3.5R	21.6+2R	23.2+1.1R					
60"	q _a	1191	949	929	780	668	581	511	485					
	F, lap	13.7-5.2R	16.3-6.5R	15.9-5.3R	17.9-6.1R	19.9-6.9R	21.9-7.7R	23.9-8.4R	22.3-6.7R	23.4-5.9R				
F, no lap	11.9+18.3R	14.9+12.3R	14.7+10.4R	16.8+7.4R	18.9+5.1R	21.1+2.9R	23.1+1.3R	21.6+2R	23.2+1.1R					
20 36/7/4	4"	q _a	1782	1764	1751	1741	1733	1514	1226	1013	852			
		F, lap	6.4-0.4R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R			
	F, no lap	4.6+23.1R	5.1+18.5R	5.4+15.4R	5.5+13.3R	5.7+11.7R	5.8+10.4R	5.9+9.4R	6+8.6R	6.5+6.8R				
	6"	q _a	1610	1575	1550	1531	1516	1504	1226	1013	852			
		F, lap	7.6-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8.1-0.4R	8.1-0.4R	8.2-0.4R	8.2-0.4R	8.2-0.3R			
	F, no lap	5.8+22.8R	6.3+18.2R	6.7+15.1R	6.9+13R	7.1+11.5R	7.2+10.2R	7.4+9.2R	7.5+8.4R	8+6.6R				
	8"	q _a	1470	1456	1386	1387	1338	1345	1226	1013	852			
		F, lap	8.6-1.1R	8.6-0.9R	9.1-0.9R	9-0.8R	9.4-0.8R	9.3-0.7R	9.6-0.6R	9.5-0.6R	9.7-0.5R			
	F, no lap	6.8+22.4R	7.2+17.9R	7.9+14.8R	8+12.8R	8.4+11.2R	8.4+10R	8.8+9R	8.7+8.2R	9.4+6.4R				
	12"	q _a	1274	1205	1156	1119	1090	1067	1048	1013	852			
		F, lap	10.4-1.9R	10.9-1.8R	11.2-1.6R	11.5-1.5R	11.7-1.4R	11.9-1.3R	12.1-1.2R	12.2-1.2R	12.3-1.1R			
	F, no lap	8.6+21.7R	9.4+17.1R	10+14R	10.4+12R	10.8+10.5R	11.1+9.3R	11.3+8.4R	11.5+7.6R	12.1+5.9R				
	18"	q _a	1149	1097	956	943	933	848	849	850	790			
		F, lap	11.7-2.6R	12.1-2.3R	13.8-2.8R	13.8-2.4R	13.8-2.2R	15.1-2.4R	15.2-1.9R	14.9-1.9R	15.8-1.9R			
	F, no lap	9.9+20.9R	10.7+16.5R	12.6+12.9R	12.7+11.1R	12.8+9.8R	14.2+8.2R	14.2+7.5R	14.1+6.8R	15.6+5.9R				
	24"	q _a	1001	975	841	844	750	766	683	702	638			
		F, lap	13.8-3.9R	13.8-3.3R	15.9-3.9R	15.5-3.2R	17.3-3.7R	16.8-3.1R	18.2-3.4R	17.7-2.9R	18.8-2.8R			
	F, no lap	12+19.6R	12.4+15.6R	14.7+11.8R	14.5+10.3R	16.3+8.3R	15.9+7.5R	17.4+6.2R	17+5.8R	18.6+4.1R				
36"	q _a	1001	837	704	731	632	555	589	530	481				
	F, lap	13.8-3.9R	16.4-4.8R	19.5-8R	17.9-4.5R	20-5.1R	22.1-5.7R	20.7-4.5R	22.4-5R	23.8-4.6R				
F, no lap	12+19.6R	14.9+14R	17.8+9.9R	16.9+9.1R	19+6.9R	21.2+4.9R	19.9+5.1R	21.7+3.8R	23.6+2.3R					
48"	q _a	831	837	704	595	514	555	494	444	402				
	F, lap	17.2-6.4R	16.4-4.8R	19.5-8R	21.5-6.7R	24-7.5R	22.1-5.7R	24.1-6.2R	26.1-6.9R	27.7-6.2R				
F, no lap	15.4+17.2R	14.9+14R	17.8+9.9R	20.4+6.9R	23.1+4.4R	21.2+4.9R	23.3+3.4R	25.4+1.9R	27.4+0.7R					
60"	q _a	831	668	704	595	514	514	399	444	402				
	F, lap	17.2-6.4R	20.6-8R	19.5-8R	21.5-6.7R	24-7.5R	26.6-8.5R	29.1-9.2R	26.1-6.9R	27.7-6.2R				
F, no lap	15.4+17.2R	19.2+10.9R	17.8+9.9R	20.4+6.9R	23.1+4.4R	25.8+2.2R	28.3+0.4R	25.4+1.9R	27.4+0.7R					
36/4	4"	q _a	1113	1109	1107	1105	1103	1102	1101	1013	852			
		F, lap	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.1R	6.8-0.1R	6.8-0.1R	6.8-0.1R			
	F, no lap	-8.6+19.7R	-5.5+15.8R	-3.4+13.1R	-2.4+11.4R	-1.5+10.5R	-0.6+8.9R	0+8.7R	0.6+7.3R	4.8+5.8R				
	6"	q _a	1057	1049	1042	1037	1033	1030	1028	1013	852			
		F, lap	7.9-0.6R	8-0.5R	8.1-0.4R	8.2-0.4R	8.2-0.3R	8.3-0.3R	8.3-0.3R	8.3-0.3R	8.4-0.2R			
	F, no lap	-7.3+19.4R	-4.1+15.9R	-2+13.1R	-0.9+11.3R	0+10.3R	0.9+8.9R	1.6+8.0R	2.2+7.3R	6.4+5.8R				
	8"	q _a	1003	1003	977	981	962	967	953	958	852			
		F, lap	9.1-0.9R	9-0.7R	9.5-0.7R	9.3-0.6R	9.7-0.6R	9.5-0.5R	9.8-0.5R	9.7-0.4R	9.9-0.4R			
	F, no lap	-6.1+19.7R	-3.1+15.7R	-0.6+13.1R	0.3+11.3R	1.4+10.1R	2.2+8.9R	3.1+8.0R	3.5+7.1R	7.9+5.9R				
	12"	q _a	909	882	863	848	836	827	819	813	807			
		F, lap	11.2-1.6R	11.7-1.5R	12-1.3R	12.2-1.2R	12.3-1.1R	12.5-1R	12.6-1R	12.7-0.9R	12.8-0.8R			
	F, no lap	-3.9+19.6R	-0.5+15.9R	1.8+13.0R	3.1+11.2R	4.1+9.6R	5.2+8.5R	5.9+7.9R	6.6+7.2R	10.8+5.7R				
	18"	q _a	836	819	739	739	739	686	691	696	656			
		F, lap	13-2.4R	13.2-2.1R	15.1-2.5R	14.9-2.1R	14.8-1.8R	16.2-2R	15.9-1.7R	15.7-1.5R	16.7-1.5R			
	F, no lap	-2.1+19.5R	1.1+15.6R	5+12.9R	5.9+11.1R	6.5+9.8R	8.9+7.5R	9.6+7.2R	9.6+7.2R	14.8+5.8R				
	24"	q _a	739	739	656	669	609	625	578	595	557			
		F, lap	15.9-3.9R	15.4-3R	17.8-3.6R	17.1-2.9R	19.3-2R	18.2-2.6R	19.8-2.9R	19.2-4R	20.3-2.4R			
	F, no lap	0.7+19.4R	3.3+15.4R	7.7+12.8R	8+11.3R	10.8+9.7R	10.9+8.6R	13.1+7.8R	12.9+7.1R	18.4+5.9R				
36"	q _a	739	638	557	587	529	468	510	458	415				
	F, lap	15.9-3.9R	19.4-9R	22.1-5.8R	20.2-4.2R	22.6-4.7R	25-5.3R	22.9-4R	24.8-4.4R	26.5-4.2R				
F, no lap	0.7+19.4R	6.9+15.3R	12+12.2R	11.2+10.1R	14.3+9.5R	17.7+8.4R	16.2+7.6R	18.7+6.9R	24.6+5.4R					
48"	q _a	609	638	557	483	415	468	415	372	336				
	F, lap	21.2-7.3R	19.4-9R	22.1-5.8R	25.2-6.8R	28.3-7.6R	25-5.3R	27.4-5.8R	29.7-6.4R	31.7-6R				
F, no lap	6+19.0R	6.9+15.3R	12+12.2R	16.2+10.7R	20+9.1R	17.7+8.4R	20.6+7.5R	23.6+6.7R	29.8+5.2R					
60"	q _a	609	510	557	483	415	363	320	372	336				
	F, lap	21.2-7.3R	25.6-9.2R	22.1-5.8R	25.2-6.8R	28.3-7.6R	31.4-8.6R	34.4-9.3R	29.7-6.4R	31.7-6R				
F, no lap	6+19.0R	13.5+14.9R	12+12.2R	16.2+10.7R	20+9.1R	24.1+8.0R	27.7+7.1R	23.6+6.7R	29.8+5.2R					

B PANELS

2.5 DGB-36 & DGBF-36

Pneutek K64 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10^{-6} in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
36/9	4"	q_a F, lap F, no lap		3159 4.3-0.2R	3123 4.3-0.2R	3097 4.4-0.2R	3077 4.4-0.1R	2932 4.4-0.1R	2317 4.4-0.1R	1877 4.4-0.1R	1551 4.4-0.1R	1303 4.4-0.1R	
				3.4+11.3R	3.6+9R	3.8+7.5R	3.9+6.5R	3.9+5.7R	4+5.1R	4+4.6R	4.1+4.2R	4.3+3.3R	
	6"	q_a F, lap F, no lap		2895 4.9-0.4R	2827 5-0.4R	2778 5.1-0.3R	2740 5.2-0.3R	2710 5.2-0.3R	2317 5.2-0.2R	1877 5.3-0.2R	1551 5.3-0.2R	1303 5.3-0.2R	
				4.1+11.1R	4.3+8.8R	4.5+7.4R	4.6+6.3R	4.7+5.6R	4.8+5R	4.9+4.5R	4.9+4.1R	5.2+3.2R	
	8"	q_a F, lap F, no lap		2682 5.5-0.6R	2642 5.5-0.5R	2516 5.8-0.5R	2508 5.9-0.4R	2420 5.9-0.4R	2317 5.9-0.4R	2011 6-0.4R	1963 6-0.3R	1877 6-0.3R	1551 6.1-0.3R
				4.7+10.9R	4.8+8.7R	5.2+7.2R	5.2+6.2R	5.5+5.4R	5.5+4.8R	5.7+4.3R	5.6+4R	6+3.1R	
	12"	q_a F, lap F, no lap		2381 6.5-1R	2246 6.8-1R	2147 7-0.9R	2071 7.2-0.9R	2011 7.3-0.8R	1963 7.4-0.7R	1877 7.5-0.7R	1663 7.6-0.7R	1551 7.6-0.7R	1303 7.6-0.6R
				5.6+10.5R	6.1+8.2R	6.4+6.7R	6.6+5.8R	6.8+5.1R	7-4.5R	7.1+4R	7.2+3.6R	7.5+2.8R	
	18"	q_a F, lap F, no lap		2186 7.3-1.5R	2074 7.5-1.3R	1822 8.5-1.6R	1782 8.5-1.4R	1751 8.5-1.2R	1597 9.2-1.4R	1589 9.1-1.2R	1551 9.1-1.1R	1551 9.1-1.1R	1303 9.6-1.1R
				6.4+10R	6.8+7.9R	8.5+6.1R	8.5+5.3R	8.5+3.8R	8.8+3.8R	8.7+3.5R	8.7+3.2R	9.5+2.3R	
	24"	q_a F, lap F, no lap		1956 8.5-2.2R	1877 8.5-1.8R	1633 9.7-2.2R	1618 9.5-1.8R	1445 10.4-2.1R	1456 10.2-1.7R	1297 11-1.9R	1297 10.7-1.6R	1319 10.7-1.6R	1197 11.3-1.6R
				7.6+9.3R	7.8+7.4R	9.1+5.5R	8.9+4.8R	10+3.8R	9.7+3.5R	10.6+2.8R	10.3+2.6R	11.2+1.8R	
	36"	q_a F, lap F, no lap		1956 8.5-2.2R	1655 10-2.7R	1414 11.5-3.3R	1432 10.9-2.5R	1236 12-2.9R	1083 13.2-3.2R	1129 12.4-2.5R	1014 13.4-2.8R	918 14.2-2.6R	918 14.2-2.6R
				7.6+9.3R	9.3+6.5R	10.9+4.4R	10.3+4.1R	11.5+3R	12.8+2R	12+2.2R	13+1.5R	14.1+0.8R	
	48"	q_a F, lap F, no lap		1687 10.5-3.6R	1655 10-2.7R	1414 11.5-3.3R	1192 12.9-3.8R	1026 14.4-4.3R	1083 13.2-3.2R	961 14.4-3.5R	861 15.5-3.9R	861 15.5-3.9R	778 16.4-3.5R
				9.6+7.9R	9.3+6.5R	10.9+4.4R	12.4+2.8R	13.9+1.6R	12.8+2R	14+1.2R	15.2+0.4R	16.3-0.1R	
	60"	q_a F, lap F, no lap		1687 10.5-3.6R	1389 12.4-4.5R	1414 11.5-3.3R	1192 12.9-3.8R	1026 14.4-4.3R	897 15.8-4.8R	793 17.3-5.2R	861 15.5-3.9R	861 15.5-3.9R	778 16.4-3.5R
				9.6+7.9R	11.7+4.7R	10.9+4.4R	12.4+2.8R	13.9+1.6R	15.4+0.4R	16.9-0.5R	15.2+0.4R	16.3-0.1R	
18	36/7/4	4"	q_a	2539 4.4-0.2R	2524 4.4-0.1R	2514 4.4-0.1R	2506 4.4-0.1R	2500 4.4-0.1R	2317 4.5-0.1R	1877 4.5-0.1R	1551 4.5-0.1R	1303 4.5-0.1R	
			F, lap F, no lap	3.5+11.3R	3.7+9.1R	3.8+7.6R	3.9+6.5R	4+5.8R	4+5.1R	4+4.6R	4.1+4.2R	4.4+3.3R	
	6"	q_a F, lap F, no lap		2346 5.1-0.3R	2314 5.2-0.3R	2291 5.2-0.2R	2274 5.3-0.2R	2261 5.3-0.2R	2250 5.3-0.2R	1877 5.3-0.2R	1551 5.4-0.1R	1303 5.4-0.1R	
				4.2+11.2R	4.5+8.9R	4.6+7.4R	4.7+6.4R	4.8+5.7R	4.9+5R	4.9+4.5R	5+4.1R	5.3+3.3R	
	8"	q_a F, lap F, no lap		2172 5.8-0.5R	2169 5.7-0.4R	2089 6-0.4R	2098 5.9-0.3R	2041 6.1-0.3R	2055 6-0.3R	1877 6.2-0.3R	1551 6.1-0.2R	1303 6.2-0.2R	
				4.9+11R	5+8.8R	5.4+7.3R	5.4+6.3R	5.6+5.5R	5.6+4.9R	5.8+4.4R	5.8+4R	6.1+3.2R	
	12"	q_a F, lap F, no lap		1904 7-0.9R	1828 7.2-0.8R	1731 7.4-0.8R	1731 7.5-0.7R	1699 7.6-0.6R	1652 7.7-0.6R	1652 7.8-0.5R	1551 7.8-0.5R	1303 7.9-0.4R	
				6.1+10.6R	6.5+8.4R	6.8+6.9R	7+5.9R	7.1+5.2R	7.3+4.6R	7.4+4.2R	7.5+3.8R	7.7+2.9R	
	18"	q_a F, lap F, no lap		1717 8.1-1.4R	1667 8.1-1.1R	1471 9.2-1.4R	1466 9.1-1.2R	1463 9-1R	1339 9.8-1.1R	1350 9.6-1R	1358 9.5-0.9R	1269 10.1-0.9R	
				7.2+10.1R	7.4+8.1R	8.6+6.3R	8.5+5.5R	8.5+4.9R	9.4+4.1R	9.2+3.7R	9.2+3.4R	10.2+5R	
	24"	q_a F, lap F, no lap		1485 9.7-2.2R	1477 9.4-1.7R	1286 10.8-2R	1309 10.3-1.6R	1176 11.4-1.8R	1207 10.9-1.5R	1106 11.9-1.6R	1139 11.4-1.4R	1058 12.1-1.3R	
				8.8+9.3R	8.7+7.5R	10.2+5.6R	9.8+5R	10.9+4R	10.5+3.7R	11.5+3.1R	11+2.9R	12+2R	
	36"	q_a F, lap F, no lap		1485 9.7-2.2R	1253 11.4-2.7R	1078 13.2-3.3R	1134 12.1-2.4R	1012 13.5-2.7R	896 14.8-3R	967 13.6-2.2R	873 14.7-2.5R	794 15.7-2.4R	
				8.8+9.3R	10.7+6.5R	12.6+4.4R	11.6+4.3R	13.3+2.2R	14.4+2.2R	13.2+2.5R	14.4+1.8R	15.6+1R	
	48"	q_a F, lap F, no lap		1203 12.7-4.2R	1253 11.4-2.7R	1078 13.2-3.3R	931 15-3.8R	806 16.7-4.3R	896 14.8-3R	799 16.2-3.3R	720 17.5-3.6R	654 18.6-3.4R	
				11.8+7.3R	10.7+6.5R	12.6+4.4R	14.4+2.8R	16.2+1.6R	14.4+2.2R	15.8+1.4R	17.2+0.7R	18.5+0R	
	60"	q_a F, lap F, no lap		1203 12.7-4.2R	995 15.2-5.2R	1078 13.2-3.3R	931 15-3.8R	806 16.7-4.3R	709 18.5-4.8R	631 20.2-5.3R	631 17.5-3.6R	654 18.6-3.4R	
				11.8+7.3R	14.5+4R	12.6+4.4R	14.4+2.8R	16.2+1.6R	18.1+0.4R	19.8-0.6R	17.2+0.7R	18.5+0R	
36/4	4"	q_a F, lap F, no lap		1544 4.4-0.1R	1542 4.4-0.1R	1540 4.5-0.1R	1538 4.5-0.1R	1537 4.5-0.1R	1536 4.5-0.1R	1536 4.5-0.1R	1535 4.5-0.1R	1303 4.5+0R	
				-3+96.7R	-1.5+77.3R	-0.5+64.4R	0+55.7R	0.4+49.2R	0.9+43.7R	1.2+39.5R	1.5+35.9R	3.5+28.5R	
	6"	q_a F, lap F, no lap		1489 5.2-0.2R	1482 5.3-0.2R	1477 5.3-0.2R	1474 5.3-0.1R	1471 5.4-0.1R	1468 5.4-0.1R	1467 5.4-0.1R	1465 5.4-0.1R	1303 5.4-0.1R	
				-2.2+96.6R	-0.7+77.2R	0.4+64.4R	0.9+55.7R	1.3+49.1R	1.8+43.6R	2.1+39.4R	2.4+35.8R	4.5+28.4R	
	8"	q_a F, lap F, no lap		1431 6-0.4R	1434 5.9-0.3R	1409 6.2-0.3R	1415 6-0.2R	1397 6.2-0.2R	1404 6.1-0.2R	1389 6.3-0.2R	1396 6.2-0.2R	1303 6.3-0.2R	
				-1.4+96.4R	0+77.1R	1.2+64.2R	1.6+55.6R	2.2+49R	2.5+43.6R	3+39.3R	3.2+35.8R	5.4+28.4R	
	12"	q_a F, lap F, no lap		1320 7.4-0.7R	1295 7.6-0.7R	1277 7.7-0.6R	1263 7.8-0.5R	1252 7.9-0.5R	1243 7.9-0.4R	1235 8-0.4R	1229 8-0.4R	1224 8-0.3R	
				0+96R	1.6+76.8R	2.8+63.9R	3.4+55.3R	3.8+48.7R	4.3+43.3R	4.7+39.1R	5+35.6R	7.1+28.2R	
	18"	q_a F, lap F, no lap		1227 8.7-1.2R	1214 8.6-0.9R	1114 9.8-1.1R	1121 9.6-0.9R	1126 9.4-0.8R	1057 10.3-0.9R	1068 10-0.7R	1078 9.8-0.6R	1025 10.5-0.7R	
				1.2+95.6R	2.7+76.5R	4.9+63.4R	5.1+54.9R	5.4+48.5R	6.7+42.9R	6.7+38.8R	6.9+35.3R	9.5+27.8R	
	24"	q_a F, lap F, no lap		1089 10.8-2R	1104 10.2-1.4R	995 11.7-1.7R	1023 11-1.3R	941 12.2-1.5R	970 11.6-1.2R	905 12.6-1.3R	934 12-1R	881 12.8-1.1R	
				3.3+94.8R	4.2+76R	6.7+62.8R	6.6+54.5R	8.2+47.7R	8+42.6R	9.3+38.2R	9+34.9R	11.8+27.4R	
	36"	q_a F, lap F, no lap		1089 10.8-2R	954 12.8-2.5R	842 14.9-3R	900 13.2-2R	818 14.7-2.3R	748 16.2-2.6R	804 14.6-1.8R	747 15.8-2R	697 16.9-2R	
				3.3+94.8R	6.9+74.9R	9.9+61.5R	8.8+53.8R	10.7+46.9R	12.6+41.2R	11.3+37.7R	12.8+33.9R	16.2+25.5R	
	48"	q_a F, lap F, no lap		886 15.1-4.4R	954 12.8-2.5R	842 14.9-3R	749 16.9-3.5R	673 18.9-4R	688 16.2-2.6R	688 17.7-2.8R	623 19.2-3.1R	565 20.6-3R	
				7.7+92.4R	6.9+74.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	12.6+41.2R	14.4+36.7R	16.2+32.8R	19.6+25.5R	
	60"	q_a F, lap F, no lap		886 15.1-4.4R	752 18.3-5.5R	842 14.9-3R	749 16.9-3.5R	673 18.9-4R	590 21-4.5R	524 23-4.9R	524 19.2-3.1R	565 20.6-3R	
				7.7+92.4R	12.3+71.9R	9.9+61.5R	12.5+52.3R	14.9+45.2R	17.4+39.3R	19.7+34.6R	16.2+32.8R	19.6+25.5R	



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span																			
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"											
36/9	4"	q _a	4025	3997	3978	3963	3951	3230	2617	2162	1817	F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	
		F, no lap	2.7+6.5R	2.8+5.2R	2.9+4.3R	2.9+3.7R	3+3.3R	3+2.9R	3+2.6R	3.1+2.4R	3.2+1.9R	F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	6"	q _a	3751	3693	3651	3619	3594	3230	2617	2162	1817	F, lap	3.2+6.4R	3.3+5.1R	3.4+4.2R	3.5+3.6R	3.5+3.2R	3.6+2.9R	3.6+2.6R	3.6+2.3R	3.8-0.1R	
		F, no lap	3509	3485	3357	3361	3269	3230	2617	2162	1817	F, lap	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.1R	
	8"	q _a	3137	3001	2900	2824	2763	2714	2714	2617	2162	1817	F, lap	3.6+6.2R	3.7+5R	3.9+4.1R	3.9+3.6R	4+3.1R	4+2.8R	4.1+2.5R	4.1+2.3R	4.3+1.8R
		F, no lap	2879	2773	2464	2436	2414	2216	2216	2162	1817	F, lap	4.8-0.6R	5-0.5R	5.1-0.5R	5.2-0.5R	5.3-0.4R	5.3-0.4R	5.4-0.4R	5.4-0.3R	5.4-0.3R	
	12"	q _a	2879	2773	2464	2436	2414	2216	2216	2162	1817	F, lap	4.3+6R	4.6+4.7R	4.8+3.9R	4.9+3.3R	5+2.9R	5.1+2.6R	5.1+2.3R	5.2+2.1R	5.3+1.6R	
		F, no lap	2558	2502	2195	2204	1988	2019	1854	1894	1762	F, lap	5.5-0.9R	5.5-0.8R	6.2-0.9R	6.2-0.8R	6.1-0.7R	6.6-0.7R	6.5-0.6R	6.4-0.6R	6.8-0.6R	
	18"	q _a	2558	2502	2195	2204	1988	2019	1854	1894	1762	F, lap	5+5.7R	5.1+4.5R	5.9+3.5R	5.9+3R	5.8+2.7R	6.4+2.2R	6.3+2R	6.2+1.9R	6.8+1.4R	
		F, no lap	2163	2182	1890	1890	1641	1535	1366	1228	1114	F, lap	6.5-1.4R	6.3-1.1R	7.2-1.3R	6.9-1R	7.6-1.2R	7.3-1R	7.9-1.1R	7.6-0.9R	8.1-0.9R	
	24"	q _a	2558	2182	1890	1946	1743	1535	1629	1467	1332	F, lap	6+5.2R	5.9+4.2R	6.8+3.1R	6.6+2.7R	7.3+2.2R	7.1+2R	7.7+1.6R	7.4+1.5R	8.1-1.1R	
		F, no lap	2163	2182	1890	1641	1535	1417	1366	1228	1114	F, lap	6.5-1.4R	7.6-1.8R	8.7-2.1R	8-1.5R	8.9-1.7R	9.7-1.9R	9-1.5R	9.7-1.6R	10.3-1.5R	
36"	q _a	2163	2182	1890	1641	1535	1417	1366	1228	1114	F, lap	6+5.2R	7.2+3.5R	8.3+2.3R	7.7+2.3R	8.6+1.6R	9.5+1R	8.8+1.2R	9.5+0.8R	10.2+0.4R		
	F, no lap	8.3-2.6R	7.6-1.8R	8.7-2.1R	9.8-2.4R	10.9-2.8R	9.7-1.9R	10.6-2.1R	11.4-2.3R	12.1-2.2R	F, lap	8.3-2.6R	9.9-3.3R	8.7-2.1R	9.8-2.4R	10.9-2.8R	12-3.1R	13-3.4R	11.4-2.3R	12.1-2.2R		
48"	q _a	2163	1810	1890	1641	1417	1243	1104	1228	1114	F, lap	7.8+4R	7.2+3.5R	8.3+2.3R	9.5+1.3R	10.6+0.6R	9.5+1R	10.3+0.6R	11.2+0.1R	12-0.3R		
	F, no lap	8.3-2.6R	9.9-3.3R	8.7-2.1R	9.8-2.4R	10.9-2.8R	12-3.1R	13-3.4R	11.4-2.3R	12.1-2.2R	F, lap	8.3-2.6R	9.9-3.3R	8.7-2.1R	9.8-2.4R	10.9-2.8R	12-3.1R	13-3.4R	11.4-2.3R	12.1-2.2R		
60"	q _a	2163	1810	1890	1641	1417	1243	1104	1228	1114	F, lap	7.8+4R	9.4+2R	8.3+2.3R	9.5+1.3R	10.6+0.6R	11.7-0.1R	12.8-0.7R	11.2+0.1R	12-0.3R		
	F, no lap	3213	3203	3195	3190	3186	3182	2617	2162	1817	F, lap	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R		
16 36/7/4	4"	q _a	3027	3002	2984	2971	2960	2952	2617	2162	1817	F, lap	3.2+6.4R	3.4+5.1R	3.5+4.3R	3.5+3.7R	3.6+3.2R	3.6+2.9R	3.6+2.6R	3.7+2.4R	3.8-1.9R	
		F, no lap	2844	2851	2773	2789	2733	2751	2617	2162	1817	F, lap	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	
	6"	q _a	2533	2460	2408	2368	2337	2312	2292	2162	1817	F, lap	3.7+6.3R	3.8+5.1R	4+4.2R	4+3.6R	4.1+3.2R	4.1+2.8R	4.2+2.6R	4.2+2.3R	4.4+1.8R	
		F, no lap	2297	2259	2020	2030	2037	1881	1903	1821	1807	F, lap	5.1-0.5R	5.2-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.5-0.2R	
	8"	q _a	2297	2259	2020	2030	2037	1881	1903	1821	1807	F, lap	4.6+6.1R	4.8+4.8R	5+4R	5.1+3.4R	5.1+3R	5.2+2.7R	5.3+2.4R	5.3+2.2R	5.5+1.7R	
		F, no lap	1985	2006	1766	1816	1644	1700	1567	1621	1513	F, lap	5.9-0.8R	5.9-0.6R	6.6-0.7R	6.5-0.6R	6.4-0.5R	6.9-0.6R	6.8-0.5R	6.7-0.4R	7.1-0.4R	
	12"	q _a	1985	2006	1766	1816	1644	1700	1567	1621	1513	F, lap	5.4+5.8R	5.5+4.6R	6.3+3.6R	6.2+3.2R	6.1+2.8R	6.7+2.4R	6.6+2.2R	6.5+2R	7.1-5R	
		F, no lap	1692	1692	1465	1569	1408	1274	1373	1266	1172	F, lap	7.2-1.3R	6.8-1.1R	7.8-1.1R	7.4-0.9R	8.1-1R	7.7-0.8R	8.4-0.9R	8-0.7R	8.5-0.7R	
	18"	q _a	1692	1692	1465	1569	1408	1274	1373	1266	1172	F, lap	6.7+5.2R	6.4+4.3R	7.4+3.2R	7.1+2.9R	7.9+2.4R	7.5+2.2R	8.1+1.8R	7.8+1.7R	8.5+1.2R	
		F, no lap	1576	1692	1465	1287	1139	1274	1159	1047	953	F, lap	7.2-1.3R	8.5-1.7R	9.7-2R	8.7-1.3R	9.7-1.5R	10.6-1.7R	9.6-1.2R	10.4-1.3R	11.1-1.3R	
	24"	q _a	1576	1692	1465	1287	1139	1274	1159	1047	953	F, lap	6.7+5.2R	8+3.6R	9.4+2.4R	8.4+2.5R	9.4+1.8R	10.4+1.3R	9.4+1.5R	10.2+1.1R	11+0.6R	
		F, no lap	1576	1692	1465	1287	1139	1274	1159	1047	953	F, lap	9.8-2.8R	8.5-1.7R	9.7-2R	11-2.3R	12.3-2.6R	10.6-1.7R	11.6-1.9R	12.5-2.1R	13.4-2R	
36"	q _a	1576	1692	1465	1287	1139	1274	1159	1047	953	F, lap	9.3+3.8R	8+3.6R	9.4+2.4R	10.7+1.5R	12+0.7R	10.4-1.3R	11.3+0.8R	12.3+0.4R	13.3+0R		
	F, no lap	1576	1311	1465	1287	1139	1004	896	1047	953	F, lap	9.8-2.8R	11.7-3.5R	9.7-2R	11-2.3R	12.3-2.6R	13.5-2.9R	14.8-3.2R	12.5-2.1R	13.4-2R		
48"	q _a	1576	1311	1465	1287	1139	1004	896	1047	953	F, lap	9.3+3.8R	11.3+1.7R	9.4+2.4R	10.7+1.5R	12+0.7R	13.3+0R	14.6-0.5R	12.3+0.4R	13.3+0R		
	F, no lap	1917	1915	1914	1913	1913	1912	1912	1911	1817	F, lap	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R		
36/4	4"	q _a	1869	1865	1861	1859	1857	1855	1854	1853	1852	F, lap	-1+55.2R	-0.1+44.2R	0.4+36.8R	0.8+31.8R	1+28.1R	1.2+25R	1.4+22.6R	1.6+20.5R	2.8+16.3R	
		F, no lap	1815	1821	1799	1806	1790	1797	1785	1791	1781	F, lap	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0R	3.9+0R	
	6"	q _a	1815	1821	1799	1806	1790	1797	1785	1791	1781	F, lap	0.4+55.2R	0.4+44.1R	1+36.8R	1.3+31.8R	1.6+28.1R	1.8+24.9R	2+22.5R	2.2+20.5R	3.3+16.2R	
		F, no lap	1815	1821	1799	1806	1790	1797	1785	1791	1781	F, lap	4.3-0.2R	4.2-0.1R	4.4-0.1R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.5-0.1R	4.5-0.1R	
	8"	q _a	1704	1683	1668	1657	1648	1640	1635	1630	1625	F, lap	0.1+55.1R	0.8+44.1R	1.6+36.7R	1.8+31.8R	2.1+28R	2.3+24.9R	2.6+22.5R	2.7+20.4R	3.9+16.2R	
		F, no lap	1704	1683	1668	1657	1648	1640	1635	1630	1625	F, lap	5.3-0.4R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	
	12"	q _a	1704	1683	1668	1657	1648	1640	1635	1630	1625	F, lap	1.1+54.9R	2+43.9R	2.6+36.6R	3+31.6R	3.2+27.9R	3.5+24.8R	3.7+22.4R	3.9+20.4R	5.1+16.1R	
		F, no lap	1601	1596	1488	1502	1512	1436	1452	1465	1407	F, lap	6.2-0.6R	6.1-0.5R	6.9-0.6R	6.7-0.5R	6.6-0.4R	7.2-0.4R	7-0.4R	6.8-0.3R	7.3-0.3R	
	18"	q _a	1601	1596	1488	1502	1512	1436	1452	1465	1407	F, lap	2+54.7R	2.7+43.7R	4.1+36.3R	4.2+31.4R	4.3+27.7R	5.1+24.6R	5.1+22.2R	5.1+22.2R	6.7+16R	
		F, no lap	1436	1468	1343	1385	1289	1331	1254	1294	1230	F, lap	7.8-1.1R	7.2-0.8R	8.3-0.9R	7.7-0.7R	8.5-0.8R	8.1-0.6R	8.7-0.7R	8.3-0.5R	8.8-0.5R	
	24"	q _a	1436	1468	1343	1385	1289	1331	1254	1294	1230	F, lap	3.6+54.1R	3.9+43.5R	5.5+35.9R	5.2+31.2R	6.2+27.3R	6+24.4R	6.8+21.9R	6.6+20R	8.3+15.7R	
		F, no lap	1436	1278	1141	1230	1129	1040	1122	1050	985	F, lap	7.8-1.1R	9.2-1.4R	10.6-1.7R	9.3-1.1R	10.3-1.2R	11.4-1.4R	10.2-1R	11-1.1R	11.7-1.1R	
36"	q _a	1436	1278	1141	1230	1129	1040	1122	1050	985	F, lap	3.6+54.1R	5.8+42.8R	7.8+35.1R	6.8+30.8R	8+26.9R	9.3+23.6R	8.3+21.6R	9.3+19.5R	11.2+15.2R		
	F, no lap	1164	1278	1141	1025	927	1040	962	893	833	F, lap	11.3-2.8R	9.2-1.4R	10.6-1.7R	12.1-2R	13.5-2.3R	11.4-1.4R	12.4-1.5R	13.4-1.7R	14.4-1.7R		
48"	q _a	1164	1278	1141	1025	927	1040	962	893	833	F, lap	7.1+52.5R	5.8+42.8R	7.8+35.1R	9.5+29.9R	11.2+25.9R	9.3+23.6R	10.5+21.1R	11.7+18.9R	13.9+14.6R		
	F, no lap	1164	997	1141	1025	927	844	765	893	833	F, lap	11.3-2.8R	13.6-3.5R	10.6-1.7R	12.1-2R	13.5-2.3R	14.9-2.5R	16.3-2.8R	13.4-1.7R	14.4-1.7R		
60"	q _a	1164	997	1141	1025	927	844	765	893	833	F, lap	7.1+52.5R	10.2+40.7R	7.8+35.1R	9.5+29.9R	11.2+25.9R	12.9+22.4R	14.5+19.8R	11.7+18.9R	13.9+14.6R		
	F, no lap	1164	997	11																		

2.5 DGB-36 & DGBF-36

Pneutek K66 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/9	4"	F, lap	q_a	1753	1709	1677	1653	1457	1151	932	771	647
			F, no lap	7.9-0.8R	8.1-0.7R	8.2-0.6R	8.3-0.6R	8.4-0.5R	8.5-0.5R	8.5-0.5R	8.5-0.5R	8.6-0.4R
	6"	F, lap	q_a	1567	1499	1449	1411	1381	1151	932	771	647
			F, no lap	9.2-1.3R	9.5-1.3R	9.8-1.2R	10.1-1.1R	10.1-1R	10.3-1R	10.4-0.9R	10.5-0.8R	10.5-0.7R
	8"	F, lap	q_a	1439	1386	1292	1270	1206	1151	932	771	647
			F, no lap	10.2-1.9R	10.4-1.7R	11.1-1.7R	11.2-1.5R	11.6-1.5R	11.6-1.4R	12-1.4R	12-1.3R	12-1.3R
	12"	F, lap	q_a	1278	1174	1097	1039	993	955	914	771	647
			F, no lap	11.7-2.8R	12.5-2.8R	13.2-2.8R	13.7-2.7R	14.1-2.6R	14.5-2.6R	14.9-2.4R	15.1-2.4R	15.1-2.4R
	18"	F, lap	q_a	1184	1090	938	883	841	736	717	702	635
			F, no lap	12.7-3.5R	13.5-3.5R	15.4-4.2R	15.8-3.9R	16.1-3.7R	17.6-4.1R	17.8-3.8R	17.9-3.6R	17.9-3.6R
	24"	F, lap	q_a	1081	1001	829	789	677	663	586	583	525
			F, no lap	14.1-4.6R	14.9-4.4R	17-5.3R	17.3-4.8R	19.1-5.4R	19.1-5.4R	20.8-5.4R	20.6-4.9R	20.6-4.9R
	36"	F, lap	q_a	1081	885	719	695	595	517	520	463	416
			F, no lap	14.1-4.6R	16.7-5.8R	19.2-6.9R	19.1-6.1R	21.2-6.8R	23.4-7.7R	22.8-6.6R	24.7-7.3R	25.9-6.4R
	48"	F, lap	q_a	967	885	719	601	513	517	455	404	361
			F, no lap	16.1-6.3R	16.7-5.8R	19.2-6.9R	21.6-8R	24-8.9R	23.4-7.7R	25.4-8.3R	27.5-9.2R	28.7-7.8R
	60"	F, lap	q_a	967	753	719	601	513	444	389	404	361
			F, no lap	16.1-6.3R	19.1-7.9R	19.2-6.9R	21.6-8R	24-8.9R	26.5-10R	28.9-10.8R	27.5-9.2R	28.7-7.8R
36/7/4	4"	F, lap	q_a	1421	1400	1385	1374	1365	1151	932	771	647
			F, no lap	8.2-0.6R	8.4-0.6R	8.5-0.5R	8.6-0.4R	8.6-0.4R	8.7-0.4R	8.7-0.3R	8.8-0.3R	8.8-0.3R
	6"	F, lap	q_a	1266	1229	1203	1183	1168	1151	932	771	647
			F, no lap	9.8-1.2R	10.1-1.1R	10.3-1R	10.4-0.9R	10.6-0.8R	10.7-0.7R	10.7-0.7R	10.8-0.6R	10.9-0.6R
	8"	F, lap	q_a	1148	1129	1065	1062	1018	1021	932	771	647
			F, no lap	11.1-1.7R	11.2-1.5R	11.9-1.5R	11.8-1.3R	12.3-1.3R	12.2-1.1R	12.6-1.1R	12.5-1R	12.8-0.9R
	12"	F, lap	q_a	992	928	882	848	822	800	783	769	647
			F, no lap	13.2-2.8R	13.9-2.7R	14.5-2.6R	15-2.5R	15.4-2.3R	15.7-2.2R	16-2.1R	16.2-2R	16.3-1.7R
	18"	F, lap	q_a	896	846	732	716	704	632	629	627	570
			F, no lap	14.7-3.8R	15.4-3.5R	17.7-4.2R	17.8-3.8R	18-3.4R	19.7-3.8R	19.6-3.4R	19.6-3.2R	19.6-3.2R
	24"	F, lap	q_a	787	755	647	641	554	559	498	508	461
			F, no lap	17-5.3R	17.4-4.7R	20-5.6R	19.9-4.9R	22.1-5.5R	21.7-4.8R	23.7-5.2R	23.4-4.6R	24.6-4.3R
	36"	F, lap	q_a	787	655	537	547	472	413	432	388	351
			F, no lap	17-5.3R	20.2-6.6R	23.4-8R	22.7-6.5R	25.3-7.3R	27.9-8.2R	26.6-6.7R	28.8-7.4R	30.5-6.7R
	48"	F, lap	q_a	665	655	537	453	390	413	367	329	297
			F, no lap	20.5-8R	20.2-6.6R	23.4-8R	26.6-9.1R	29.7-10.3R	27.9-8.2R	30.5-9R	33.1-9.9R	34.9-8.7R
	60"	F, lap	q_a	665	524	537	453	390	340	301	319	297
			F, no lap	20.5-8R	24.5-10R	23.4-8R	26.6-9.1R	29.7-10.3R	32.9-11.5R	36-12.5R	33.1-9.9R	34.9-8.7R
36/4	4"	F, lap	q_a	907	902	899	896	894	893	892	771	647
			F, no lap	8.5-0.5R	8.6-0.4R	8.7-0.4R	8.7-0.3R	8.8-0.3R	8.8-0.3R	8.9-0.2R	8.9-0.2R	8.9-0.2R
	6"	F, lap	q_a	851	841	833	828	823	820	817	771	647
			F, no lap	10.3-1R	10.5-0.8R	10.7-0.7R	10.8-0.7R	10.9-0.6R	11-0.6R	11-0.5R	11-0.5R	11.1-0.4R
	8"	F, lap	q_a	800	797	772	774	755	759	745	749	647
			F, no lap	11.9-1.5R	11.8-1.2R	12.5-1.2R	12.4-1R	12.8-1R	12.7-0.9R	13-1.0.8R	12.9-0.7R	13.2-0.7R
	12"	F, lap	q_a	717	691	671	656	644	635	627	620	615
			F, no lap	14.6-2.6R	15.2-2.4R	15.7-2.2R	16.1-2.1R	16.4-1.9R	16.7-1.8R	16.9-1.7R	17-1.6R	17-1.6R
	18"	F, lap	q_a	658	638	570	567	564	520	523	525	492
			F, no lap	16.7-3.7R	17.2-3.3R	19.8-3.9R	19.7-3.4R	19.6-2.9R	21.5-3.3R	21.2-2.9R	21-2.6R	21-2.6R
	24"	F, lap	q_a	582	575	506	512	463	473	433	447	406
			F, no lap	20.1-5.6R	19.9-4.6R	23-5.5R	22.4-4.5R	24.9-5.1R	24.1-4.3R	26.3-4.7R	25.4-4R	27.1-3.9R
	36"	F, lap	q_a	582	498	428	450	390	341	367	329	297
			F, no lap	20.1-5.6R	24.1-7.1R	28.1-8.5R	26.2-6.4R	29.3-7.2R	32.4-8.1R	30.1-6.3R	32.7-6.9R	34.8-6.5R
	48"	F, lap	q_a	485	498	428	359	308	341	301	269	242
			F, no lap	25.8-9.7R	24.1-7.1R	28.1-8.5R	32-9.8R	35.9-11R	32.4-8.1R	35.5-8.9R	38.6-9.8R	41.1-8.9R
	60"	F, lap	q_a	485	393	428	359	308	268	268	269	242
			F, no lap	25.8-9.7R	31.2-12.1R	28.1-8.5R	32-9.8R	35.9-11R	39.9-12.4R	43.7-13.4R	38.6-9.8R	41.1-8.9R



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	2236	2193	2161	2137	1916	1514	1226	1013	852			
		F, lap	6.2-0.5R	6.3-0.4R	6.4-0.4R	6.5-0.3R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R		
	F, no lap	4.4+23R	4.9+18.4R	5.2+15.3R	5.4+13.2R	5.5+11.7R	5.7+10.3R	5.8+9.3R	5.9+8.5R	6.4+6.7R				
	6"	q _a	2014	1943	1890	1850	1818	1514	1226	1013	852			
		F, lap	7.2-0.9R	7.4-0.8R	7.6-0.7R	7.7-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8-0.5R	8-0.5R	8-1.0.4R		
	F, no lap	5.4+22.7R	6+18R	6.4+15R	6.7+12.9R	6.8+11.4R	7+10.1R	7.2+9.1R	7.3+8.2R	7.8+6.5R				
	8"	q _a	1852	1800	1691	1672	1598	1514	1226	1013	852			
		F, lap	8.1-1.2R	8.2-1.1R	8.6-1.1R	8.6-0.9R	9-0.9R	8.9-0.8R	9.2-0.8R	9.2-0.7R	9.4-0.7R			
	F, no lap	6.3+22.3R	6.7+17.7R	7.4+14.6R	7.6+12.6R	8+11R	8.1+9.8R	8.4+8.8R	8.4+8R	9.1+6.2R				
	12"	q _a	1642	1522	1435	1368	1316	1274	1226	1013	852			
		F, lap	9.4-2R	9.9-1.9R	10.4-1.9R	10.7-1.8R	11-1.7R	11.2-1.6R	11.4-1.5R	11.6-1.5R	11.7-1.3R			
	F, no lap	7.6+21.6R	8.5+16.9R	9.2+13.8R	9.6+11.8R	10+10.3R	10.4+9R	10.6+8.1R	10.9+7.3R	11.5+5.7R				
	18"	q _a	1515	1410	1227	1183	1149	1008	990	975	852			
		F, lap	10.4-2.6R	10.9-2.5R	12.3-2.9R	12.5-2.7R	12.7-2.4R	13.8-2.7R	13.8-2.5R	13.8-2.3R	14.6-2.2R			
	F, no lap	8.6+20.9R	9.4+16.4R	11.1+12.7R	11.4+10.9R	11.7+9.5R	12.9+7.9R	13.7+7.1R	13.8+6.4R	14.4+4.7R				
	24"	q _a	1371	1286	1099	1060	913	903	801	803	726			
		F, lap	11.7-3.5R	12.1-3.2R	13.8-3.9R	13.8-3.4R	15.3-3.8R	15.1-3.4R	16.4-3.7R	16.1-3.3R	17.3-1.1R			
	F, no lap	9.9+20R	10.6+15.6R	12.6+11.8R	12.7+10.2R	14.3+8.1R	14.2+7.2R	15.6+5.9R	15.4+5.4R	16.8+3.9R				
36"	q _a	1371	1152	941	925	794	693	706	631	569				
	F, lap	11.7-3.5R	13.8-4.4R	15.9-5.3R	15.5-4.5R	17.2-5R	18.9-5.6R	18.2-4.7R	19.7-5.2R	20.7-4.6R				
F, no lap	9.9+20R	12.3+14.4R	14.7+10.4R	14.4+9.1R	16.2+6.9R	18.1+5.9R	17.4+4.9R	18.9+3.6R	20.5+2.3R					
48"	q _a	1211	1152	941	789	676	693	612	545	490				
	F, lap	13.7-5.2R	13.8-4.4R	15.9-5.3R	17.9-6.1R	19.9-6.9R	18.9-5.6R	20.6-6.1R	22.3-6.7R	23.4-5.9R				
F, no lap	11.9+18.3R	12.3+14.4R	14.7+10.4R	16.8+7.4R	18.9+5.1R	18.1+5.9R	19.8+3.5R	21.6+2R	23.2+1.1R					
60"	q _a	1211	964	941	789	676	588	517	490	490				
	F, lap	13.7-5.2R	16.3-6.5R	15.9-5.3R	17.9-6.1R	19.9-6.9R	21.9-7.7R	23.9-8.4R	22.3-6.7R	23.4-5.9R				
F, no lap	11.9+18.3R	14.9+12.3R	14.7+10.4R	16.8+7.4R	18.9+5.1R	21.1+2.9R	23.1+1.3R	21.6+2R	23.2+1.1R					
20 36/7/4	4"	q _a	1809	1789	1775	1765	1757	1514	1226	1013	852			
		F, lap	6.4-0.4R	6.5-0.3R	6.6-0.3R	6.6-0.3R	6.6-0.2R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R		
	F, no lap	4.6+23.1R	5.1+18.5R	5.4+15.4R	5.5+13.3R	5.7+11.7R	5.8+10.4R	5.9+9.4R	6+8.6R	6.5+6.8R				
	6"	q _a	1631	1595	1569	1549	1533	1514	1226	1013	852			
		F, lap	7.6-0.7R	7.8-0.6R	7.9-0.6R	8-0.5R	8.1-0.5R	8.1-0.4R	8.2-0.4R	8.2-0.4R	8.2-0.3R			
	F, no lap	5.8+22.8R	6.3+18.2R	6.7+15.1R	6.9+13R	7.1+11.5R	7.2+10.2R	7.4+9.2R	7.5+8.4R	8+6.6R				
	8"	q _a	1489	1474	1401	1402	1352	1358	1226	1013	852			
		F, lap	8.6-1.1R	8.6-0.9R	9.1-0.9R	9-0.8R	9.4-0.8R	9.3-0.7R	9.6-0.6R	9.5-0.6R	9.7-0.5R			
	F, no lap	6.8+22.4R	7.2+17.9R	7.9+14.8R	8+12.8R	8.4+11.2R	8.4+10R	8.8+9R	8.7+8.2R	9.4+6.4R				
	12"	q _a	1290	1219	1168	1129	1099	1075	1056	1013	852			
		F, lap	10.4-1.9R	10.9-1.8R	11.2-1.6R	11.5-1.5R	11.7-1.4R	11.9-1.3R	12.1-1.2R	12.2-1.2R	12.2-1.2R			
	F, no lap	8.6+21.7R	9.4+17.1R	10+14R	10.4+12R	10.8+10.5R	11.1+9.3R	11.3+8.4R	11.5+7.6R	12.1+5.9R				
	18"	q _a	1163	1109	966	952	941	855	856	856	795			
		F, lap	11.7-2.6R	12.1-2.3R	13.8-2.8R	13.8-2.4R	15.1-2.4R	15.1-2.4R	15.2-1.9R	14.9-1.9R	15.8-1.9R			
	F, no lap	9.9+20.9R	10.7+16.5R	12.6+12.9R	12.7+11.1R	12.8+9.8R	14.2+8.2R	14.2+7.5R	14.1+6.8R	15.6+5.9R				
	24"	q _a	1014	986	850	852	756	770	687	705	642			
		F, lap	13.8-3.9R	13.8-3.3R	15.9-3.9R	15.5-3.2R	17.3-3.7R	16.8-3.1R	18.2-3.4R	17.7-2.9R	18.8-2.8R			
	F, no lap	12+19.6R	12.4+15.6R	14.7+11.8R	14.5+10.3R	16.3+8.3R	15.9+7.5R	17.4+6.2R	17.5+5.8R	18.6+4.1R				
36"	q _a	1014	848	712	737	637	560	593	533	484				
	F, lap	13.8-3.9R	16.4-4.8R	19.5-8R	17.9-4.5R	20.5-1R	22.1-5.7R	20.7-4.5R	22.4-5R	23.8-4.6R				
F, no lap	12+19.6R	14.9+14R	17.8+9.9R	16.9+9.1R	19+6.9R	21.2+4.9R	19.9+5.1R	21.7+3.8R	23.6+2.3R					
48"	q _a	844	848	712	602	519	498	447	405	405				
	F, lap	17.2-6.4R	16.4-4.8R	19.5-8R	21.5-6.7R	24-7.5R	22.1-5.7R	24.1-6.2R	26.1-6.9R	27.7-6.2R				
F, no lap	15.4+17.2R	14.9+14R	17.8+9.9R	20.4+6.9R	23.1+4.4R	21.2+4.9R	23.3+3.4R	25.4+1.9R	27.4+0.7R					
60"	q _a	844	677	712	602	519	455	403	447	405				
	F, lap	17.2-6.4R	20.6-8R	19.5-8R	21.5-6.7R	24-7.5R	26.6-8.5R	29.1-9.2R	26.1-6.9R	27.7-6.2R				
F, no lap	15.4+17.2R	19.2+10.9R	17.8+9.9R	20.4+6.9R	23.1+4.4R	25.8+2.2R	28.3+0.4R	25.4+1.9R	27.4+0.7R					
36/4	4"	q _a	1132	1128	1125	1123	1122	1120	1119	1013	852			
		F, lap	6.6-0.3R	6.6-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.2R	6.7-0.1R	6.8-0.1R	6.8-0.1R	6.8-0.1R			
	F, no lap	-8.6+197.7R	-5.5+158.2R	-3.4+131.8R	-2.4+114R	-1.5+100.5R	-0.6+89.4R	0+80.7R	0.6+73.4R	4.8+58.2R				
	6"	q _a	1074	1065	1058	1053	1049	1046	1043	1013	852			
		F, lap	7.9-0.6R	8-0.5R	8.1-0.4R	8.2-0.4R	8.2-0.3R	8.3-0.3R	8.3-0.3R	8.3-0.3R	8.4-0.2R			
	F, no lap	-7.3+197.4R	-4.1+157.9R	-2+131.6R	-0.9+113.8R	0+100.3R	0.9+89.2R	1.6+80.6R	2.2+73.3R	6.4+58.1R				
	8"	q _a	1018	1017	991	995	975	980	965	970	852			
		F, lap	9.1-0.9R	9-0.7R	9.5-0.7R	9.3-0.6R	9.7-0.6R	9.5-0.5R	9.8-0.5R	9.7-0.4R	9.9-0.4R			
	F, no lap	-6.1+197.1R	-3.1+157.7R	-0.6+131.3R	0.3+113.6R	1.4+100.1R	2.2+89R	3.1+80.4R	3.5+73.1R	7.9+57.9R				
	12"	q _a	921	894	873	858	836	836	821	815	815			
		F, lap	11.2-1.6R	11.7-1.5R	12-1.3R	12.2-1.2R	12.3-1.1R	12.5-1R	12.6-1R	12.7-0.9R	12.8-0.8R			
	F, no lap	-3.9+196.4R	-0.5+156.9R	1.8+130.7R	3.1+112.9R	4.1+99.6R	5.2+88.5R	5.9+79.9R	6.6+72.6R	10.8+57.5R				
	18"	q _a	848	829	747	747	747	698	702	662	662			
		F, lap	13-2.4R	13.2-2.1R	15.1-2.5R	14.9-2.1R	14.8-1.8R	16.2-2R	15.9-1.7R	15.7-1.5R	16.7-1.5R			
	F, no lap	-2.1+195.6R	1.1+156.4R	5+129.5R	5.9+112.1R	6.5+98.9R	8.9+87.5R	9.9+79.1R	9.6+72R	14.8+56.8R				
	24"	q _a	749	748	664	676	615	631	583	600	561			
		F, lap	15.9-3.9R	15.4-3R	17.8-3.6R	17.1-2.9R	19-3.2R	18.2-2.6R	19.8-2.9R	19.2-2.4R	20.3-2.4R			
	F, no lap	0.7+194.1R	3.3+155.4R	7.7+128.4R	8+111.3R	10.8+97.5R	10.9+86.9R	13.1+78R	12.9+71.1R	18.4+55.9R				
36"	q _a	749	646	564	593	535	471	512	460	417				
	F, lap	15.9-3.9R	19.4-9R	22.1-5.8R	20.2-4.2R	22.6-4.7R	25-5.3R	22.9-4R	24.8-4.4R	26.5-4.2R				
F, no lap	0.7+194.1R	6.9+153.5R	12+126.2R	11.2+110.1R	14.3+95.9R	17.7+84.2R	16.2+76.9R	18.7+69.1R	24.6+54.1R					
48"	q _a	618	646	564	487	419	471	418	374	338				
	F, lap	21.2-7.3R	19.4-9R	22.1-5.8R	25.2-6.8R	28.3-7.6R	25-5.3R	27.4-5.8R	29.7-6.4R	31.7-6R				
F, no lap	6+190.7R	6.9+153.5R	12+126.2R	16.2+107.4R	20+93.1R	17.7+84.2R	20.6+75R	23.6+67.1R	29.8+52.3R					
60"	q _a	618	516	564	487	419	365	374	323	338				
	F, lap	21.2-7.3R	25.6-9.2R	22.1-5.8R	25.2-6.8R	28.3-7.6R	31.4-8.6R	34.4-9.3R	29.7-6.4R	31.7-6R				
F, no lap	6+190.													

2.5 DGB-36 & DGBF-36

Pneutek K66 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10^{-6} in/lbs)

Gage	Pins	Spacing		4'-0"	5'-0"	6'-0"	7'-0"	Span 8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
36/9	4"	F, lap	q_a	3264	3224	3195	3173	2932	2317	1877	1551	1303	
			F, no lap	4.3-0.2R 3.4+11.3R	4.3-0.2R 3.6+9R	4.4-0.2R 3.8+7.5R	4.4-0.1R 3.9+6.5R	4.4-0.1R 3.9+5.7R	4.4-0.1R 4+5.1R	4.4-0.1R 4+4.6R	4.4-0.1R 4.1+4.2R	4.4-0.1R 4.3+3.3R	
	6"	F, lap	q_a	2983	2909	2854	2813	2780	2317	1877	1551	1303	
			F, no lap	4.9-0.4R 4.1+11.1R	5-0.4R 4.3+8.8R	5.1-0.3R 4.5+7.4R	5.2-0.3R 4.6+6.3R	5.2-0.3R 4.7+5.6R	5.2-0.2R 4.8+5R	5.3-0.2R 4.9+4.5R	5.3-0.2R 4.9+4.1R	5.3-0.2R 5.2+3.2R	
	8"	F, lap	q_a	2760	2714	2580	2570	2476	2317	1877	1551	1303	
			F, no lap	4.9-0.6R 4.7+10.9R	5.5-0.5R 4.8+8.7R	5.8-0.5R 5.2+7.2R	5.8-0.4R 5.2+6.2R	5.9-0.4R 5.5+5.4R	5.9-0.4R 5.5+4.8R	6-0.4R 5.7+4.3R	6-0.3R 5.6+4R	6.1-0.3R 6+3.1R	
	12"	F, lap	q_a	2448	2304	2198	2117	2054	2002	1877	1551	1303	
			F, no lap	6.5-1R 5.6+10.5R	6.8-1R 6.1+8.2R	7-0.9R 6.4+6.7R	7.2-0.9R 6.6+5.8R	7.3-0.8R 6.8+5.1R	7.4-0.7R 7-4.5R	7.5-0.7R 7.1+4R	7.6-0.7R 7.2+3.6R	7.6-0.6R 7.5+2.8R	
	18"	F, lap	q_a	2249	2128	1867	1822	1788	1629	1619	1551	1303	
			F, no lap	7.3-1.5R 6.4+10R	7.5-1.3R 6.8+7.9R	8.5-1.6R 7.9+6.1R	8.5-1.4R 8+5.3R	8.5-1.2R 8+4.6R	9.1-1.4R 8.8+3.8R	9.1-1.2R 8.7+3.5R	9.1-1.1R 8.7+3.2R	9.6-1.1R 9.5+2.3R	
	24"	F, lap	q_a	2015	1928	1675	1655	1470	1477	1315	1335	1212	
			F, no lap	8.5-2.2R 7.6+9.3R	8.5-1.8R 7.8+7.4R	9.7-2.2R 9.1+5.5R	9.5-1.8R 8.9+4.8R	10.4-2.1R 10+3.8R	10.2-1.7R 9.7+3.5R	11-1.9R 10.6+2.8R	10.7-1.6R 10.3+2.6R	11.3-1.6R 11.2+1.8R	
36"	F, lap	q_a	2015	1703	1449	1461	1260	1105	1148	1030	932		
		F, no lap	8.5-2.2R 7.6+9.3R	10-2.7R 9.3+6.5R	11.5-3.3R 10.9+4.4R	10.9-2.5R 10.3+4.1R	12-2.9R 11.5+3R	13.2-3.2R 12.8+2R	12.4-2.5R 12+2.2R	13.4-2.8R 13+1.5R	14.2-2.6R 14.1+0.8R		
48"	F, lap	q_a	1744	1703	1449	1221	1051	1105	878	793			
		F, no lap	10.5-3.6R 9.6+7.9R	10-2.7R 9.3+6.5R	11.5-3.3R 10.9+4.4R	12.9-3.8R 12.4+2.8R	14.4-4.3R 13.9+1.6R	13.2-3.2R 12.8+2R	14.4-3.5R 14+1.2R	15.5-3.9R 15.2+0.4R	16.4-3.5R 16.3-0.1R		
60"	F, lap	q_a	1744	1432	1449	1221	1051	918	812	793			
		F, no lap	10.5-3.6R 9.6+7.9R	12.4-4.5R 11.7+4.7R	11.5-3.3R 10.9+4.4R	12.9-3.8R 12.4+2.8R	14.4-4.3R 13.9+1.6R	15.8-4.8R 15.4+0.4R	17.3-5.2R 16.9-0.5R	15.5-3.9R 15.2+0.4R	16.4-3.5R 16.3-0.1R		
18	36/7/4	4"	F, lap	q_a	2626	2610	2598	2589	2582	2317	1877	1551	1303
				F, no lap	4.4-0.2R 3.5+11.3R	4.4-0.1R 3.7+9.1R	4.4-0.1R 3.8+7.6R	4.4-0.1R 3.9+6.5R	4.4-0.1R 4+5.8R	4.5-0.1R 4+5.1R	4.5-0.1R 4.1+4.6R	4.5-0.1R 4.1+4.2R	4.5-0.1R 4.4+3.3R
		6"	F, lap	q_a	2418	2383	2358	2338	2324	2312	1877	1551	1303
				F, no lap	5.1-0.3R 4.2+11.2R	5.2-0.3R 4.5+8.9R	5.2-0.2R 4.6+7.4R	5.3-0.2R 4.7+6.4R	5.3-0.2R 4.8+5.7R	5.3-0.2R 4.9+5R	5.3-0.2R 4.9+4.5R	5.4-0.1R 5+4.1R	5.4-0.1R 5.3+3.3R
		8"	F, lap	q_a	2234	2228	2142	2152	2091	2104	1877	1551	1303
				F, no lap	5.8-0.5R 4.9+11R	5.7-0.4R 5+8.8R	6-0.4R 5.4+7.3R	5.9-0.3R 5.4+6.3R	6.1-0.3R 5.6+5.5R	6-0.3R 5.6+4.9R	6.2-0.3R 5.8+4.4R	6.1-0.2R 5.8+4R	6.2-0.2R 6.1+3.2R
		12"	F, lap	q_a	1954	1872	1812	1768	1733	1705	1682	1551	1303
				F, no lap	7-0.9R 6.1+10.6R	7.2-0.8R 6.5+8.4R	7.4-0.8R 6.8+6.9R	7.5-0.7R 7+5.9R	7.6-0.6R 7.1+5.2R	7.7-0.6R 7.3+4.6R	7.8-0.5R 7.4+4.2R	7.8-0.5R 7.5+3.8R	7.9-0.4R 7.7+2.9R
		18"	F, lap	q_a	1761	1706	1502	1495	1490	1363	1372	1380	1288
				F, no lap	8.1-1.4R 7.2+10.1R	8.1-1.1R 7.4+8.1R	9.2-1.4R 8.6+6.3R	9.1-1.2R 8.6+5.5R	9-1R 8.5+4.9R	9.8-1.1R 9.4+4.1R	9.6-1R 9.2+3.7R	9.5-0.9R 9.2+3.4R	10.1-0.9R 10.0+2.5R
		24"	F, lap	q_a	1525	1511	1314	1335	1198	1228	1125	1157	1074
				F, no lap	9.7-2.2R 8.8+9.3R	9.4-1.7R 8.7+7.5R	10.8-2R 10.2+5.6R	10.3-1.6R 9.8+5R	11.4-1.8R 10.9+4R	10.9-1.5R 10.5+3.7R	11.9-1.6R 11.5+3.1R	11.4-1.4R 11+2.9R	12.1-1.3R 12+2R
36"	F, lap	q_a	1525	1284	1103	1158	1032	909	883	804			
		F, no lap	9.7-2.2R 8.8+9.3R	11.4-2.7R 10.7+6.5R	13.2-3.3R 12.6+4.4R	12.1-2.4R 11.6+4.3R	13.5-2.7R 13+3.2R	14.8-3R 14.4+2.2R	13.6-2.2R 13.2+2.5R	14.7-2.5R 14.4+1.8R	15.7-2.4R 15.6+1R		
48"	F, lap	q_a	1239	1284	1103	950	822	909	811	664			
		F, no lap	12.7-4.2R 11.8+7.3R	11.4-2.7R 10.7+6.5R	13.2-3.3R 12.6+4.4R	15-3.8R 14.4+2.8R	16.7-4.3R 16.2+1.6R	14.8-3R 14.4+2.2R	16.2-3.3R 15.8+1.4R	17.5-3.6R 17.2+0.7R	18.6-3.4R 18.5+0R		
60"	F, lap	q_a	1239	1023	1103	950	822	723	643	664			
		F, no lap	12.7-4.2R 11.8+7.3R	15.2-5.2R 14.5+4R	13.2-3.3R 12.6+4.4R	15-3.8R 14.4+2.8R	16.7-4.3R 16.2+1.6R	18.5-4.8R 18.1+0.4R	20.2-5.3R 19.8-0.6R	17.5-3.6R 17.2+0.7R	18.6-3.4R 18.5+0R		
36/4	36/4	4"	F, lap	q_a	1603	1600	1598	1596	1595	1594	1593	1551	1303
				F, no lap	4.4-0.1R -3+96.7R	4.4-0.1R -1.5+77.3R	4.5-0.1R -0.5+64.4R	4.5-0.1R 0+55.7R	4.5-0.1R 0.4+49.2R	4.5-0.1R 0.9+43.7R	4.5-0.1R 1.2+39.5R	4.5+0R 1.5+35.9R	4.5+0R 3.5+28.5R
		6"	F, lap	q_a	1543	1535	1529	1525	1522	1519	1517	1515	1303
				F, no lap	5.2-0.2R -2.2+96.6R	5.3-0.2R -0.7+77.2R	5.3-0.2R 0.4+64.4R	5.3-0.1R 0.9+55.7R	5.4-0.1R 1.3+49.1R	5.4-0.1R 1.8+43.6R	5.4-0.1R 2.1+39.4R	5.4-0.1R 2.4+35.8R	5.4-0.1R 4.5+28.4R
		8"	F, lap	q_a	1479	1483	1455	1462	1441	1448	1432	1439	1303
				F, no lap	6-0.4R -1.4+96.4R	5.9-0.3R 0+77.1R	6.2-0.3R 1.2+64.2R	6-0.2R 1.6+55.6R	6.1-0.2R 2.2+49R	6.1-0.2R 2.5+43.6R	6.3-0.2R 3+39.3R	6.2-0.2R 3.2+35.8R	6.3-0.2R 5.4+28.4R
		12"	F, lap	q_a	1361	1333	1313	1298	1285	1276	1267	1261	1255
				F, no lap	7.4-0.7R 0+96R	7.6-0.7R 1.6+76.8R	7.7-0.6R 2.8+63.9R	7.8-0.5R 3.4+55.3R	7.9-0.5R 3.8+48.7R	7.9-0.4R 4.3+43.3R	8-0.4R 4.7+39.1R	8-0.4R 5+35.6R	8-0.3R 7.1+28.2R
		18"	F, lap	q_a	1263	1142	1148	1153	1080	1092	1101	1046	
				F, no lap	8.7-1.2R 1.2+95.6R	8.6-0.9R 2.7+76.5R	9.8-1.1R 4.9+63.4R	9.6-0.9R 5.1+54.9R	9.4-0.8R 5.4+48.5R	10.3-0.9R 6.7+42.9R	10-0.7R 6.7+38.8R	9.8-0.6R 6.9+35.3R	10.5-0.7R 9.5+27.8R
		24"	F, lap	q_a	1120	1133	1019	1046	960	990	923	952	896
				F, no lap	10.8-2R 3.3+94.8R	10.2-1.4R 4.2+76R	11.7-1.7R 6.7+62.8R	11-1.3R 6.6+54.5R	12.2-1.5R 8.2+47.7R	11.6-1.2R 8+42.6R	12.6-1.3R 9.3+38.2R	12-1R 9+34.9R	12.8-1.1R 11.8+27.4R
36"	F, lap	q_a	1120	978	862	920	835	763	819	760	709		
		F, no lap	10.8-2R 3.3+94.8R	12.8-2.5R 6.9+74.9R	14.9-3R 9.9+61.5R	13.2-2R 8.8+53.8R	14.7-2.3R 10.7+46.9R	16.2-2.6R 12.6+41.2R	14.6-1.8R 11.3+37.7R	15.8-2R 12.8+33.9R	16.9-2R 16+25.8R		
48"	F, lap	q_a	913	978	862	766	683	763	700	630	571		
		F, no lap	15.1-4.4R 7.7+92.4R	12.8-2.5R 6.9+74.9R	14.9-3R 9.9+61.5R	16.9-3.5R 12.5+52.3R	18.9-4R 14.9+45.2R	16.2-2.6R 12.6+41.2R	17.7-2.8R 14.4+36.7R	19.2-3.1R 16.2+32.8R	20.6-3R 19.6+25.5R		
60"	F, lap	q_a	913	773	862	766	683	599	532	630	571		
		F, no lap	15.1-4.4R 7.7+92.4R	18.3-5.5R 12.3+71.9R	14.9-3R 9.9+61.5R	16.9-3.5R 12.5+52.3R	18.9-4R 14.9+45.2R	21-4.5R 17.4+39.3R	23-4.9R 19.7+34.6R	19.2-3.1R 16.2+32.8R	20.6-3R 19.6+25.5R		



Allowable Diaphragm Shear, q_a (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Pins	Spacing	Span											
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"			
36/9	4"	q _a	4384	4348	4321	4301	4088	3230	2617	2162	1817			
		F, lap	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	
	F, no lap	2.7+6.5R	2.8+5.2R	2.9+4.3R	2.9+3.7R	3+3.3R	3+2.9R	3+2.6R	3.1+2.4R	3.1+2.4R	3.2+1.9R			
	6"	q _a	4058	3983	3929	3887	3854	3230	2617	2162	1817			
		F, lap	3.7-0.2R	3.7-0.2R	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	
	F, no lap	3.2+6.4R	3.3+5.1R	3.4+4.2R	3.5+3.6R	3.5+3.2R	3.6+2.9R	3.6+2.6R	3.6+2.3R	3.6+2.3R	3.8+1.8R			
	8"	q _a	3780	3743	3589	3588	3478	3230	2617	2162	1817			
		F, lap	4.1-0.3R	4.1-0.3R	4.2-0.3R	4.2-0.3R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.4-0.2R	4.4-0.1R	4.4-0.1R	4.4-0.1R	
	F, no lap	3.6+6.2R	3.7+5R	3.9+4.1R	3.9+3.6R	4+3.1R	4+2.8R	4.1+2.5R	4.1+2.3R	4.1+2.3R	4.3+1.8R			
	12"	q _a	3367	3203	3082	2990	2917	2858	2617	2162	1817			
F, lap		4.8-0.6R	5-0.5R	5.1-0.5R	5.2-0.5R	5.3-0.4R	5.3-0.4R	5.4-0.4R	5.4-0.3R	5.4-0.3R	5.4-0.3R	5.4-0.3R		
F, no lap	4.3+6R	4.6+4.7R	4.8+3.9R	4.9+3.5R	5+2.9R	5.1+2.6R	5.1+2.3R	5.2+2.1R	5.2+2.1R	5.3+1.6R				
18"	q _a	3090	2958	2615	2574	2543	2328	2326	2162	1817				
	F, lap	5.5-0.9R	5.5-0.8R	6.2-0.9R	6.2-0.8R	6.1-0.7R	6.6-0.7R	6.5-0.6R	6.4-0.6R	6.4-0.6R	6.8-0.6R			
F, no lap	5+5.7R	5.1+4.5R	5.9+3.5R	5.9+3R	5.8+2.7R	6.4+2.2R	6.2+2.2R	6.2+1.9R	6.2+1.9R	6.8+1.4R				
24"	q _a	2752	2671	2335	2332	2097	2122	1945	1980	1817				
	F, lap	6.5-1.4R	6.3-1.1R	7.2-1.3R	6.9-1R	7.6-1.2R	7.3-1R	7.9-1.1R	7.6-0.9R	7.6-0.9R	8.1-0.9R			
F, no lap	6+5.2R	5.9+4.2R	6.8+3.1R	6.6+2.7R	7.3+2.2R	7.1+2R	7.7+1.6R	7.4+1.5R	7.4+1.5R	8+1.1R				
36"	q _a	2752	2339	2021	2065	1826	1605	1690	1521	1381				
	F, lap	6.5-1.4R	7.6-1.8R	8.7-2.1R	8-1.5R	8.9-1.7R	9.7-1.9R	9-1.5R	9.7-1.6R	10.3-1.5R				
F, no lap	6+5.2R	7.2+3.5R	8.3+2.3R	7.7+2.3R	8.6+1.6R	9.5+1R	8.8+1.2R	9.5+0.8R	10.2+0.4R					
48"	q _a	2345	2339	2021	1736	1498	1605	1428	1283	1162				
	F, lap	8.3-2.6R	7.6-1.8R	8.7-2.1R	9.8-2.4R	10.9-2.8R	9.7-1.9R	10.6-2.1R	11.4-2.3R	12.1-2.2R				
F, no lap	7.8+4R	7.2+3.5R	8.3+2.3R	9.5+1.3R	10.6+0.6R	9.5+1R	10.3+0.6R	11.2+0.1R	12-0.3R					
60"	q _a	2345	1959	2021	1498	1313	1165	1283	1162					
	F, lap	8.3-2.6R	9.9-3.3R	8.7-2.1R	9.8-2.4R	10.9-2.8R	12-3.1R	13-3.4R	11.4-2.3R	12.1-2.2R				
F, no lap	7.8+4R	9.4+2R	8.3+2.3R	9.5+1.3R	10.6+0.6R	11.7-0.1R	12.8-0.7R	11.2+0.1R	12-0.3R					
16 36/7/4	4"	q _a	3510	3496	3486	3478	3472	3230	2617	2162	1817			
		F, lap	3.2-0.1R	3.2-0.1R	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R		
	F, no lap	2.7+6.5R	2.8+5.2R	2.9+4.3R	3+3.3R	3+3.3R	3+2.9R	3+2.6R	3.1+2.4R	3.1+2.4R	3.2+1.9R			
	6"	q _a	3281	3248	3224	3206	3192	3181	2617	2162	1817			
		F, lap	3.7-0.2R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R		
	F, no lap	3.2+6.4R	3.4+5.1R	3.5+4.3R	3.5+3.7R	3.6+3.2R	3.6+2.9R	3.6+2.6R	3.7+2.4R	3.8+1.9R				
	8"	q _a	3065	3068	2972	2989	2920	2940	2617	2162	1817			
		F, lap	4.2-0.3R	4.2-0.2R	4.3-0.2R	4.3-0.2R	4.4-0.2R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R	4.4-0.1R		
	F, no lap	3.7+6.3R	3.8+5.1R	4+4.2R	4+3.6R	4.1+3.2R	4.1+2.8R	4.2+2.6R	4.2+2.3R	4.2+2.3R	4.4+1.8R			
	12"	q _a	2710	2620	2555	2506	2468	2437	2412	2162	1817			
F, lap		5.1-0.5R	5.2-0.4R	5.3-0.4R	5.4-0.3R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.5-0.2R	5.5-0.2R			
F, no lap	4.6+6.1R	4.8+4.8R	5+4R	5.1+3.4R	5.1+3R	5.2+2.7R	5.3+2.4R	5.3+2.2R	5.3+2.2R	5.5+1.7R				
18"	q _a	2451	2398	2132	2136	2139	1968	1988	2005	1817				
	F, lap	5.9-0.8R	5.9-0.6R	6.6-0.7R	6.5-0.6R	6.4-0.5R	6.9-0.6R	6.8-0.5R	6.7-0.4R	7.1-0.4R				
F, no lap	5.4+5.8R	5.5+4.6R	6.3+3.6R	6.2+3.2R	6.1+2.8R	6.7+2.4R	6.6+2.2R	6.5+2R	7.1-1.5R					
24"	q _a	2117	2126	1862	1908	1721	1776	1632	1686	1571				
	F, lap	7.2-1.3R	6.8-1R	7.8-1.1R	7.4-0.9R	8.1-1R	7.7-0.8R	8.4-0.9R	8.0-7R	8.5-0.7R				
F, no lap	6.7+5.2R	6.4+4.3R	7.4+3.2R	7.1+2.9R	7.9+2.4R	7.5+2.2R	8.1+1.8R	7.8+1.7R	8.5+1.2R					
36"	q _a	2117	1796	1551	1650	1476	1334	1431	1317	1204				
	F, lap	7.2-1.3R	8.5-1.7R	9.7-2R	8.7-1.3R	9.7-1.5R	10.6-1.7R	9.6-1.2R	10.4-1.3R	11.1-1.3R				
F, no lap	6.7+5.2R	8+3.6R	9.4+2.4R	8.4+2.5R	9.4+1.8R	10.4+1.3R	9.4+1.5R	10.2+1.1R	11+0.6R					
48"	q _a	1693	1796	1551	1360	1190	1334	1198	1082	985				
	F, lap	9.8-2.8R	8.5-1.7R	9.7-2R	11-2.3R	12.3-2.6R	10.6-1.7R	11.6-1.9R	12.5-2.1R	13.4-2R				
F, no lap	9.3+3.8R	8+3.6R	9.4+2.4R	10.7+1.5R	12+0.7R	10.4+1.3R	11.3+0.8R	12.3+0.4R	13.3+0R					
60"	q _a	1693	1406	1551	1360	1190	1049	936	1082	985				
	F, lap	9.8-2.8R	11.7-3.5R	9.7-2R	11-2.3R	12.3-2.6R	13.5-2.9R	14.8-3.2R	12.5-2.1R	13.4-2R				
F, no lap	9.3+3.8R	11.3+1.7R	9.4+2.4R	10.7+1.5R	12+0.7R	13.3+0R	14.6-0.5R	12.3+0.4R	13.3+0R					
36/4	4"	q _a	2110	2107	2105	2104	2103	2102	2102	2101	1817			
		F, lap	3.3-0.1R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R	3.3+0R		
	F, no lap	-1+5.5.2R	-0.1+4.4.2R	0.4+3.6.8R	0.8+3.1.8R	1+2.8.1R	1.2+2.5R	1.4+2.2.6R	1.6+2.0.5R	2.8+1.6.3R				
	6"	q _a	2049	2042	2037	2033	2031	2028	2026	2025	1817			
		F, lap	3.8-0.1R	3.8-0.1R	3.8-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9-0.1R	3.9+0R	3.9+0R	3.9+0R		
	F, no lap	-0.4+5.5.2R	0.4+4.4.1R	1+3.6.8R	1.3+3.1.8R	1.6+2.8.1R	1.8+2.4.9R	2+2.2.5R	2.2+2.0.5R	3.3+1.6.2R				
	8"	q _a	1981	1987	1959	1967	1947	1955	1939	1947	1817			
		F, lap	4.3-0.2R	4.2-0.1R	4.4-0.1R	4.3-0.1R	4.4-0.1R	4.4-0.1R	4.5-0.1R	4.4-0.1R	4.5-0.1R			
	F, no lap	0.1+5.5.1R	0.8+4.4.1R	1.6+3.6.7R	1.8+3.1.8R	2.1+2.8R	2.3+2.4.9R	2.6+2.2.5R	2.7+2.0.4R	3.9+1.6.2R				
	12"	q _a	1846	1819	1799	1784	1773	1763	1755	1749	1743			
F, lap		5.3-0.4R	5.4-0.3R	5.5-0.3R	5.5-0.3R	5.5-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R	5.6-0.2R			
F, no lap	1.1+5.4.9R	2+4.3.9R	2.6+3.6.6R	3+3.1.6R	3.2+2.7.9R	3.5+2.4.8R	3.7+2.2.4R	3.9+2.0.4R	5.1+1.6.1R					
18"	q _a	1727	1717	1590	1603	1613	1524	1542	1556	1488				
	F, lap	6.2-0.6R	6.1-0.5R	6.9-0.6R	6.7-0.5R	6.6-0.4R	7.2-0.4R	7-0.4R	6.8-0.3R	7.3-0.3R				
F, no lap	2+5.4.7R	2.7+4.3.7R	4.1+3.6.3R	4.2+3.1.4R	4.3+2.7.7R	5.1+2.4.6R	5.1+2.2.2R	5.1+2.0.2R	6.7+1.6R					
24"	q _a	1541	1571	1428	1471	1363	1407	1320	1363	1291				
	F, lap	7.8-1.1R	7.2-0.8R	8.3-0.9R	7.7-0.7R	8.5-0.8R	8.1-0.6R	8.7-0.7R	8.3-0.5R	8.8-0.5R				
F, no lap	3.6+5.4.1R	3.9+4.3.5R	5.5+3.5.9R	5.2+3.1.2R	6.2+2.7.3R	6+2.4R	6.8+2.1.9R	6.6+2.0R	8.3+1.5.7R					
36"	q _a	1541	1362	1210	1301	1189	1092	1177	1098	1028				
	F, lap	7.8-1.1R	9.2-1.4R	10.6-1.7R	9.3-1.1R	10.3-1.2R	11.4-1.4R	10.2-1R	11-1.1R	11.7-1.1R				
F, no lap	3.6+5.4.1R	5.8+4.2.8R	7.8+3.5.1R	6.8+3.0.8R	8+2.6.9R	9.3+2.3.6R	8.3+2.1.6R	9.3+1.9.5R	11.2+1.5.2R					
48"	q _a	1250	1362	1210	1083	976	1092	1007	933	864				
	F, lap	11.3-2.8R	9.2-1.4R	10.6-1.7R	12.1-2R	13.5-2.3R	11.4-1.4R	12.4-1.5R	13.4-1.7R	14.4-1.7R				
F, no lap	7.1+5.2.5R	5.8+4.2.8R	7.8+3.5.1R	9.5+2.9.9R	11.2+2.5.9R	9.3+2.3.6R	10.5+2.1.1R	11.7+1.8.9R	13.9+1.4.6R					
60"	q _a	1250	1066	1210	1083	976	887	791	933	864				
	F, lap	11.3-2.8R	13.6-3.5R	10.6-1.7R	12.1-2R	13.5-2.3R	14.9-2.5R	16.3-2.8R	13.4-1.7R	14.4-1.7R				

2.6 B-36

Arc Spot/Seam Welds to Supports with Button Punch or Top/Side Seam Welded Side Seam Attachment

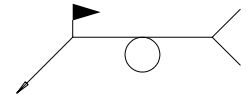


Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Seam Attachment Spacing		Span						
				5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	
22	36/4	Button Punch	12"	q_a	320	320	320	320	310	280
			F	14.5 + 222R	14.7 + 185R	14.8 + 159R	15.0 + 139R	15.2 + 123R	15.4 + 111R	
		24"	q_a	260	260	260	250	250	220	
			F	17.4 + 222R	17.6 + 185R	17.9 + 159R	18.1 + 139R	18.4 + 123R	18.6 + 111R	
		Top Seam Weld	12"	q_a	360	360	360	360	360	360
			F	6.9 + 222R	6.1 + 185R	5.7 + 159R	5.4 + 139R	5.1 + 123R	4.9 + 111R	
	24"	q_a	280	280	270	270	270	270		
		F	8.1 + 222R	7.2 + 185R	6.6 + 159R	6.2 + 139R	5.8 + 123R	5.6 + 111R		
	Side Seam Weld	12"	q	519	492	473	458	447	438	
		F	7.1 + 222R	6.6 + 185R	6.2 + 159R	5.9 + 139R	5.7 + 123R	5.5 + 111R		
	24"	q_a	337	309	290	276	264	256		
		F	9.5 + 222R	8.9 + 185R	8.4 + 159R	8.0 + 139R	7.7 + 123R	7.4 + 111R		
36/7	Button Punch	12"	q_a	570	570	560	500	450	410	
		F	13.8 + 56R	14.1 + 46R	14.3 + 39R	14.6 + 34R	14.8 + 31R	15.1 + 28R		
	24"	q_a	510	500	500	450	400	360		
		F	15.2 + 56R	15.5 + 46R	15.8 + 39R	16.2 + 34R	16.5 + 31R	16.8 + 28R		
	Top Seam Weld	12"	q_a	700	700	690	690	620	560	
		F	12.5 + 56R	11.1 + 46R	10.0 + 39R	9.2 + 34R	8.6 + 31R	8.2 + 28R		
24"	q_a	610	610	600	600	540	490			
	F	13.9 + 56R	12.3 + 46R	11.1 + 39R	10.2 + 34R	9.5 + 31R	9.0 + 28R			
Side Seam Weld	12"	q_a	596	555	525	504	487	473		
	F	6.9 + 56R	6.5 + 46R	6.2 + 39R	6.0 + 34R	5.7 + 31R	5.6 + 28R			
24"	q_a	414	372	343	321	304	291			
	F	8.8 + 56R	8.4 + 46R	8.1 + 39R	7.8 + 34R	7.5 + 31R	7.3 + 28R			
20	36/4	Button Punch	12"	q_a	420	420	410	410	380	350
			F	11.0 + 129R	11.2 + 107R	11.3 + 92R	11.5 + 80R	11.7 + 71R	11.8 + 64R	
		24"	q_a	340	340	340	330	310	280	
			F	13.0 + 129R	13.2 + 107R	13.4 + 92R	13.6 + 80R	13.8 + 71R	14.1 + 64R	
		Top Seam Weld	12"	q_a	450	450	450	440	440	440
			F	5.4 + 129R	5.0 + 107R	4.6 + 92R	4.4 + 80R	4.1 + 71R	4.0 + 64R	
	24"	q_a	340	340	340	340	340	340		
		F	6.4 + 129R	5.8 + 107R	5.3 + 92R	5.0 + 80R	4.7 + 71R	4.5 + 64R		
	Side Seam Weld	12"	q_a	805	756	721	694	674	658	
		F	5.9 + 129R	5.5 + 107R	5.3 + 92R	5.0 + 80R	4.8 + 71R	4.6 + 64R		
	24"	q_a	543	494	458	432	412	395		
		F	7.7 + 129R	7.3 + 107R	6.9 + 92R	6.6 + 80R	6.4 + 71R	6.2 + 64R		
36/7	Button Punch	12"	q_a	740	740	710	630	560	500	
		F	10.4 + 32R	10.6 + 27R	10.8 + 23R	11.0 + 20R	11.3 + 18R	11.5 + 16R		
	24"	q_a	670	660	640	560	500	450		
		F	11.3 + 32R	11.6 + 27R	11.8 + 23R	12.1 + 20R	12.4 + 18R	12.6 + 16R		
	Top Seam Weld	12"	q_a	900	890	880	840	750	680	
		F	9.6 + 32R	8.5 + 27R	7.8 + 23R	7.2 + 20R	6.7 + 18R	6.4 + 16R		
24"	q_a	790	780	770	740	660	600			
	F	10.6 + 32R	9.4 + 27R	8.5 + 23R	7.9 + 20R	7.4 + 18R	7.0 + 16R			
Side Seam Weld	12"	q_a	939	865	812	773	742	718		
	F	5.7 + 32R	5.4 + 27R	5.2 + 23R	5.0 + 20R	4.8 + 18R	4.7 + 16R			
24"	q_a	677	602	549	510	479	455			
	F	7.0 + 32R	6.8 + 27R	6.6 + 23R	6.4 + 20R	6.2 + 18R	6.0 + 16R			

Arc Spot/Seam Welds to Supports with Button Punch or Top/Side Seam Welded Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Seam Attachment		Span						
		Attachment	Spacing	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	
18	36/4	Button Punch	12"	q_a	806	697	619	562	517	482
			F	5.9 + 54R	6.7 + 45R	7.5 + 39R	8.2 + 34R	9.0 + 30R	9.7 + 27R	
		24"	q_a	736	626	548	489	444	408	
			F	6.3 + 54R	7.2 + 45R	8.2 + 39R	9.2 + 34R	10.2 + 30R	11.2 + 27R	
		Top Seam Weld	12"	q_a	1215	1112	1032	968	917	878
			F	5.0 + 54R	4.8 + 45R	4.7 + 39R	4.5 + 34R	4.4 + 30R	4.2 + 27R	
	24"	q_a	940	834	752	688	638	598		
		F	6.0 + 54R	5.9 + 45R	5.7 + 39R	5.6 + 34R	5.5 + 30R	5.4 + 27R		
	Side Seam Weld	12"	q	1580	1482	1406	1341	1291	1251	
		F	4.3 + 54R	4.1 + 45R	3.9 + 39R	3.7 + 34R	3.6 + 30R	3.5 + 27R		
	24"	q_a	1123	1018	940	875	826	785		
		F	5.3 + 54R	5.1 + 45R	5.0 + 39R	4.8 + 34R	4.7 + 30R	4.5 + 27R		
36/7	Button Punch	12"	q_a	1176	1008	889	800	731	677	
		F	5.0 + 14R	5.7 + 11R	6.4 + 10R	7.1 + 9R	7.9 + 8R	8.6 + 7R		
	24"	q_a	1102	932	811	721	651	596		
		F	5.2 + 14R	6.0 + 11R	6.9 + 10R	7.7 + 9R	8.6 + 8R	9.5 + 7R		
	Top Seam Weld	12"	q_a	1538	1359	1232	1138	1064	1007	
		F	4.6 + 14R	4.5 + 11R	4.4 + 10R	4.3 + 9R	4.2 + 8R	4.1 + 7R		
24"	q_a	1258	1079	952	858	785	727			
	F	5.2 + 14R	5.2 + 11R	5.2 + 10R	5.1 + 9R	5.1 + 8R	5.1 + 7R			
Side Seam Weld	12"	q_a	1911	1732	1606	1511	1438	1380		
	F	4.0 + 14R	3.9 + 11R	3.8 + 10R	3.7 + 9R	3.6 + 8R	3.5 + 7R			
24"	q_a	1445	1266	1139	1044	971	913			
	F	4.8 + 14R	4.7 + 11R	4.6 + 10R	4.5 + 9R	4.5 + 8R	4.4 + 7R			
16	36/4	Button Punch	12"	q_a	1155	991	874	788	721	668
			F	4.3 + 28R	4.9 + 23R	5.5 + 20R	6.1 + 17R	6.7 + 15R	7.3 + 14R	
		24"	q_a	1077	912	794	706	639	584	
			F	4.5 + 28R	5.2 + 23R	5.9 + 20R	6.6 + 17R	7.4 + 15R	8.1 + 14R	
		Top Seam Weld	12"	q_a	1683	1529	1421	1344	1286	1242
			F	3.8 + 28R	3.6 + 23R	3.5 + 20R	3.4 + 17R	3.4 + 15R	3.3 + 14R	
	24"	q_a	1341	1181	1068	984	920	871		
		F	4.4 + 28R	4.3 + 23R	4.3 + 20R	4.2 + 17R	4.1 + 15R	4.1 + 14R		
	Side Seam Weld	12"	q_a	2138	1992	1893	1823	1773	1736	
		F	3.3 + 28R	3.1 + 23R	3.0 + 20R	2.9 + 17R	2.8 + 15R	2.7 + 14R		
	24"	q_a	1570	1412	1303	1224	1164	1118		
		F	3.9 + 28R	3.8 + 23R	3.7 + 20R	3.7 + 17R	3.6 + 15R	3.5 + 14R		
36/7	Button Punch	12"	q_a	1652	1408	1234	1105	1005	927	
		F	3.7 + 6.9R	4.2 + 5.8R	4.7 + 5R	5.3 + 4.3R	5.8 + 3.9R	6.4 + 3.5R		
	24"	q_a	1570	1323	1150	1018	916	835		
		F	3.8 + 6.9R	4.4 + 5.8R	5.0 + 5R	5.6 + 4.3R	6.3 + 3.9R	6.9 + 3.5R		
	Top Seam Weld	12"	q_a	2212	1982	1821	1705	1617	1550	
		F	3.4 + 6.9R	3.4 + 5.8R	3.3 + 5R	3.3 + 4.3R	3.2 + 3.9R	3.2 + 3.5R		
24"	q_a	1850	1610	1442	1317	1221	1147			
	F	3.8 + 6.9R	3.8 + 5.8R	3.8 + 5R	3.8 + 4.3R	3.8 + 3.9R	3.8 + 3.5R			
Side Seam Weld	12"	q_a	2696	2476	2326	2221	2144	1895		
	F	3.1 + 6.9R	3.0 + 5.8R	2.9 + 5R	2.8 + 4.3R	2.8 + 3.9R	2.7 + 3.5R			
24"	q_a	2091	1858	1694	1575	1485	1415			
	F	3.5 + 6.9R	3.5 + 5.8R	3.5 + 5R	3.4 + 4.3R	3.4 + 3.9R	3.4 + 3.5R			

B PANELS

2.7 BF-36

Arc Spot/Seam Welds to Supports with Button Punch or Top Seam Welded Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10^{-6} in/lbs)

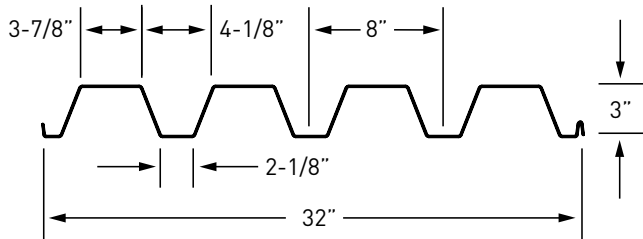
Gage	Arc Spot Welds	Seam Attachment		Spacing					
				6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	
20/20	36/4	Top Seam Weld	12"	q_a	905	812	742	688	645
			F	3.3 + 4.4R	3.3 + 3.8R	3.2 + 3.3R	3.2 + 3.0R	3.2 + 2.7R	
	36/7	Top Seam Weld	24"	q_a	748	654	584	530	488
			F	3.7 + 4.4R	3.8 + 3.8R	3.8 + 3.3R	3.8 + 3.0R	3.8 + 2.7R	
20/18	36/4	Top Seam Weld	12"	q_a	1090	964	870	797	740
			F	3.0 + 3.9R	3.0 + 3.4R	3.0 + 3.0R	3.0 + 2.6R	3.0 + 2.4R	
	36/7	Top Seam Weld	24"	q_a	933	806	712	640	583
			F	3.3 + 3.9R	3.4 + 3.4R	3.4 + 3.0R	3.5 + 2.6R	3.5 + 2.4R	
18/18	36/4	Top Seam Weld	12"	q_a	1582	1446	1332	1233	1154
			F	2.7 + 3.4R	2.6 + 2.9R	2.6 + 2.5R	2.6 + 2.2R	2.6 + 2.0R	
	36/7	Top Seam Weld	24"	q_a	1311	1169	1053	953	874
			F	3.0 + 3.4R	3.0 + 2.9R	3.1 + 2.5R	3.1 + 2.2R	3.1 + 2.0R	
18/16	36/4	Top Seam Weld	12"	q_a	1975	1742	1567	1433	1327
			F	2.5 + 3.1R	2.5 + 2.6R	2.5 + 2.3R	2.5 + 2.0R	2.5 + 1.8R	
	36/7	Top Seam Weld	24"	q_a	1695	1462	1287	1153	1047
			F	2.7 + 3.1R	2.8 + 2.6R	2.8 + 2.3R	2.9 + 2.0R	2.9 + 1.8R	
16/16	36/4	Top Seam Weld	12"	q_a	1520	1384	1285	1210	1152
			F	2.2 + 3.2R	2.2 + 2.8R	2.2 + 2.4R	2.2 + 2.1R	2.25 + 1.9R	
	36/7	Top Seam Weld	24"	q_a	1275	1134	1029	949	885
			F	2.2 + 3.2R	2.5 + 2.8R	2.6 + 2.4R	2.6 + 2.1R	2.6 + 1.9R	
16/16	36/4	Top Seam Weld	12"	q_a	1887	1704	1570	1469	1390
			F	2.1 + 2.7R	2.1 + 2.3R	2.1 + 2.0R	2.1 + 1.8R	2.1 + 1.6R	
	36/7	Top Seam Weld	24"	q_a	1640	1450	1310	1202	1090
			F	2.3 + 2.7R	2.4 + 2.3R	2.4 + 2.0R	2.5 + 1.8R	2.5 + 1.6R	
16/16	36/4	Top Seam Weld	12"	q_a	1920	1749	1625	1531	1460
			F	1.9 + 2.6R	1.9 + 2.2R	1.9 + 2.0R	1.9 + 1.7R	1.9 + 1.6R	
	36/7	Top Seam Weld	24"	q_a	1612	1434	1302	1201	1121
			F	2.1 + 2.6R	2.2 + 2.2R	2.2 + 2.0R	2.2 + 1.7R	2.3 + 1.6R	
16/16	36/4	Top Seam Weld	12"	q_a	2413	2181	2011	1883	1784
			F	1.8 + 2.2R	1.8 + 1.9R	1.8 + 1.7R	1.8 + 1.5R	1.9 + 1.3R	
	36/7	Top Seam Weld	24"	q_a	2093	1850	1670	1533	1424
			F	1.9 + 2.2R	2.0 + 1.9R	2.0 + 1.7R	2.1 + 1.5R	2.1 + 1.3R	
16/16	36/4	Top Seam Weld	12"	q_a	1887	1715	1589	1494	1421
			F	1.7 + 2.5R	1.7 + 2.1R	1.7 + 1.9R	1.7 + 1.7R	1.7 + 1.5R	
	36/7	Top Seam Weld	24"	q_a	1601	1421	1288	1186	1105
			F	1.9 + 2.5R	1.9 + 2.1R	1.9 + 1.9R	2.0 + 1.7R	2.0 + 1.5R	
36/7	Top Seam Weld	12"	q_a	2383	2148	1976	1846	1745	
		F	1.6 + 1.9R	1.6 + 1.6R	1.6 + 1.4R	1.6 + 1.3R	1.6 + 1.1R		
36/7	Top Seam Weld	24"	q_a	2085	1840	1658	1519	1409	
		F	1.7 + 1.9R	1.7 + 1.6R	1.8 + 1.4R	1.8 + 1.3R	1.9 + 1.1R		



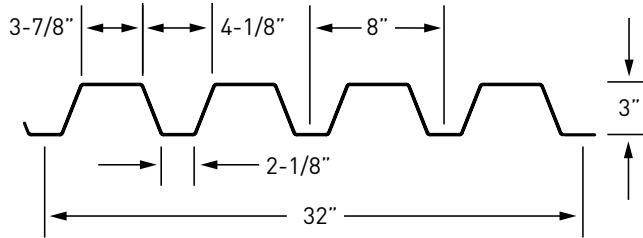
3.1 DGN-32, N-32 & NN-32



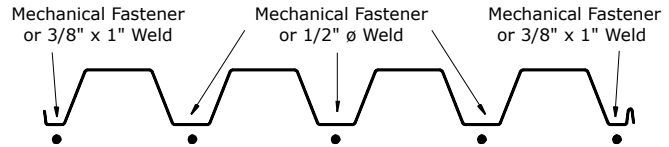
DGN-32 & N-32



NN-32 Nestable



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight	Base Metal Thickness	Yield Strength	Tensile Strength	Gross Section Properties				
					Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
22	1.97	0.0299	50	65	0.569	0.814	1.68	0.483	1.195
20	2.35	0.0359	50	65	0.681	0.968	1.68	0.576	1.193
18	3.10	0.0478	50	65	0.902	1.275	1.69	0.755	1.189
16	3.86	0.0598	50	65	1.123	1.575	1.69	0.931	1.185

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _e = (2I _e +I _g)/3	I ₊
22	0.272	0.349	1.37	0.402	1.78	0.668	0.754	0.716	0.774
20	0.372	0.446	1.41	0.505	1.76	0.848	0.930	0.888	0.943
18	0.604	0.661	1.48	0.715	1.72	1.219	1.275	1.238	1.275
16	0.871	0.879	1.54	0.927	1.70	1.556	1.575	1.563	1.575

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	500	566	622	716	764	866	952	1095
	Interior	876	973	1056	1194	1303	1448	1570	1776
20	End	709	799	876	1004	1084	1223	1340	1536
	Interior	1240	1371	1482	1669	1844	2040	2205	2482
18	End	1221	1367	1490	1697	1868	2092	2280	2597
	Interior	2133	2343	2519	2816	3173	3485	3748	4189
16	End	1864	2076	2254	2554	2852	3176	3449	3907
	Interior	3260	3560	3814	4239	4849	5296	5673	6305

Web Crippling Constraints

h=3.06"

r=0.125"

θ=70.7°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

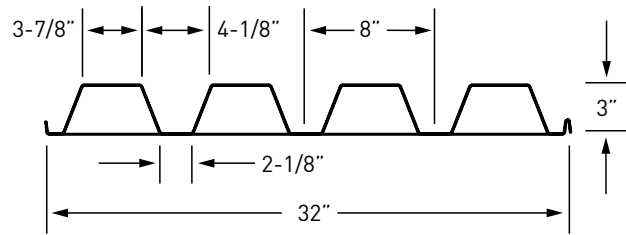
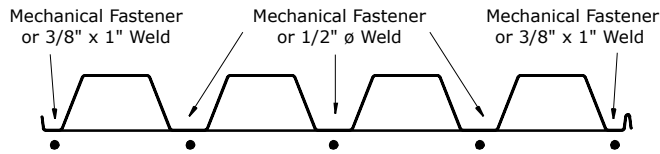
Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
22	SS	f_b / Ω	435	193	109	70	48	36	27	21	17
		Φf_b	690	307	173	110	77	56	43	34	28
		L/360	-	145	61	31	18	11	8	5	4
		L/240	-	-	92	47	27	17	11	8	6
		L/180	-	-	-	63	36	23	15	11	8
	L/120	-	-	-	-	-	34	23	16	12	
	DS	f_b / Ω	502	223	125	80	56	41	31	25	20
		Φf_b	796	354	199	127	88	65	50	39	32
		L/360	-	-	-	-	47	30	20	14	10
		L/240	-	-	-	-	-	-	30	21	15
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	627	279	157	100	70	51	39	31	25
		Φf_b	995	442	249	159	111	81	62	49	40
		L/360	-	-	146	75	43	27	18	13	9
L/240		-	-	-	-	65	41	27	19	14	
L/180		-	-	-	-	-	-	36	26	19	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	557	247	139	89	62	45	35	27	22
		Φf_b	883	393	221	141	98	72	55	44	35
		L/360	-	180	76	39	22	14	9	7	5
		L/240	-	-	114	58	34	21	14	10	7
		L/180	-	-	-	78	45	28	19	13	10
	L/120	-	-	-	-	-	42	28	20	15	
	DS	f_b / Ω	630	280	158	101	70	51	39	31	25
		Φf_b	1000	444	250	160	111	82	63	49	40
		L/360	-	-	-	99	57	36	24	17	12
		L/240	-	-	-	-	-	-	36	26	19
		L/180	-	-	-	-	-	-	-	-	25
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	788	350	197	126	88	64	49	39	32
		Φf_b	1250	556	313	200	139	102	78	62	50
		L/360	-	-	178	91	53	33	22	16	11
L/240		-	-	-	-	79	50	33	23	17	
L/180		-	-	-	-	-	-	44	31	23	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	825	367	206	132	92	67	52	41	33
		Φf_b	1308	582	327	209	145	107	82	65	52
		L/360	-	250	106	54	31	20	13	9	7
		L/240	-	-	158	81	47	30	20	14	10
		L/180	-	-	-	108	63	39	26	19	14
	L/120	-	-	-	-	-	59	40	28	20	
	DS	f_b / Ω	892	396	223	143	99	73	56	44	36
		Φf_b	1415	629	354	226	157	116	88	70	57
		L/360	-	-	-	134	78	49	33	23	17
		L/240	-	-	-	-	-	-	49	35	25
		L/180	-	-	-	-	-	-	-	-	34
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1115	496	279	178	124	91	70	55	45
		Φf_b	1769	786	442	283	197	144	111	87	71
		L/360	-	-	240	123	71	45	30	21	15
L/240		-	-	-	-	107	67	45	32	23	
L/180		-	-	-	-	-	90	60	42	31	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	1097	487	274	175	122	90	69	54	44
		Φf_b	1740	773	435	278	193	142	109	86	70
		L/360	1067	316	133	68	40	25	17	12	9
		L/240	-	474	200	102	59	37	25	18	13
		L/180	-	-	267	137	79	50	33	23	17
	L/120	-	-	-	-	119	75	50	35	26	
	DS	f_b / Ω	1156	514	289	185	128	94	72	57	46
		Φf_b	1834	815	458	293	204	150	115	91	73
		L/360	-	-	-	166	96	60	40	28	21
		L/240	-	-	-	-	-	91	61	43	31
		L/180	-	-	-	-	-	-	-	57	41
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1445	642	361	231	161	118	90	71	58
		Φf_b	2292	1019	573	367	255	187	143	113	92
		L/360	-	-	297	152	88	55	37	26	19
L/240		-	-	-	228	132	83	56	39	28	
L/180		-	-	-	-	-	111	74	52	38	
L/120	-	-	-	-	-	-	-	-	57		

N PANELS

3.1 DGNF-32 & NF-32



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
20/20	3.96	0.0359 / 0.036	50	65	1.114	1.740	1.07	0.867	1.250
20/18	4.44	0.0359 / 0.047	50	65	1.254	1.877	0.96	0.884	1.223
20/16	4.96	0.0359 / 0.059	50	65	1.406	1.999	0.87	0.899	1.192
18/20	4.71	0.0478 / 0.036	50	65	1.330	2.143	1.19	1.129	1.269
18/18	5.19	0.0478 / 0.047	50	65	1.470	2.316	1.09	1.153	1.255
18/16	5.71	0.0478 / 0.059	50	65	1.622	2.474	1.00	1.173	1.235
16/20	5.47	0.0598 / 0.036	50	65	1.547	2.522	1.27	1.385	1.277
16/18	5.95	0.0598 / 0.047	50	65	1.687	2.725	1.18	1.415	1.271
16/16	6.47	0.0598 / 0.059	50	65	1.839	2.914	1.10	1.442	1.259

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _u = (2I _e +I _g)/3	I ₊ in ⁴ /ft
20/20	0.547	0.488	0.76	0.808	1.39	1.381	1.454	1.501	1.549
20/18	0.622	0.490	0.66	0.838	1.24	1.480	1.623	1.612	1.708
20/16	0.729	0.522	0.62	0.863	1.11	1.515	1.816	1.676	1.877
18/20	0.784	0.798	0.99	1.057	1.45	1.835	1.839	1.938	1.940
18/18	0.859	0.816	0.90	1.093	1.33	1.972	2.019	2.087	2.118
18/16	0.966	0.810	0.81	1.123	1.22	2.107	2.234	2.230	2.314
16/20	1.057	1.073	1.13	1.306	1.49	2.316	2.218	2.385	2.319
16/18	1.132	1.098	1.04	1.346	1.39	2.495	2.405	2.572	2.512
16/16	1.238	1.119	0.96	1.380	1.30	2.661	2.636	2.746	2.729

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	500	566	622	716	764	866	952	1095
	Interior	876	973	1056	1194	1303	1448	1570	1776
20	End	709	799	876	1004	1084	1223	1340	1536
	Interior	1240	1371	1482	1669	1844	2040	2205	2482
18	End	1221	1367	1490	1697	1868	2092	2280	2597
	Interior	2133	2343	2519	2816	3173	3485	3748	4189
16	End	1864	2076	2254	2554	2852	3176	3449	3907
	Interior	3260	3560	3814	4239	4849	5296	5673	6305

Web Crippling Constraints

h=3.06"

r=0.125"

θ=70.7°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
20/20	SS	f_b / Ω	609	271	152	97	68	50	38	30	24
		Φf_b	966	429	241	155	107	79	60	48	39
		L/360	-	-	128	66	38	24	16	11	8
		L/240	-	-	-	-	57	36	24	17	12
		L/180	-	-	-	-	-	48	32	22	16
	L/120	-	-	-	-	-	-	-	-	-	
	DS	f_b / Ω	1008	448	252	161	112	82	63	50	40
		Φf_b	1600	711	400	256	178	131	100	79	64
		L/360	-	-	-	-	94	59	40	28	20
		L/240	-	-	-	-	-	-	60	42	31
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	951	423	238	152	106	78	59	47	38
		Φf_b	1509	671	377	241	168	123	94	75	60
		L/360	-	-	-	149	86	54	36	26	19
L/240		-	-	-	-	-	-	55	38	28	
L/180		-	-	-	-	-	-	-	-	37	
L/120	-	-	-	-	-	-	-	-	-		
20/18	SS	f_b / Ω	611	272	153	98	68	50	38	30	24
		Φf_b	970	431	242	155	108	79	61	48	39
		L/360	-	-	138	70	41	26	17	12	9
		L/240	-	-	-	-	61	39	26	18	13
		L/180	-	-	-	-	-	-	34	24	18
	L/120	-	-	-	-	-	-	-	-	-	
	DS	f_b / Ω	1045	464	261	167	116	85	65	52	42
		Φf_b	1658	737	414	265	184	135	104	82	66
		L/360	-	-	-	-	104	66	44	31	22
		L/240	-	-	-	-	-	-	-	46	34
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	955	424	239	153	106	78	60	47	38
		Φf_b	1515	673	379	242	168	124	95	75	61
		L/360	-	-	-	-	95	60	40	28	21
L/240		-	-	-	-	-	-	-	42	31	
L/180		-	-	-	-	-	-	-	-	-	
L/120	-	-	-	-	-	-	-	-	-		
20/16	SS	f_b / Ω	652	290	163	104	72	53	41	32	26
		Φf_b	1034	459	258	165	115	84	65	51	41
		L/360	-	-	143	73	42	27	18	13	9
		L/240	-	-	-	-	64	40	27	19	14
		L/180	-	-	-	-	-	-	36	25	18
	L/120	-	-	-	-	-	-	-	-	-	
	DS	f_b / Ω	1076	478	269	172	120	88	67	53	43
		Φf_b	1707	759	427	273	190	139	107	84	68
		L/360	-	-	-	-	114	72	48	34	25
		L/240	-	-	-	-	-	-	-	51	37
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1018	453	255	163	113	83	64	50	41
		Φf_b	1615	718	404	258	179	132	101	80	65
		L/360	-	-	-	-	105	66	44	31	23
L/240		-	-	-	-	-	-	-	47	34	
L/180		-	-	-	-	-	-	-	-	-	
L/120	-	-	-	-	-	-	-	-	-		

N PANELS

3.1 DGNF-32 & NF-32



Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
18/20	SS	f_b / Ω	995	442	249	159	111	81	62	49	40
		Φf_b	1578	702	395	253	175	129	99	78	63
		L/360	-	392	165	85	49	31	21	15	11
		L/240	-	-	248	127	74	46	31	22	16
		L/180	-	-	-	-	98	62	41	29	21
	L/120	-	-	-	-	-	-	62	44	32	
	DS	f_b / Ω	1319	586	330	211	147	108	82	65	53
		Φf_b	2093	930	523	335	233	171	131	103	84
		L/360	-	-	-	204	118	74	50	35	26
		L/240	-	-	-	-	-	-	75	53	38
		L/180	-	-	-	-	-	-	-	-	51
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1555	691	389	249	173	127	97	77	62
		Φf_b	2466	1096	617	395	274	201	154	122	99
		L/360	-	-	366	187	108	68	46	32	23
L/240		-	-	-	-	162	102	69	48	35	
L/180		-	-	-	-	-	-	91	64	47	
L/120	-	-	-	-	-	-	-	-	-		
18/18	SS	f_b / Ω	1018	452	254	163	113	83	64	50	41
		Φf_b	1614	717	404	258	179	132	101	80	65
		L/360	-	422	178	91	53	33	22	16	11
		L/240	-	-	-	137	79	50	33	23	17
		L/180	-	-	-	-	106	66	45	31	23
	L/120	-	-	-	-	-	-	-	47	34	
	DS	f_b / Ω	1363	606	341	218	151	111	85	67	55
		Φf_b	2163	961	541	346	240	177	135	107	87
		L/360	-	-	-	-	129	81	54	38	28
		L/240	-	-	-	-	-	-	82	57	42
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1590	707	397	254	177	130	99	79	64
		Φf_b	2522	1121	631	404	280	206	158	125	101
		L/360	-	-	-	204	118	74	50	35	26
L/240		-	-	-	-	-	112	75	53	38	
L/180		-	-	-	-	-	-	-	70	51	
L/120	-	-	-	-	-	-	-	-	-		
18/16	SS	f_b / Ω	1011	449	253	162	112	82	63	50	40
		Φf_b	1603	713	401	257	178	131	100	79	64
		L/360	-	-	190	97	56	36	24	17	12
		L/240	-	-	-	146	85	53	36	25	18
		L/180	-	-	-	-	-	71	48	33	24
	L/120	-	-	-	-	-	-	-	-	37	
	DS	f_b / Ω	1401	623	350	224	156	114	88	69	56
		Φf_b	2222	988	556	356	247	181	139	110	89
		L/360	-	-	-	-	141	89	59	42	30
		L/240	-	-	-	-	-	-	-	63	46
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1579	702	395	253	175	129	99	78	63
		Φf_b	2505	1113	626	401	278	204	157	124	100
		L/360	-	-	-	223	129	81	54	38	28
L/240		-	-	-	-	-	122	82	57	42	
L/180		-	-	-	-	-	-	-	77	56	
L/120	-	-	-	-	-	-	-	-	-		

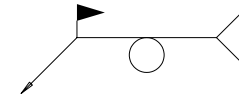
Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
16/20	SS	f_b / Ω	1338	595	335	214	149	109	84	66	54
		Φf_b	2123	944	531	340	236	173	133	105	85
		L/360	-	483	204	104	60	38	25	18	13
		L/240	-	-	305	156	90	57	38	27	20
		L/180	-	-	-	208	121	76	51	36	26
	L/120	-	-	-	-	-	-	76	54	39	
	DS	f_b / Ω	1630	724	407	261	181	133	102	80	65
		Φf_b	2586	1149	646	414	287	211	162	128	103
		L/360	-	-	-	244	141	89	60	42	31
		L/240	-	-	-	-	-	-	89	63	46
		L/180	-	-	-	-	-	-	-	-	61
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2037	905	509	326	226	166	127	101	81
		Φf_b	3232	1436	808	517	359	264	202	160	129
		L/360	-	-	437	224	129	82	55	38	28
L/240		-	-	-	-	194	122	82	58	42	
L/180		-	-	-	-	-	163	109	77	56	
L/120	-	-	-	-	-	-	-	-	-		
16/18	SS	f_b / Ω	1369	609	342	219	152	112	86	68	55
		Φf_b	2172	966	543	348	241	177	136	107	87
		L/360	-	520	220	112	65	41	27	19	14
		L/240	-	-	329	169	98	61	41	29	21
		L/180	-	-	-	-	130	82	55	39	28
	L/120	-	-	-	-	-	-	82	58	42	
	DS	f_b / Ω	1679	746	420	269	187	137	105	83	67
		Φf_b	2663	1184	666	426	296	217	166	132	107
		L/360	-	-	-	264	153	96	65	45	33
		L/240	-	-	-	-	-	-	97	68	50
		L/180	-	-	-	-	-	-	-	-	66
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2098	933	525	336	233	171	131	104	84
		Φf_b	3329	1480	832	533	370	272	208	164	133
		L/360	-	-	473	242	140	88	59	42	30
L/240		-	-	-	-	210	132	89	62	45	
L/180		-	-	-	-	-	-	118	83	61	
L/120	-	-	-	-	-	-	-	-	-		
16/16	SS	f_b / Ω	1396	621	349	223	155	114	87	69	56
		Φf_b	2215	985	554	354	246	181	138	109	89
		L/360	-	556	234	120	69	44	29	21	15
		L/240	-	-	-	180	104	66	44	31	23
		L/180	-	-	-	-	139	87	59	41	30
	L/120	-	-	-	-	-	-	-	62	45	
	DS	f_b / Ω	1721	765	430	275	191	141	108	85	69
		Φf_b	2731	1214	683	437	303	223	171	135	109
		L/360	-	-	-	-	166	105	70	49	36
		L/240	-	-	-	-	-	-	105	74	54
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2152	956	538	344	239	176	134	106	86
		Φf_b	3414	1517	853	546	379	279	213	169	137
		L/360	-	-	514	263	152	96	64	45	33
L/240		-	-	-	-	228	144	96	68	49	
L/180		-	-	-	-	-	-	129	90	66	
L/120	-	-	-	-	-	-	-	-	-		

N PANELS

3.2 DGN-32 & DGNF-32

Arc Spot/Seam Welds to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																					
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"					
16	32/5	4"	q_a	q_f	4397	7254	4333	7149	4299	7093	4277	7057	4263	7033	3794	6070	2905	4647	2295	3672	1859	2974		
			F		1.7+12.5R		1.9+8.3R		2+6.2R		2.1+5R		2.2+4.2R		2.2+3.6R		2.2+3.1R		2.2+2.8R		2.3+2.5R			
		6"	q_a	q_f	3869	6385	3749	6186	3684	6078	3643	6011	3615	5965	3595	5931	2905	4647	2295	3672	1859	2974		
			F		1.7+12.5R		2+8.3R		2.1+6.2R		2.2+5R		2.2+4.2R		2.3+3.6R		2.3+3.1R		2.3+2.8R		2.3+2.5R			
		8"	q_a	q_f	3446	5687	3279	5411	3189	5262	3133	5169	3094	5105	3066	5059	2905	4647	2295	3672	1859	2974		
			F		1.8+12.5R		2.1+8.3R		2.2+6.2R		2.3+5R		2.3+4.2R		2.3+3.6R		2.4+3.1R		2.4+2.8R		2.4+2.5R			
		12"	q_a	q_f	2862	4722	2634	4345	2511	4144	2435	4018	2384	3933	2346	3871	2318	3824	2295	3672	1859	2974		
			F		1.9+12.5R		2.2+8.3R		2.3+6.2R		2.4+5R		2.4+4.2R		2.5+3.6R		2.5+3.1R		2.5+2.8R		2.5+2.5R			
		18"	q_a	q_f	2495	4722	2088	3444	2094	3454	1915	3160	1792	2956	1839	3034	1755	2896	1689	2786	1733	2859		
			F		2.1+12.5R		2.4+8.3R		2.5+6.2R		2.6+5R		2.6+4.1R		2.7+3.6R		2.7+3.1R		2.7+2.8R		2.7+2.5R			
		24"	q_a	q_f	2044	3373	1721	2840	1579	2605	1494	2465	1437	2371	1396	2304	1366	2254	1342	2215	1323	2184		
			F		2.3+12.4R		2.6+8.3R		2.7+6.2R		2.8+5R		2.8+4.1R		2.9+3.5R		2.9+3.1R		2.9+2.8R		2.9+2.5R			
		36"	q_a	q_f	1676	2765	1337	2206	1291	2130	1263	2031	1053	1737	1067	1761	1078	1778	958	1581	977	1613		
			F		2.6+12.4R		2.9+8.2R		3.1+6.2R		3.2+4.9R		3.2+4.1R		3.3+3.5R		3.3+3.1R		3.3+2.7R		3.4+2.5R			
18	32/5	4"	q_a	q_f	3459	5707	3379	5575	3335	5503	3308	5459	3290	5428	2737	4379	2096	3353	1656	2649	1341	2146		
			F		1.8+21.9R		2.2+14.6R		2.4+10.9R		2.5+8.7R		2.6+7.3R		2.7+6.2R		2.7+5.5R		2.8+4.9R		2.8+4.4R			
		6"	q_a	q_f	2969	4899	2835	4677	2762	4558	2717	4483	2686	4432	2664	4379	2096	3353	1656	2649	1341	2146		
			F		1.9+21.8R		2.3+14.6R		2.5+10.9R		2.6+8.7R		2.7+7.3R		2.8+6.2R		2.8+5.5R		2.9+4.9R		2.9+4.4R			
		8"	q_a	q_f	2611	4309	2439	4025	2346	3872	2289	3776	2249	3711	2221	3664	2096	3353	1656	2649	1341	2146		
			F		2+21.8R		2.4+14.6R		2.6+10.9R		2.8+8.7R		2.8+7.3R		2.9+6.2R		3+5.5R		3+4.9R		3+4.4R			
		12"	q_a	q_f	2155	3555	1938	3198	1823	3007	1751	2889	1703	2809	1667	2751	1641	2707	1620	2649	1341	2146		
			F		2.2+21.8R		2.6+14.5R		2.8+10.9R		3+8.7R		3.1+7.3R		3.1+6.2R		3.2+5.5R		3.2+4.8R		3.2+4.4R			
		18"	q_a	q_f	1851	3555	1474	2432	1489	2457	1344	2218	1248	2059	1289	2127	1224	2019	1173	1935	1209	1995		
			F		2.4+21.8R		2.9+14.5R		3.1+10.9R		3.3+8.7R		3.4+7.3R		3.4+6.2R		3.5+5.4R		3.5+4.8R		3.6+4.4R			
		24"	q_a	q_f	1468	2422	1219	2011	1106	1824	1038	1712	993	1638	960	1584	936	1545	917	1513	902	1489		
			F		2.7+21.7R		3.2+14.5R		3.4+10.9R		3.6+8.7R		3.7+7.2R		3.7+6.2R		3.8+5.4R		3.8+4.8R		3.9+4.3R			
		36"	q_a	q_f	1356	2237	963	1589	914	1508	884	1459	737	1216	741	1223	744	1228	662	1092	672	1109		
			F		3.2+21.6R		3.7+14.4R		4+10.8R		4.2+8.6R		4.3+7.2R		4.3+6.2R		4.4+5.4R		4.4+4.8R		4.5+4.3R			
20	32/5	4"	q_a	q_f	2374	3917	2282	3766	2233	3684	2202	3633	2181	3598	1796	2874	1375	2200	1087	1738	880	1408		
			F		1.5+44.7R		2.4+29.8R		2.8+22.4R		3.1+17.9R		3.3+14.9R		3.4+12.8R		3.5+11.2R		3.6+9.9R		3.6+8.9R			
		6"	q_a	q_f	1988	3280	1855	3061	1783	2943	1739	2869	1708	2819	1686	2783	1375	2200	1087	1738	880	1408		
			F		1.7+44.7R		2.6+29.8R		3+22.3R		3.3+17.9R		3.5+14.9R		3.6+12.8R		3.7+11.2R		3.8+9.9R		3.8+8.9R			
		8"	q_a	q_f	1714	2827	1573	2595	1492	2462	1440	2376	1404	2317	1378	2275	1359	2200	1087	1738	880	1408		
			F		1.8+44.7R		2.8+29.8R		3.2+22.3R		3.5+17.9R		3.7+14.9R		3.8+12.8R		3.9+11.2R		4+9.9R		4+8.9R			
		12"	q_a	q_f	1279	2110	1138	1877	1071	1767	1031	1700	1004	1656	985	1625	970	1601	959	1583	880	1408		
			F		2.2+44.6R		3.1+29.7R		3.6+22.3R		3.8+17.8R		4+14.9R		4.2+12.7R		4.3+11.2R		4.3+9.9R		4.4+8.9R			
		18"	q_a	q_f	1061	2110	848	1399	853	1408	770	1270	714	1178	736	1215	698	1152	669	1104	689	1137		
			F		2.6+44.6R		3.6+29.7R		4.1+22.3R		4.4+17.8R		4.6+14.8R		4.7+12.7R		4.8+11.1R		4.9+9.9R		5+8.9R			
		24"	q_a	q_f	844	1392	703	1160	636	1049	596	983	569	939	550	907	535	883	524	865	515	850		
			F		3.1+44.5R		4.1+29.6R		4.6+22.2R		4.9+17.7R		5.1+14.8R		5.2+12.7R		5.3+11.1R		5.4+9.9R		5.5+8.9R			
		36"	q_a	q_f	844	1392	558	920	527	870	509	839	424	699	425	702	427	704	379	626	385	635		
			F		3.8+44.2R		4.9+29.4R		5.5+22R		5.9+17.6R		6.1+14.7R		6.3+12.6R		6.4+11R		6.5+9.8R		6.6+8.8R			
22	32/5	4"	q_a	q_f	1901	3137	1805	2978	1753	2892	1720	2838	1698	2801	1375	2200	1053	1684	832	1331	674	1078		
			F		0.9+70.6R		2.3+47.1R		3+35.3R		3.4+28.2R		3.7+23.5R		3.9+20.2R		4+17.7R		4.2+15.7R		4.3+14.1R			
		6"	q_a	q_f	1554	2564	1447	2387	1377	2272	1334	2200	1304	2152	1283	2116	1053	1684	832	1331	674	1078		
			F		1.1+70.6R		2.5+47.1R		3.3+35.3R		3.7+28.2R		4+23.5R		4.2+20.2R		4.3+17.6R		4.4+15.7R		4.5+14.1R			
		8"	q_a	q_f	1242	2049	1139	1879	1088	1796	1058	1746	1038	1712	1023	1688	1012	1670	832	1331	674	1078		
			F		1.4+70.6R		2.8+47R		3.5+35.3R		3.9+28.2R		4.2+23.5R		4.4+20.2R		4.6+17.6R		4.7+15.7R		4.8+14.1R			
		12"	q_a	q_f	930	1534	827	1364	776	1281	746	1231	726	1197	711	1173	700	1155	692	1141	674	1078		
			F		1.8+70.5R		3.3+47R		4+35.2R		4.5+28.2R		4.8+23.5R		5+20.1R		5.1+17.6R		5.2+15.7R		5.3+14.1R			
		18"	q_a	q_f	774	1534	619	1021	620	1023	559	922	517	854	533	879	505	833	484	798	498	821		
			F		2.4+70.4R		4+46.9R		4.7+35.1R		5.2+28.1R		5.5+23.4R		5.7+20.1R		5.9+17.6R		6+15.6R		6.1+14R			
		24"	q_a	q_f	618	1019	515	849	464	766	434	716	413	682	399	658	388	640	380	626	373	615		
			F		3+70.2R		4.6+46.7R		5.4+35R		5.9+28R		6.2+23.3R		6.5+20R		6.7+17.5R		6.8+15.5R		6.9+14R			
		36"	q_a	q_f	618	1019	411	678	386	637	371	613	309	510										



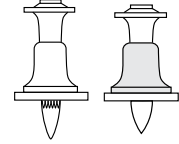
Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1703	1703	1702	1702	1702	1702	1701	1701	1701	1701	1701	1701	1701	1701	1514	1514		
			F	1.6+12.3R	1.9+8.2R	2+6.2R	2.1+4.9R	2.1+4.1R	2.1+3.5R	2.2+3.1R	2.2+2.7R	2.2+2.5R										
		6"	q_a	q_f	1666	2707	1663	2703	1662	2700	1661	2699	1660	2698	1660	2697	1660	2697	1659	2696	1514	2422
			F	1.7+12.3R	1.9+8.2R	2.1+6.2R	2.1+4.9R	2.2+4.1R	2.2+3.5R	2.2+3.1R	2.3+2.7R	2.3+2.5R										
		8"	q_a	q_f	1621	2634	1615	2625	1612	2620	1610	2617	1609	2615	1608	2613	1607	2612	1607	2611	1514	2422
			F	1.8+12.3R	2+8.2R	2.1+6.1R	2.2+4.9R	2.3+4.1R	2.3+3.5R	2.3+3.1R	2.3+2.7R	2.4+2.5R										
		12"	q_a	q_f	1519	2468	1504	2445	1497	2432	1492	2424	1488	2419	1486	2415	1484	2412	1483	2410	1482	2408
			F	1.9+12.3R	2.1+8.2R	2.3+6.1R	2.3+4.9R	2.4+4.1R	2.4+3.5R	2.5+3.1R	2.5+2.7R	2.5+2.5R										
		18"	q_a	q_f	1415	2468	1335	2170	1377	2237	1334	2168	1302	2115	1333	2167	1310	2128	1290	2096	1314	2136
			F	2.1+12.3R	2.3+8.2R	2.5+6.1R	2.5+4.9R	2.6+4.1R	2.6+3.5R	2.7+3.1R	2.7+2.7R	2.7+2.5R										
		24"	q_a	q_f	1232	2003	1187	1930	1163	1890	1148	1865	1138	1848	1130	1836	1124	1827	1120	1820	1116	1814
			F	2.3+12.3R	2.5+8.2R	2.7+6.1R	2.7+4.9R	2.8+4.1R	2.8+3.5R	2.9+3.1R	2.9+2.7R	2.9+2.4R										
		36"	q_a	q_f	1232	2003	968	1573	999	1623	1016	1651	895	1454	925	1503	947	1538	869	1412	893	1452
			F	2.6+12.2R	2.9+8.1R	3+6.1R	3.1+4.9R	3.2+4.1R	3.2+3.5R	3.3+3.1R	3.3+2.7R	3.3+2.4R										
18	32/5	4"	q_a	q_f	1402	1402	1401	1401	1400	1400	1400	1400	1399	1399	1399	1399	1399	1399	1348	1348	1092	1092
			F	1.7+21.5R	2.1+14.4R	2.3+10.8R	2.5+8.6R	2.6+7.2R	2.6+6.2R	2.7+5.4R	2.7+4.8R	2.7+4.3R										
		6"	q_a	q_f	1358	2207	1354	2200	1352	2197	1350	2195	1350	2193	1349	2192	1348	2191	1348	2157	1092	1747
			F	1.8+21.5R	2.2+14.4R	2.5+10.8R	2.6+8.6R	2.7+7.2R	2.7+6.2R	2.8+5.4R	2.8+4.8R	2.8+4.3R										
		8"	q_a	q_f	1307	2123	1299	2110	1294	2103	1291	2099	1290	2096	1288	2093	1287	2092	1286	2091	1092	1747
			F	1.9+21.5R	2.3+14.4R	2.6+10.8R	2.7+8.6R	2.8+7.2R	2.8+6.2R	2.9+5.4R	2.9+4.8R	3+4.3R										
		12"	q_a	q_f	1198	1947	1179	1917	1169	1900	1163	1890	1159	1883	1156	1878	1154	1874	1152	1871	1092	1747
			F	2.1+21.5R	2.6+14.3R	2.8+10.8R	2.9+8.6R	3+7.2R	3.1+6.1R	3.1+5.4R	3.1+4.8R	3.2+4.3R										
		18"	q_a	q_f	1096	1947	1016	1651	1051	1708	1009	1639	978	1589	1006	1634	983	1597	964	1566	986	1602
			F	2.4+21.5R	2.9+14.3R	3.1+10.7R	3.2+8.6R	3.3+7.2R	3.4+6.1R	3.4+5.4R	3.5+4.8R	3.5+4.3R										
		24"	q_a	q_f	934	1518	886	1440	861	1399	845	1373	834	1355	826	1342	820	1332	815	1325	811	1319
			F	2.7+21.4R	3.1+14.3R	3.4+10.7R	3.5+8.6R	3.6+7.1R	3.7+6.1R	3.7+5.4R	3.8+4.8R	3.8+4.3R										
		36"	q_a	q_f	934	1518	710	1155	727	1182	737	1198	641	1041	661	1075	677	1100	616	1001	633	1029
			F	3.2+21.3R	3.7+14.2R	4+10.6R	4.1+8.5R	4.2+7.1R	4.3+6.1R	4.3+5.3R	4.4+4.7R	4.4+4.3R										
20	32/5	4"	q_a	q_f	1038	1038	1035	1035	1034	1034	1033	1033	1033	1033	1032	1032	1032	1032	885	885	717	717
			F	1.4+44.1R	2.3+29.4R	2.8+22R	3+17.6R	3.2+14.7R	3.3+12.6R	3.4+11R	3.5+9.8R	3.6+8.8R										
		6"	q_a	q_f	987	1604	981	1594	977	1588	975	1585	974	1583	973	1581	972	1580	885	1416	717	1147
			F	1.6+44R	2.5+29.4R	2.9+22R	3.2+17.6R	3.4+14.7R	3.5+12.6R	3.6+11R	3.7+9.8R	3.7+8.8R										
		8"	q_a	q_f	932	1515	921	1497	915	1487	911	1481	909	1477	907	1473	905	1471	885	1416	717	1147
			F	1.8+44R	2.7+29.4R	3.1+22R	3.4+17.6R	3.6+14.7R	3.7+12.6R	3.8+11R	3.9+9.8R	3.9+8.8R										
		12"	q_a	q_f	828	1346	806	1310	794	1291	787	1278	782	1270	778	1264	775	1259	773	1256	717	1147
			F	2.1+44R	3+29.3R	3.5+22R	3.8+17.6R	4+14.7R	4.1+12.6R	4.2+11R	4.3+9.8R	4.3+8.8R										
		18"	q_a	q_f	742	1346	670	1089	693	1126	657	1067	630	1024	651	1058	632	1027	616	1001	633	1028
			F	2.6+43.9R	3.5+29.3R	4+21.9R	4.3+17.6R	4.5+14.6R	4.6+12.5R	4.7+11R	4.8+9.7R	4.9+8.8R										
		24"	q_a	q_f	619	1006	574	933	550	894	535	869	525	853	517	841	512	831	507	824	504	818
			F	3+43.8R	4+29.2R	4.5+21.9R	4.8+17.5R	5+14.6R	5.2+12.5R	5.3+10.9R	5.4+9.7R	5.4+8.7R										
		36"	q_a	q_f	619	1006	455	740	459	746	462	750	396	643	407	661	415	674	375	609	385	625
			F	3.8+43.6R	4.9+29R	5.5+21.7R	5.8+17.4R	6+14.5R	6.2+12.4R	6.3+10.8R	6.4+9.6R	6.5+8.7R										
22	32/5	4"	q_a	q_f	878	878	874	874	873	873	872	872	871	871	871	871	857	857	677	677	549	549
			F	0.8+69.6R	2.2+46.4R	2.9+34.8R	3.3+27.8R	3.6+23.2R	3.8+19.9R	4+17.4R	4.1+15.5R	4.2+13.9R										
		6"	q_a	q_f	822	1336	815	1324	810	1317	808	1312	806	1310	805	1307	804	1306	677	1084	549	878
			F	1.1+69.6R	2.5+46.4R	3.2+34.8R	3.6+27.8R	3.9+23.2R	4.1+19.9R	4.2+17.4R	4.3+15.5R	4.4+13.9R										
		8"	q_a	q_f	766	1245	753	1223	745	1211	741	1204	738	1199	735	1195	734	1192	677	1084	549	878
			F	1.3+69.5R	2.7+46.4R	3.4+34.8R	3.9+27.8R	4.1+23.2R	4.3+19.9R	4.5+17.4R	4.6+15.5R	4.7+13.9R										
		12"	q_a	q_f	667	1084	643	1045	630	1023	622	1010	616	1001	612	994	609	989	606	985	549	878
			F	1.8+69.5R	3.2+46.3R	3.9+34.7R	4.4+27.8R	4.7+23.1R	4.9+19.8R	5+17.4R	5.2+15.4R	5.2+13.9R										
		18"	q_a	q_f	591	1084	524	852	541	879	508	825	485	787	501	814	484	786	470	764	484	786
			F	2.4+69.3R	3.9+46.2R	4.7+34.6R	5.1+27.7R	5.4+23.1R	5.7+19.8R	5.8+17.3R	5.9+15.4R	6+13.8R										
		24"	q_a	q_f	489	795	446	725	423	687	409	664	399	648	392	637	387	628	382	621	379	616
			F	3+69.2R	4.6+46.1R	5.4+34.5R	5.9+27.6R	6.2+23.3R	6.4+19.7R	6.6+17.2R	6.7+15.3R	6.8+13.8R										
		36"	q_a	q_f	489	795	354	575	352	572	351	571	299	486	306	498	312	506	280	456	287	467
			F	4+68.9R	5.8+45.8R	6.7+34.3R	7.2+27.4R	7.6+22.8R	7.8+19.5R	8+17.1R	8.2+15.2R	8.3+13.7R										

N PANELS

3.4 DGN-32 & DGNF-32

Hilti X-EDNK-22, X-EDN19 or HSN 24 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2127	3457	2125	3453	2124	3451	2123	3450	2123	3449	2122	3449	2122	3448	1869	2990	1514	2422
			F	1.6+12.3R	1.9+8.2R	2+6.2R	2.1+4.9R	2.1+4.1R	2.1+3.5R	2.2+3.1R	2.2+2.7R	2.2+2.5R										
		6"	q_a	q_f	2059	3346	2053	3336	2049	3330	2047	3327	2046	3325	2045	3323	2044	3322	1869	2990	1514	2422
			F	1.7+12.3R	1.9+8.2R	2.1+6.2R	2.1+4.9R	2.2+4.1R	2.2+3.5R	2.2+3.1R	2.3+2.7R	2.3+2.5R										
		8"	q_a	q_f	1980	3218	1968	3197	1961	3186	1957	3180	1954	3175	1952	3172	1950	3169	1869	2990	1514	2422
			F	1.8+12.3R	2+8.2R	2.1+6.1R	2.2+4.9R	2.3+4.1R	2.3+3.5R	2.3+3.1R	2.3+2.7R	2.4+2.5R										
		12"	q_a	q_f	1814	2948	1785	2901	1770	2876	1760	2860	1754	2850	1749	2842	1745	2836	1742	2831	1514	2422
			F	1.9+12.3R	2.1+8.2R	2.3+6.1R	2.3+4.9R	2.4+4.1R	2.4+3.5R	2.5+3.1R	2.5+2.7R	2.5+2.5R										
		18"	q_a	q_f	1659	2948	1536	2496	1589	2582	1525	2478	1477	2400	1520	2470	1485	2413	1456	2366	1489	2420
			F	2.1+12.3R	2.3+8.2R	2.5+6.1R	2.5+4.9R	2.6+4.1R	2.6+3.5R	2.7+3.1R	2.7+2.7R	2.7+2.5R										
		24"	q_a	q_f	1412	2294	1339	2176	1300	2112	1275	2073	1259	2046	1247	2026	1237	2011	1230	1999	1224	1990
			F	2.3+12.3R	2.5+8.2R	2.7+6.1R	2.7+4.9R	2.8+4.1R	2.8+3.5R	2.9+3.1R	2.9+2.7R	2.9+2.4R										
		36"	q_a	q_f	1412	2294	1073	1743	1098	1784	1113	1808	966	1570	997	1621	1021	1658	928	1509	955	1552
			F	2.6+12.2R	2.9+8.1R	3+6.1R	3.1+4.9R	3.2+4.1R	3.2+3.5R	3.3+3R	3.3+2.7R	3.3+2.4R										
18	32/5	4"	q_a	q_f	1700	2762	1697	2757	1695	2754	1694	2753	1693	2752	1693	2751	1692	2730	1348	2157	1092	1747
			F	1.7+21.5R	2.1+14.4R	2.3+10.8R	2.5+8.6R	2.6+7.2R	2.6+6.2R	2.7+5.4R	2.7+4.8R	2.7+4.3R										
		6"	q_a	q_f	1626	2642	1618	2629	1613	2621	1610	2617	1609	2614	1607	2612	1606	2610	1348	2157	1092	1747
			F	1.8+21.5R	2.2+14.4R	2.5+10.8R	2.6+8.6R	2.7+7.2R	2.7+6.2R	2.8+5.4R	2.8+4.8R	2.8+4.3R										
		8"	q_a	q_f	1544	2510	1529	2484	1520	2471	1515	2462	1512	2457	1509	2452	1507	2449	1348	2157	1092	1747
			F	1.9+21.5R	2.3+14.4R	2.6+10.8R	2.7+8.6R	2.8+7.2R	2.8+6.2R	2.9+5.4R	2.9+4.8R	3+4.3R										
		12"	q_a	q_f	1385	2250	1353	2198	1335	2170	1324	2152	1317	2140	1312	2131	1308	2125	1304	2119	1092	1747
			F	2.1+21.5R	2.5+14.3R	2.8+10.8R	2.9+8.6R	3+7.2R	3.1+6.1R	3.1+5.4R	3.1+4.8R	3.2+4.3R										
		18"	q_a	q_f	1247	2250	1135	1844	1175	1909	1117	1815	1075	1747	1109	1803	1079	1753	1054	1712	1081	1747
			F	2.4+21.5R	2.8+14.3R	3.1+10.7R	3.2+8.6R	3.3+7.2R	3.4+6.1R	3.4+5.4R	3.5+4.8R	3.5+4.3R										
		24"	q_a	q_f	1045	1699	976	1586	939	1526	916	1488	900	1463	889	1444	880	1430	873	1419	868	1410
			F	2.7+21.4R	3.1+14.3R	3.4+10.7R	3.5+8.6R	3.6+7.1R	3.7+6.1R	3.7+5.4R	3.8+4.8R	3.8+4.3R										
		36"	q_a	q_f	1045	1699	776	1260	786	1277	792	1287	681	1107	702	1140	717	1165	648	1053	666	1082
			F	3.2+21.3R	3.7+14.2R	3.9+10.6R	4.1+8.5R	4.2+7.1R	4.3+6.1R	4.3+5.3R	4.4+4.7R	4.4+4.2R										
20	32/5	4"	q_a	q_f	1255	2040	1250	2032	1248	2028	1246	2025	1245	2023	1244	2022	1120	1791	885	1416	717	1147
			F	1.4+44.1R	2.3+29.4R	2.8+22R	3+17.6R	3.2+14.7R	3.3+12.6R	3.4+11R	3.5+9.8R	3.6+8.8R										
		6"	q_a	q_f	1173	1906	1161	1887	1155	1876	1151	1870	1148	1865	1146	1862	1120	1791	885	1416	717	1147
			F	1.6+44R	2.5+29.4R	2.9+22R	3.2+17.6R	3.4+14.7R	3.5+12.6R	3.6+11R	3.7+9.8R	3.7+8.8R										
		8"	q_a	q_f	1090	1772	1070	1739	1059	1721	1052	1710	1047	1702	1044	1696	1041	1692	885	1416	717	1147
			F	1.8+44R	2.7+29.4R	3.1+22R	3.4+17.6R	3.6+14.7R	3.7+12.6R	3.8+11R	3.9+9.8R	3.9+8.8R										
		12"	q_a	q_f	947	1538	910	1479	891	1448	879	1428	870	1414	864	1404	860	1397	856	1391	717	1147
			F	2.1+44R	3+29.3R	3.5+22R	3.8+17.6R	3.9+14.7R	4.1+12.6R	4.2+11R	4.3+9.8R	4.3+8.8R										
		18"	q_a	q_f	837	1538	740	1203	763	1240	716	1163	682	1109	705	1146	681	1107	662	1075	680	1105
			F	2.6+43.9R	3.5+29.3R	4+21.9R	4.3+17.5R	4.5+14.6R	4.6+12.5R	4.7+11R	4.8+9.7R	4.9+8.8R										
		24"	q_a	q_f	692	1124	629	1023	596	968	575	934	561	911	551	895	543	882	537	872	532	864
			F	3+43.8R	4+29.2R	4.5+21.9R	4.8+17.5R	5+14.6R	5.2+12.5R	5.3+10.9R	5.4+9.7R	5.4+8.7R										
		36"	q_a	q_f	692	1124	499	811	496	806	494	803	421	683	430	699	437	711	393	639	403	655
			F	3.8+43.6R	4.9+29R	5.5+21.7R	5.8+17.4R	6+14.5R	6.2+12.4R	6.3+10.8R	6.4+9.6R	6.5+8.7R										
22	32/5	4"	q_a	q_f	1030	1673	1024	1664	1021	1658	1019	1655	1017	1653	1016	1652	857	1372	677	1084	549	878
			F	0.8+69.6R	2.2+46.4R	2.9+34.8R	3.3+27.8R	3.6+23.2R	3.8+19.9R	4+17.4R	4.1+15.5R	4.2+13.9R										
		6"	q_a	q_f	948	1540	934	1518	927	1506	922	1499	919	1494	917	1490	857	1372	677	1084	549	878
			F	1.1+69.6R	2.5+46.4R	3.2+34.8R	3.6+27.8R	3.9+23.2R	4.1+19.9R	4.2+17.4R	4.3+15.5R	4.4+13.9R										
		8"	q_a	q_f	870	1414	848	1378	837	1359	829	1347	824	1339	820	1333	818	1329	677	1084	549	878
			F	1.3+69.5R	2.7+46.4R	3.4+34.8R	3.9+27.8R	4.1+23.2R	4.3+19.9R	4.5+17.4R	4.6+15.5R	4.7+13.9R										
		12"	q_a	q_f	744	1209	708	1150	689	1119	677	1099	668	1086	662	1076	658	1069	654	1063	549	878
			F	1.8+69.5R	3.2+46.3R	3.9+34.7R	4.4+27.8R	4.7+23.1R	4.9+19.8R	5+17.4R	5.1+15.4R	5.2+13.9R										
		18"	q_a	q_f	653	1209	569	924	583	948	543	883	515	837	532	865	512	832	496	806	510	829
			F	2.4+69.3R	3.9+46.2R	4.7+34.6R	5.1+27.7R	5.4+23.1R	5.6+19.8R	5.8+17.3R	5.9+15.4R	6+13.8R										
		24"	q_a	q_f	539	875	482	784	452	735	434	705	421	685	412	670	405	659	400	650	395	643
			F	3+69.2R	4.6+46.1R	5.4+34.5R	5.8+27.6R	6.2+23R	6.4+19.7R	6.6+17.2R	6.7+15.3R	6.8+13.8R										
		36"	q_a	q_f	539	875	384	624	377	613	373	606	316	513	322	523	326	530	292	475	299	486
			F	4+68.9R	5.7+45.8R	6.6+34.3R	7.2+27.4R	7.6+22.8R	7.8+19.5R	8+17.1R	8.2+15.2R	8.3+13.6R										



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2281	3706	2278	3701	2276	3699	2275	3697	2275	3696	2274	3695	2274	3695	1857	2972	1504	2407
			F		1.7+12.5R		1.9+8.3R		2+6.2R		2.1+5R		2.2+4.2R		2.2+3.6R		2.2+3.1R		2.2+2.8R		2.3+2.5R	
		6"	q_a	q_f	2199	3573	2191	3560	2186	3552	2183	3548	2182	3545	2180	3543	2179	3541	1857	2972	1504	2407
			F		1.7+12.5R		2+8.3R		2.1+6.2R		2.2+5R		2.2+4.2R		2.3+3.6R		2.3+3.1R		2.3+2.8R		2.3+2.5R	
		8"	q_a	q_f	2105	3421	2089	3395	2081	3381	2075	3372	2072	3366	2069	3362	2067	3359	1857	2972	1504	2407
			F		1.8+12.5R		2+8.3R		2.2+6.2R		2.3+5R		2.3+4.2R		2.3+3.6R		2.4+3.1R		2.4+2.8R		2.4+2.5R	
		12"	q_a	q_f	1913	3109	1878	3052	1859	3021	1847	3002	1839	2989	1833	2979	1829	2972	1825	2966	1504	2407
			F		1.9+12.5R		2.2+8.3R		2.3+6.2R		2.4+5R		2.4+4.2R		2.5+3.6R		2.5+3.1R		2.5+2.8R		2.5+2.5R	
		18"	q_a	q_f	1739	3109	1600	2600	1656	2691	1584	2574	1531	2487	1577	2562	1538	2499	1506	2447	1504	2407
			F		2.1+12.4R		2.4+8.3R		2.5+6.2R		2.6+5R		2.6+4.1R		2.7+3.6R		2.7+3.1R		2.7+2.8R		2.7+2.5R	
		24"	q_a	q_f	1471	2390	1387	2254	1342	2181	1314	2136	1295	2105	1281	2082	1271	2065	1262	2051	1256	2041
			F		2.3+12.4R		2.5+8.3R		2.7+6.2R		2.8+5R		2.8+4.1R		2.9+3.5R		2.9+3.1R		2.9+2.8R		2.9+2.5R	
36"	q_a	q_f	1471	2390	1107	1799	1129	1835	1142	1856	988	1605	1019	1656	1042	1694	946	1537	973	1581		
	F		2.6+12.3R		2.9+8.2R		3+6.1R		3.1+4.9R		3.2+4.1R		3.3+3.5R		3.3+3.1R		3.3+2.7R		3.3+2.5R			
18	32/5	4"	q_a	q_f	1862	3026	1861	3024	1860	3022	1859	3021	1859	3021	1859	3020	1696	2713	1340	2144	1085	1737
			F		1.8+21.9R		2.2+14.6R		2.4+10.9R		2.5+8.7R		2.6+7.3R		2.7+6.2R		2.7+5.5R		2.8+4.9R		2.8+4.4R	
		6"	q_a	q_f	1810	2941	1806	2934	1803	2930	1802	2928	1801	2926	1800	2925	1696	2713	1340	2144	1085	1737
			F		1.9+21.8R		2.3+14.6R		2.5+10.9R		2.6+8.7R		2.7+7.3R		2.8+6.2R		2.8+5.5R		2.9+4.9R		2.9+4.4R	
		8"	q_a	q_f	1748	2841	1739	2826	1734	2818	1731	2813	1729	2810	1728	2807	1696	2713	1340	2144	1085	1737
			F		1.9+21.8R		2.4+14.6R		2.6+10.9R		2.7+8.7R		2.8+7.3R		2.9+6.2R		2.9+5.5R		3+4.9R		3+4.4R	
		12"	q_a	q_f	1615	2624	1593	2589	1581	2570	1574	2558	1569	2550	1566	2544	1563	2540	1340	2144	1085	1737
			F		2.1+21.8R		2.6+14.5R		2.8+10.9R		3+8.7R		3+7.3R		3.1+6.2R		3.2+5.5R		3.2+4.8R		3.2+4.4R	
		18"	q_a	q_f	1486	2624	1385	2251	1432	2327	1379	2240	1339	2176	1376	2236	1347	2188	1323	2144	1085	1737
			F		2.4+21.8R		2.9+14.5R		3.1+10.9R		3.3+8.7R		3.4+7.2R		3.4+6.2R		3.5+5.4R		3.5+4.8R		3.5+4.3R	
		24"	q_a	q_f	1274	2070	1215	1975	1184	1924	1164	1892	1151	1870	1141	1854	1133	1842	1127	1832	1085	1737
			F		2.6+21.7R		3.1+14.5R		3.4+10.8R		3.5+8.7R		3.6+7.2R		3.7+6.2R		3.8+5.4R		3.8+4.8R		3.8+4.3R	
36"	q_a	q_f	1274	2070	979	1590	1005	1633	1020	1658	890	1446	919	1494	941	1529	858	1395	883	1434		
	F		3.1+21.6R		3.6+14.4R		3.9+10.7R		4.1+8.6R		4.2+7.1R		4.3+6.1R		4.4+5.4R		4.4+4.8R		4.4+4.3R			
20	32/5	4"	q_a	q_f	1339	2175	1332	2165	1329	2160	1327	2157	1326	2154	1325	2153	1113	1780	879	1407	712	1140
			F		1.5+44.7R		2.4+29.8R		2.8+22.3R		3.1+17.9R		3.3+14.9R		3.4+12.8R		3.5+11.2R		3.6+9.9R		3.6+8.9R	
		6"	q_a	q_f	1242	2019	1227	1994	1219	1981	1214	1973	1211	1968	1208	1964	1113	1780	879	1407	712	1140
			F		1.7+44.7R		2.6+29.8R		3+22.3R		3.3+17.9R		3.5+14.9R		3.6+12.8R		3.7+11.2R		3.8+9.9R		3.8+8.9R	
		8"	q_a	q_f	1148	1865	1123	1825	1110	1803	1101	1790	1096	1780	1091	1773	1088	1768	879	1407	712	1140
			F		1.8+44.7R		2.7+29.8R		3.2+22.3R		3.5+17.9R		3.6+14.9R		3.8+12.8R		3.9+11.2R		4+9.9R		4+8.9R	
		12"	q_a	q_f	989	1607	946	1538	924	1501	909	1478	900	1462	892	1450	887	1441	879	1407	712	1140
			F		2.1+44.6R		3.1+29.7R		3.5+22.3R		3.8+17.8R		4+14.9R		4.1+12.7R		4.2+11.1R		4.3+9.9R		4.4+8.9R	
		18"	q_a	q_f	871	1607	765	1243	787	1278	735	1195	699	1136	722	1174	697	1132	676	1098	695	1129
			F		2.5+44.5R		3.5+29.6R		4+22.2R		4.3+17.8R		4.5+14.8R		4.7+12.7R		4.8+11.1R		4.9+9.9R		4.9+8.9R	
		24"	q_a	q_f	719	1168	649	1055	612	994	589	957	573	931	562	913	553	899	546	888	541	879
			F		2.9+44.4R		3.9+29.5R		4.5+22.1R		4.8+17.7R		5+14.7R		5.2+12.6R		5.3+11.1R		5.4+9.8R		5.5+8.8R	
36"	q_a	q_f	719	1168	516	838	509	828	506	822	430	698	438	713	445	723	400	649	409	665		
	F		3.5+44.2R		4.7+29.3R		5.3+21.9R		5.7+17.5R		5.9+14.6R		6.1+12.5R		6.3+10.9R		6.4+9.7R		6.5+8.7R			
22	32/5	4"	q_a	q_f	1102	1791	1095	1780	1092	1774	1089	1770	1088	1768	1087	1766	852	1363	673	1077	545	872
			F		0.9+70.6R		2.3+47.1R		3+35.3R		3.4+28.2R		3.7+23.5R		3.9+20.2R		4+17.6R		4.2+15.7R		4.3+14.1R	
		6"	q_a	q_f	1011	1642	995	1617	987	1603	981	1595	978	1589	975	1585	852	1363	673	1077	545	872
			F		1.1+70.6R		2.5+47R		3.2+35.3R		3.7+28.2R		4+23.5R		4.2+20.2R		4.3+17.6R		4.4+15.7R		4.5+14.1R	
		8"	q_a	q_f	925	1503	900	1463	887	1441	879	1428	873	1418	869	1412	852	1363	673	1077	545	872
			F		1.3+70.5R		2.8+47R		3.5+35.3R		3.9+28.2R		4.2+23.5R		4.4+20.1R		4.6+17.6R		4.7+15.7R		4.8+14.1R	
		12"	q_a	q_f	788	1280	748	1216	727	1181	713	1159	704	1144	697	1133	692	1125	673	1077	545	872
			F		1.7+70.4R		3.2+46.9R		4+35.2R		4.4+28.2R		4.7+23.5R		4.9+20.1R		5.1+17.6R		5.2+15.6R		5.3+14.1R	
		18"	q_a	q_f	691	1280	600	974	614	998	571	928	541	879	558	907	537	873	520	845	535	869
			F		2.3+70.3R		3.8+46.8R		4.6+35.1R		5.1+28R		5.4+23.4R		5.7+20R		5.8+17.5R		6+15.6R		6.1+14R	
		24"	q_a	q_f	570	926	508	826	476	773	455	740	442	718	432	702	424	689	418	680	414	672
			F		2.7+70.1R		4.4+46.7R		5.2+34.9R		5.8+27.9R		6.1+23.2R		6.4+19.9R		6.6+17.4R		6.7+15.5R		6.8+13.9R	
36"	q_a	q_f	570	926	405	659	397	644	391	636	331	539	337	548	341	554	306	497	312	508		
	F		3.5+69.8R		5.3+46.3R		6.3+34.6R		6.9+27.6R		7.4+23R		7.7+19.7R		7.9+17.2R		8.1+15.3R		8.2+13.7R			

N PANELS

3.5 DGN-32 & DGNF-32

Pneutek SDK61 Fasteners to Supports with DeltaGrip® Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2108	3425	2106	3422	2105	3420	2104	3419	2103	3418	2103	3418	2103	3417	1858	2974	1505	2409
			F	1.7+12.4R	1.9+8.3R	2+6.2R	2.1+5R	2.2+4.1R	2.2+3.6R	2.2+3.1R	2.2+2.8R	2.3+2.5R										
		6"	q_a	q_f	2042	3318	2035	3308	2032	3302	2030	3299	2029	3297	2028	3295	2027	3294	1858	2974	1505	2409
			F	1.7+12.4R	2+8.3R	2.1+6.2R	2.2+5R	2.2+4.1R	2.3+3.6R	2.3+3.1R	2.3+2.8R	2.3+2.5R										
		8"	q_a	q_f	1964	3192	1952	3172	1946	3162	1942	3155	1939	3151	1937	3147	1935	3145	1858	2974	1505	2409
			F	1.8+12.4R	2+8.3R	2.2+6.2R	2.2+5R	2.3+4.1R	2.3+3.6R	2.4+3.1R	2.4+2.8R	2.4+2.5R										
		12"	q_a	q_f	1801	2927	1773	2882	1758	2857	1749	2842	1742	2832	1738	2824	1734	2818	1731	2814	1505	2409
			F	1.9+12.4R	2.2+8.3R	2.3+6.2R	2.4+5R	2.4+4.1R	2.5+3.6R	2.5+3.1R	2.5+2.8R	2.5+2.5R										
		18"	q_a	q_f	1649	2927	1528	2482	1580	2568	1517	2465	1470	2389	1512	2457	1478	2401	1449	2355	1482	2409
			F	2.1+12.4R	2.4+8.3R	2.5+6.2R	2.6+5R	2.6+4.1R	2.7+3.6R	2.7+3.1R	2.7+2.8R	2.7+2.5R										
		24"	q_a	q_f	1404	2282	1333	2166	1294	2103	1270	2064	1254	2038	1242	2018	1233	2004	1226	1992	1220	1983
			F	2.3+12.4R	2.6+8.3R	2.7+6.2R	2.8+5R	2.9+4.1R	2.9+3.5R	2.9+3.1R	2.9+2.8R	3+2.5R										
		36"	q_a	q_f	1404	2282	1068	1736	1094	1777	1109	1802	963	1565	995	1616	1018	1654	926	1505	952	1548
			F	2.7+12.4R	3+8.3R	3.1+6.2R	3.2+5R	3.3+4.1R	3.3+3.5R	3.3+3.1R	3.3+2.8R	3.4+2.5R										
18	32/5	4"	q_a	q_f	1743	2832	1741	2830	1741	2829	1740	2828	1740	2828	1740	2827	1697	2715	1341	2145	1086	1738
			F	1.8+21.8R	2.2+14.5R	2.4+10.9R	2.5+8.7R	2.6+7.3R	2.7+6.2R	2.7+5.4R	2.8+4.8R	2.8+4.4R										
		6"	q_a	q_f	1699	2761	1696	2755	1694	2752	1693	2750	1692	2749	1691	2748	1691	2715	1341	2145	1086	1738
			F	1.9+21.8R	2.3+14.5R	2.5+10.9R	2.6+8.7R	2.7+7.3R	2.8+6.2R	2.8+5.4R	2.9+4.8R	2.9+4.4R										
		8"	q_a	q_f	1647	2676	1640	2664	1636	2658	1633	2654	1632	2652	1631	2650	1630	2648	1341	2145	1086	1738
			F	2+21.8R	2.4+14.5R	2.6+10.9R	2.8+8.7R	2.8+7.3R	2.9+6.2R	2.9+5.4R	3+4.8R	3+4.4R										
		12"	q_a	q_f	1531	2489	1514	2460	1504	2445	1498	2435	1494	2428	1491	2424	1489	2420	1341	2145	1086	1738
			F	2.2+21.8R	2.6+14.5R	2.8+10.9R	3+8.7R	3.1+7.3R	3.1+6.2R	3.2+5.4R	3.2+4.8R	3.2+4.4R										
		18"	q_a	q_f	1417	2489	1329	2159	1372	2230	1325	2153	1290	2096	1323	2150	1297	2108	1276	2073	1086	1738
			F	2.5+21.8R	2.9+14.5R	3.2+10.9R	3.3+8.7R	3.4+7.3R	3.4+6.2R	3.5+5.4R	3.5+4.8R	3.6+4.4R										
		24"	q_a	q_f	1224	1988	1173	1906	1145	1861	1128	1833	1117	1814	1108	1801	1102	1790	1096	1782	1086	1738
			F	2.8+21.7R	3.2+14.5R	3.5+10.9R	3.6+8.7R	3.7+7.2R	3.8+6.2R	3.8+5.4R	3.8+4.8R	3.9+4.3R										
		36"	q_a	q_f	1224	1988	949	1543	977	1588	993	1614	870	1413	899	1461	920	1495	842	1368	865	1406
			F	3.4+21.7R	3.8+14.4R	4.1+10.8R	4.2+8.7R	4.3+7.2R	4.4+6.2R	4.4+5.4R	4.5+4.8R	4.5+4.3R										
20	32/5	4"	q_a	q_f	1275	2072	1270	2064	1267	2060	1266	2057	1265	2055	1264	2054	1114	1782	880	1408	713	1140
			F	1.5+44.6R	2.4+29.7R	2.8+22.3R	3.1+17.8R	3.3+14.9R	3.4+12.7R	3.5+11.1R	3.6+9.9R	3.6+8.9R										
		6"	q_a	q_f	1190	1933	1177	1913	1170	1902	1166	1895	1163	1890	1161	1887	1114	1782	880	1408	713	1140
			F	1.7+44.6R	2.6+29.7R	3+22.3R	3.3+17.8R	3.5+14.9R	3.6+12.7R	3.7+11.1R	3.8+9.9R	3.8+8.9R										
		8"	q_a	q_f	1104	1794	1083	1760	1071	1741	1064	1729	1059	1721	1055	1715	1053	1711	880	1408	713	1140
			F	1.9+44.6R	2.8+29.7R	3.2+22.3R	3.5+17.8R	3.7+14.9R	3.8+12.7R	3.9+11.1R	4+9.9R	4+8.9R										
		12"	q_a	q_f	957	1555	919	1494	899	1461	886	1440	877	1426	871	1415	866	1408	862	1401	713	1140
			F	2.2+44.5R	3.1+29.7R	3.6+22.3R	3.9+17.8R	4+14.8R	4.2+12.7R	4.3+11.1R	4.3+9.9R	4.4+8.9R										
		18"	q_a	q_f	845	1555	746	1212	769	1249	720	1171	686	1115	709	1152	685	1113	665	1081	684	1111
			F	2.8+44.5R	3.7+29.7R	4.1+22.2R	4.4+17.8R	4.6+14.8R	4.7+12.7R	4.8+11.1R	4.9+9.9R	5+8.9R										
		24"	q_a	q_f	698	1135	634	1030	600	974	578	940	564	916	553	899	545	886	539	876	534	868
			F	3.3+44.4R	4.2+29.6R	4.7+22.2R	5+17.8R	5.2+14.8R	5.3+12.7R	5.4+11.1R	5.5+9.9R	5.5+8.9R										
		36"	q_a	q_f	698	1135	503	818	499	811	497	808	423	687	432	702	439	714	395	641	404	657
			F	4.3+44.3R	5.3+29.5R	5.8+22.1R	6.1+17.7R	6.3+14.7R	6.4+12.6R	6.5+11.1R	6.6+9.8R	6.7+8.8R										
22	32/5	4"	q_a	q_f	1057	1718	1052	1709	1048	1704	1046	1701	1045	1698	1044	1697	853	1364	674	1078	546	873
			F	0.9+70.4R	2.3+46.9R	3+35.2R	3.4+28.2R	3.7+23.5R	3.9+20.1R	4+17.6R	4.2+15.6R	4.3+14.1R										
		6"	q_a	q_f	975	1584	961	1562	954	1550	949	1542	946	1537	944	1534	853	1364	674	1078	546	873
			F	1.1+70.4R	2.6+46.9R	3.3+35.2R	3.7+28.2R	4+23.5R	4.2+20.1R	4.3+17.6R	4.4+15.6R	4.5+14.1R										
		8"	q_a	q_f	896	1455	874	1420	862	1400	854	1388	849	1380	846	1374	843	1364	674	1078	546	873
			F	1.4+70.4R	2.8+46.9R	3.5+35.2R	4+28.2R	4.2+23.5R	4.4+20.1R	4.6+17.6R	4.7+15.6R	4.8+14.1R										
		12"	q_a	q_f	766	1245	730	1187	711	1155	698	1135	690	1121	684	1111	679	1104	674	1078	546	873
			F	1.9+70.4R	3.4+46.9R	4.1+35.2R	4.5+28.1R	4.8+23.5R	5+20.1R	5.1+17.6R	5.3+15.6R	5.4+14.1R										
		18"	q_a	q_f	673	1245	587	954	602	979	561	912	533	865	550	894	530	861	513	834	528	858
			F	2.7+70.3R	4.1+46.8R	4.9+35.1R	5.3+28.1R	5.6+23.4R	5.8+20.1R	6+17.6R	6.1+15.6R	6.2+14.1R										
		24"	q_a	q_f	555	902	498	809	467	759	448	729	436	708	426	693	419	681	414	672	409	665
			F	3.4+70.2R	4.9+46.8R	5.6+35.1R	6.1+28.1R	6.4+23.4R	6.6+20R	6.8+17.5R	6.9+15.6R	7+14R										
		36"	q_a	q_f	555	902	396	644	389	633	385	626	327	531	333	541	337	548	302	491	309	502
			F	4.7+70R	6.3+46.6R	7.1+34.9R	7.6+27.9R	7.9+23.3R	8.2+19.9R	8.3+17.4R	8.5+15.5R	8.6+14R										



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q _a	q _f	2041	3317	2039	3314	2038	3312	2038	3311	2037	3311	2037	3310	2037	3310	1858	2974	1505	2409
			F	1.7+12.4R	1.9+8.3R	2+6.2R	2.1+5R	2.2+4.1R	2.2+3.6R	2.2+3.1R	2.2+2.8R	2.3+2.5R										
		6"	q _a	q _f	1981	3219	1975	3210	1972	3205	1970	3202	1969	3200	1968	3199	1968	3197	1858	2974	1505	2409
			F	1.7+12.4R	2+8.3R	2.1+6.2R	2.2+5R	2.2+4.1R	2.3+3.6R	2.3+3.1R	2.3+2.8R	2.3+2.5R										
		8"	q _a	q _f	1909	3103	1898	3085	1892	3075	1889	3069	1886	3065	1885	3062	1883	3060	1858	2974	1505	2409
			F	1.8+12.4R	2+8.3R	2.2+6.2R	2.2+5R	2.3+4.1R	2.3+3.6R	2.4+3.1R	2.4+2.8R	2.4+2.5R										
		12"	q _a	q _f	1757	2855	1731	2813	1718	2791	1709	2777	1703	2768	1699	2761	1696	2756	1693	2752	1505	2409
			F	1.9+12.4R	2.2+8.3R	2.3+6.2R	2.4+5R	2.4+4.1R	2.5+3.6R	2.5+3.1R	2.5+2.8R	2.5+2.5R										
		18"	q _a	q _f	1612	2855	1498	2435	1549	2518	1489	2420	1445	2348	1486	2414	1453	2361	1426	2317	1458	2369
			F	2.1+12.4R	2.4+8.3R	2.5+6.2R	2.6+5R	2.6+4.1R	2.7+3.6R	2.7+3.1R	2.7+2.8R	2.7+2.5R										
		24"	q _a	q _f	1377	2238	1311	2130	1275	2071	1252	2035	1237	2010	1226	1992	1217	1978	1211	1967	1205	1958
			F	2.3+12.4R	2.6+8.3R	2.7+6.2R	2.8+5R	2.9+4.1R	2.9+3.5R	2.9+3.1R	2.9+2.8R	3+2.5R										
36"	q _a	q _f	1377	2238	1053	1711	1079	1754	1095	1779	953	1549	984	1600	1007	1637	918	1491	944	1534		
	F	2.7+12.4R	3+8.3R	3.1+6.2R	3.2+5R	3.3+4.1R	3.3+3.5R	3.3+3.1R	3.3+2.8R	3.4+2.5R												
18	32/5	4"	q _a	q _f	1762	2864	1761	2862	1760	2861	1760	2860	1760	2860	1760	2859	1697	2715	1341	2145	1086	1738
			F	1.8+21.8R	2.2+14.5R	2.4+10.9R	2.5+8.7R	2.6+7.3R	2.7+6.2R	2.7+5.4R	2.8+4.8R	2.8+4.4R										
		6"	q _a	q _f	1718	2791	1714	2785	1712	2782	1711	2780	1710	2779	1709	2778	1697	2715	1341	2145	1086	1738
			F	1.9+21.8R	2.3+14.5R	2.5+10.9R	2.6+8.7R	2.7+7.3R	2.8+6.2R	2.8+5.4R	2.9+4.8R	2.9+4.4R										
		8"	q _a	q _f	1664	2704	1656	2691	1652	2685	1650	2681	1648	2678	1647	2676	1646	2674	1341	2145	1086	1738
			F	2+21.8R	2.4+14.5R	2.6+10.9R	2.8+8.7R	2.8+7.3R	2.9+6.2R	2.9+5.4R	3+4.8R	3+4.4R										
		12"	q _a	q _f	1545	2511	1527	2481	1517	2466	1511	2456	1507	2449	1504	2444	1502	2440	1341	2145	1086	1738
			F	2.2+21.8R	2.6+14.5R	2.8+10.9R	3+8.7R	3.1+7.3R	3.1+6.2R	3.2+5.4R	3.2+4.8R	3.2+4.4R										
		18"	q _a	q _f	1429	2511	1338	2175	1382	2246	1334	2168	1298	2109	1332	2165	1306	2122	1284	2086	1086	1738
			F	2.5+21.8R	2.9+14.5R	3.2+10.9R	3.3+8.7R	3.4+7.3R	3.4+6.2R	3.5+5.4R	3.5+4.8R	3.6+4.4R										
		24"	q _a	q _f	1232	2002	1180	1918	1152	1872	1134	1843	1122	1824	1114	1810	1107	1799	1102	1790	1086	1738
			F	2.8+21.7R	3.2+14.5R	3.5+10.9R	3.6+8.7R	3.7+7.2R	3.8+6.2R	3.8+5.4R	3.8+4.8R	3.9+4.3R										
36"	q _a	q _f	1232	2002	954	1551	982	1595	998	1621	873	1419	902	1466	924	1501	844	1372	868	1411		
	F	3.4+21.7R	3.8+14.4R	4.1+10.8R	4.2+8.7R	4.3+7.2R	4.4+6.2R	4.4+5.4R	4.5+4.8R	4.5+4.3R												
20	32/5	4"	q _a	q _f	1356	2204	1350	2193	1346	2188	1344	2184	1343	2182	1341	2180	1114	1782	880	1408	713	1140
			F	1.5+44.6R	2.4+29.7R	2.8+22.3R	3.1+17.8R	3.3+14.9R	3.4+12.7R	3.5+11.1R	3.6+9.9R	3.6+8.9R										
		6"	q _a	q _f	1257	2042	1241	2017	1233	2003	1227	1995	1224	1989	1221	1985	1114	1782	880	1408	713	1140
			F	1.7+44.6R	2.6+29.7R	3+22.3R	3.3+17.8R	3.5+14.9R	3.6+12.7R	3.7+11.1R	3.8+9.9R	3.8+8.9R										
		8"	q _a	q _f	1160	1885	1134	1843	1120	1820	1111	1806	1105	1796	1101	1789	1098	1782	880	1408	713	1140
			F	1.9+44.6R	2.8+29.7R	3.2+22.3R	3.5+17.8R	3.7+14.9R	3.8+12.7R	3.9+11.1R	4+9.9R	4+8.9R										
		12"	q _a	q _f	998	1621	954	1550	930	1512	916	1488	906	1471	898	1460	893	1451	880	1408	713	1140
			F	2.2+44.5R	3.1+29.7R	3.6+22.3R	3.9+17.8R	4+14.8R	4.2+12.7R	4.3+11.1R	4.3+9.9R	4.4+8.9R										
		18"	q _a	q _f	878	1621	770	1251	791	1286	740	1202	703	1142	726	1180	700	1137	679	1103	698	1134
			F	2.8+44.5R	3.7+29.7R	4.1+22.2R	4.4+17.8R	4.6+14.8R	4.7+12.7R	4.8+11.1R	4.9+9.9R	5+8.9R										
		24"	q _a	q _f	725	1178	653	1062	615	1000	592	961	576	935	564	917	555	902	548	891	543	882
			F	3.3+44.4R	4.2+29.6R	4.7+22.2R	5+17.8R	5.2+14.8R	5.3+12.7R	5.4+11.1R	5.5+9.9R	5.5+8.9R										
36"	q _a	q _f	725	1178	519	844	513	833	508	826	432	701	440	716	447	726	401	652	410	667		
	F	4.3+44.3R	5.3+29.5R	5.8+22.1R	6.1+17.7R	6.3+14.7R	6.4+12.6R	6.5+11.1R	6.6+9.8R	6.7+8.8R												
22	32/5	4"	q _a	q _f	1156	1878	1148	1865	1143	1858	1141	1853	1139	1850	1113	1782	853	1364	674	1078	546	873
			F	0.9+70.4R	2.3+46.9R	3+35.2R	3.4+28.2R	3.7+23.5R	3.9+20.1R	4+17.6R	4.2+15.6R	4.3+14.1R										
		6"	q _a	q _f	1054	1712	1035	1682	1026	1666	1019	1656	1015	1650	1012	1645	853	1364	674	1078	546	873
			F	1.1+70.4R	2.6+46.9R	3.3+35.2R	3.7+28.2R	4+23.5R	4.2+20.1R	4.3+17.6R	4.4+15.6R	4.5+14.1R										
		8"	q _a	q _f	960	1560	932	1514	916	1489	907	1473	900	1463	895	1455	853	1364	674	1078	546	873
			F	1.4+70.4R	2.8+46.9R	3.5+35.2R	4+28.2R	4.2+23.5R	4.4+20.1R	4.6+17.6R	4.7+15.6R	4.8+14.1R										
		12"	q _a	q _f	814	1322	769	1250	745	1211	730	1187	720	1170	713	1158	707	1149	674	1078	546	873
			F	1.9+70.4R	3.4+46.9R	4.1+35.2R	4.5+28.1R	4.8+23.5R	5+20.1R	5.1+17.6R	5.3+15.6R	5.4+14.1R										
		18"	q _a	q _f	712	1322	615	999	628	1020	582	946	550	894	568	923	546	887	528	858	543	873
			F	2.7+70.3R	4.1+46.8R	4.9+35.1R	5.3+28.1R	5.6+23.4R	5.8+20.1R	6+17.6R	6.1+15.6R	6.2+14.1R										
		24"	q _a	q _f	588	955	521	847	486	789	464	754	449	730	438	712	430	699	424	689	419	681
			F	3.4+70.2R	4.9+46.8R	5.6+35.1R	6.1+28.1R	6.4+23.4R	6.6+20R	6.8+17.5R	6.9+15.6R	7+14R										
36"	q _a	q _f	588	955	417	677	406	659	399	648	337	548	342	556	346	562	310	504	316	514		
	F	4.7+70R	6.3+46.6R	7.1+34.9R	7.6+27.9R	7.9+23.3R	8.2+19.9R	8.3+17.4R	8.5+15.5R	8.6+14R												

N PANELS

3.5 DGN-32 & DGNF-32

Pneutek K64 Fasteners to Supports with DeltaGrip® Side Seam Attachment



PNEUTEK®



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2628	4271	2623	4263	2620	4258	2619	4256	2618	4254	2617	4252	2351	3761	1857	2972	1504	2407
			F	1.7+12.5R	1.9+8.3R	2+6.2R	2.1+5R	2.2+4.2R	2.2+3.6R	2.2+3.1R	2.2+2.8R	2.3+2.5R										
		6"	q_a	q_f	2509	4077	2495	4055	2488	4043	2483	4035	2480	4030	2478	4027	2351	3761	1857	2972	1504	2407
			F	1.7+12.5R	2+8.3R	2.1+6.2R	2.2+5R	2.2+4.2R	2.3+3.6R	2.3+3.1R	2.3+2.8R	2.3+2.5R										
		8"	q_a	q_f	2378	3865	2353	3823	2339	3801	2330	3787	2324	3777	2320	3770	2317	3761	1857	2972	1504	2407
			F	1.8+12.5R	2.1+8.3R	2.2+6.2R	2.3+5R	2.3+4.2R	2.3+3.6R	2.4+3.1R	2.4+2.8R	2.4+2.5R										
		12"	q_a	q_f	2125	3454	2073	3369	2045	3323	2027	3294	2015	3275	2007	3261	2000	3250	1857	2972	1504	2407
			F	1.9+12.5R	2.2+8.3R	2.3+6.2R	2.4+5R	2.4+4.2R	2.5+3.6R	2.5+3.1R	2.5+2.8R	2.5+2.5R										
		18"	q_a	q_f	1910	3454	1733	2816	1793	2914	1703	2768	1638	2661	1690	2747	1642	2669	1604	2606	1504	2407
			F	2.1+12.5R	2.4+8.3R	2.5+6.2R	2.6+5R	2.6+4.2R	2.7+3.6R	2.7+3.1R	2.7+2.8R	2.8+2.5R										
		24"	q_a	q_f	1598	2596	1488	2419	1430	2323	1393	2263	1368	2223	1350	2193	1336	2171	1325	2154	1317	2139
			F	2.3+12.5R	2.6+8.3R	2.7+6.2R	2.8+5R	2.9+4.2R	2.9+3.6R	2.9+3.1R	2.9+2.8R	3+2.5R										
		36"	q_a	q_f	1598	2596	1182	1920	1195	1942	1204	1956	1034	1680	1064	1729	1086	1765	982	1595	1009	1639
			F	2.7+12.4R	3+8.3R	3.1+6.2R	3.2+5R	3.3+4.1R	3.3+3.6R	3.3+3.1R	3.4+2.8R	3.4+2.5R										
18	32/5	4"	q_a	q_f	2168	3523	2165	3519	2164	3516	2163	3515	2162	3514	2162	3513	1696	2713	1340	2144	1085	1737
			F	1.8+21.9R	2.2+14.6R	2.4+10.9R	2.5+8.7R	2.6+7.3R	2.7+6.2R	2.7+5.5R	2.8+4.9R	2.8+4.4R										
		6"	q_a	q_f	2090	3396	2082	3383	2077	3376	2075	3371	2073	3368	2072	3366	1696	2713	1340	2144	1085	1737
			F	1.9+21.9R	2.3+14.6R	2.5+10.9R	2.6+8.7R	2.7+7.3R	2.8+6.2R	2.8+5.5R	2.9+4.9R	2.9+4.4R										
		8"	q_a	q_f	2000	3250	1984	3224	1976	3211	1971	3203	1967	3197	1965	3193	1696	2713	1340	2144	1085	1737
			F	2+21.9R	2.4+14.6R	2.6+10.9R	2.8+8.7R	2.8+7.3R	2.9+6.2R	3+5.5R	3+4.9R	3+4.4R										
		12"	q_a	q_f	1816	2951	1782	2896	1764	2867	1753	2848	1745	2835	1739	2826	1696	2713	1340	2144	1085	1737
			F	2.2+21.8R	2.6+14.6R	2.8+10.9R	3+8.7R	3.1+7.3R	3.1+6.2R	3.2+5.5R	3.2+4.9R	3.2+4.4R										
		18"	q_a	q_f	1650	2951	1517	2465	1570	2552	1501	2440	1451	2357	1494	2429	1457	2368	1340	2144	1085	1737
			F	2.5+21.8R	2.9+14.6R	3.2+10.9R	3.3+8.7R	3.4+7.3R	3.4+6.2R	3.5+5.5R	3.5+4.8R	3.6+4.4R										
		24"	q_a	q_f	1395	2267	1315	2137	1272	2067	1245	2023	1227	1993	1213	1972	1203	1955	1195	1942	1085	1737
			F	2.8+21.8R	3.2+14.5R	3.5+10.9R	3.6+8.7R	3.7+7.3R	3.8+6.2R	3.8+5.4R	3.9+4.8R	3.9+4.4R										
		36"	q_a	q_f	1395	2267	1049	1705	1070	1738	1082	1758	935	1520	965	1568	987	1603	895	1455	921	1496
			F	3.4+21.7R	3.9+14.5R	4.1+10.9R	4.2+8.7R	4.3+7.2R	4.4+6.2R	4.5+5.4R	4.5+4.8R	4.5+4.3R										
20	32/5	4"	q_a	q_f	1494	2427	1484	2412	1479	2404	1476	2398	1474	2395	1453	2326	1113	1780	879	1407	712	1140
			F	1.5+44.7R	2.4+29.8R	2.8+22.4R	3.1+17.9R	3.3+14.9R	3.4+12.8R	3.5+11.2R	3.6+9.9R	3.6+8.9R										
		6"	q_a	q_f	1368	2223	1347	2188	1335	2169	1328	2157	1323	2149	1319	2144	1113	1780	879	1407	712	1140
			F	1.7+44.7R	2.6+29.8R	3+22.4R	3.3+17.9R	3.5+14.9R	3.6+12.8R	3.7+11.2R	3.8+9.9R	3.8+8.9R										
		8"	q_a	q_f	1251	2033	1217	1978	1199	1948	1187	1929	1179	1916	1173	1907	1113	1780	879	1407	712	1140
			F	1.9+44.7R	2.8+29.8R	3.2+22.3R	3.5+17.9R	3.7+14.9R	3.8+12.8R	3.9+11.2R	4+9.9R	4+8.9R										
		12"	q_a	q_f	1065	1730	1010	1641	980	1593	962	1563	949	1543	940	1528	933	1517	879	1407	712	1140
			F	2.2+44.7R	3.1+29.8R	3.6+22.3R	3.9+17.9R	4+14.9R	4.2+12.8R	4.3+11.2R	4.3+9.9R	4.4+8.9R										
		18"	q_a	q_f	933	1730	809	1315	828	1346	770	1251	729	1184	752	1222	723	1175	700	1138	712	1140
			F	2.8+44.6R	3.7+29.8R	4.2+22.3R	4.4+17.9R	4.6+14.9R	4.7+12.7R	4.8+11.2R	4.9+9.9R	5+8.9R										
		24"	q_a	q_f	770	1251	686	1115	641	1042	614	997	595	967	581	945	571	928	563	915	557	905
			F	3.3+44.6R	4.2+29.7R	4.7+22.3R	5+17.8R	5.2+14.9R	5.3+12.7R	5.4+11.1R	5.5+9.9R	5.5+8.9R										
		36"	q_a	q_f	770	1251	547	889	535	869	528	857	447	726	454	738	459	747	412	669	420	683
			F	4.3+44.4R	5.3+29.6R	5.8+22.2R	6.1+17.8R	6.3+14.8R	6.4+12.7R	6.5+11.1R	6.6+9.9R	6.7+8.9R										
22	32/5	4"	q_a	q_f	1159	1884	1151	1870	1147	1863	1144	1859	1142	1856	1113	1780	852	1363	673	1077	545	872
			F	0.9+70.6R	2.3+47.1R	3+35.3R	3.4+28.2R	3.7+23.5R	3.9+20.2R	4.1+17.7R	4.2+15.7R	4.3+14.1R										
		6"	q_a	q_f	1056	1717	1038	1687	1028	1670	1022	1660	1017	1653	1014	1648	852	1363	673	1077	545	872
			F	1.1+70.6R	2.6+47.1R	3.3+35.3R	3.7+28.2R	4+23.5R	4.2+20.2R	4.4+17.7R	4.4+15.7R	4.5+14.1R										
		8"	q_a	q_f	962	1564	934	1517	918	1492	908	1476	902	1465	897	1457	852	1363	673	1077	545	872
			F	1.4+70.6R	2.8+47.1R	3.5+35.3R	4+28.2R	4.2+23.5R	4.5+20.2R	4.6+17.6R	4.7+15.7R	4.8+14.1R										
		12"	q_a	q_f	815	1325	771	1252	746	1213	731	1188	721	1172	714	1159	708	1150	673	1077	545	872
			F	1.9+70.6R	3.4+47R	4.1+35.3R	4.5+28.2R	4.8+23.5R	5+20.2R	5.2+17.6R	5.3+15.7R	5.4+14.1R										
		18"	q_a	q_f	714	1325	616	1000	629	1022	583	947	551	895	569	924	546	888	528	859	543	872
			F	2.7+70.5R	4.1+47R	4.9+35.2R	5.3+28.2R	5.6+23.5R	5.8+20.1R	6+17.6R	6.1+15.7R	6.2+14.1R										
		24"	q_a	q_f	589	957	522	848	486	790	464	755	450	731	439	713	431	700	424	690	419	681
			F	3.4+70.4R	4.9+46.9R	5.6+35.2R	6.1+28.1R	6.4+23.4R	6.6+20.1R	6.8+17.6R	6.9+15.6R	7+14.1R										
		36"	q_a	q_f	589	957	417	678	406	660	399	649	338	549	343	557	346	563	310	504	317	514
			F	4.7+70.2R	6.3+46.7R	7.1+35R	7.6+28R	7.9+23.3R	8.2+20R	8.4+17.5R	8.5+15.6R	8.6+14R										



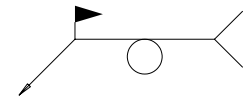
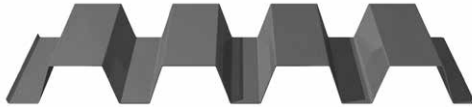
Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
 Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q _a	q _f	2893	4700	2885	4688	2881	4682	2879	4678	2877	4675	2876	4673	2875	4651	2297	3675	1860	2976
			F		1.7+12.4R		1.9+8.3R		2+6.2R		2.1+5R		2.2+4.1R		2.2+3.6R		2.2+3.1R		2.2+2.8R		2.3+2.5R	
		6"	q _a	q _f	2740	4452	2720	4420	2710	4403	2703	4393	2699	4386	2696	4381	2693	4377	2297	3675	1860	2976
			F		1.7+12.4R		2+8.3R		2.1+6.2R		2.2+5R		2.2+4.1R		2.3+3.6R		2.3+3.1R		2.3+2.8R		2.3+2.5R	
		8"	q _a	q _f	2577	4188	2542	4131	2524	4101	2512	4082	2504	4069	2498	4059	2494	4052	2297	3675	1860	2976
			F		1.8+12.4R		2+8.3R		2.2+6.2R		2.2+5R		2.3+4.1R		2.3+3.6R		2.4+3.1R		2.4+2.8R		2.4+2.5R	
		12"	q _a	q _f	2276	3699	2209	3590	2173	3531	2150	3494	2134	3468	2123	3450	2114	3436	2108	3425	1860	2976
			F		1.9+12.4R		2.2+8.3R		2.3+6.2R		2.4+5R		2.4+4.1R		2.5+3.6R		2.5+3.1R		2.5+2.8R		2.5+2.5R	
		18"	q _a	q _f	2031	3699	1824	2964	1886	3065	1783	2897	1708	2775	1764	2867	1710	2779	1666	2708	1711	2781
			F		2.1+12.4R		2.4+8.3R		2.5+6.2R		2.6+5R		2.6+4.1R		2.7+3.6R		2.7+3.1R		2.7+2.8R		2.7+2.5R	
		24"	q _a	q _f	1689	2745	1559	2533	1489	2420	1446	2349	1416	2301	1395	2266	1378	2240	1366	2219	1355	2203
			F		2.3+12.4R		2.6+8.3R		2.7+6.2R		2.8+5R		2.9+4.1R		2.9+3.5R		2.9+3.1R		2.9+2.8R		3+2.5R	
36"	q _a	q _f	1689	2745	1236	2008	1242	2018	1246	2024	1065	1731	1094	1778	1116	1813	1006	1635	1033	1678		
	F		2.7+12.4R		3+8.3R		3.1+6.2R		3.2+5R		3.3+4.1R		3.3+3.5R		3.3+3.1R		3.3+2.8R		3.4+2.5R			
18	32/5	4"	q _a	q _f	2261	3674	2257	3668	2256	3665	2254	3664	2254	3662	2253	3662	2097	3355	1657	2651	1342	2147
			F		1.8+21.8R		2.2+14.5R		2.4+10.9R		2.5+8.7R		2.6+7.3R		2.7+6.2R		2.7+5.4R		2.8+4.8R		2.8+4.4R	
		6"	q _a	q _f	2173	3531	2163	3516	2158	3508	2155	3503	2153	3499	2152	3497	2097	3355	1657	2651	1342	2147
			F		1.9+21.8R		2.3+14.5R		2.5+10.9R		2.6+8.7R		2.7+7.3R		2.8+6.2R		2.8+5.4R		2.9+4.8R		2.9+4.4R	
		8"	q _a	q _f	2074	3370	2056	3341	2046	3325	2040	3315	2036	3309	2033	3304	2031	3300	1657	2651	1342	2147
			F		2+21.8R		2.4+14.5R		2.6+10.9R		2.8+8.7R		2.8+7.3R		2.9+6.2R		2.9+5.4R		3+4.8R		3+4.4R	
		12"	q _a	q _f	1874	3045	1836	2983	1815	2950	1803	2929	1794	2915	1787	2904	1783	2897	1657	2651	1342	2147
			F		2.2+21.8R		2.6+14.5R		2.8+10.9R		3+8.7R		3.1+7.3R		3.1+6.2R		3.2+5.4R		3.2+4.8R		3.2+4.4R	
		18"	q _a	q _f	1697	3045	1554	2525	1609	2614	1535	2494	1481	2406	1526	2480	1487	2416	1454	2363	1342	2147
			F		2.5+21.8R		2.9+14.5R		3.2+10.9R		3.3+8.7R		3.4+7.3R		3.4+6.2R		3.5+5.4R		3.5+4.8R		3.6+4.4R	
		24"	q _a	q _f	1429	2323	1343	2182	1296	2106	1267	2059	1247	2026	1233	2003	1222	1985	1213	1971	1206	1960
			F		2.8+21.7R		3.2+14.5R		3.5+10.9R		3.6+8.7R		3.7+7.2R		3.8+6.2R		3.8+5.4R		3.8+4.8R		3.9+4.3R	
36"	q _a	q _f	1429	2323	1069	1737	1088	1768	1099	1786	948	1540	977	1588	999	1623	905	1471	931	1512		
	F		3.4+21.7R		3.8+14.4R		4.1+10.8R		4.2+8.7R		4.3+7.2R		4.4+6.2R		4.4+5.4R		4.5+4.8R		4.5+4.3R			
20	32/5	4"	q _a	q _f	1523	2475	1513	2459	1507	2450	1504	2444	1502	2440	1500	2438	1376	2202	1087	1740	881	1409
			F		1.5+44.6R		2.4+29.7R		2.8+22.3R		3.1+17.8R		3.3+14.9R		3.4+12.7R		3.5+11.1R		3.6+9.9R		3.6+8.9R	
		6"	q _a	q _f	1392	2262	1369	2224	1356	2204	1349	2191	1343	2183	1339	2176	1336	2172	1087	1740	881	1409
			F		1.7+44.6R		2.6+29.7R		3+22.3R		3.3+17.8R		3.5+14.9R		3.6+12.7R		3.7+11.1R		3.8+9.9R		3.8+8.9R	
		8"	q _a	q _f	1270	2064	1234	2006	1215	1974	1202	1954	1194	1940	1188	1930	1183	1923	1087	1740	881	1409
			F		1.9+44.6R		2.8+29.7R		3.2+22.3R		3.5+17.8R		3.7+14.9R		3.8+12.7R		3.9+11.1R		4+9.9R		4+8.9R	
		12"	q _a	q _f	1079	1753	1022	1660	991	1610	971	1579	958	1557	949	1542	941	1530	936	1520	881	1409
			F		2.2+44.5R		3.1+29.7R		3.6+22.3R		3.9+17.8R		4+14.8R		4.2+12.7R		4.3+11.1R		4.3+9.9R		4.4+8.9R	
		18"	q _a	q _f	945	1753	817	1328	836	1358	776	1261	734	1193	758	1231	728	1183	705	1145	725	1177
			F		2.8+44.5R		3.7+29.7R		4.1+22.2R		4.4+17.8R		4.6+14.8R		4.7+12.7R		4.8+11.1R		4.9+9.9R		5+8.9R	
		24"	q _a	q _f	780	1267	693	1126	647	1051	618	1005	599	973	585	951	575	934	566	920	560	909
			F		3.3+44.4R		4.2+29.6R		4.7+22.2R		5+17.8R		5.2+14.8R		5.3+12.7R		5.4+11.1R		5.5+9.9R		5.5+8.9R	
36"	q _a	q _f	780	1267	553	899	540	877	532	864	450	731	457	742	462	751	414	673	423	687		
	F		4.3+44.3R		5.3+29.5R		5.8+22.1R		6.1+17.7R		6.3+14.7R		6.4+12.6R		6.5+11.1R		6.6+9.8R		6.7+8.8R			
22	32/5	4"	q _a	q _f	1222	1985	1212	1969	1206	1960	1203	1954	1200	1951	1199	1948	1053	1686	832	1332	674	1079
			F		0.9+70.4R		2.3+46.9R		3+35.2R		3.4+28.2R		3.7+23.5R		3.9+20.1R		4+17.6R		4.2+15.6R		4.3+14.1R	
		6"	q _a	q _f	1106	1796	1084	1761	1072	1742	1064	1730	1059	1721	1056	1715	1053	1686	832	1332	674	1079
			F		1.1+70.4R		2.6+46.9R		3.3+35.2R		3.7+28.2R		4+23.5R		4.2+20.1R		4.3+17.6R		4.4+15.6R		4.5+14.1R	
		8"	q _a	q _f	1002	1628	969	1574	951	1545	940	1527	932	1514	926	1505	922	1498	832	1332	674	1079
			F		1.4+70.4R		2.8+46.9R		3.5+35.2R		4+28.2R		4.2+23.5R		4.4+20.1R		4.6+17.6R		4.7+15.6R		4.8+14.1R	
		12"	q _a	q _f	845	1373	794	1291	767	1246	750	1219	739	1200	730	1186	724	1176	719	1168	674	1079
			F		1.9+70.4R		3.4+46.9R		4.1+35.2R		4.5+28.1R		4.8+23.5R		5+20.1R		5.1+17.6R		5.3+15.6R		5.4+14.1R	
		18"	q _a	q _f	738	1373	633	1028	644	1047	596	968	562	913	579	941	556	903	537	872	552	897
			F		2.7+70.3R		4.1+46.8R		4.9+35.1R		5.3+28.1R		5.6+23.4R		5.8+20.1R		6+17.6R		6.1+15.6R		6.2+14.1R	
		24"	q _a	q _f	609	990	537	872	498	809	474	770	458	744	446	725	437	711	431	700	425	691
			F		3.4+70.2R		4.9+46.8R		5.6+35.1R		6.1+28.1R		6.4+23.4R		6.6+20R		6.8+17.5R		6.9+15.6R		7+14R	
36"	q _a	q _f	609	990	428	696	416	677	408	663	344	558	349	567	352	572	315	512	321	522		
	F		4.7+70R		6.3+46.6R		7.1+34.9R		7.6+27.9R		7.9+23.3R		8.2+19.9R		8.3+17.4R		8.5+15.5R		8.6+14R			

N PANELS

3.6 NN-32

Arc Spot/Seam Welds to Supports with No. 12 Self-Drilling Side Lap Screws



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2656	4383	2467	4071	2365	3903	2302	3798	2258	3726	2227	3674	2203	3634	1858	2974	1505	2409
			F	2.8+12.3R	3.2+8.2R	3.3+6.1R	3.4+4.9R	3.5+4.1R	3.5+3.5R	3.6+3.1R	3.6+2.7R	3.6+2.4R										
		6"	q_a	q_f	2203	3635	1968	3247	1842	3040	1764	2911	1711	2823	1673	2760	1644	2712	1621	2675	1505	2409
			F	3.4+12.2R	3.7+8.1R	3.9+6R	4.1+4.8R	4.1+4R	4.2+3.4R	4.2+3R	4.3+2.7R	4.3+2.4R										
		8"	q_a	q_f	1937	3196	1678	2769	1541	2542	1456	2402	1398	2307	1357	2238	1325	2187	1301	2146	1281	2114
			F	3.8+12R	4.3+7.9R	4.5+5.9R	4.7+4.7R	4.8+3.9R	4.9+3.3R	4.9+2.9R	5+2.6R	5+2.3R										
	12"	q_a	q_f	1644	2713	1347	2223	1199	1979	1111	1833	1052	1735	1009	1665	978	1613	953	1572	933	1540	
		F	4.6+11.7R	5.2+7.6R	5.6+5.6R	5.8+4.5R	6+3.7R	6.1+3.1R	6.2+2.7R	6.2+2.4R	6.3+2.2R											
	18"	q_a	q_f	1488	2713	1096	1808	1011	1667	884	1459	800	1319	793	1309	741	1223	701	1157	706	1166	
		F	5.4+11.4R	6.3+7.2R	6.9+5.2R	7.3+4R	7.5+3.3R	7.7+2.7R	7.9+2.4R	8+2.1R	8.1+1.8R											
	24"	q_a	q_f	1304	2152	970	1600	822	1356	733	1209	674	1112	631	1042	600	990	575	949	555	916	
		F	6+11R	7.2+6.8R	8+4.8R	8.5+3.6R	8.9+2.8R	9.2+2.3R	9.4+1.9R	9.6+1.7R	9.8+1.4R											
18	32/5	4"	q_a	q_f	2102	3469	1956	3227	1877	3097	1827	3015	1794	2960	1769	2919	1697	2715	1341	2145	1086	1738
			F	3+21.6R	3.5+14.4R	3.8+10.8R	3.9+8.6R	4+7.2R	4.1+6.2R	4.2+5.4R	4.2+4.8R	4.2+4.3R										
		6"	q_a	q_f	1744	2878	1561	2575	1463	2413	1402	2313	1360	2245	1331	2195	1308	2158	1290	2129	1086	1738
			F	3.6+21.5R	4.2+14.3R	4.5+10.7R	4.7+8.5R	4.8+7.1R	4.9+6.1R	4.9+5.3R	5+4.7R	5+4.3R										
		8"	q_a	q_f	1533	2529	1330	2195	1223	2018	1157	1908	1112	1834	1079	1780	1055	1740	1035	1708	1020	1683
			F	4.1+21.3R	4.8+14.1R	5.1+10.5R	5.3+8.4R	5.5+7R	5.6+6R	5.7+5.2R	5.7+4.6R	5.8+4.2R										
	12"	q_a	q_f	1300	2145	1069	1763	952	1571	883	1457	836	1380	803	1325	778	1284	759	1252	743	1227	
		F	4.9+21R	5.8+13.8R	6.3+10.2R	6.6+8.1R	6.8+6.7R	7+5.7R	7.1+5R	7.2+4.4R	7.3+4R											
	18"	q_a	q_f	1172	2145	867	1431	801	1322	702	1158	635	1048	631	1040	589	973	558	920	562	928	
		F	5.9+20.6R	7.1+13.3R	7.8+9.8R	8.2+7.7R	8.6+6.3R	8.8+5.3R	9+4.6R	9.2+4R	9.3+3.6R											
	24"	q_a	q_f	1021	1685	767	1265	650	1073	581	958	534	882	501	827	476	786	457	754	441	728	
		F	6.6+20.2R	8+12.9R	9+9.3R	9.6+7.2R	10.1+5.8R	10.4+4.8R	10.7+4.1R	11+3.6R	11.1+3.2R											
20	32/5	4"	q_a	q_f	1380	2276	1309	2160	1270	2096	1246	2057	1230	2029	1218	2010	1114	1782	880	1408	713	1140
			F	2.8+44.4R	3.8+29.6R	4.3+22.2R	4.6+17.7R	4.8+14.8R	4.9+12.7R	5+11.1R	5.1+9.8R	5.2+8.9R										
		6"	q_a	q_f	1150	1898	1054	1740	1003	1655	971	1601	949	1565	933	1539	921	1519	880	1408	713	1140
			F	3.5+44.2R	4.5+29.4R	5.1+22R	5.4+17.6R	5.6+14.7R	5.8+12.6R	5.9+11R	6+9.8R	6.1+8.8R										
		8"	q_a	q_f	1007	1662	897	1480	838	1383	802	1323	777	1282	759	1252	745	1230	735	1212	713	1140
			F	4.1+44R	5.2+29.2R	5.8+21.9R	6.2+17.5R	6.5+14.5R	6.6+12.5R	6.8+10.9R	6.9+9.7R	7+8.7R										
	12"	q_a	q_f	843	1392	719	1186	653	1078	613	1011	585	966	565	933	551	908	539	889	529	874	
		F	5+43.7R	6.4+28.9R	7.2+21.5R	7.7+17.2R	8+14.2R	8.2+12.2R	8.4+10.6R	8.5+9.4R	8.6+8.5R											
	18"	q_a	q_f	754	1392	577	951	546	901	482	795	439	725	441	728	415	684	394	650	400	660	
		F	6.1+43.2R	7.9+28.3R	8.9+21R	9.5+16.6R	10+13.7R	10.3+11.7R	10.6+10.2R	10.8+9R	11+8.1R											
	24"	q_a	q_f	645	1064	501	827	432	713	391	646	364	600	344	568	330	544	318	525	309	510	
		F	6.9+42.8R	9+27.8R	10.3+20.4R	11.1+16.1R	11.7+13.2R	12.2+11.1R	12.6+9.6R	12.9+8.5R	13.1+7.6R											
22	32/5	4"	q_a	q_f	1053	1737	1009	1666	986	1626	971	1602	961	1585	953	1573	853	1364	674	1078	546	873
			F	2.2+70.2R	3.7+46.8R	4.4+35.1R	4.9+28.1R	5.2+23.4R	5.4+20R	5.6+17.5R	5.7+15.6R	5.8+14R										
		6"	q_a	q_f	884	1459	822	1356	788	1300	767	1265	752	1241	742	1224	734	1211	674	1078	546	873
			F	2.9+70R	4.5+46.6R	5.3+34.9R	5.8+27.9R	6.1+23.3R	6.4+19.9R	6.5+17.4R	6.7+15.5R	6.8+13.9R										
		8"	q_a	q_f	775	1278	700	1155	661	1090	636	1049	619	1021	607	1001	598	986	590	974	546	873
			F	3.6+69.8R	5.3+46.4R	6.1+34.8R	6.7+27.8R	7+23.1R	7.3+19.8R	7.5+17.3R	7.6+15.4R	7.8+13.9R										
	12"	q_a	q_f	645	1064	559	922	513	847	485	800	466	769	452	746	442	729	433	715	427	704	
		F	4.6+69.4R	6.6+46R	7.6+34.4R	8.3+27.4R	8.7+22.8R	9+19.5R	9.3+17R	9.5+15.1R	9.6+13.6R											
	18"	q_a	q_f	573	1064	449	740	431	711	383	631	350	578	354	584	334	550	318	524	324	534	
		F	5.8+68.9R	8.2+45.4R	9.5+33.8R	10.3+26.8R	10.9+22.2R	11.4+19R	11.7+16.5R	12+14.6R	12.2+13.1R											
	24"	q_a	q_f	486	801	386	637	337	555	307	507	287	474	273	451	263	434	255	420	248	409	
		F	6.7+68.4R	9.4+44.9R	11+33.2R	12.1+26.2R	12.8+21.6R	13.4+18.4R	13.9+15.9R	14.2+14.1R	14.5+12.6R											

**No. 12 Self-Drilling Screws to Supports with
No. 12 Self-Drilling Side Lap Screws**



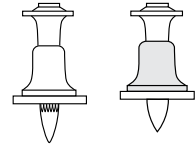
Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1490	2422	1476	2398	1468	2385	1463	2377	1460	2372	1457	2368	1455	2365	1454	2362	1453	2361
			F		2.8+12.2R	3.1+8.1R	3.3+6.1R	3.4+4.8R	3.4+4R	3.5+3.5R	3.5+3R	3.5+2.7R	3.6+2.4R									
		6"	q_a	q_f	1343	2183	1313	2133	1296	2106	1286	2089	1278	2078	1273	2069	1269	2063	1266	2058	1264	2054
			F		3.4+12R	3.7+8R	3.9+6R	4+4.8R	4.1+4R	4.2+3.4R	4.2+3R	4.2+2.6R	4.3+2.4R									
		8"	q_a	q_f	1215	1975	1170	1901	1145	1861	1130	1835	1119	1818	1111	1806	1105	1796	1101	1789	1097	1782
			F		3.8+11.9R	4.3+7.9R	4.5+5.9R	4.7+4.7R	4.8+3.9R	4.8+3.3R	4.9+2.9R	4.9+2.6R	5+2.3R									
		12"	q_a	q_f	1025	1665	957	1556	921	1497	898	1460	883	1434	871	1416	863	1402	856	1391	851	1382
			F		4.6+11.6R	5.3+7.6R	5.6+5.6R	5.8+4.4R	6+3.7R	6.1+3.1R	6.2+2.7R	6.2+2.4R	6.3+2.2R									
		18"	q_a	q_f	898	1665	765	1243	774	1257	713	1159	671	1091	691	1122	661	1075	638	1037	655	1065
			F		5.6+11.2R	6.5+7.1R	7+5.2R	7.4+4R	7.6+3.3R	7.8+2.8R	7.9+2.4R	8.1+2.1R	8.2+1.8R									
		24"	q_a	q_f	747	1213	651	1059	601	976	570	926	548	891	533	866	521	847	512	833	505	821
			F		6.3+10.9R	7.4+6.7R	8.2+4.7R	8.7+3.6R	9+2.8R	9.3+2.3R	9.6+2R	9.7+1.7R	9.9+1.5R									
18	32/5	4"	q_a	q_f	1191	1936	1180	1917	1173	1907	1169	1900	1167	1896	1165	1893	1163	1890	1162	1888	1092	1747
			F		3+21.4R	3.5+14.2R	3.7+10.7R	3.9+8.5R	4+7.1R	4.1+6.1R	4.1+5.3R	4.2+4.7R	4.2+4.3R									
		6"	q_a	q_f	1074	1745	1049	1705	1036	1683	1028	1670	1022	1661	1018	1654	1015	1649	1012	1645	1010	1641
			F		3.6+21.2R	4.2+14.1R	4.4+10.6R	4.6+8.4R	4.7+7R	4.8+6R	4.9+5.3R	4.9+4.7R	5+4.2R									
		8"	q_a	q_f	971	1579	935	1519	915	1487	903	1467	894	1453	888	1443	883	1436	880	1430	877	1425
			F		4.1+21.1R	4.8+14R	5.1+10.4R	5.3+8.3R	5.5+6.9R	5.6+5.9R	5.7+5.2R	5.7+4.6R	5.8+4.1R									
		12"	q_a	q_f	819	1331	765	1244	736	1196	718	1167	706	1146	696	1132	690	1121	684	1112	680	1105
			F		5+20.8R	5.9+13.7R	6.3+10.2R	6.6+8.1R	6.8+6.7R	7+5.7R	7.1+5R	7.2+4.4R	7.2+4R									
		18"	q_a	q_f	718	1331	611	993	618	1005	570	927	536	872	552	897	529	859	510	829	524	851
			F		6.1+20.3R	7.2+13.2R	7.9+9.7R	8.3+7.6R	8.7+6.3R	8.9+5.3R	9.1+4.6R	9.2+4R	9.3+3.6R									
		24"	q_a	q_f	597	970	521	846	480	780	455	740	438	712	426	692	417	677	410	666	404	656
			F		6.8+19.9R	8.3+12.7R	9.2+9.2R	9.8+7.1R	10.3+5.8R	10.6+4.8R	10.9+4.1R	11.1+3.6R	11.3+3.2R									
20	32/5	4"	q_a	q_f	895	1454	886	1440	881	1432	878	1427	876	1424	875	1422	874	1420	873	1416	717	1147
			F		2.8+43.9R	3.7+29.2R	4.2+21.9R	4.5+17.5R	4.7+14.6R	4.8+12.5R	4.9+11R	5+9.7R	5.1+8.8R									
		6"	q_a	q_f	806	1310	788	1281	778	1264	772	1254	768	1247	764	1242	762	1238	760	1235	717	1147
			F		3.5+43.7R	4.5+29.1R	5.1+21.8R	5.4+17.4R	5.6+14.5R	5.7+12.4R	5.9+10.9R	5.9+9.7R	6+8.7R									
		8"	q_a	q_f	730	1186	702	1141	687	1117	678	1102	672	1092	667	1084	664	1078	661	1074	659	1070
			F		4.1+43.5R	5.2+28.9R	5.8+21.7R	6.2+17.3R	6.4+14.4R	6.6+12.3R	6.7+10.8R	6.8+9.6R	6.9+8.6R									
		12"	q_a	q_f	615	1000	575	934	553	898	539	876	530	861	523	850	518	842	514	835	511	830
			F		5.1+43.2R	6.5+28.6R	7.2+21.3R	7.7+17R	8+14.1R	8.2+12.1R	8.4+10.5R	8.5+9.4R	8.6+8.4R									
		18"	q_a	q_f	539	1000	459	746	465	755	428	696	403	655	415	674	397	645	383	623	393	639
			F		6.3+42.6R	8.1+28R	9+20.8R	9.7+16.5R	10.1+13.6R	10.4+11.6R	10.7+10.1R	10.9+8.9R	11+8R									
		24"	q_a	q_f	448	728	391	636	361	586	342	556	329	535	320	520	313	509	308	500	303	493
			F		7.2+42.2R	9.3+27.5R	10.5+20.2R	11.4+15.9R	12+13.1R	12.4+11.1R	12.7+9.6R	13+8.4R	13.2+7.5R									
22	32/5	4"	q_a	q_f	745	1211	738	1199	734	1193	731	1189	730	1186	729	1184	728	1182	677	1084	549	878
			F		2.2+69.4R	3.6+46.2R	4.4+34.7R	4.8+27.7R	5.1+23.1R	5.3+19.8R	5.5+17.3R	5.6+15.4R	5.7+13.9R									
		6"	q_a	q_f	672	1091	656	1067	648	1053	643	1045	639	1039	637	1035	635	1031	633	1029	549	878
			F		2.9+69.2R	4.5+46.1R	5.3+34.5R	5.8+27.6R	6.1+23R	6.3+19.7R	6.5+17.3R	6.6+15.3R	6.7+13.8R									
		8"	q_a	q_f	608	987	585	950	573	930	565	918	559	909	556	903	553	898	550	894	548	878
			F		3.6+69R	5.3+45.9R	6.1+34.4R	6.7+27.5R	7+22.9R	7.3+19.6R	7.4+17.2R	7.6+15.2R	7.7+13.7R									
		12"	q_a	q_f	512	833	479	778	460	748	449	730	441	717	436	708	431	701	428	695	425	691
			F		4.7+68.6R	6.7+45.5R	7.7+34R	8.3+27.1R	8.7+22.6R	9+19.3R	9.3+16.9R	9.4+15R	9.6+13.5R									
		18"	q_a	q_f	449	833	382	621	387	629	357	580	336	545	345	561	331	537	319	518	328	533
			F		6.1+68.1R	8.4+44.9R	9.6+33.4R	10.5+26.6R	11+22R	11.4+18.8R	11.8+16.4R	12+14.5R	12.2+13R									
		24"	q_a	q_f	373	607	326	529	300	488	285	463	274	446	267	433	261	424	256	416	253	410
			F		7+67.6R	9.7+44.3R	11.3+32.8R	12.3+26R	13.1+21.4R	13.6+18.2R	14+15.8R	14.4+14R	14.7+12.5R									

N PANELS

3.8 NN-32

Hilti X-EDNK-22, X-EDN19 or HSN-24 Fasteners to Supports with No. 12 Self-Drilling Side Lap Screws



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf) Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1810	2942	1779	2892	1763	2865	1752	2848	1745	2836	1740	2828	1736	2821	1733	2816	1514	2422
			F	2.8+12.2R	3.1+8.1R	3.3+6.1R	3.4+4.8R	3.4+4R	3.5+3.5R	3.5+3R	3.5+2.7R	3.6+2.4R										
		6"	q_a	q_f	1587	2579	1531	2488	1500	2438	1481	2407	1468	2385	1458	2370	1451	2358	1445	2349	1441	2341
			F	3.3+12R	3.7+8R	3.9+6R	4+4.8R	4.1+4R	4.2+3.4R	4.2+3R	4.2+2.6R	4.3+2.4R										
		8"	q_a	q_f	1413	2296	1336	2171	1294	2104	1268	2061	1251	2032	1238	2011	1228	1995	1220	1983	1214	1973
			F	3.8+11.9R	4.3+7.8R	4.5+5.9R	4.7+4.7R	4.8+3.9R	4.8+3.3R	4.9+2.9R	4.9+2.6R	5+2.3R										
		12"	q_a	q_f	1176	1912	1074	1745	1019	1655	984	1600	961	1562	944	1534	931	1513	921	1497	913	1484
			F	4.6+11.6R	5.2+7.6R	5.6+5.6R	5.8+4.4R	6+3.7R	6.1+3.1R	6.2+2.7R	6.2+2.4R	6.3+2.1R										
		18"	q_a	q_f	1030	1912	856	1390	851	1383	776	1261	724	1176	741	1204	706	1147	678	1102	694	1129
			F	5.5+11.2R	6.4+7.1R	7+5.2R	7.3+4R	7.6+3.3R	7.8+2.7R	7.9+2.4R	8+2.1R	8.1+1.8R										
		24"	q_a	q_f	864	1405	733	1192	664	1079	622	1010	593	963	572	930	556	904	544	884	534	868
			F	6.2+10.9R	7.4+6.7R	8.1+4.7R	8.6+3.6R	9+2.8R	9.3+2.3R	9.5+1.9R	9.7+1.7R	9.8+1.5R										
18	32/5	4"	q_a	q_f	1460	2373	1435	2332	1421	2309	1412	2295	1407	2286	1402	2279	1399	2273	1348	2157	1092	1747
			F	3+21.4R	3.5+14.2R	3.7+10.7R	3.9+8.5R	4+7.1R	4.1+6.1R	4.1+5.3R	4.1+4.7R	4.2+4.3R										
		6"	q_a	q_f	1279	2078	1232	2003	1207	1962	1191	1936	1181	1919	1173	1906	1167	1896	1162	1888	1092	1747
			F	3.6+21.2R	4.1+14.1R	4.4+10.6R	4.6+8.4R	4.7+7R	4.8+6R	4.9+5.3R	4.9+4.7R	5+4.2R										
		8"	q_a	q_f	1137	1848	1075	1746	1041	1691	1019	1656	1005	1633	994	1615	986	1602	980	1592	975	1584
			F	4.1+21.1R	4.8+14R	5.1+10.4R	5.3+8.3R	5.5+6.9R	5.6+5.9R	5.6+5.2R	5.7+4.6R	5.8+4.1R										
		12"	q_a	q_f	947	1539	863	1403	818	1330	790	1284	771	1253	757	1231	747	1214	739	1200	732	1190
			F	5+20.7R	5.8+13.6R	6.3+10.1R	6.6+8.1R	6.8+6.7R	7+5.7R	7.1+5R	7.2+4.4R	7.2+4R										
		18"	q_a	q_f	829	1539	688	1118	684	1111	623	1012	581	944	594	965	566	919	543	883	557	905
			F	6+20.3R	7.2+13.2R	7.8+9.7R	8.3+7.6R	8.6+6.2R	8.8+5.3R	9+4.6R	9.2+4R	9.3+3.6R										
		24"	q_a	q_f	696	1131	590	958	534	867	499	811	476	773	459	746	446	725	436	709	428	696
			F	6.7+19.9R	8.2+12.7R	9.1+9.2R	9.7+7.1R	10.2+5.8R	10.5+4.8R	10.8+4.1R	11+3.6R	11.2+3.2R										
20	32/5	4"	q_a	q_f	1107	1798	1087	1766	1076	1749	1070	1738	1065	1731	1062	1725	1059	1721	885	1416	717	1147
			F	2.8+43.9R	3.7+29.2R	4.2+21.9R	4.5+17.5R	4.7+14.6R	4.8+12.5R	4.9+11R	5+9.7R	5.1+8.8R										
		6"	q_a	q_f	968	1573	932	1515	913	1483	900	1463	892	1450	886	1440	881	1432	878	1416	717	1147
			F	3.5+43.7R	4.5+29.1R	5+21.8R	5.4+17.4R	5.6+14.5R	5.7+12.4R	5.8+10.9R	5.9+9.7R	6+8.7R										
		8"	q_a	q_f	860	1398	812	1320	786	1277	769	1250	758	1232	750	1219	744	1209	739	1201	717	1147
			F	4.1+43.5R	5.2+28.9R	5.8+21.6R	6.2+17.3R	6.4+14.4R	6.6+12.3R	6.7+10.8R	6.8+9.6R	6.9+8.6R										
		12"	q_a	q_f	716	1163	652	1059	617	1003	596	969	581	945	571	928	563	915	557	905	552	896
			F	5.1+43.1R	6.5+28.6R	7.2+21.3R	7.7+17R	8+14.1R	8.2+12.1R	8.4+10.5R	8.5+9.3R	8.6+8.4R										
		18"	q_a	q_f	627	1163	520	844	516	838	470	763	438	712	448	727	426	693	409	665	419	681
			F	6.2+42.6R	8+28R	9+20.8R	9.6+16.4R	10+13.6R	10.4+11.6R	10.6+10.1R	10.8+8.9R	11+8R										
		24"	q_a	q_f	527	856	446	724	403	655	377	612	359	583	346	562	336	546	329	534	323	524
			F	7.1+42.2R	9.2+27.5R	10.4+20.2R	11.3+15.9R	11.9+13R	12.3+11R	12.7+9.6R	13+8.4R	13.2+7.5R										
22	32/5	4"	q_a	q_f	926	1505	909	1477	900	1463	894	1453	890	1447	888	1442	857	1372	677	1084	549	878
			F	2.2+69.4R	3.6+46.2R	4.4+34.7R	4.8+27.7R	5.1+23.1R	5.3+19.8R	5.5+17.3R	5.6+15.4R	5.7+13.9R										
		6"	q_a	q_f	809	1315	779	1266	763	1239	752	1222	745	1211	740	1203	736	1196	677	1084	549	878
			F	2.9+69.2R	4.5+46.1R	5.3+34.5R	5.8+27.6R	6.1+23R	6.3+19.7R	6.5+17.2R	6.6+15.3R	6.7+13.8R										
		8"	q_a	q_f	719	1168	678	1102	656	1066	642	1044	633	1029	626	1018	621	1009	617	1002	549	878
			F	3.6+69R	5.3+45.9R	6.1+34.4R	6.6+27.5R	7+22.9R	7.2+19.6R	7.4+17.1R	7.6+15.2R	7.7+13.7R										
		12"	q_a	q_f	598	972	544	885	515	838	497	808	485	789	476	774	470	763	464	755	460	748
			F	4.7+68.6R	6.6+45.5R	7.6+34R	8.3+27.1R	8.7+22.6R	9+19.3R	9.2+16.9R	9.4+15R	9.6+13.5R										
		18"	q_a	q_f	524	972	434	705	431	700	392	637	365	594	373	607	356	578	341	555	350	568
			F	6+68.1R	8.3+44.9R	9.6+33.4R	10.4+26.5R	11+22R	11.4+18.8R	11.7+16.4R	12+14.5R	12.2+13R										
		24"	q_a	q_f	440	716	372	605	336	547	314	511	299	487	289	469	280	456	274	445	269	437
			F	6.9+67.6R	9.6+44.3R	11.2+32.8R	12.2+25.9R	13+21.4R	13.5+18.2R	14+15.8R	14.3+14R	14.6+12.5R										

**Hilti X-ENP-19 Fasteners to Supports with
No. 12 Self-Drilling Side Lap Screws**



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1909	3103	1872	3042	1851	3009	1839	2988	1830	2974	1824	2963	1819	2955	1815	2949	1514	2422
			F		2.7+12.1R		3+8R		3.2+6R		3.3+4.8R		3.4+4R		3.4+3.4R		3.5+3R		3.5+2.7R		3.5+2.4R	
		6"	q_a	q_f	1662	2700	1595	2592	1559	2534	1537	2497	1521	2472	1510	2453	1501	2439	1494	2428	1489	2420
			F		3.1+12R		3.6+7.9R		3.8+5.9R		3.9+4.7R		4+3.9R		4.1+3.3R		4.1+2.9R		4.2+2.6R		4.2+2.3R	
		8"	q_a	q_f	1473	2394	1385	2251	1337	2173	1307	2125	1287	2091	1272	2067	1261	2049	1252	2035	1245	2023
			F		3.5+11.8R		4+7.8R		4.3+5.8R		4.5+4.6R		4.6+3.8R		4.7+3.2R		4.8+2.8R		4.8+2.5R		4.9+2.2R	
		12"	q_a	q_f	1224	1989	1109	1803	1048	1703	1009	1640	983	1598	965	1567	950	1544	939	1526	930	1511
			F		4+11.6R		4.7+7.5R		5.2+5.5R		5.4+4.3R		5.6+3.5R		5.8+3R		5.9+2.6R		6+2.3R		6.1+2R	
		18"	q_a	q_f	1073	1989	885	1438	875	1422	795	1292	740	1203	756	1228	719	1168	690	1121	706	1147
			F		4.6+11.3R		5.6+7.1R		6.2+5.1R		6.6+3.9R		6.9+3.1R		7.2+2.5R		7.4+2.1R		7.5+1.8R		7.7+1.6R	
		24"	q_a	q_f	904	1468	760	1236	684	1112	638	1037	607	987	585	950	567	922	554	900	543	883
			F		5+11.1R		6.2+6.8R		7+4.7R		7.5+3.5R		8+2.7R		8.4+2.1R		8.6+1.7R		8.9+1.4R		9.1+1.2R	
18	32/5	4"	q_a	q_f	1540	2502	1509	2452	1492	2425	1482	2407	1474	2396	1469	2387	1465	2381	1348	2157	1092	1747
			F		2.8+21.3R		3.4+14.2R		3.7+10.6R		3.8+8.5R		3.9+7.1R		4+6.1R		4.1+5.3R		4.1+4.7R		4.2+4.2R	
		6"	q_a	q_f	1338	2175	1284	2086	1254	2038	1236	2008	1223	1987	1214	1972	1207	1961	1201	1952	1092	1747
			F		3.3+21.2R		4+14R		4.3+10.5R		4.5+8.4R		4.6+7R		4.7+6R		4.8+5.2R		4.9+4.6R		4.9+4.2R	
		8"	q_a	q_f	1186	1927	1114	1810	1075	1746	1050	1707	1034	1680	1022	1660	1012	1645	1005	1633	999	1624
			F		3.7+21R		4.5+13.9R		4.9+10.3R		5.1+8.2R		5.3+6.8R		5.4+5.8R		5.5+5.1R		5.6+4.5R		5.6+4.1R	
		12"	q_a	q_f	985	1601	892	1449	842	1367	810	1317	789	1282	774	1257	762	1238	753	1224	746	1212
			F		4.3+20.7R		5.3+13.6R		5.8+10R		6.2+7.9R		6.4+6.5R		6.6+5.5R		6.8+4.8R		6.9+4.2R		7+3.8R	
		18"	q_a	q_f	864	1601	711	1156	703	1142	638	1037	594	965	606	985	576	937	553	898	566	919
			F		5+20.4R		6.2+13.1R		7+9.5R		7.5+7.4R		7.9+6R		8.2+5.1R		8.4+4.3R		8.6+3.8R		8.8+3.4R	
		24"	q_a	q_f	728	1183	612	994	549	893	512	832	487	791	469	762	455	740	444	722	436	708
			F		5.4+20.2R		6.9+12.8R		7.9+9.1R		8.6+7R		9.1+5.6R		9.5+4.6R		9.8+3.9R		10.1+3.3R		10.4+2.9R	
20	32/5	4"	q_a	q_f	1167	1896	1143	1857	1130	1836	1121	1822	1116	1813	1112	1807	1109	1791	885	1416	717	1147
			F		2.6+43.8R		3.6+29.2R		4.1+21.9R		4.4+17.5R		4.6+14.6R		4.8+12.5R		4.9+10.9R		5+9.7R		5.1+8.7R	
		6"	q_a	q_f	1013	1646	971	1577	948	1540	934	1517	924	1501	917	1490	911	1481	885	1416	717	1147
			F		3.2+43.6R		4.3+29R		4.9+21.7R		5.2+17.3R		5.5+14.4R		5.6+12.4R		5.7+10.8R		5.8+9.6R		5.9+8.6R	
		8"	q_a	q_f	897	1457	841	1367	811	1319	793	1288	780	1267	771	1252	764	1241	758	1232	717	1147
			F		3.7+43.4R		4.9+28.8R		5.5+21.5R		5.9+17.2R		6.2+14.3R		6.4+12.2R		6.5+10.7R		6.7+9.5R		6.8+8.5R	
		12"	q_a	q_f	745	1210	673	1094	635	1032	611	993	595	967	583	948	574	933	567	922	562	913
			F		4.4+43.1R		5.8+28.4R		6.6+21.2R		7.2+16.8R		7.5+13.9R		7.8+11.9R		8+10.4R		8.2+9.2R		8.3+8.2R	
		18"	q_a	q_f	653	1210	537	873	530	862	481	782	448	728	457	742	434	706	416	677	426	692
			F		5.1+42.7R		6.9+28R		8+20.6R		8.7+16.3R		9.2+13.4R		9.6+11.3R		9.9+9.8R		10.2+8.6R		10.4+7.7R	
		24"	q_a	q_f	551	895	462	750	414	673	386	627	367	596	353	574	343	557	335	544	328	533
			F		5.6+42.5R		7.7+27.6R		9+20.1R		9.9+15.7R		10.6+12.8R		11.1+10.8R		11.6+9.3R		11.9+8.1R		12.2+7.2R	
22	32/5	4"	q_a	q_f	976	1586	956	1553	945	1535	938	1524	933	1516	929	1510	857	1372	677	1084	549	878
			F		2+69.3R		3.5+46.2R		4.3+34.6R		4.7+27.7R		5+23.1R		5.3+19.8R		5.4+17.3R		5.6+15.4R		5.7+13.8R	
		6"	q_a	q_f	847	1376	811	1318	792	1287	780	1267	772	1254	766	1244	761	1237	677	1084	549	878
			F		2.6+69.1R		4.2+46R		5.1+34.4R		5.6+27.5R		5.9+22.9R		6.2+19.6R		6.4+17.2R		6.5+15.3R		6.6+13.7R	
		8"	q_a	q_f	750	1218	703	1142	678	1101	662	1076	651	1058	643	1045	637	1036	633	1028	549	878
			F		3.1+68.9R		4.9+45.8R		5.8+34.2R		6.4+27.3R		6.8+22.7R		7+19.5R		7.2+17R		7.4+15.1R		7.5+13.6R	
		12"	q_a	q_f	622	1011	562	914	530	861	510	829	496	807	487	791	479	779	473	769	468	761
			F		3.9+68.6R		5.9+45.4R		7+33.8R		7.7+26.9R		8.2+22.4R		8.6+19.1R		8.8+16.7R		9.1+14.8R		9.2+13.3R	
		18"	q_a	q_f	546	1011	449	729	443	720	402	653	374	607	381	619	362	589	347	564	355	577
			F		4.7+68.2R		7.1+44.9R		8.5+33.3R		9.4+26.3R		10.1+21.8R		10.6+18.5R		10.9+16.1R		11.3+14.2R		11.5+12.7R	
		24"	q_a	q_f	461	748	386	626	346	562	322	523	306	497	295	479	286	465	279	454	274	445
			F		5.2+67.9R		7.9+44.4R		9.6+32.7R		10.7+25.8R		11.6+21.2R		12.2+17.9R		12.7+15.5R		13.2+13.6R		13.5+12.1R	

N PANELS

3.9 NN-32

Pneutek SDK61 Fasteners to Supports with No. 12 Self-Drilling Side Lap Screws



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf) Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1797	2921	1768	2872	1751	2846	1741	2829	1734	2818	1729	2810	1725	2804	1722	2799	1514	2422
			F		2.9+12.2R	3.2+8.1R	3.3+6.1R	3.4+4.9R	3.5+4.1R	3.5+3.5R	3.5+3.1R	3.6+2.7R	3.6+2.4R									
		6"	q_a	q_f	1578	2564	1523	2474	1493	2425	1474	2395	1461	2374	1452	2359	1444	2347	1439	2338	1434	2331
			F		3.6+12.1R	3.9+8.1R	4+6.1R	4.1+4.8R	4.2+4R	4.2+3.5R	4.3+3R	4.3+2.7R	4.3+2.4R									
		8"	q_a	q_f	1405	2283	1330	2161	1289	2094	1263	2053	1246	2024	1233	2004	1223	1988	1216	1976	1210	1966
			F		4.2+12R	4.6+8R	4.7+6R	4.8+4.8R	4.9+4R	5+3.4R	5+3R	5+2.7R	5.1+2.4R									
	12"	q_a	q_f	1170	1902	1069	1738	1015	1649	981	1594	958	1557	941	1530	929	1509	919	1493	911	1480	
		F		5.3+11.8R	5.8+7.8R	6.1+5.8R	6.2+4.6R	6.3+3.9R	6.4+3.3R	6.4+2.9R	6.5+2.6R	6.5+2.3R										
	18"	q_a	q_f	1025	1902	852	1384	848	1378	773	1257	722	1173	739	1200	704	1144	676	1099	693	1126	
		F		6.8+11.4R	7.5+7.4R	7.9+5.5R	8.1+4.4R	8.3+3.6R	8.4+3.1R	8.5+2.7R	8.5+2.4R	8.6+2.1R										
	24"	q_a	q_f	860	1397	730	1186	662	1075	620	1007	591	960	571	927	555	902	543	882	533	866	
		F		8.1+10.9R	9+7R	9.6+5.1R	9.9+4R	10.1+3.3R	10.3+2.8R	10.4+2.4R	10.5+2.1R	10.6+1.9R										
18	32/5	4"	q_a	q_f	1465	2381	1439	2339	1425	2316	1417	2302	1411	2293	1406	2285	1403	2280	1348	2157	1092	1747
			F		3.1+21.5R	3.6+14.3R	3.8+10.7R	3.9+8.6R	4+7.1R	4.1+6.1R	4.1+5.4R	4.2+4.8R	4.2+4.3R									
		6"	q_a	q_f	1283	2084	1236	2008	1210	1967	1194	1941	1183	1923	1175	1910	1169	1900	1165	1892	1092	1747
			F		3.8+21.4R	4.3+14.2R	4.6+10.7R	4.7+8.5R	4.8+7.1R	4.9+6.1R	5+5.3R	5+4.7R	5+4.3R									
		8"	q_a	q_f	1140	1853	1077	1750	1043	1694	1021	1659	1007	1636	996	1618	988	1605	981	1595	976	1586
			F		4.5+21.2R	5.1+14.1R	5.4+10.6R	5.5+8.5R	5.6+7.1R	5.7+6R	5.8+5.3R	5.8+4.7R	5.9+4.2R									
	12"	q_a	q_f	949	1542	865	1405	820	1332	792	1286	772	1255	758	1232	748	1215	740	1202	733	1191	
		F		5.8+21R	6.5+13.9R	6.8+10.4R	7+8.3R	7.2+6.9R	7.3+5.9R	7.4+5.2R	7.4+4.6R	7.5+4.1R										
	18"	q_a	q_f	831	1542	689	1120	685	1113	624	1014	582	945	595	967	566	920	544	884	557	906	
		F		7.5+20.5R	8.4+13.5R	8.9+10R	9.2+8R	9.4+6.6R	9.5+5.7R	9.7+4.9R	9.7+4.4R	9.8+3.9R										
	24"	q_a	q_f	698	1134	591	961	535	869	500	813	477	774	460	747	447	726	437	710	429	697	
		F		8.9+20R	10.1+13R	10.8+9.6R	11.2+7.6R	11.5+6.3R	11.7+5.3R	11.8+4.7R	12+4.1R	12.1+3.7R										
20	32/5	4"	q_a	q_f	1121	1822	1100	1788	1089	1770	1082	1759	1077	1751	1074	1745	1071	1741	885	1416	717	1147
			F		2.9+44R	3.8+29.3R	4.3+22R	4.6+17.6R	4.8+14.6R	4.9+12.6R	5+11R	5.1+9.8R	5.1+8.8R									
		6"	q_a	q_f	979	1591	942	1530	921	1497	909	1476	900	1462	894	1452	889	1444	885	1416	717	1147
			F		3.8+43.9R	4.7+29.2R	5.2+21.9R	5.5+17.5R	5.7+14.6R	5.8+12.5R	5.9+11R	6+9.7R	6.1+8.8R									
		8"	q_a	q_f	869	1412	819	1331	792	1287	775	1260	764	1241	755	1227	749	1217	744	1209	717	1147
			F		4.6+43.7R	5.6+29.1R	6.1+21.8R	6.4+17.5R	6.6+14.5R	6.8+12.5R	6.9+10.9R	7+9.7R	7+8.7R									
	12"	q_a	q_f	723	1175	657	1068	622	1010	600	975	585	950	574	933	566	919	559	909	554	900	
		F		6+43.4R	7.2+28.9R	7.8+21.6R	8.2+17.3R	8.4+14.4R	8.6+12.3R	8.7+10.8R	8.8+9.6R	8.9+8.6R										
	18"	q_a	q_f	633	1175	524	851	519	844	473	768	440	715	450	731	428	696	411	668	421	684	
		F		8+42.9R	9.4+28.4R	10.2+21.2R	10.6+16.9R	10.9+14.1R	11.2+12R	11.4+10.5R	11.5+9.3R	11.6+8.4R										
	24"	q_a	q_f	533	865	450	731	406	660	379	616	361	586	348	565	338	549	330	536	324	526	
		F		9.6+42.3R	11.4+27.9R	12.3+20.7R	12.9+16.5R	13.3+13.7R	13.6+11.7R	13.9+10.2R	14.1+9R	14.2+8.1R										
22	32/5	4"	q_a	q_f	943	1532	925	1502	915	1487	909	1477	905	1470	902	1465	857	1372	677	1084	549	878
			F		2.3+69.5R	3.7+46.3R	4.5+34.7R	4.9+27.8R	5.2+23.2R	5.4+19.9R	5.5+17.4R	5.7+15.4R	5.7+13.9R									
		6"	q_a	q_f	822	1335	790	1283	772	1255	762	1238	754	1225	749	1217	745	1210	677	1084	549	878
			F		3.2+69.4R	4.7+46.2R	5.5+34.7R	5.9+27.7R	6.2+23.1R	6.4+19.8R	6.6+17.3R	6.7+15.4R	6.8+13.9R									
		8"	q_a	q_f	729	1185	687	1116	663	1078	649	1055	639	1039	632	1027	626	1018	622	1011	549	878
			F		4.1+69.2R	5.7+46.1R	6.4+34.6R	6.9+27.7R	7.2+23R	7.4+19.7R	7.6+17.3R	7.7+15.4R	7.8+13.8R									
	12"	q_a	q_f	606	985	550	894	520	846	502	815	489	795	480	780	473	768	467	759	463	752	
		F		5.7+68.9R	7.4+45.8R	8.3+34.3R	8.8+27.5R	9.2+22.9R	9.4+19.6R	9.6+17.1R	9.8+15.2R	9.9+13.7R										
	18"	q_a	q_f	531	985	439	713	435	706	395	642	368	598	376	611	358	581	343	558	352	571	
		F		7.8+68.3R	9.8+45.3R	10.9+33.9R	11.5+27.1R	12+22.5R	12.3+19.3R	12.5+16.8R	12.7+15R	12.8+13.5R										
	24"	q_a	q_f	447	726	377	612	340	552	317	515	302	490	291	472	282	459	276	448	271	440	
		F		9.6+67.7R	12+44.7R	13.3+33.4R	14+26.6R	14.6+22.1R	15+18.9R	15.3+16.5R	15.5+14.6R	15.7+13.1R										



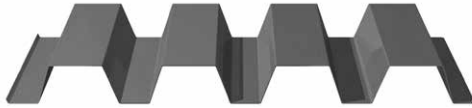
Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	1753	2849	1726	2805	1711	2781	1702	2766	1696	2755	1691	2748	1688	2742	1685	2738	1514	2422
			F		2.9+12.2R	3.2+8.1R	3.3+6.1R	3.4+4.9R	3.5+4.1R	3.5+3.5R	3.5+3.1R	3.6+2.7R	3.6+2.4R									
		6"	q_a	q_f	1544	2510	1493	2427	1466	2381	1448	2353	1436	2334	1427	2320	1421	2309	1416	2300	1411	2294
			F		3.6+12.1R	3.9+8.1R	4+6.1R	4.1+4.8R	4.2+4R	4.2+3.5R	4.3+3R	4.3+2.7R	4.3+2.4R									
		8"	q_a	q_f	1378	2239	1307	2125	1269	2062	1245	2024	1229	1997	1217	1977	1208	1963	1201	1951	1195	1942
			F		4.2+12R	4.6+8R	4.7+6R	4.8+4.8R	4.9+4R	5+3.4R	5+3R	5+2.7R	5.1+2.4R									
		12"	q_a	q_f	1149	1867	1053	1712	1002	1628	970	1576	948	1540	932	1514	920	1495	910	1479	903	1467
			F		5.3+11.8R	5.8+7.8R	6.1+5.8R	6.2+4.6R	6.3+3.9R	6.4+3.3R	6.4+2.9R	6.5+2.6R	6.5+2.3R									
		18"	q_a	q_f	1006	1867	839	1364	838	1361	765	1243	715	1161	732	1189	698	1134	671	1090	688	1118
			F		6.8+11.4R	7.5+7.4R	7.9+5.5R	8.1+4.4R	8.3+3.6R	8.4+3.1R	8.5+2.7R	8.5+2.4R	8.6+2.1R									
		24"	q_a	q_f	843	1369	718	1167	653	1061	612	995	585	950	565	918	550	894	538	875	529	860
			F		8.1+10.9R	9+7R	9.6+5.1R	9.9+4R	10.1+3.3R	10.3+2.8R	10.4+2.4R	10.5+2.1R	10.6+1.9R									
18	32/5	4"	q_a	q_f	1478	2401	1451	2358	1437	2335	1428	2320	1422	2310	1417	2303	1414	2297	1348	2157	1092	1747
			F		3.1+21.5R	3.6+14.3R	3.8+10.7R	3.9+8.6R	4+7.1R	4.1+6.1R	4.1+5.4R	4.2+4.8R	4.2+4.3R									
		6"	q_a	q_f	1292	2099	1244	2021	1218	1979	1201	1952	1190	1934	1182	1921	1176	1910	1171	1903	1092	1747
			F		3.8+21.4R	4.3+14.2R	4.6+10.7R	4.7+8.5R	4.8+7.1R	4.9+6.1R	5+5.3R	5+4.7R	5+4.3R									
		8"	q_a	q_f	1148	1866	1083	1760	1048	1703	1026	1668	1011	1643	1000	1625	992	1612	985	1601	980	1593
			F		4.5+21.2R	5.1+14.1R	5.4+10.6R	5.5+8.5R	5.6+7.1R	5.7+6R	5.8+5.3R	5.8+4.7R	5.9+4.2R									
		12"	q_a	q_f	955	1552	869	1413	823	1338	795	1291	775	1260	761	1237	750	1219	742	1206	735	1195
			F		5.8+21R	6.5+13.9R	6.8+10.4R	7+8.3R	7.2+6.9R	7.3+5.9R	7.4+5.2R	7.4+4.6R	7.5+4.1R									
		18"	q_a	q_f	837	1552	693	1126	688	1118	626	1018	584	948	597	970	568	923	546	886	559	908
			F		7.5+20.5R	8.4+13.5R	8.9+10R	9.2+8R	9.4+6.6R	9.5+5.7R	9.7+4.9R	9.7+4.4R	9.8+3.9R									
		24"	q_a	q_f	703	1142	595	966	537	873	502	816	478	777	461	749	448	728	438	712	430	699
			F		8.9+20R	10.1+13R	10.8+9.6R	11.2+7.6R	11.5+6.3R	11.7+5.3R	11.8+4.7R	12+4.1R	12.1+3.7R									
20	32/5	4"	q_a	q_f	1179	1916	1154	1875	1140	1853	1132	1839	1126	1830	1122	1823	1119	1791	885	1416	717	1147
			F		2.9+44R	3.8+29.3R	4.3+22R	4.6+17.6R	4.8+14.6R	4.9+12.6R	5+11R	5.1+9.8R	5.1+8.8R									
		6"	q_a	q_f	1022	1661	979	1590	955	1552	940	1528	930	1511	923	1499	917	1490	885	1416	717	1147
			F		3.8+43.9R	4.7+29.2R	5.2+21.9R	5.5+17.5R	5.7+14.6R	5.8+12.5R	5.9+11R	6+9.7R	6.1+8.8R									
		8"	q_a	q_f	904	1470	847	1377	817	1327	797	1296	784	1274	775	1259	767	1247	762	1238	717	1147
			F		4.6+43.7R	5.6+29.1R	6.1+21.8R	6.4+17.5R	6.6+14.5R	6.8+12.5R	6.9+10.9R	7+9.7R	7+8.7R									
		12"	q_a	q_f	751	1220	678	1101	639	1038	614	998	598	971	586	952	577	937	569	925	564	916
			F		6+43.4R	7.2+28.9R	7.8+21.6R	8.2+17.3R	8.4+14.4R	8.6+12.3R	8.7+10.8R	8.8+9.6R	8.9+8.6R									
		18"	q_a	q_f	659	1220	541	879	534	867	484	786	450	731	459	745	436	708	418	679	427	695
			F		8+42.9R	9.4+28.4R	10.2+21.2R	10.6+16.9R	10.9+14.1R	11.2+12R	11.4+10.5R	11.5+9.3R	11.6+8.4R									
		24"	q_a	q_f	556	903	465	755	416	677	388	630	368	599	355	576	344	560	336	546	329	535
			F		9.6+42.3R	11.4+27.9R	12.3+20.7R	12.9+16.5R	13.3+13.7R	13.6+11.7R	13.9+10.2R	14.1+9R	14.2+8.1R									
22	32/5	4"	q_a	q_f	1016	1650	992	1612	979	1591	971	1578	966	1569	962	1562	857	1372	677	1084	549	878
			F		2.3+69.5R	3.7+46.3R	4.5+34.7R	4.9+27.8R	5.2+23.2R	5.4+19.9R	5.5+17.4R	5.7+15.4R	5.7+13.9R									
		6"	q_a	q_f	876	1424	836	1359	814	1323	801	1301	792	1286	785	1275	780	1267	677	1084	549	878
			F		3.2+69.4R	4.7+46.2R	5.5+34.7R	5.9+27.7R	6.2+23.1R	6.4+19.8R	6.6+17.3R	6.7+15.4R	6.8+13.9R									
		8"	q_a	q_f	774	1257	722	1173	694	1128	677	1100	665	1080	656	1066	650	1055	644	1047	549	878
			F		4.1+69.2R	5.7+46.1R	6.4+34.6R	6.9+27.7R	7.2+23R	7.4+19.7R	7.6+17.3R	7.7+15.4R	7.8+13.8R									
		12"	q_a	q_f	642	1043	577	937	542	880	520	845	505	821	494	803	486	790	480	780	475	772
			F		5.7+68.9R	7.4+45.8R	8.3+34.3R	8.8+27.5R	9.2+22.9R	9.4+19.6R	9.6+17.1R	9.8+15.2R	9.9+13.7R									
		18"	q_a	q_f	564	1043	461	749	453	736	410	666	380	618	387	629	367	597	352	572	360	585
			F		7.8+68.3R	9.8+45.3R	10.9+33.9R	11.5+27.1R	12+22.5R	12.3+19.3R	12.5+16.8R	12.7+15R	12.8+13.5R									
		24"	q_a	q_f	477	775	395	642	353	573	328	532	311	505	299	486	290	471	283	459	277	450
			F		9.6+67.7R	12+44.7R	13.3+33.4R	14+26.6R	14.6+22.1R	15+18.9R	15.3+16.5R	15.5+14.6R	15.7+13.1R									

N PANELS

3.9 NN-32

Pneutek K64 Fasteners to Supports with No. 12 Self-Drilling Side Lap Screws



Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf) Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Spacing	Span																			
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"			
16	32/5	4"	q_a	q_f	2122	3448	2066	3357	2036	3308	2017	3277	2004	3256	1994	3241	1987	3229	1869	2990	1514	2422
			F	2.9+12.2R	3.2+8.1R	3.3+6.1R	3.4+4.9R	3.5+4.1R	3.5+3.5R	3.5+3.1R	3.6+2.7R	3.6+2.4R										
		6"	q_a	q_f	1819	2956	1728	2809	1679	2728	1648	2678	1627	2644	1612	2619	1600	2600	1591	2585	1514	2422
			F	3.6+12.1R	3.9+8.1R	4+6.1R	4.1+4.8R	4.2+4R	4.2+3.5R	4.3+3R	4.3+2.7R	4.3+2.4R										
		8"	q_a	q_f	1603	2604	1487	2417	1425	2316	1386	2253	1360	2209	1340	2178	1326	2154	1314	2136	1305	2121
			F	4.2+12R	4.6+8R	4.7+6R	4.8+4.8R	4.9+4R	5+3.4R	5+3R	5+2.7R	5.1+2.4R										
		12"	q_a	q_f	1329	2160	1186	1927	1110	1803	1062	1726	1030	1674	1007	1636	989	1607	975	1584	964	1566
			F	5.3+11.8R	5.8+7.8R	6.1+5.8R	6.2+4.6R	6.3+3.9R	6.4+3.3R	6.4+2.9R	6.5+2.6R	6.5+2.3R										
		18"	q_a	q_f	1169	2160	950	1544	928	1508	838	1361	776	1260	788	1280	747	1214	715	1162	730	1186
			F	6.8+11.4R	7.5+7.4R	7.9+5.5R	8.1+4.4R	8.3+3.6R	8.4+3.1R	8.5+2.7R	8.5+2.4R	8.6+2.1R										
		24"	q_a	q_f	993	1614	812	1320	722	1174	669	1086	633	1028	607	987	588	955	573	931	561	912
			F	8.1+10.9R	9+7R	9.6+5.1R	9.9+4R	10.1+3.3R	10.3+2.8R	10.4+2.4R	10.5+2.1R	10.6+1.9R										
18	32/5	4"	q_a	q_f	1720	2794	1673	2718	1647	2677	1632	2651	1621	2634	1613	2621	1607	2611	1348	2157	1092	1747
			F	3.1+21.5R	3.6+14.3R	3.8+10.7R	3.9+8.6R	4+7.1R	4.1+6.1R	4.1+5.4R	4.2+4.8R	4.2+4.3R										
		6"	q_a	q_f	1472	2392	1396	2269	1355	2202	1329	2160	1312	2132	1299	2111	1289	2095	1282	2083	1092	1747
			F	3.8+21.4R	4.3+14.2R	4.6+10.7R	4.7+8.5R	4.8+7.1R	4.9+6.1R	5+5.3R	5+4.7R	5+4.3R										
		8"	q_a	q_f	1296	2106	1200	1950	1149	1867	1117	1814	1095	1779	1079	1753	1067	1733	1057	1718	1049	1705
			F	4.5+21.2R	5.1+14.1R	5.4+10.6R	5.5+8.5R	5.6+7.1R	5.7+6R	5.8+5.3R	5.8+4.7R	5.9+4.2R										
		12"	q_a	q_f	1075	1746	957	1555	894	1453	855	1389	828	1346	809	1315	795	1291	783	1273	774	1258
			F	5.8+21R	6.5+13.9R	6.8+10.4R	7+8.3R	7.2+6.9R	7.3+5.9R	7.4+5.2R	7.4+4.6R	7.5+4.1R										
		18"	q_a	q_f	946	1746	767	1246	748	1215	674	1096	624	1014	634	1029	600	976	574	933	586	952
			F	7.5+20.5R	8.4+13.5R	8.9+10R	9.2+8R	9.4+6.6R	9.5+5.7R	9.7+4.9R	9.7+4.4R	9.8+3.9R										
		24"	q_a	q_f	804	1307	655	1065	582	946	538	874	509	827	488	793	472	767	460	748	450	732
			F	8.9+20R	10.1+13R	10.8+9.6R	11.2+7.6R	11.5+6.3R	11.7+5.3R	11.8+4.7R	12+4.1R	12.1+3.7R										
20	32/5	4"	q_a	q_f	1275	2072	1241	2017	1223	1988	1212	1969	1204	1956	1198	1947	1120	1791	885	1416	717	1147
			F	2.9+44R	3.8+29.3R	4.3+22R	4.6+17.6R	4.8+14.6R	4.9+12.6R	5+11R	5.1+9.8R	5.1+8.8R										
		6"	q_a	q_f	1093	1776	1038	1687	1009	1639	990	1609	977	1588	968	1573	961	1562	885	1416	717	1147
			F	3.8+43.9R	4.7+29.2R	5.2+21.9R	5.5+17.5R	5.7+14.6R	5.8+12.5R	5.9+11R	6+9.7R	6.1+8.8R										
		8"	q_a	q_f	963	1565	893	1452	856	1391	833	1353	817	1327	805	1308	796	1294	789	1283	717	1147
			F	4.6+43.7R	5.6+29.1R	6.1+21.8R	6.4+17.5R	6.6+14.5R	6.8+12.5R	6.9+10.9R	7+9.7R	7+8.7R										
		12"	q_a	q_f	799	1298	712	1158	666	1083	638	1037	619	1005	604	982	594	965	586	951	579	941
			F	6+43.4R	7.2+28.9R	7.8+21.6R	8.2+17.3R	8.4+14.4R	8.6+12.3R	8.7+10.8R	8.8+9.6R	8.9+8.6R										
		18"	q_a	q_f	702	1298	571	927	557	906	503	817	466	757	473	769	449	729	429	698	438	712
			F	8+42.9R	9.4+28.4R	10.2+21.2R	10.6+16.9R	10.9+14.1R	11.2+12R	11.4+10.5R	11.5+9.3R	11.6+8.4R										
		24"	q_a	q_f	597	970	488	793	434	705	402	653	380	618	365	592	353	574	344	559	337	547
			F	9.6+42.3R	11.4+27.9R	12.3+20.7R	12.9+16.5R	13.3+13.7R	13.6+11.7R	13.9+10.2R	14.1+9R	14.2+8.1R										
22	32/5	4"	q_a	q_f	1018	1654	994	1616	981	1595	973	1581	968	1572	964	1566	857	1372	677	1084	549	878
			F	2.3+69.5R	3.7+46.3R	4.5+34.7R	4.9+27.8R	5.2+23.2R	5.4+19.9R	5.5+17.4R	5.7+15.4R	5.7+13.9R										
		6"	q_a	q_f	878	1427	838	1361	816	1326	802	1303	793	1288	786	1277	781	1269	677	1084	549	878
			F	3.2+69.4R	4.7+46.2R	5.5+34.7R	5.9+27.7R	6.2+23.1R	6.4+19.8R	6.6+17.3R	6.7+15.4R	6.8+13.9R										
		8"	q_a	q_f	775	1260	723	1175	695	1130	678	1101	666	1082	657	1067	650	1057	645	1048	549	878
			F	4.1+69.2R	5.7+46.1R	6.4+34.6R	6.9+27.7R	7.2+23R	7.4+19.7R	7.6+17.3R	7.7+15.4R	7.8+13.8R										
		12"	q_a	q_f	643	1045	577	938	542	881	521	846	506	822	495	804	487	791	480	781	475	772
			F	5.7+68.9R	7.4+45.8R	8.3+34.3R	8.8+27.5R	9.2+22.9R	9.4+19.6R	9.6+17.1R	9.8+15.2R	9.9+13.7R										
		18"	q_a	q_f	565	1045	462	750	453	737	410	667	381	618	387	630	368	598	352	573	360	585
			F	7.8+68.3R	9.8+45.3R	10.9+33.9R	11.5+27.1R	12+22.5R	12.3+19.3R	12.5+16.8R	12.7+15R	12.8+13.5R										
		24"	q_a	q_f	478	777	395	643	353	574	328	533	311	506	299	486	290	471	283	460	277	451
			F	9.6+67.7R	12+44.7R	13.3+33.4R	14+26.6R	14.6+22.1R	15+18.9R	15.3+16.5R	15.5+14.6R	15.7+13.1R										

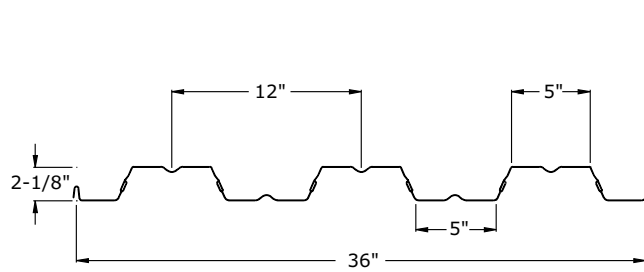


Allowable Diaphragm Shear, q_a (plf) and Factored Shear, q_f (plf)
Flexibility Factor, F (10^{-6} in/lbs)

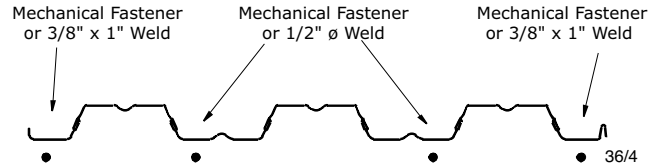
Gage	Arc Spot Welds	Spacing	Span																				
			4'-0"		6'-0"		8'-0"		10'-0"		12'-0"		14'-0"		16'-0"		18'-0"		20'-0"				
16	32/5	4"	q_a	q_f	2273	3694	2201	3577	2163	3514	2138	3475	2121	3447	2109	3428	2100	3413	1869	2990	1514	2422	
			F		2.9+12.2R	3.2+8.1R	3.3+6.1R	3.4+4.9R	3.5+4.1R	3.5+3.5R	3.5+3.1R	3.6+2.7R	3.6+2.4R										
		6"	q_a	q_f	1932	3139	1821	2958	1760	2860	1723	2799	1697	2757	1678	2727	1664	2704	1653	2686	1514	2422	
			F		3.6+12.1R	3.9+8.1R	4+6.1R	4.1+4.8R	4.2+4R	4.2+3.5R	4.3+3R	4.3+2.7R	4.3+2.4R										
		8"	q_a	q_f	1697	2757	1559	2534	1486	2414	1440	2339	1408	2288	1385	2251	1368	2223	1355	2201	1344	2184	
			F		4.2+12R	4.6+8R	4.7+6R	4.8+4.8R	4.9+4R	5+3.4R	5+3R	5+2.7R	5.1+2.4R										
		12"	q_a	q_f	1408	2288	1242	2019	1154	1875	1100	1787	1063	1727	1036	1683	1015	1650	1000	1624	987	1604	
			F		5.3+11.8R	5.8+7.8R	6.1+5.8R	6.2+4.6R	6.3+3.9R	6.4+3.3R	6.4+2.9R	6.5+2.6R	6.5+2.3R										
		18"	q_a	q_f	1242	2288	999	1624	967	1572	869	1412	802	1303	812	1319	768	1248	733	1192	747	1214	
			F		6.8+11.4R	7.5+7.4R	7.9+5.5R	8.1+4.4R	8.3+3.6R	8.4+3.1R	8.5+2.7R	8.5+2.4R	8.6+2.1R										
		24"	q_a	q_f	1062	1726	852	1384	752	1222	692	1125	653	1061	624	1014	603	980	586	953	573	931	
			F		8.1+10.9R	9+7R	9.6+5.1R	9.9+4R	10.1+3.3R	10.3+2.8R	10.4+2.4R	10.5+2.1R	10.6+1.9R										
18	32/5	4"	q_a	q_f	1771	2878	1719	2793	1691	2747	1673	2718	1661	2699	1652	2684	1645	2673	1348	2157	1092	1747	
			F		3.1+21.5R	3.6+14.3R	3.8+10.7R	3.9+8.6R	4+7.1R	4.1+6.1R	4.1+5.4R	4.2+4.8R	4.2+4.3R										
		6"	q_a	q_f	1510	2454	1427	2320	1383	2247	1355	2201	1336	2170	1322	2148	1311	2130	1303	2117	1092	1747	
			F		3.8+21.4R	4.3+14.2R	4.6+10.7R	4.7+8.5R	4.8+7.1R	4.9+6.1R	5+5.3R	5+4.7R	5+4.3R										
		8"	q_a	q_f	1327	2157	1225	1990	1169	1900	1135	1844	1111	1806	1094	1778	1081	1757	1071	1740	1063	1727	
			F		4.5+21.2R	5.1+14.1R	5.4+10.6R	5.5+8.5R	5.6+7.1R	5.7+6R	5.8+5.3R	5.8+4.7R	5.9+4.2R										
		12"	q_a	q_f	1101	1789	976	1586	909	1477	868	1410	839	1364	819	1331	804	1306	792	1286	782	1271	
			F		5.8+21R	6.5+13.9R	6.8+10.4R	7+8.3R	7.2+6.9R	7.3+5.9R	7.4+5.2R	7.4+4.6R	7.5+4.1R										
		18"	q_a	q_f	970	1789	784	1273	761	1237	685	1113	633	1028	641	1042	607	987	581	943	592	962	
			F		7.5+20.5R	8.4+13.5R	8.9+10R	9.2+8R	9.4+6.6R	9.5+5.7R	9.7+4.9R	9.7+4.4R	9.8+3.9R										
		24"	q_a	q_f	828	1345	669	1086	592	962	546	887	516	838	494	802	477	775	464	755	454	738	
			F		8.9+20R	10.1+13R	10.8+9.6R	11.2+7.6R	11.5+6.3R	11.7+5.3R	11.8+4.7R	12+4.1R	12.1+3.7R										
20	32/5	4"	q_a	q_f	1295	2104	1259	2047	1240	2015	1228	1996	1220	1982	1214	1972	1120	1791	885	1416	717	1147	
			F		2.9+44R	3.8+29.3R	4.3+22R	4.6+17.6R	4.8+14.6R	4.9+12.6R	5+11R	5.1+9.8R	5.1+8.8R										
		6"	q_a	q_f	1108	1800	1051	1707	1020	1657	1000	1625	987	1603	977	1588	970	1576	885	1416	717	1147	
			F		3.8+43.9R	4.7+29.2R	5.2+21.9R	5.5+17.5R	5.7+14.6R	5.8+12.5R	5.9+11R	6+9.7R	6.1+8.8R										
		8"	q_a	q_f	975	1585	903	1467	864	1404	840	1365	823	1338	811	1318	802	1303	795	1292	717	1147	
			F		4.6+43.7R	5.6+29.1R	6.1+21.8R	6.4+17.5R	6.6+14.5R	6.8+12.5R	6.9+10.9R	7+9.7R	7+8.7R										
		12"	q_a	q_f	809	1314	720	1170	672	1093	643	1045	623	1012	608	989	597	971	589	957	582	946	
			F		6+43.4R	7.2+28.9R	7.8+21.6R	8.2+17.3R	8.4+14.4R	8.6+12.3R	8.7+10.8R	8.8+9.6R	8.9+8.6R										
		18"	q_a	q_f	712	1314	577	938	563	914	507	824	469	763	476	774	451	734	432	702	441	716	
			F		8+42.9R	9.4+28.4R	10.2+21.2R	10.6+16.9R	10.9+14.1R	11.2+12R	11.4+10.5R	11.5+9.3R	11.6+8.4R										
		24"	q_a	q_f	606	984	493	801	438	711	405	658	383	622	367	596	355	577	346	562	338	550	
			F		9.6+42.3R	11.4+27.9R	12.3+20.7R	12.9+16.5R	13.3+13.7R	13.6+11.7R	13.9+10.2R	14.1+9R	14.2+8.1R										
22	32/5	4"	q_a	q_f	1063	1728	1035	1682	1020	1658	1011	1642	1004	1632	999	1624	857	1372	677	1084	549	878	
			F		2.3+69.5R	3.7+46.3R	4.5+34.7R	4.9+27.8R	5.2+23.2R	5.4+19.9R	5.5+17.4R	5.7+15.4R	5.7+13.9R										
		6"	q_a	q_f	912	1481	866	1407	841	1367	825	1341	815	1324	807	1311	801	1302	677	1084	549	878	
			F		3.2+69.4R	4.7+46.2R	5.5+34.7R	5.9+27.7R	6.2+23.1R	6.4+19.8R	6.6+17.3R	6.7+15.4R	6.8+13.9R										
		8"	q_a	q_f	803	1305	745	1210	714	1160	694	1128	681	1106	671	1090	664	1078	658	1069	549	878	
			F		4.1+69.2R	5.7+46.1R	6.4+34.6R	6.9+27.7R	7.2+23R	7.4+19.7R	7.6+17.3R	7.7+15.4R	7.8+13.8R										
		12"	q_a	q_f	666	1082	594	965	556	903	532	864	515	838	504	819	495	804	488	793	482	784	
			F		5.7+68.9R	7.4+45.8R	8.3+34.3R	8.8+27.5R	9.2+22.9R	9.4+19.6R	9.6+17.1R	9.8+15.2R	9.9+13.7R										
		18"	q_a	q_f	586	1082	476	773	465	755	419	681	388	631	394	641	374	608	358	581	365	594	
			F		7.8+68.3R	9.8+45.3R	10.9+33.9R	11.5+27.1R	12+22.5R	12.3+19.3R	12.5+16.8R	12.7+15R	12.8+13.5R										
		24"	q_a	q_f	498	809	407	661	362	588	335	544	317	515	304	494	294	478	287	466	281	456	
			F		9.6+67.7R	12+44.7R	13.3+33.4R	14+26.6R	14.6+22.1R	15+18.9R	15.3+16.5R	15.5+14.6R	15.7+13.1R										

N PANELS

4.1 DG2W-36 & 2W-36



Attachment Patterns



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
22	1.57	0.0299	38	52	0.462	0.377	1.06	0.355	0.902
20	1.88	0.0359	38	52	0.553	0.450	1.06	0.434	0.900
18	2.49	0.0478	38	52	0.735	0.590	1.06	0.557	0.898
16	3.11	0.0598	38	52	0.914	0.730	1.06	0.688	0.895

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _d = (2I _{e+} +I _{e-})/3	
22	0.354	0.297	0.99	0.297	1.14	0.343	0.337	0.354	0.350
20	0.466	0.377	1.02	0.378	1.11	0.427	0.420	0.434	0.430
18	0.705	0.537	1.06	0.535	1.07	0.590	0.583	0.590	0.585
16	0.914	0.663	1.06	0.663	1.06	0.730	0.730	0.730	0.730

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	240	272	299	344	367	416	457	527
	Interior	401	447	485	548	597	664	721	816
20	End	342	386	423	485	523	590	647	742
	Interior	574	635	687	773	853	944	1021	1150
18	End	593	665	725	826	908	1017	1109	1264
	Interior	1002	1101	1184	1324	1491	1638	1762	1970
16	End	907	1011	1098	1244	1388	1547	1680	1904
	Interior	1541	1683	1803	2005	2292	2504	2682	2982

Web Crippling Constraints

h=2.16"

r=0.125"

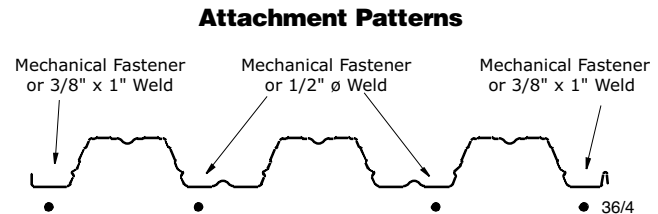
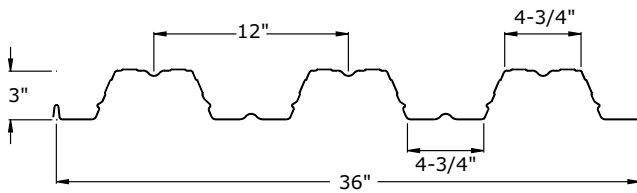
θ=64°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
22	SS	f_b / Ω	281	125	70	45	31	23	18	14	11
		Φf_b	446	198	111	71	50	36	28	22	18
		L/360	242	72	30	15	9	6	4	3	2
		L/240	-	108	45	23	13	8	6	4	3
		L/180	-	-	60	31	18	11	8	5	4
	L/120	-	-	-	-	27	17	11	8	6	
	DS	f_b / Ω	281	125	70	45	31	23	18	14	11
		Φf_b	446	198	111	71	50	36	28	22	18
		L/360	-	-	-	37	22	14	9	6	5
		L/240	-	-	-	-	-	20	14	10	7
		L/180	-	-	-	-	-	-	-	13	9
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	351	156	88	56	39	29	Exceeds Maximum Product Length		
		Φf_b	557	248	139	89	62	46			
		L/360	-	-	67	34	20	12			
L/240		-	-	-	51	30	19				
L/180		-	-	-	-	-	25				
L/120	-	-	-	-	-	-					
20	SS	f_b / Ω	357	159	89	57	40	29	22	18	14
		Φf_b	567	252	142	91	63	46	35	28	23
		L/360	297	88	37	19	11	7	5	3	2
		L/240	-	132	56	28	16	10	7	5	4
		L/180	-	-	74	38	22	14	9	7	5
	L/120	-	-	-	57	33	21	14	10	7	
	DS	f_b / Ω	358	159	90	57	40	29	22	18	14
		Φf_b	569	253	142	91	63	46	36	28	23
		L/360	-	-	89	46	26	17	11	8	6
		L/240	-	-	-	-	40	25	17	12	9
		L/180	-	-	-	-	-	-	22	16	11
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	448	199	112	72	50	37	Exceeds Maximum Product Length		
		Φf_b	711	316	178	114	79	58			
		L/360	-	194	82	42	24	15			
L/240		-	-	-	63	36	23				
L/180		-	-	-	-	49	31				
L/120	-	-	-	-	-	-					
18	SS	f_b / Ω	509	226	127	81	57	42	32	25	20
		Φf_b	807	359	202	129	90	66	50	40	32
		L/360	403	119	50	26	15	9	6	4	3
		L/240	-	179	76	39	22	14	9	7	5
		L/180	-	-	101	52	30	19	13	9	6
	L/120	-	-	-	77	45	28	19	13	10	
	DS	f_b / Ω	507	225	127	81	56	41	32	25	20
		Φf_b	804	357	201	129	89	66	50	40	32
		L/360	-	-	121	62	36	23	15	11	8
		L/240	-	-	-	-	54	34	23	16	12
		L/180	-	-	-	-	-	-	30	21	16
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	634	282	158	101	70	52	Exceeds Maximum Product Length		
		Φf_b	1005	447	251	161	112	82			
		L/360	-	263	111	57	33	21			
L/240		-	-	-	85	49	31				
L/180		-	-	-	-	66	41				
L/120	-	-	-	-	-	-					
16	SS	f_b / Ω	629	279	157	101	70	51	39	31	25
		Φf_b	997	443	249	160	111	81	62	49	40
		L/360	498	148	62	32	18	12	8	5	4
		L/240	-	222	93	48	28	17	12	8	6
		L/180	-	-	125	64	37	23	16	11	8
	L/120	-	-	-	96	55	35	23	16	12	
	DS	f_b / Ω	629	279	157	101	70	51	39	31	25
		Φf_b	997	443	249	160	111	81	62	49	40
		L/360	-	-	150	77	44	28	19	13	10
		L/240	-	-	-	-	67	42	28	20	14
		L/180	-	-	-	-	-	-	38	26	19
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	786	349	196	126	87	64	Exceeds Maximum Product Length		
		Φf_b	1247	554	312	199	139	102			
		L/360	-	326	138	70	41	26			
L/240		-	-	-	106	61	38				
L/180		-	-	-	-	81	51				
L/120	-	-	-	-	-	-					

2W & 3W PANELS

4.1 DG3W-36 & 3W-36



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
22	1.73	0.0299	38	52	0.508	0.773	1.44	0.536	1.234
20	2.07	0.0359	38	52	0.608	0.923	1.44	0.640	1.232
18	2.74	0.0478	38	52	0.807	1.220	1.45	0.843	1.229
16	3.42	0.0598	38	52	1.005	1.510	1.45	1.043	1.226

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _u = (2I _e +I _g)/3	
	A _e ⁺ in ² /ft	S _e ⁺ in ³ /ft	y _b in	S _e ⁻ in ³ /ft	y _b in	I _e ⁺ in ⁴ /ft	I _e ⁻ in ⁴ /ft	I _u ⁺ in ⁴ /ft	I _u ⁻ in ⁴ /ft
22	0.365	0.449	1.38	0.467	1.53	0.723	0.713	0.740	0.733
20	0.480	0.566	1.41	0.586	1.49	0.897	0.883	0.906	0.897
18	0.716	0.783	1.45	0.781	1.46	1.220	1.210	1.220	1.213
16	0.944	0.970	1.45	0.970	1.44	1.510	1.510	1.510	1.510

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
22	End	234	265	291	335	357	405	446	513
	Interior	409	454	493	558	608	676	733	830
20	End	335	378	414	475	512	578	633	726
	Interior	584	646	699	788	869	962	1040	1171
18	End	586	656	716	815	896	1004	1095	1247
	Interior	1021	1122	1207	1350	1519	1669	1796	2008
16	End	900	1002	1089	1234	1377	1534	1666	1888
	Interior	1571	1716	1839	2044	2337	2553	2735	3041

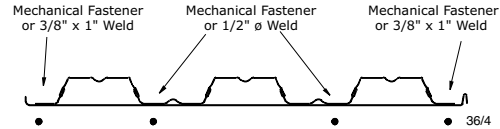
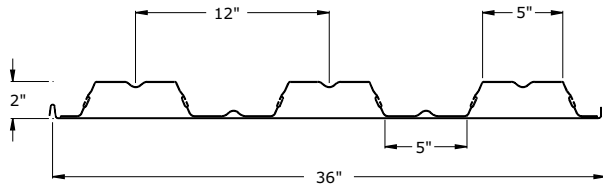
Web Crippling Constraints h=3" r=0.125" θ=67°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)									
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	
22	SS	f_b / Ω	426	189	106	68	47	35	27	21	17	
		Φf_b	675	300	169	108	75	55	42	33	27	
		L/360	-	150	63	32	19	12	8	6	4	
		L/240	-	-	95	49	28	18	12	8	6	
		L/180	-	-	-	65	37	24	16	11	8	
	L/120	-	-	-	-	-	-	24	17	12		
	DS	f_b / Ω	443	197	111	71	49	36	28	22	18	
		Φf_b	702	312	176	112	78	57	44	35	28	
		L/360	-	-	-	-	45	28	19	13	10	
		L/240	-	-	-	-	-	-	-	20	15	
		L/180	-	-	-	-	-	-	-	-	-	
	L/120	-	-	-	-	-	-	-	-	-		
	TS	f_b / Ω	553	246	138	89	61	45	Exceeds Maximum Product Length			
		Φf_b	878	390	220	140	98	72				
		L/360	-	-	-	71	41	26				
L/240		-	-	-	-	-	39					
L/180		-	-	-	-	-	-					
L/120	-	-	-	-	-	-						
20	SS	f_b / Ω	537	239	134	86	60	44	34	27	21	
		Φf_b	851	378	213	136	95	69	53	42	34	
		L/360	-	183	77	40	23	14	10	7	5	
		L/240	-	-	116	59	34	22	14	10	7	
		L/180	-	-	-	79	46	29	19	14	10	
	L/120	-	-	-	-	-	43	29	20	15		
	DS	f_b / Ω	555	247	139	89	62	45	35	27	22	
		Φf_b	881	392	220	141	98	72	55	44	35	
		L/360	-	-	-	-	55	35	23	16	12	
		L/240	-	-	-	-	-	-	-	25	18	
		L/180	-	-	-	-	-	-	-	-	-	
	L/120	-	-	-	-	-	-	-	-	-		
	TS	f_b / Ω	694	309	174	111	77	57	Exceeds Maximum Product Length			
		Φf_b	1101	489	275	176	122	90				
		L/360	-	-	171	87	51	32				
L/240		-	-	-	-	76	48					
L/180		-	-	-	-	-	-					
L/120	-	-	-	-	-	-						
18	SS	f_b / Ω	743	330	186	119	83	61	46	37	30	
		Φf_b	1178	524	295	189	131	96	74	58	47	
		L/360	-	247	104	53	31	19	13	9	7	
		L/240	-	-	156	80	46	29	20	14	10	
		L/180	-	-	-	107	62	39	26	18	13	
	L/120	-	-	-	-	-	58	39	27	20		
	DS	f_b / Ω	741	329	185	119	82	60	46	37	30	
		Φf_b	1175	522	294	188	131	96	73	58	47	
		L/360	-	-	-	-	74	47	31	22	16	
		L/240	-	-	-	-	-	-	-	33	24	
		L/180	-	-	-	-	-	-	-	-	-	
	L/120	-	-	-	-	-	-	-	-	-		
	TS	f_b / Ω	926	412	231	148	103	76	Exceeds Maximum Product Length			
		Φf_b	1469	653	367	235	163	120				
		L/360	-	-	230	118	68	43				
L/240		-	-	-	-	102	64					
L/180		-	-	-	-	-	-					
L/120	-	-	-	-	-	-						
16	SS	f_b / Ω	920	409	230	147	102	75	57	45	37	
		Φf_b	1459	648	365	233	162	119	91	72	58	
		L/360	-	306	129	66	38	24	16	11	8	
		L/240	-	-	193	99	57	36	24	17	12	
		L/180	-	-	-	132	76	48	32	23	16	
	L/120	-	-	-	-	-	72	48	34	25		
	DS	f_b / Ω	920	409	230	147	102	75	57	45	37	
		Φf_b	1459	648	365	233	162	119	91	72	58	
		L/360	-	-	-	-	92	58	39	27	20	
		L/240	-	-	-	-	-	-	-	41	30	
		L/180	-	-	-	-	-	-	-	-	-	
	L/120	-	-	-	-	-	-	-	-	-		
	TS	f_b / Ω	1150	511	287	184	128	94	Exceeds Maximum Product Length			
		Φf_b	1824	811	456	292	203	149				
		L/360	-	-	284	146	84	53				
L/240		-	-	-	-	126	80					
L/180		-	-	-	-	-	-					
L/120	-	-	-	-	-	-						

2W & 3W PANELS

4.1 DG2WF-36 & 2WF-36



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.

Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	3.60	0.674	0.416	0.435
20/18	4.18	0.741	0.423	0.451
20/16	4.55	0.797	0.429	0.463
18/20	4.15	0.901	0.601	0.600
18/18	4.67	0.928	0.611	0.592
18/16	5.10	1.003	0.621	0.608
16/16	5.79	1.196	0.771	0.749

Allowable Reactions, plf

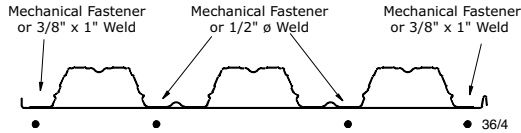
Gage		Bearing Length						
		1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
20/20	End	286	318	350	382	414	446	477
	Interior	628	680	733	804	886	968	1051
20/18	End	286	318	350	382	414	446	477
	Interior	628	680	733	804	886	968	1051
20/16	End	286	318	350	382	414	446	477
	Interior	628	680	733	804	886	968	1051
18/20	End	615	669	723	777	831	884	938
	Interior	1181	1258	1334	1411	1493	1613	1733
18/18	End	615	669	723	777	831	884	938
	Interior	1181	1258	1334	1411	1493	1613	1733
18/16	End	615	669	723	777	831	884	938
	Interior	1181	1258	1334	1411	1493	1613	1733
16/16	End	1054	1130	1207	1283	1360	1436	1512
	Interior	1902	2003	2104	2205	2306	2407	2544

Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

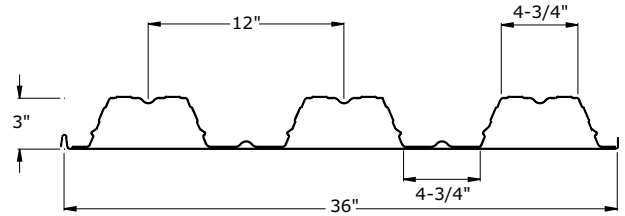
Span Condition	Gage		Span										
			6'0"	7'0"	8'0"	9'0"	10'0"	11'0"	12'0"	13'0"	14'0"	15'0"	16'0"
SINGLE SPAN	20/20	f_b/Ω	175	129	98	78	63	52	43	37	32	28	24
		L/240	175	129	86	60	44	33	25	20	16	13	10
	20/18	f_b/Ω	178	131	100	79	64	53	44	38	32	28	25
		L/240	178	131	95	66	48	36	28	22	17	14	11
	20/16	f_b/Ω	181	133	101	80	65	53	45	38	33	28	25
		L/240	181	133	101	71	52	39	30	23	19	15	12
	18/20	f_b/Ω	253	186	142	112	91	75	63	54	46	40	35
		L/240	253	172	115	81	59	44	34	26	21	17	14
	18/18	f_b/Ω	257	189	145	114	92	76	64	54	47	41	36
		L/240	257	177	119	83	60	45	35	27	22	18	14
	18/16	f_b/Ω	262	192	147	116	94	78	65	55	48	41	36
		L/240	262	192	128	90	65	49	38	29	24	19	16
16/16	f_b/Ω	325	239	183	144	117	96	81	69	59	52	45	
	L/240	325	228	153	107	78	59	45	35	28	23	19	
DOUBLE SPAN	20/20	f_b/Ω	183	134	103	81	66	54	45	39	33	29	25
		L/240	183	134	103	81	66	54	45	39	33	29	25
	20/18	f_b/Ω	190	139	107	84	68	56	47	40	34	30	26
		L/240	190	139	107	84	68	56	47	40	34	30	26
	20/16	f_b/Ω	195	143	109	86	70	58	48	41	35	31	27
		L/240	195	143	109	86	70	58	48	41	35	31	27
	18/20	f_b/Ω	253	186	142	112	91	75	63	53	46	40	35
		L/240	253	186	142	112	91	75	63	53	46	40	34
	18/18	f_b/Ω	249	183	140	111	89	74	62	53	45	39	35
		L/240	249	183	140	111	89	74	62	53	45	39	35
	18/16	f_b/Ω	256	188	144	114	92	76	64	54	47	41	36
		L/240	256	188	144	114	92	76	64	54	47	41	36
16/16	f_b/Ω	316	232	177	140	113	94	79	67	58	50	44	
	L/240	316	232	177	140	113	94	79	67	58	50	44	
TRIPLE SPAN	20/20	f_b/Ω	229	168	129	102	82	68	57	48			
		L/240	229	168	129	102	82	62	48	37			
	20/18	f_b/Ω	238	174	133	105	85	70	59	50			
		L/240	238	174	133	105	85	68	53	41			
	20/16	f_b/Ω	244	179	137	108	87	72	61	52			
		L/240	244	179	137	108	87	72	57	44			
	18/20	f_b/Ω	316	232	178	140	114	94	79	67			
		L/240	316	232	178	140	114	86	66	52			
	18/18	f_b/Ω	312	229	175	138	112	92	78	66			
		L/240	312	229	175	138	112	86	66	52			
	18/16	f_b/Ω	320	235	180	142	115	95	80	68			
		L/240	320	235	180	142	115	93	71	56			
16/16	f_b/Ω	395	290	222	175	142	117	98	84				
	L/240	395	290	222	175	142	111	85	67				

Exceeds
Maximum
Product Length

Based on AISI 2001 NASPEC with 2004 Supplement



Note: Weld sizes are effective not visible. Refer to AISI S100-2007 or AWS D1.3 for additional welding requirements.



Allowable Reactions, pif

Gage		Bearing Length						
		1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
20/20	End	275	306	337	367	398	429	459
	Interior	615	666	717	787	867	948	1028
20/18	End	275	306	337	367	398	429	459
	Interior	615	666	717	787	867	948	1028
20/16	End	275	306	337	367	398	429	459
	Interior	615	666	717	787	867	948	1028
18/20	End	602	655	707	760	813	866	919
	Interior	1170	1246	1322	1398	1479	1598	1717
18/18	End	502	655	707	760	813	866	919
	Interior	1170	1246	1322	1398	1479	1598	1717
18/16	End	602	655	707	760	813	866	919
	Interior	1170	1246	1322	1398	1479	1598	1717
16/16	End	1042	1117	1193	1268	1344	1419	1495
	Interior	1898	1998	2099	2200	2300	2401	2538

Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	3.44	1.328	0.623	0.623
20/18	3.96	1.469	0.634	0.646
20/16	4.45	1.585	0.646	0.666
18/20	4.10	1.662	0.870	0.832
18/18	4.59	1.832	0.885	0.855
18/16	5.11	1.984	0.899	0.873
16/16	5.73	2.350	1.113	1.080

Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span											
			10'0"	11'0"	12'0"	13'0"	14'0"	15'0"	16'0"	17'0"	18'0"	19'0"	20'0"	
SINGLE SPAN	20/20	f _b /Ω	94	78	65	56	48	42	36	32	29	26	23	
		L/240	87	65	50	39	31	25	21	17	14	12	10	
	20/18	f _b /Ω	96	79	66	57	49	42	37	33	29	26	24	
		L/240	96	72	55	43	35	28	23	19	16	14	12	
	20/16	f _b /Ω	97	80	67	57	49	43	38	33	30	27	24	
		L/240	97	78	60	47	37	30	25	21	17	15	13	
	18/20	f _b /Ω	132	109	91	78	67	58	51	45	40	36	33	
		L/240	109	81	63	49	39	32	26	22	18	15	13	
	18/18	f _b /Ω	134	111	93	79	68	59	52	46	41	37	33	
		L/240	120	90	69	54	43	35	29	24	20	17	15	
	18/16	f _b /Ω	136	112	94	80	69	60	53	47	42	37	34	
		L/240	130	97	75	59	47	38	31	26	22	18	16	
	16/16	f _b /Ω	169	139	117	100	86	75	66	58	52	46	42	
		L/240	154	115	89	70	56	45	37	31	26	22	19	
DOUBLE SPAN	20/20	f _b /Ω	94	78	65	56	48	42	36	32	29	26	23	
		L/240	94	78	65	56	48	42	36	32	29	26	23	
	20/18	f _b /Ω	98	81	68	58	50	43	38	33	30	27	24	
		L/240	98	81	68	58	50	43	38	33	30	27	24	
	20/16	f _b /Ω	101	83	70	59	51	44	39	35	31	28	25	
		L/240	101	83	70	59	51	44	39	35	31	28	25	
	18/20	f _b /Ω	126	104	87	74	64	56	49	43	39	35	31	
		L/240	126	104	87	74	64	56	49	43	39	35	31	
	18/18	f _b /Ω	129	107	90	76	66	57	50	44	40	36	32	
		L/240	129	107	90	76	66	57	50	44	40	36	32	
	18/16	f _b /Ω	132	109	92	78	67	58	51	45	40	36	33	
		L/240	132	109	92	78	67	58	51	45	40	36	33	
	16/16	f _b /Ω	164	135	114	97	83	72	64	56	50	45	41	
		L/240	164	135	114	97	83	72	64	56	50	45	41	
TRIPLE SPAN	20/20	f _b /Ω	118	97	82	70								
		L/240	118	97	82	70								
	20/18	f _b /Ω	122	101	85	72								
		L/240	122	101	85	72								
	20/16	f _b /Ω	126	104	87	74								
		L/240	126	104	87	74								
	18/20	f _b /Ω	158	130	109	93								
		L/240	158	130	109	93								
	18/18	f _b /Ω	162	134	112	96								
		L/240	162	134	112	96								
	18/16	f _b /Ω	165	137	115	98								
		L/240	165	137	115	98								
	16/16	f _b /Ω	205	169	142	121								
		L/240	205	169	142	121								

Exceeds
Maximum
Product Length

Based on AISI 2001 NASPEC with 2004 Supplement

4.2 DG2W-36, DG2WF-36, DG3W-36 & DG3WF-36



Arc Spot/Seam Welds to Supports with DeltaGrip® Side Seam Attachment

Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Spacing	Span									
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	
22	36/4	4"	q_a	973	939	919	907	898	798	611	483	391
			F	7.3-0.9R	7.8-0.8R	8-0.7R	8.2-0.6R	8.3-0.5R	8.4-0.4R	8.4-0.4R	8.5-0.4R	8.5-0.3R
		8"	q_a	811	739	696	669	650	635	611	483	391
			F	9.3-2R	10.3-2R	11-1.8R	11.5-1.7R	11.8-1.4R	12-1.3R	12.3-1.2R	12.4-1.1R	12.6-1.1R
		12"	q_a	723	630	575	524	490	465	447	433	391
			F	10.5-2.8R	12.1-3R	13.2-2.9R	14-2.8R	14.5-2.3R	15-2.2R	15.4-2.1R	15.8-2R	16.1-1.9R
		18"	q_a	670	524	473	402	354	349	320	298	300
F	11.2-3.4R		13.8-4.2R	14.8-3.9R	16.5-4.1R	17.6-3.6R	17.9-3.3R	18.8-3.3R	19.8-3.3R	19.8-3.1R		
24"	q_a	610	457	372	321	287	262	244	230	219		
	F	12.3-4.2R	15-5.1R	17.2-5.4R	18.9-5.6R	19.9-4.6R	21.2-4.7R	22-4.5R	23-4.6R	23.8-4.5R		
36"	q_a	610	389	321	280	219	204	193	162	158		
	F	12.3-4.2R	16.6-6.4R	18.7-6.6R	20.5-6.6R	23.1-6.2R	24.3-6.2R	25-5.8R	27.7-6.6R	28.4-6.4R		
60"	q_a	525	389	270	199	185	146	143	117	97		
	F	13.6-5.4R	16.6-6.4R	20.7-8.1R	24.8-9.9R	25.2-7.3R	28.8-8.5R	29.2-7.8R	32.3-8.8R	35.5-9.7R		
20	36/4	4"	q_a	1213	1183	1166	1155	1147	1060	811	641	519
			F	5.8-0.6R	6-0.5R	6.2-0.4R	6.2-0.3R	6.3-0.3R	6.3-0.3R	6.4-0.2R	6.4-0.2R	6.4-0.2R
		8"	q_a	1026	953	910	882	862	848	811	641	519
			F	7.4-1.4R	8.1-1.3R	8.5-1.1R	8.8-1R	8.9-0.8R	9.1-0.8R	9.2-0.7R	9.3-0.7R	9.4-0.6R
		12"	q_a	914	814	756	719	692	672	650	633	519
			F	8.5-2R	9.6-2.1R	10.3-1.9R	10.8-1.8R	11.1-1.5R	11.4-1.4R	11.7-1.3R	11.9-1.2R	12.1-1.2R
		18"	q_a	844	696	655	564	504	503	465	436	442
F	9.2-2.6R		11.2-3.1R	11.7-2.7R	12.9-2.8R	13.7-2.4R	13.8-2.2R	14.4-2.1R	15.1-2.2R	15-2R		
24"	q_a	762	609	507	446	405	376	354	337	324		
	F	10.2-3.3R	12.3-3.9R	13.8-4R	15-3.9R	15.7-3.3R	16.6-3.3R	17.2-3.1R	17.8-3.1R	18.3-3R		
36"	q_a	762	510	433	387	307	292	280	239	235		
	F	10.2-3.3R	13.8-5R	15.4-5R	16.5-4.8R	18.7-4.6R	19.4-4.5R	19.8-4.2R	21.9-4.7R	22.2-4.5R		
60"	q_a	664	510	359	268	257	207	206	173	146		
	F	11.6-4.5R	13.8-5R	17.3-6.4R	20.8-7.8R	20.8-5.7R	23.7-6.6R	23.7-5.8R	26.2-6.6R	28.8-7.3R		
18	36/4	4"	q_a	1687	1665	1653	1645	1639	1635	1253	990	802
			F	3.9-0.3R	4-0.2R	4.1-0.2R	4.1-0.1R	4.1-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R
		8"	q_a	1471	1403	1363	1337	1318	1305	1253	990	802
			F	5.1-0.7R	5.4-0.6R	5.6-0.5R	5.7-0.4R	5.8-0.4R	5.8-0.3R	5.9-0.3R	5.9-0.3R	6-0.3R
		12"	q_a	1320	1215	1153	1113	1085	1064	1048	990	802
			F	5.9-1.1R	6.5-1R	6.8-0.9R	7.1-0.8R	7.2-0.7R	7.3-0.6R	7.4-0.6R	7.5-0.5R	7.6-0.5R
		18"	q_a	1216	1037	1010	927	867	875	828	783	801
F	6.6-1.5R		7.8-1.7R	7.9-1.4R	8.6-1.4R	9-1.2R	8.9-1R	9.3-1R	9.7-1R	9.5-0.9R		
24"	q_a	1087	928	829	749	695	656	628	605	587		
	F	7.5-2.2R	8.8-2.3R	9.6-2.2R	10.2-2.1R	10.6-1.7R	11-1.7R	11.3-1.6R	11.5-1.5R	11.8-1.5R		
36"	q_a	1087	786	696	642	517	504	494	427	427		
	F	7.5-2.2R	10.2-3.2R	10.9-3R	11.4-2.7R	13-2.7R	13.2-2.5R	13.3-2.3R	14.7-2.5R	14.7-2.3R		
60"	q_a	929	786	562	428	428	352	361	309	267		
	F	9-3.3R	10.2-3.2R	12.7-4.2R	15.3-5.1R	14.8-3.5R	16.9-4.1R	16.4-3.5R	18.2-3.9R	20-4.3R		
16	36/4	4"	q_a	2146	2130	2121	2115	2111	2108	1757	1388	1125
			F	2.9-0.1R	3-0.1R	3-0.1R	3-0.1R	3-0.1R	3+0R	3+0R	3+0R	3+0R
		8"	q_a	1922	1862	1827	1804	1788	1777	1757	1388	1125
			F	3.8-0.4R	3.9-0.3R	4-0.3R	4.1-0.2R	4.1-0.2R	4.2-0.2R	4.2-0.1R	4.2-0.1R	4.2-0.1R
		12"	q_a	1742	1640	1580	1541	1513	1493	1477	1388	1125
			F	4.4-0.7R	4.7-0.6R	4.9-0.5R	5-0.4R	5.1-0.4R	5.2-0.3R	5.2-0.3R	5.3-0.3R	5.3-0.3R
		18"	q_a	1609	1408	1396	1298	1227	1247	1198	1158	1125
F	5-1R		5.8-1R	5.7-0.8R	6.1-0.8R	6.5-0.7R	6.3-0.6R	6.6-0.5R	6.8-0.5R	6.6-0.5R		
24"	q_a	1433	1258	1156	1090	1044	1007	971	943	921		
	F	5.8-1.4R	6.6-1.4R	7.1-1.3R	7.4-1.2R	7.6-1R	7.8-1R	8-0.9R	8.1-0.8R	8.2-0.8R		
36"	q_a	1433	1080	1010	952	774	766	761	663	669		
	F	5.8-1.4R	7.8-2.2R	8.1-1.9R	8.4-1.6R	9.6-1.7R	9.6-1.5R	9.5-1.3R	10.5-1.5R	10.4-1.3R		
60"	q_a	1204	1080	799	616	634	526	551	476	417		
	F	7.2-2.4R	7.8-2.2R	9.8-2.8R	11.7-3.4R	11.1-2.3R	12.6-2.7R	12.1-2.2R	13.4-2.4R	14.6-2.7R		

ASC Steel Deck



**DG2W-36, DG2WF-36, 4.2
DG3W-36 & DG3WF-36**
No. 12 Self-Drilling Screws to Supports with
DeltaGrip® Side Seam Attachment

Allowable Diaphragm Shear, q_a (plf)
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Screws	Spacing	Span									
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	
22	36/4	4"	q_a	562	559	557	556	555	555	554	483	391
			F	7.5-0.9R	7.9-0.8R	8.1-0.6R	8.2-0.5R	8.3-0.5R	8.4-0.4R	8.5-0.4R	8.5-0.3R	8.6-0.3R
		8"	q_a	510	497	489	484	481	478	477	475	391
			F	9.6-2R	10.6-1.9R	11.3-1.8R	11.7-1.6R	12-1.3R	12.3-1.2R	12.5-1.1R	12.6-1.1R	12.8-1R
		12"	q_a	465	442	428	419	413	408	405	402	391
			F	10.9-2.9R	12.6-3R	13.6-2.9R	14.4-2.7R	14.9-2.3R	15.4-2.2R	15.8-2R	16.1-1.9R	16.4-1.9R
		18"	q_a	430	381	380	356	338	344	332	322	328
F	11.9-3.6R		14.6-4.3R	15.5-3.9R	17.2-4.1R	18.3-3.6R	18.5-3.3R	19.5-3.2R	20.4-3.3R	20.4-3R		
24"	q_a	384	341	316	300	286	274	264	257	252		
	F	13.1-4.5R	16-5.4R	18.1-5.6R	19.9-5.7R	20.9-4.7R	22.1-4.7R	23-4.6R	23.9-4.5R	24.7-4.5R		
36"	q_a	384	291	268	254	205	204	204	176	178		
	F	13.1-4.5R	17.7-6.8R	20-6.9R	21.7-6.8R	24.6-6.4R	25.7-6.4R	26.4-6R	29.2-6.7R	29.8-6.5R		
60"	q_a	320	291	207	157	164	134	143	122	105		
	F	14.6-5.9R	17.7-6.8R	22.3-8.7R	26.8-10.5R	27-7.7R	30.9-9R	31.1-8.1R	34.5-9.1R	38-10.2R		
20	36/4	4"	q_a	689	687	685	684	684	683	683	641	519
			F	5.8-0.5R	6.1-0.4R	6.2-0.4R	6.3-0.3R	6.3-0.3R	6.4-0.2R	6.4-0.2R	6.4-0.2R	6.5-0.2R
		8"	q_a	637	625	619	615	612	610	608	607	519
			F	7.6-1.4R	8.3-1.2R	8.6-1.1R	8.9-1R	9.1-0.8R	9.2-0.7R	9.3-0.7R	9.4-0.6R	9.5-0.6R
		12"	q_a	587	566	553	544	538	534	531	528	519
			F	8.8-2.1R	9.9-2R	10.6-1.9R	11.1-1.7R	11.4-1.4R	11.7-1.3R	11.9-1.2R	12.1-1.2R	12.2-1.1R
		18"	q_a	547	494	497	470	450	459	444	433	441
F	9.7-2.6R		11.7-3.1R	12.1-2.6R	13.3-2.7R	14.2-2.4R	14.2-2.1R	14.8-2.1R	15.5-2.1R	15.3-1.9R		
24"	q_a	488	443	416	399	387	378	371	365	361		
	F	10.8-3.5R	13-4R	14.5-4R	15.7-3.9R	16.4-3.3R	17.2-3.2R	17.8-3.1R	18.4-3R	18.9-2.9R		
36"	q_a	488	378	364	355	292	294	296	258	263		
	F	10.8-3.5R	14.7-5.3R	16.2-5.1R	17.4-4.9R	19.7-4.7R	20.4-4.5R	20.7-4.2R	22.9-4.7R	23.1-4.4R		
60"	q_a	404	378	285	218	233	193	207	179	156		
	F	12.5-4.9R	14.7-5.3R	18.5-6.8R	22.3-8.2R	22.1-5.9R	25.3-6.9R	25-6R	27.8-6.8R	30.5-7.5R		
18	36/4	4"	q_a	941	939	938	938	937	937	937	937	802
			F	4-0.2R	4.1-0.2R	4.1-0.1R	4.1-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R
		8"	q_a	892	883	879	876	873	872	871	870	802
			F	5.2-0.7R	5.5-0.6R	5.7-0.5R	5.8-0.4R	5.8-0.3R	5.9-0.3R	5.9-0.3R	6-0.3R	6-0.2R
		12"	q_a	839	820	809	803	798	794	791	789	787
			F	6.1-1.1R	6.6-1R	7-0.9R	7.2-0.8R	7.3-0.6R	7.4-0.6R	7.5-0.5R	7.6-0.5R	7.7-0.5R
		18"	q_a	790	734	744	714	692	705	689	675	687
F	6.8-1.5R		8-1.7R	8.1-1.3R	8.8-1.3R	9.3-1.2R	9.1-1R	9.5-1R	9.8-1R	9.6-0.8R		
24"	q_a	713	665	637	619	606	597	589	584	579		
	F	7.9-2.2R	9.1-2.3R	9.9-2.2R	10.5-2.1R	10.9-1.7R	11.3-1.6R	11.6-1.5R	11.8-1.5R	12-1.4R		
36"	q_a	713	569	561	555	488	495	500	457	466		
	F	7.9-2.2R	10.7-3.3R	11.4-3R	11.8-2.7R	13.5-2.7R	13.7-2.5R	13.7-2.2R	15.2-2.5R	15.1-2.3R		
60"	q_a	586	569	464	368	404	338	369	322	284		
	F	9.6-3.5R	10.7-3.3R	13.5-4.3R	16.2-5.2R	15.6-3.6R	17.8-4.2R	17.2-3.5R	19-3.9R	20.9-4.3R		
16	36/4	4"	q_a	1191	1190	1189	1189	1188	1188	1188	1188	1125
			F	2.9-0.1R	3-0.1R	3-0.1R	3-0.1R	3+0R	3+0R	3+0R	3+0R	3+0R
		8"	q_a	1146	1140	1136	1134	1132	1131	1130	1130	1125
			F	3.8-0.4R	4-0.3R	4.1-0.2R	4.1-0.2R	4.1-0.2R	4.2-0.2R	4.2-0.1R	4.2-0.1R	4.2-0.1R
		12"	q_a	1093	1078	1069	1064	1060	1057	1055	1053	1052
			F	4.5-0.7R	4.8-0.6R	5-0.5R	5.1-0.4R	5.2-0.3R	5.2-0.3R	5.3-0.3R	5.3-0.3R	5.3-0.2R
		18"	q_a	1041	985	1000	970	947	963	947	932	946
F	5.1-0.9R		5.9-1R	5.8-0.7R	6.3-0.7R	6.6-0.6R	6.4-0.5R	6.6-0.5R	6.9-0.5R	6.7-0.4R		
24"	q_a	950	904	877	859	846	837	830	824	820		
	F	6-1.5R	6.8-1.4R	7.3-1.3R	7.6-1.2R	7.8-1R	8-0.9R	8.1-0.8R	8.3-0.8R	8.4-0.7R		
36"	q_a	950	781	780	779	694	707	716	661	674		
	F	6-1.5R	8.1-2.2R	8.4-1.8R	8.6-1.6R	9.9-1.6R	9.8-1.4R	9.8-1.3R	10.8-1.4R	10.6-1.3R		
60"	q_a	784	781	648	547	592	520	563	503	446		
	F	7.6-2.6R	8.1-2.2R	10.2-2.8R	12.3-3.5R	11.5-2.3R	13.2-2.7R	12.5-2.1R	13.8-2.4R	15.2-2.7R		

2W & 3W PANELS

4.2 DG2W-36, DG2WF-36, DG3W-36 & DG3WF-36



Power Actuated Fasteners* (PAF) to Supports with DeltaGrip® Side Seam Attachment

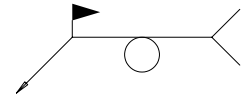
Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Nails	Spacing	Span									
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	
22	36/4	4"	q_a	716	709	704	702	700	698	611	483	391
			F	7.4-0.9R	7.8-0.8R	8.1-0.7R	8.2-0.6R	8.3-0.5R	8.4-0.4R	8.5-0.4R	8.5-0.3R	8.6-0.3R
		8"	q_a	631	605	590	580	573	568	564	483	391
			F	9.5-2R	10.5-1.9R	11.2-1.8R	11.6-1.6R	11.9-1.3R	12.2-1.3R	12.4-1.2R	12.6-1.1R	12.7-1R
		12"	q_a	567	527	503	487	476	468	461	456	391
			F	10.8-2.9R	12.4-3R	13.5-2.9R	14.3-2.7R	14.8-2.3R	15.3-2.2R	15.7-2R	16-2R	16.3-1.9R
		18"	q_a	523	450	441	407	380	387	362	343	352
F	11.7-3.5R		14.3-4.3R	15.3-3.9R	16.9-4.1R	18.1-3.6R	18.3-3.3R	19.3-3.2R	20.2-3.3R	20.2-3R		
24"	q_a	467	402	356	322	299	283	271	262	254		
	F	12.8-4.4R	15.7-5.3R	17.8-5.6R	19.6-5.6R	20.6-4.7R	21.8-4.7R	22.7-4.6R	23.6-4.5R	24.4-4.5R		
36"	q_a	467	331	295	273	218	213	210	180	181		
	F	12.8-4.4R	17.4-6.6R	19.6-6.8R	21.3-6.8R	24.1-6.4R	25.3-6.3R	25.9-5.9R	28.7-6.7R	29.3-6.5R		
60"	q_a	397	331	234	176	177	144	149	126	108		
	F	14.3-5.7R	17.4-6.6R	21.8-8.5R	26.2-10.3R	26.4-7.6R	30.2-8.9R	30.5-8R	33.8-9R	37.2-10R		
20	36/4	4"	q_a	879	873	869	867	866	864	811	641	519
			F	5.8-0.6R	6.1-0.5R	6.2-0.4R	6.3-0.3R	6.3-0.3R	6.4-0.2R	6.4-0.2R	6.4-0.2R	6.5-0.2R
		8"	q_a	790	767	753	745	738	734	730	641	519
			F	7.5-1.4R	8.2-1.2R	8.6-1.1R	8.9-1R	9-0.8R	9.2-0.7R	9.3-0.7R	9.4-0.6R	9.5-0.6R
		12"	q_a	717	677	654	638	627	619	613	608	519
			F	8.7-2.1R	9.8-2R	10.5-1.9R	11-1.7R	11.3-1.4R	11.6-1.4R	11.8-1.3R	12-1.2R	12.2-1.1R
		18"	q_a	663	583	578	539	510	519	499	483	492
F	9.5-2.6R		11.5-3.1R	12-2.7R	13.2-2.7R	14-2.4R	14-2.1R	14.7-2.1R	15.4-2.1R	15.2-1.9R		
24"	q_a	591	520	479	453	428	408	394	383	374		
	F	10.6-3.5R	12.8-3.9R	14.3-4R	15.5-3.9R	16.2-3.3R	17-3.2R	17.6-3.1R	18.2-3R	18.7-3R		
36"	q_a	591	445	407	384	309	307	305	264	267		
	F	10.6-3.5R	14.5-5.2R	16-5.1R	17.1-4.9R	19.4-4.7R	20.1-4.5R	20.4-4.2R	22.6-4.7R	22.9-4.4R		
60"	q_a	495	445	318	242	250	206	216	185	161		
	F	12.2-4.8R	14.5-5.2R	18.2-6.7R	21.8-8.1R	21.7-5.8R	24.8-6.8R	24.6-6R	27.3-6.7R	30-7.5R		
18	36/4	4"	q_a	1195	1191	1189	1188	1187	1186	1186	990	802
			F	3.9-0.2R	4-0.2R	4.1-0.2R	4.1-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R	4.2-0.1R
		8"	q_a	1109	1091	1080	1074	1069	1066	1063	990	802
			F	5.2-0.7R	5.5-0.6R	5.6-0.5R	5.7-0.4R	5.8-0.3R	5.9-0.3R	5.9-0.3R	6-0.3R	6-0.2R
		12"	q_a	1026	990	969	956	946	939	933	929	802
			F	6.1-1.1R	6.6-1R	6.9-0.9R	7.1-0.8R	7.3-0.7R	7.4-0.6R	7.5-0.6R	7.6-0.5R	7.6-0.5R
		18"	q_a	956	868	874	828	794	810	786	766	781
F	6.8-1.5R		8-1.7R	8-1.3R	8.7-1.3R	9.2-1.2R	9.1-1R	9.4-1R	9.8-1R	9.6-0.9R		
24"	q_a	855	778	734	704	684	669	657	648	641		
	F	7.8-2.2R	9-2.3R	9.8-2.2R	10.4-2.1R	10.8-1.7R	11.2-1.7R	11.5-1.5R	11.7-1.5R	11.9-1.4R		
36"	q_a	855	664	642	628	535	539	543	475	484		
	F	7.8-2.2R	10.5-3.3R	11.2-3R	11.7-2.7R	13.4-2.7R	13.5-2.5R	13.6-2.2R	15-2.5R	15-2.3R		
60"	q_a	706	664	518	400	428	356	383	332	292		
	F	9.4-3.4R	10.5-3.3R	13.2-4.3R	15.9-5.2R	15.3-3.6R	17.5-4.2R	17-3.5R	18.8-3.9R	20.6-4.3R		
16	36/4	4"	q_a	1488	1486	1485	1484	1483	1483	1482	1388	1125
			F	3-0.1R	3+0R	3+0R	3+0R	3.1+0R	3.1+0R	3.1+0R	3.1+0R	3.1+0R
		8"	q_a	1410	1397	1390	1385	1381	1379	1377	1376	1125
			F	4.1-0.2R	4.2-0.2R	4.2-0.1R	4.2-0.1R	4.3-0.1R	4.3-0.1R	4.3-0.1R	4.3-0.1R	4.3-0.1R
		12"	q_a	1326	1297	1280	1269	1261	1255	1251	1247	1125
			F	5.1-0.4R	5.2-0.3R	5.3-0.3R	5.4-0.2R	5.4-0.2R	5.5-0.2R	5.5-0.1R	5.5-0.1R	5.5-0.1R
		18"	q_a	1249	1160	1176	1129	1093	1114	1088	1067	1086
F	6-0.7R		6.7-0.7R	6.4-0.4R	6.8-0.4R	7.1-0.4R	6.8-0.3R	7-0.3R	7.2-0.3R	7-0.2R		
24"	q_a	1127	1051	1007	978	957	942	931	921	914		
	F	7.5-1.2R	8-1R	8.3-0.9R	8.5-0.7R	8.7-0.6R	8.8-0.6R	8.8-0.5R	8.9-0.5R	9-0.4R		
36"	q_a	1127	900	886	877	771	781	789	722	735		
	F	7.5-1.2R	10.3-1.9R	10.1-1.4R	10-1.1R	11.6-1.2R	11.2-1R	10.9-0.8R	12.1-0.9R	11.7-0.8R		
60"	q_a	926	900	733	589	646	543	591	517	457		
	F	10.8-2.9R	10.3-1.9R	13.2-2.4R	16-3R	14.2-1.8R	16.2-2.1R	14.8-1.6R	16.4-1.7R	18-1.9R		

*Acceptable Fasteners: Hilti X-EDNK-22, X-EDN19 & X-ENP19, Pneutek SDK61, SDK63, K64 & K66

Arc Spot/Seam Welds to Supports with Button Punch or Top Seam Welded Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

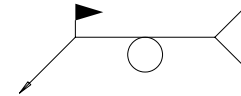
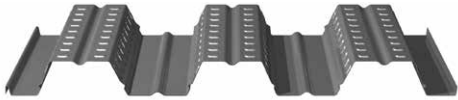
Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Arc Spot Welds	Seam		Span							
		Attachment	Spacing	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
22	36/4	Button Punch	12"	q_a	220	200	190	180	170	170	160
			F	13.5 + 290R	12.9 + 249R	12.5 + 218R	12.0 + 194R	11.7 + 174R	11.3 + 158R	11.0 + 145R	
			q_a	190	170	160	150	140	130	130	
		Top Seam Weld	F	15.1 + 290R	14.7 + 249R	14.3 + 218R	13.9 + 194R	13.6 + 174R	13.3 + 158R	13.0 + 145R	
			q_a	180	160	140	130	130	120	110	
			F	16.2 + 290R	15.9 + 249R	15.5 + 218R	15.2 + 194R	14.9 + 174R	14.7 + 158R	14.4 + 145R	
20	36/4	Button Punch	12"	q_a	330	300	280	260	250	230	230
			F	10.8 + 165R	10.5 + 142R	10.3 + 124R	10.0 + 110R	9.8 + 99R	9.6 + 90R	9.4 + 83R	
			q_a	290	260	240	220	210	200	190	
		Top Seam Weld	F	11.9 + 165R	11.7 + 142R	11.5 + 124R	11.3 + 110R	11.1 + 99R	10.9 + 90R	10.8 + 83R	
			q_a	280	240	220	200	190	180	170	
			F	12.5 + 165R	12.4 + 142R	12.2 + 124R	12.1 + 110R	12.0 + 99R	11.9 + 90R	11.7 + 83R	
18	36/4	Button Punch	12"	q_a	590	530	480	450	420	400	380
			F	7.4 + 68R	7.3 + 58R	7.2 + 51R	7.2 + 45R	7.1 + 41R	7.0 + 37R	6.9 + 34R	
			q_a	550	480	440	400	370	350	330	
		Top Seam Weld	F	7.8 + 68R	7.8 + 58R	7.8 + 51R	7.8 + 45R	7.8 + 41R	7.7 + 37R	7.7 + 34R	
			q_a	520	460	410	380	350	320	300	
			F	8.1 + 68R	8.1 + 58R	8.2 + 51R	8.2 + 45R	8.2 + 41R	8.2 + 37R	8.2 + 34R	
16	36/4	Button Punch	12"	q_a	870	770	700	640	600	560	530
			F	5.4 + 34R	5.4 + 30R	5.4 + 26R	5.4 + 23R	5.4 + 21R	5.3 + 19R	5.3 + 17R	
			q_a	820	720	650	590	540	500	470	
		Top Seam Weld	F	5.6 + 34R	5.7 + 30R	5.7 + 26R	5.7 + 23R	5.8 + 21R	5.8 + 19R	5.8 + 17R	
			q_a	790	690	620	560	510	480	440	
			F	5.8 + 34R	5.8 + 30R	5.9 + 26R	5.9 + 23R	6.0 + 21R	6.1 + 19R	6.1 + 17R	

2W & 3W PANELS

4.3 3W-36 & 3WF-36

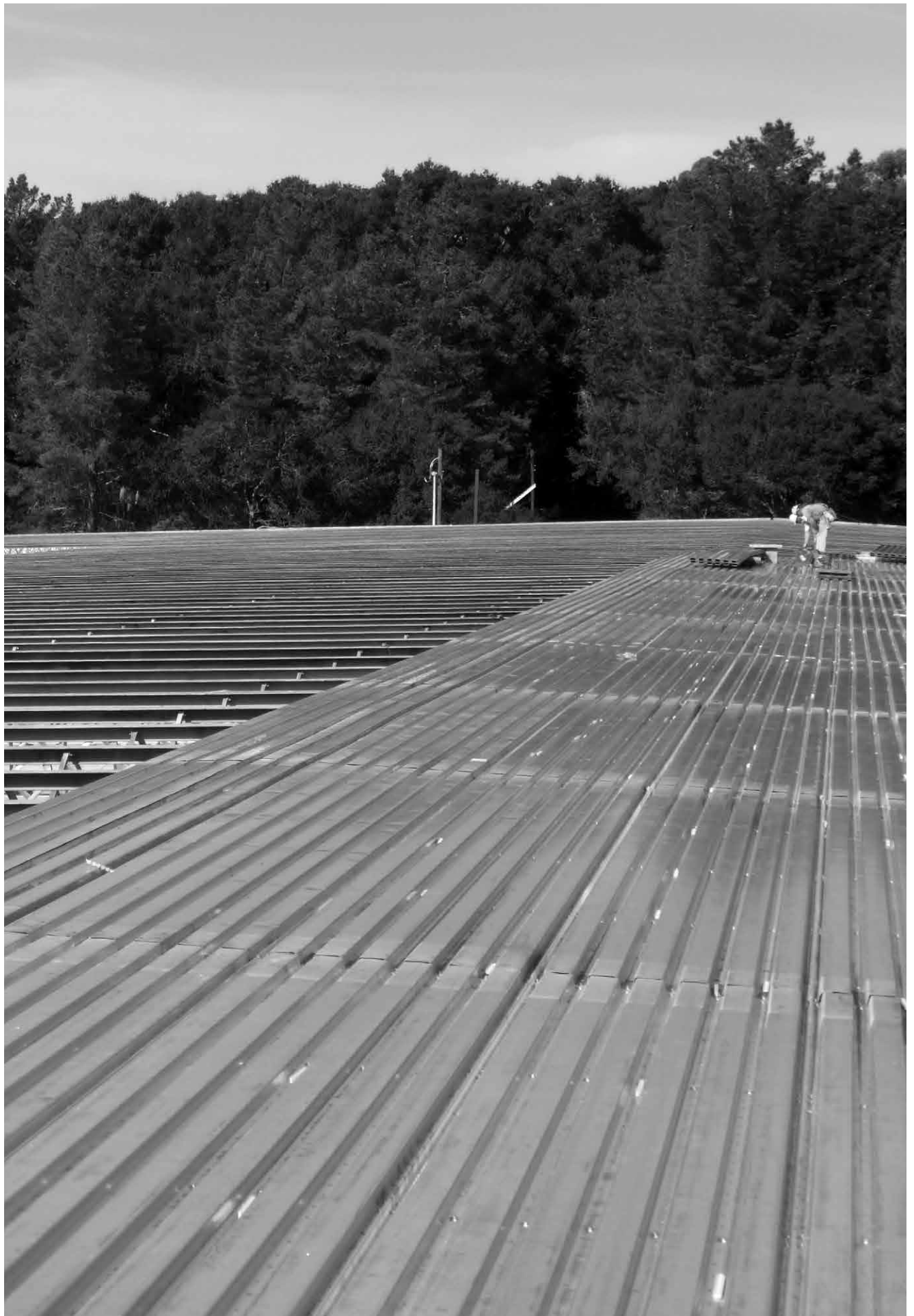
Arc Spot/Seam Welds to Supports with Button Punch or Top Seam Welded Side Seam Attachment



Allowable Diaphragm Shear, q_a (plf)

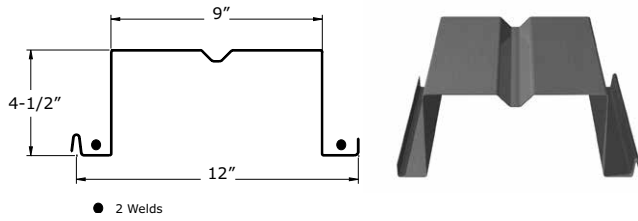
Flexibility Factor, F (10^{-6} in/lbs)

Gage	Arc Spot Welds	Seam Attachment	Spacing	Span							
				6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	
22	36/4	Button Punch	12"	q_a	200	180	170	160	150	150	140
			F	13.0 + 410R	12.4 + 351R	12.0 + 308R	11.5 + 273R	11.1 + 246R	10.8 + 224R	10.5 + 205R	
			q_b	170	150	140	130	120	120	110	
		Top Seam Weld	F	14.6 + 410R	14.2 + 351R	13.8 + 308R	13.4 + 273R	13.0 + 246R	12.7 + 224R	12.4 + 205R	
			q_b	150	140	130	120	110	100	100	
			F	15.7 + 410R	15.3 + 351R	15.0 + 308R	14.7 + 273R	14.3 + 246R	14.1 + 224R	13.8 + 205R	
20	36/4	Button Punch	12"	q_a	290	260	240	230	220	210	200
			F	10.5 + 233R	10.2 + 200R	9.9 + 175R	9.6 + 155R	9.4 + 140R	9.2 + 127R	8.9 + 117R	
			q_b	260	230	210	200	180	170	170	
		Top Seam Weld	F	11.5 + 233R	11.3 + 200R	11.1 + 175R	10.9 + 155R	10.7 + 140R	10.5 + 127R	10.3 + 117R	
			q_b	240	210	190	180	170	160	150	
			F	12.1 + 233R	12.0 + 200R	11.8 + 175R	11.7 + 155R	11.5 + 140R	11.4 + 127R	11.3 + 117R	
18	36/4	Button Punch	12"	q_a	540	480	440	410	380	360	340
			F	7.2 + 96R	7.1 + 83R	7.0 + 72R	6.9 + 64R	6.8 + 58R	6.8 + 53R	6.7 + 48R	
			q_b	490	440	390	360	340	310	300	
		Top Seam Weld	F	7.7 + 96R	7.6 + 83R	7.6 + 72R	7.6 + 64R	7.5 + 58R	7.5 + 53R	7.4 + 48R	
			q_b	470	420	370	340	310	290	270	
			F	7.9 + 96R	7.9 + 83R	7.9 + 72R	7.9 + 64R	7.9 + 58R	7.9 + 53R	7.9 + 48R	
16	36/4	Button Punch	12"	q_a	820	720	650	600	560	520	500
			F	5.2 + 49R	5.2 + 42R	5.2 + 37R	5.2 + 32R	5.2 + 29R	5.2 + 27R	5.2 + 24R	
			q_b	770	670	600	550	510	470	440	
		Top Seam Weld	F	5.5 + 49R	5.5 + 42R	5.5 + 37R	5.6 + 32R	5.6 + 29R	5.6 + 27R	5.6 + 24R	
			q_b	740	650	580	520	480	440	410	
			F	5.6 + 49R	5.7 + 42R	5.7 + 37R	5.8 + 32R	5.8 + 29R	5.9 + 27R	5.9 + 24R	



2W & 3W PANELS

5.1 4.5D-12



Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
20	2.96	0.0359	33	45	0.869	2.831	2.62	1.082	1.805
18	3.91	0.0478	33	45	1.151	3.724	2.62	1.421	1.799
16	4.87	0.0598	33	45	1.432	4.605	2.62	3.950	1.793
14	6.07	0.075	33	45	1.785	5.691	2.63	2.166	1.786

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _d = (2I _e +I _g)/3	
	A _{e+} in ² /ft	S _{e+} in ³ /ft	y _b in	S _{e-} in ³ /ft	y _b in	I _{e+} in ⁴ /ft	I _{e-} in ⁴ /ft	I _{d+} in ⁴ /ft	I _{d-} in ⁴ /ft
20	0.533	0.963	2.21	1.074	2.62	2.205	2.816	2.414	2.821
18	0.821	1.359	2.38	1.421	2.62	3.231	3.724	3.395	3.724
16	1.147	1.723	2.51	1.755	2.62	4.330	4.605	4.422	4.605
14	1.599	2.166	2.63	2.166	2.63	5.691	5.691	5.691	5.691

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	2"	4"	6"	1"	2"	4"	6"
20	End	300	371	471	548	459	567	721	839
	Interior	547	655	808	925	814	975	1202	1376
18	End	529	647	813	940	810	989	1243	1438
	Interior	958	1132	1379	1568	1425	1684	2051	2333
16	End	818	990	1233	1419	1251	1514	1886	2171
	Interior	1475	1726	2082	2355	2193	2568	3097	3502
14	End	1292	1547	1908	2185	1976	2367	2920	3344
	Interior	2325	2693	3215	3615	3458	4007	4782	5378

Web Crippling Constraints

h=4.1"

r=0.125"

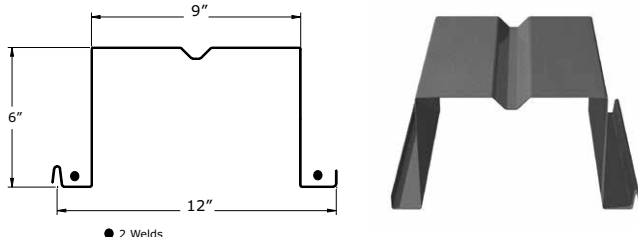
θ=90°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)																												
			10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"																		
20	SS	f_b / Ω	127	88	65	50	39	32	26	22	19	16	14																		
		Φf_b	201	140	103	79	62	50	42	35	30	26	22																		
		L/360	105	61	38	26	18	13	10	8	6	5	4																		
		L/240	-	-	58	39	27	20	15	11	9	7	6																		
		L/180	-	-	-	-	36	26	20	15	12	10	8																		
	L/120	-	-	-	-	-	-	-	-	18	14	12																			
	DS	f_b / Ω	141	98	72	55	Exceeds Maximum Product Length																								
		Φf_b	224	156	114	88																									
		L/360	-	-	-	-																									
		L/240	-	-	-	-																									
		L/180	-	-	-	-																									
	L/120	-	-	-	-																										
	TS	f_b / Ω	177	Exceeds Maximum Product Length																											
		Φf_b	280																												
		L/360	-																												
L/240		-																													
L/180		-																													
L/120	-																														
18	SS	f_b / Ω	179												124	91	70	55	45	37	31	26	23	20							
		Φf_b	284												197	145	111	88	71	59	49	42	36	32							
		L/360	148												86	54	36	25	19	14	11	8	7	5							
		L/240	-												-	81	54	38	28	21	16	13	10	8							
		L/180	-												-	-	-	51	37	28	21	17	14	11							
	L/120	-	-												-	-	-	-	-	-	25	20	16								
	DS	f_b / Ω	187												130	95	73	Exceeds Maximum Product Length													
		Φf_b	297												206	152	116														
		L/360	-												-	-	-														
		L/240	-	-	-	-																									
		L/180	-	-	-	-																									
	L/120	-	-	-	-																										
	TS	f_b / Ω	234	Exceeds Maximum Product Length																											
		Φf_b	371																												
		L/360	-																												
L/240		-																													
L/180		-																													
L/120	-																														
16	SS	f_b / Ω	227												158	116	89								70	57	47	39	34	29	25
		Φf_b	360												250	184	141								111	90	74	63	53	46	40
		L/360	193												112	70	47								33	24	18	14	11	9	7
		L/240	-												-	106	71	50	36	27	21	16	13	11							
		L/180	-												-	-	-	66	48	36	28	22	18	14							
	L/120	-	-												-	-	-	-	-	-	33	26	21								
	DS	f_b / Ω	231												161	118	90	Exceeds Maximum Product Length													
		Φf_b	367												255	187	143														
		L/360	-												-	-	-														
		L/240	-	-	-	-																									
		L/180	-	-	-	-																									
	L/120	-	-	-	-																										
	TS	f_b / Ω	289	Exceeds Maximum Product Length																											
		Φf_b	459																												
		L/360	-																												
L/240		-																													
L/180		-																													
L/120	-																														
14	SS	f_b / Ω	285												198	146	111								88	71	59	50	42	36	32
		Φf_b	453												314	231	177								140	113	94	79	67	58	50
		L/360	249												144	91	61								43	31	23	18	14	11	9
		L/240	-												-	136	91	64	47	35	27	21	17	14							
		L/180	-												-	-	-	85	62	47	36	28	23	18							
	L/120	-	-												-	-	-	-	-	-	-	34	28								
	DS	f_b / Ω	285												198	146	111	Exceeds Maximum Product Length													
		Φf_b	453												314	231	177														
		L/360	-												-	-	-														
		L/240	-	-	-	-																									
		L/180	-	-	-	-																									
	L/120	-	-	-	-																										
	TS	f_b / Ω	357	Exceeds Maximum Product Length																											
		Φf_b	566																												
		L/360	-																												
L/240		-																													
L/180		-																													
L/120	-																														

DEEP DECK PANELS

5.1 6D-12



Panel Properties

Gage	Base Metal				Gross Section Properties				
	Weight	Thickness	Yield Strength	Tensile Strength	Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
	w psf	t in	F _y ksi	F _u ksi	A _g in ² /ft	I _g in ⁴ /ft	y _b in	S _g in ³ /ft	r in
20	3.32	0.0359	33	45	0.977	5.527	3.43	1.611	2.378
18	4.40	0.0478	33	45	1.294	7.282	3.44	2.119	2.372
16	5.48	0.0598	33	45	1.612	9.021	3.44	2.623	2.366
14	6.83	0.075	33	45	2.009	11.173	3.44	3.244	2.358

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _d = (2I _e +I _g)/3	
	A _{e+} in ² /ft	S _{e+} in ³ /ft	y _b in	S _{e-} in ³ /ft	y _b in	I _{e+} in ⁴ /ft	I _{e-} in ⁴ /ft	I ₊ in ⁴ /ft	I ₋ in ⁴ /ft
20	0.537	1.421	2.94	1.504	3.53	4.349	5.314	4.742	5.385
18	0.831	2.018	3.13	2.119	3.44	6.319	7.282	6.640	7.282
16	1.167	2.565	3.29	2.623	3.44	8.447	9.021	8.638	9.021
14	1.638	3.242	3.44	3.244	3.44	11.144	11.173	11.154	11.173

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	2"	4"	6"	1"	2"	4"	6"
20	End	280	346	440	512	428	530	673	784
	Interior	543	650	801	918	808	967	1192	1365
18	End	501	612	769	889	766	936	1176	1361
	Interior	951	1125	1370	1558	1415	1673	2037	2317
16	End	780	943	1175	1353	1193	1444	1798	2070
	Interior	1466	1716	2069	2340	2180	2552	3078	3481
14	End	1240	1485	1832	2098	1897	2272	2802	3209
	Interior	2312	2679	3198	3596	3439	3985	4757	5349

Web Crippling Constraints

h=5.68"

r=0.125"

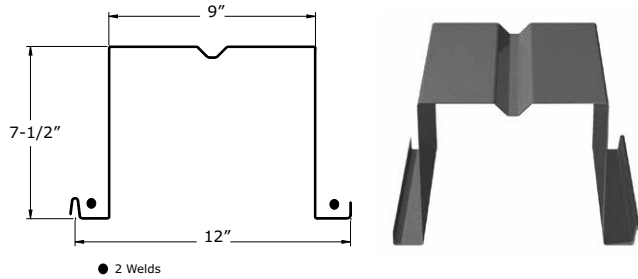
θ=90°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)										
			10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"
20	SS	f_b / Ω	187	130	95	73	58	47	39	32	28	24	21
		Φf_b	297	206	151	116	92	74	61	52	44	38	33
		L/360	-	120	76	51	36	26	19	15	12	9	8
		L/240	-	-	-	-	53	39	29	22	18	14	12
		L/180	-	-	-	-	-	-	-	30	24	19	15
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	198	138	101	77	Exceeds Maximum Product Length						
		Φf_b	314	218	160	123							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	248	Exceeds Maximum Product Length										
	Φf_b	393											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
18	SS	f_b / Ω	266	185	136	104	82	66	55	46	39	34	30
		Φf_b	422	293	215	165	130	105	87	73	62	54	47
		L/360	-	168	106	71	50	36	27	21	17	13	11
		L/240	-	-	-	-	75	54	41	31	25	20	16
		L/180	-	-	-	-	-	-	55	42	33	26	21
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	279	194	142	109	Exceeds Maximum Product Length						
		Φf_b	443	308	226	173							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	349	Exceeds Maximum Product Length										
	Φf_b	554											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
16	SS	f_b / Ω	338	235	172	132	104	84	70	59	50	43	38
		Φf_b	536	372	274	209	165	134	111	93	79	68	60
		L/360	-	218	138	92	65	47	35	27	21	17	14
		L/240	-	-	-	-	97	71	53	41	32	26	21
		L/180	-	-	-	-	-	-	-	55	43	34	28
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	346	240	176	135	Exceeds Maximum Product Length						
		Φf_b	548	381	280	214							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	432	Exceeds Maximum Product Length										
	Φf_b	685											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
14	SS	f_b / Ω	427	297	218	167	132	107	88	74	63	54	47
		Φf_b	677	470	346	265	209	169	140	118	100	86	75
		L/360	-	282	178	119	84	61	46	35	28	22	18
		L/240	-	-	-	-	125	91	69	53	42	33	27
		L/180	-	-	-	-	-	-	-	71	55	44	36
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	427	297	218	167	Exceeds Maximum Product Length						
		Φf_b	678	471	346	265							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	534	Exceeds Maximum Product Length										
	Φf_b	848											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											

DEEP DECK PANELS

5.1 7.5D-12



Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
20	3.69	0.0359	33	45	1.085	9.316	4.23	2.201	2.930
18	4.89	0.0478	33	45	1.438	12.287	4.24	2.899	2.924
16	6.09	0.0598	33	45	1.791	15.240	4.24	3.592	2.917
14	7.60	0.075	33	45	2.235	18.900	4.25	4.451	2.908

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _d = (2I _{e+} +I _{e-})/3	
20	0.540	1.805	3.55	1.850	4.58	7.137	8.476	7.863	8.756
18	0.837	2.752	3.88	2.598	4.46	10.688	11.597	11.221	11.827
16	1.178	3.504	4.06	3.367	4.38	14.241	14.733	14.574	14.902
14	1.661	4.440	4.23	4.360	4.29	18.778	18.700	18.819	18.767

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	2"	4"	6"	1"	2"	4"	6"
20	End	265	327	416	484	405	501	636	740
	Interior	540	646	796	912	803	961	1185	1356
18	End	478	584	734	850	732	894	1124	1300
	Interior	946	1119	1362	1549	1408	1664	2026	2304
16	End	750	907	1130	1301	1147	1388	1729	1991
	Interior	1459	1707	2059	2329	2170	2540	3063	3464
14	End	1199	1436	1771	2029	1835	2197	2710	3104
	Interior	2302	2668	3184	3580	3425	3968	4736	5326

Web Crippling Constraints

h=7.1"

r=0.125"

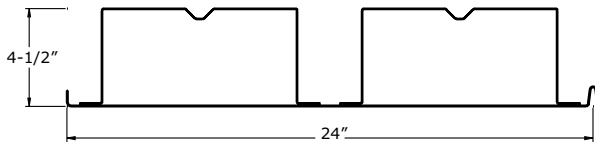
θ=90°

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)										
			10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"
20	SS	f_b / Ω	238	165	121	93	73	59	49	41	35	30	26
		Φf_b	377	262	192	147	116	94	78	65	56	48	42
		L/360	-	-	-	84	59	43	32	25	20	16	13
		L/240	-	-	-	-	-	-	48	37	29	23	19
		L/180	-	-	-	-	-	-	-	-	-	-	25
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	244	169	124	95	Exceeds Maximum Product Length						
		Φf_b	387	268	197	151							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	305	Exceeds Maximum Product Length										
	Φf_b	483											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
18	SS	f_b / Ω	362	252	185	142	112	91	75	63	54	46	40
		Φf_b	575	399	293	225	178	144	119	100	85	73	64
		L/360	-	-	179	120	84	61	46	35	28	22	18
		L/240	-	-	-	-	-	-	69	53	42	34	27
		L/180	-	-	-	-	-	-	-	-	-	45	36
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	342	238	175	134	Exceeds Maximum Product Length						
		Φf_b	543	377	277	212							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	428	Exceeds Maximum Product Length										
	Φf_b	679											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
16	SS	f_b / Ω	462	321	236	180	142	115	95	80	68	59	51
		Φf_b	732	509	374	286	226	183	151	127	108	93	81
		L/360	-	-	232	156	109	80	60	46	36	29	24
		L/240	-	-	-	-	-	-	90	69	54	44	35
		L/180	-	-	-	-	-	-	-	-	-	58	47
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	444	308	226	173	Exceeds Maximum Product Length						
		Φf_b	704	489	359	275							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	554	Exceeds Maximum Product Length										
	Φf_b	880											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											
14	SS	f_b / Ω	585	406	298	228	181	146	121	102	87	75	65
		Φf_b	928	644	473	362	286	232	192	161	137	118	103
		L/360	-	-	-	201	141	103	77	59	47	37	30
		L/240	-	-	-	-	-	-	116	89	70	56	46
		L/180	-	-	-	-	-	-	-	-	-	-	61
		L/120	-	-	-	-	-	-	-	-	-	-	-
	DS	f_b / Ω	574	399	293	224	Exceeds Maximum Product Length						
		Φf_b	911	633	465	356							
		L/360	-	-	-	-							
		L/240	-	-	-	-							
		L/180	-	-	-	-							
		L/120	-	-	-	-							
TS	f_b / Ω	718	Exceeds Maximum Product Length										
	Φf_b	1139											
	L/360	-											
	L/240	-											
	L/180	-											
	L/120	-											

DEEP DECK PANELS

5.2 4.5DF-24



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.22	4.14	1.14	1.26
20/18	4.77	4.39	1.13	1.57
20/16	5.32	4.84	1.13	1.65
18/20	5.08	4.68	1.75	1.54
18/18	5.63	5.35	1.79	1.85
18/16	6.18	5.93	1.82	2.15
16/16	7.04	6.86	2.44	2.45

AISI 2001 NASPEC with 2004 Supplement

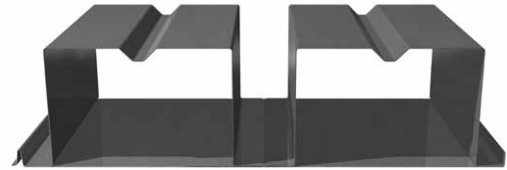
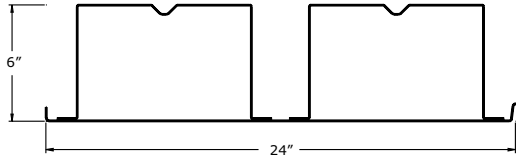
Allowable Reactions, plf

Gage	Bearing Length 3"		Gage	Bearing Length 3"	
	End	Interior		End	Interior
20/20	End	390	18/18	End	815
	Interior	853		Interior	1477
20/18	End	390	18/16	End	815
	Interior	853		Interior	1477
20/16	End	390	16/16	End	1362
	Interior	853		Interior	2316
18/20	End	815			
	Interior	1477			

Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"
SINGLE SPAN	20/20	f_b/Ω	173	120	88	67	53	43	35	30	25	22	19
		L/240	173	120	88	66	46	33	25	19	15	12	10
	20/18	f_b/Ω	171	119	87	67	53	42	35	29	25	21	19
		L/240	171	119	87	67	49	36	27	20	16	13	10
	20/16	f_b/Ω	171	119	87	67	53	42	35	29	25	21	19
		L/240	171	119	87	67	53	39	29	22	18	14	11
	18/20	f_b/Ω	266	184	135	103	82	66	54	46	39	33	29
		L/240	266	177	111	75	52	38	28	22	17	13	11
	18/18	f_b/Ω	272	188	138	106	83	68	56	47	40	34	30
		L/240	272	188	128	85	60	43	32	25	19	16	13
	18/16	f_b/Ω	276	192	141	108	85	69	57	48	40	35	30
		L/240	276	192	141	95	66	48	36	28	22	17	14
16/16	f_b/Ω	370	257	189	144	114	92	76	64	54	47	41	
	L/240	370	257	164	109	77	56	42	32	25	20	16	
DOUBLE SPAN	20/20	f_b/Ω	191	133	97	74							
		L/240	191	133	97	74							
	20/18	f_b/Ω	238	165	121	93							
		L/240	238	165	121	93							
	20/16	f_b/Ω	250	174	127	97							
		L/240	250	174	127	97							
	18/20	f_b/Ω	234	162	119	91							
		L/240	234	162	119	91							
	18/18	f_b/Ω	281	195	143	109							
		L/240	281	195	143	109							
	18/16	f_b/Ω	326	226	166	127							
		L/240	326	226	166	127							
16/16	f_b/Ω	372	258	190	145								
	L/240	372	258	190	145								
TRIPLE SPAN	20/20	f_b/Ω	239										
		L/240	239										
	20/18	f_b/Ω	268										
		L/240	268										
	20/16	f_b/Ω	268										
		L/240	268										
	18/20	f_b/Ω	292										
		L/240	292										
	18/18	f_b/Ω	351										
		L/240	351										
	18/16	f_b/Ω	408										
		L/240	408										
16/16	f_b/Ω	465											
	L/240	465											

Exceeds
Maximum
Product Length



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.59	7.25	1.55	1.78
20/18	5.14	8.23	1.55	2.24
20/16	5.69	8.93	1.55	2.35
18/20	5.57	8.85	2.54	2.24
18/18	6.12	9.99	2.51	2.65
18/16	6.67	11.10	2.49	3.05
16/16	7.65	12.88	3.52	3.49

AISI 2001 NASPEC with 2004 Supplement

Allowable Reactions, plf

Gage	Bearing Length 3"		Gage	Bearing Length 3"	
	End	Interior		End	Interior
20/20	End	351	18/18	End	757
	Interior	793		Interior	1403
20/18	End	351	18/16	End	757
	Interior	793		Interior	1403
20/16	End	351	16/16	End	1289
	Interior	793		Interior	2226
18/20	End	757			
	Interior	1403			

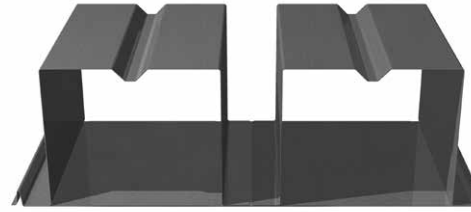
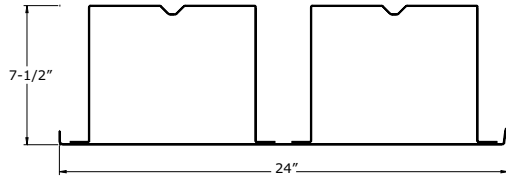
Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"
SINGLE SPAN	20/20	f _b /Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	58	44	34	27	21	17
	20/18	f _b /Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	58	48	39	30	24	20
	20/16	f _b /Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	58	48	40	33	26	21
	18/20	f _b /Ω	386	268	196	150	119	96	79	67	57	49	42
		L/240	386	268	196	141	99	72	54	42	33	26	21
	18/18	f _b /Ω	381	264	194	149	117	95	78	66	56	48	42
		L/240	381	264	194	149	112	81	61	47	37	29	24
	18/16	f _b /Ω	378	262	193	147	116	94	78	65	55	48	42
		L/240	378	262	193	147	116	91	68	52	41	33	26
16/16	f _b /Ω	535	371	272	209	165	133	110	92	79	68	59	
	L/240	535	371	272	206	145	105	79	61	48	38	31	
DOUBLE SPAN	20/20	f _b /Ω	270	187	138	105							
		L/240	270	187	138	105							
	20/18	f _b /Ω	340	236	173	133							
		L/240	340	236	173	133							
	20/16	f _b /Ω	357	248	182	139							
		L/240	357	248	182	139							
	18/20	f _b /Ω	340	236	173	133							
		L/240	340	236	173	133							
	18/18	f _b /Ω	402	279	205	157							
		L/240	402	279	205	157							
	18/16	f _b /Ω	463	321	236	181							
		L/240	463	321	236	181							
16/16	f _b /Ω	530	368	270	207								
	L/240	530	368	270	207								
TRIPLE SPAN	20/20	f _b /Ω	338										
		L/240	338										
	20/18	f _b /Ω	368										
		L/240	368										
	20/16	f _b /Ω	368										
		L/240	368										
	18/20	f _b /Ω	425										
		L/240	425										
	18/18	f _b /Ω	503										
		L/240	503										
	18/16	f _b /Ω	579										
		L/240	579										
16/16	f _b /Ω	663											
	L/240	663											

Exceeds
Maximum
Product Length

DEEP DECK PANELS

5.2 7.5DF-24



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.96	12.02	1.97	2.23
20/18	5.51	13.51	1.97	2.90
20/16	6.06	14.36	1.97	3.10
18/20	6.06	14.63	3.20	2.93
18/18	6.61	16.36	3.18	3.53
18/16	7.16	18.16	3.17	4.03
16/16	8.27	21.08	4.63	4.63

AISI 2001 NASPEC with 2004 Supplement

Allowable Reactions, plf

Gage	Bearing Length 3"		Gage	Bearing Length 3"	
	End	Interior		End	Interior
20/20	End	311	18/18	End	700
	Interior	733		Interior	1330
20/18	End	311	18/16	End	700
	Interior	733		Interior	1330
20/16	End	311	16/16	End	1216
	Interior	733		Interior	2137
18/20	End	700			
	Interior	1330			

Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"
SINGLE SPAN	20/20	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		$L/240$	299	207	152	116	92	74	61	51	44	38	29
	20/18	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		$L/240$	299	207	152	116	92	74	61	51	44	38	32
	20/16	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		$L/240$	299	207	152	116	92	74	61	51	44	38	33
	18/20	f_b/Ω	486	337	248	190	150	121	100	84	71	62	54
		$L/240$	486	337	248	190	150	120	90	69	54	43	35
	18/18	f_b/Ω	483	335	246	188	149	120	99	83	71	61	53
		$L/240$	483	335	246	188	149	120	99	77	61	48	39
	18/16	f_b/Ω	481	334	245	188	148	120	99	83	71	61	53
		$L/240$	481	334	245	188	148	120	99	83	67	54	44
16/16	f_b/Ω	703	488	359	274	217	175	145	122	104	89	78	
	$L/240$	703	488	359	274	217	173	129	100	78	63	51	
DOUBLE SPAN	20/20	f_b/Ω	338	235	172	132							
		$L/240$	338	235	172	132							
	20/18	f_b/Ω	440	306	224	172							
		$L/240$	440	306	224	172							
	20/16	f_b/Ω	471	327	240	184							
		$L/240$	471	327	240	184							
	18/20	f_b/Ω	445	309	227	173							
		$L/240$	445	309	227	173							
	18/18	f_b/Ω	536	372	273	209							
		$L/240$	536	372	273	209							
	18/16	f_b/Ω	612	425	312	239							
		$L/240$	612	425	312	239							
16/16	f_b/Ω	703	488	359	274								
	$L/240$	703	488	359	274								
TRIPLE SPAN	20/20	f_b/Ω	423										
		$L/240$	423										
	20/18	f_b/Ω	467										
		$L/240$	467										
	20/16	f_b/Ω	467										
		$L/240$	467										
	18/20	f_b/Ω	556										
		$L/240$	556										
	18/18	f_b/Ω	670										
		$L/240$	670										
	18/16	f_b/Ω	752										
		$L/240$	752										
16/16	f_b/Ω	879											
	$L/240$	879											

Exceeds
Maximum
Product Length



DEEP DECK PANELS

5.3 4.5D-12, 6D-12 & 7.5D-12



Arc Spot/Seam Welds to Supports with Button Punch or Top Seam Welded Side Seam Attachment



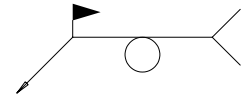
Allowable Diaphragm Shear, q_a , plf

Flexibility Factor, F (10^{-6} in/lbs)

Arc Spot Welds	Gage	Seam Attachment	Spacing	Span												
				6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	
12/2	20	Button Punch	12"	q_a	300	280	260	240	230	220	210	210	200	200	190	190
				F	31.4+ 583R	34.9+ 500R	38.1+ 437R	41.0+ 389R	43.8+ 350R	46.4+ 318R	48.8+ 292R	51.1+ 269R	53.3+ 250R	55.4+ 233R	57.4+ 219R	59.3+ 206R
	20	Top Seam Weld	12"	q_a	450	430	410	400	390	380	370	360	350	350	350	350
				F	17.9+ 583R	16.6+ 500R	15.5+ 437R	14.5+ 389R	13.7+ 350R	13.0+ 318R	12.4+ 292R	11.9+ 269R	11.4+ 250R	11.0+ 233R	10.7+ 219R	10.3+ 206R
	18	Button Punch	12"	q_a	530	480	440	410	380	360	350	340	320	310	310	300
				F	21.4+ 241R	24.2+ 206R	27.0+ 181R	29.6+ 161R	32.1+ 144R	34.5+ 131R	36.9+ 120R	39.2+ 111R	41.3+ 103R	43.5+ 96R	45.5+ 90R	47.5+ 85R
	18	Top Seam Weld	12"	q_a	920	860	820	780	760	730	720	700	690	670	660	660
				F	12.9+ 241R	12.1+ 206R	11.4+ 181R	10.9+ 161R	10.4+ 144R	9.9+ 131R	9.5+ 120R	9.2+ 111R	8.9+ 103R	8.6+ 96R	8.3+ 90R	8.1+ 85R
	16	Button Punch	12"	q_a	780	690	630	580	540	510	490	460	450	430	420	410
				F	15.4+ 122R	17.7+ 104R	19.9+ 91R	22.1+ 81R	24.2+ 73R	26.3+ 66R	28.4+ 60R	30.4+ 56R	32.4+ 52R	34.4+ 48R	36.3+ 45R	38.2+ 43R
	16	Top Seam Weld	12"	q_a	1320	1250	1190	1150	1120	1100	1080	1070	1060	1050	1040	1040
				F	9.7+ 122R	9.2+ 104R	8.8+ 91R	8.4+ 81R	8.1+ 73R	7.8+ 66R	7.5+ 60R	7.3+ 56R	7.0+ 52R	6.8+ 48R	6.7+ 45R	6.5+ 43R
14	Button Punch	12"	q_a	780	690	630	580	540	510	490	460	450	430	420	410	
			F	15.4+ 122R	17.7+ 104R	1.9+ 91R	22.1+ 81R	24.2+ 73R	26.3+ 66R	28.4+ 60R	30.4+ 56R	32.4+ 52R	34.4+ 48R	36.3+ 45R	38.2+ 43R	
14	Top Seam Weld	12"	q_a	1320	1250	1190	1150	1120	1100	1080	1070	1060	1050	1040	1040	
			F	9.7+ 122R	9.2+ 104R	8.8+ 91R	8.4+ 81R	8.1+ 73R	7.8+ 66R	7.5+ 60R	7.3+ 56R	7.0+ 52R	6.8+ 48R	6.7+ 45R	6.5+ 43R	

Continued on next page

Arc Spot/Seam Welds to Supports with Button Punch or Top Seam Welded Side Seam Attachment



Allowable Diaphragm Shear, q_a , plf

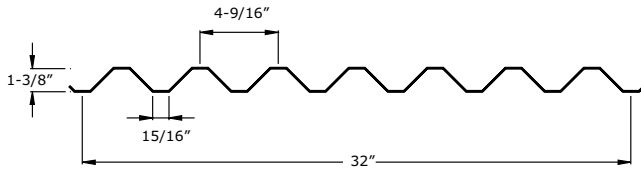
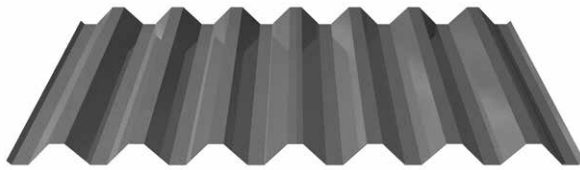
Flexibility Factor, F (10^{-6} in/lbs)

Continued from previous page

Gage	Seam Attachment	Spacing	Span													
			18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"	25'-0"	26'-0"	27'-0"	28'-0"	29'-0"	30'-0"	
20	Button Punch	12"	q_a	190	190	180	180	180	170	170	170	170	170	160	160	160
			F	61.1+ 194R	62.9+ 184R	64.5+ 175R	66.2+ 167R	67.7+ 159R	69.2+ 152R	70.7+ 146R	72.1+ 140R	73.5+ 135R	74.8+ 130R	76.1+ 125R	77.4+ 121R	78.6 117R
20	Top Seam Weld	12"	q_a	340	340	340	340	330	330	330	330	330	320	320	320	
			F	10.0+ 194R	9.7+ 184R	9.5+ 175R	9.2+ 167R	9 159R	8.8+ 152R	8.6+ 146R	8.4+ 140R	8.3+ 135R	8.1+ 130R	8.0+ 125R	7.9+ 121R	7.7+ 117R
18	Button Punch	12"	q_a	290	290	280	280	280	270	270	260	260	250	250	250	
			F	49.5+ 80R	51.3+ 76R	53.2+ 72R	54.9+ 68R	56.7+ 65R	58.3+ 62R	60.0+ 60R	61.6+ 57R	63.1+ 55R	64.7+ 53R	66.2+ 51R	67.6+ 49R	69.0+ 48R
18	Top Seam Weld	12"	q_a	650	640	630	630	620	620	620	610	610	600	600	600	
			F	7.9+ 80R	7.7+ 76R	7.5+ 72R	7.3+ 66R	7.2+ 65R	7.0+ 62R	6.9+ 60R	6.8+ 57R	6.6+ 55R	6.5+ 53R	6.4+ 51R	6.3+ 49R	6.2+ 48R
16	Button Punch	12"	q_a	400	390	380	370	370	360	360	350	350	350	340	340	330
			F	40.0+ 40R	41.8+ 38R	43.6+ 36R	45.3+ 34R	47.0+ 33R	48.7+ 31R	50.3+ 30R	51.9+ 29R	53.5+ 28R	55.0+ 27R	56.5+ 26R	58.0+ 25R	59.5+ 24R
16	Top Seam Weld	12"	q_a	1040	1040	1030	1020	1010	1000	990	990	980	970	970	960	960
			F	6.3+ 40R	6.2+ 38R	6.1+ 36R	5.9+ 34R	5.8+ 33R	5.7+ 31R	5.6+ 30R	5.5+ 29R	5.4+ 28R	5.3+ 27R	5.3+ 26R	5.2+ 25R	5.1+ 24R
14	Button Punch	12"	q_a	400	390	380	370	370	360	360	350	350	350	340	340	330
			F	40.0+ 40R	41.8+ 38R	43.6+ 36R	45.3+ 34R	47.0+ 33R	48.7+ 31R	50.3+ 30R	51.9+ 29R	53.5+ 28R	55.0+ 27R	56.5+ 26R	58.0+ 25R	59.5+ 24R
14	Top Seam Weld	12"	q_a	1040	1040	1030	1020	1010	1000	990	990	980	970	970	960	960
			F	6.3+ 40R	6.2+ 38R	6.1+ 36R	5.9+ 34R	5.8+ 33R	5.7+ 31R	5.6+ 30R	5.5+ 29R	5.4+ 28R	5.3+ 27R	5.3+ 26R	5.2+ 25R	5.1+ 24R

DEEP DECK PANELS

6.1 CP-32



CP-32, combined with lightweight insulating concrete (without a polystyrene insulation board) provides an economical insulated roof assembly which offers a 2-hour fire rating.

Please refer to the lightweight insulating concrete manufacturer's technical data for information on U-Factors & specifications.

Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
26	0.95	0.018	80	61.5	0.279	0.073	0.67	0.109	0.512
24	1.26	0.024	80	61.5	0.371	0.097	0.67	0.145	0.512
22	1.57	0.0299	80	61.5	0.461	0.120	0.67	0.179	0.511
20	1.88	0.0478	80	61.5	0.553	0.142	0.68	0.213	0.510
18	2.49	0.0598	38	52	0.733	0.191	0.68	0.279	0.509

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _u = (2I _{e+} +I _{e-})/3	
26	0.150	0.091	0.64	0.096	0.71	0.068	0.067	0.070	0.069
24	0.241	0.130	0.66	0.133	0.68	0.095	0.094	0.096	0.095
22	0.327	0.162	0.67	0.161	0.68	0.117	0.115	0.118	0.117
20	0.445	0.198	0.67	0.198	0.67	0.142	0.142	0.142	0.142
18	0.724	0.260	0.68	0.260	0.68	0.191	0.191	0.191	0.191

Reactions at Supports (plf) Based on Web Crippling

Gage	Condition	Bearing Length of Webs							
		Allowable (R _n /Ω)				Factored (ΦR _n)			
		1"	1.5"	2"	3"	1"	1.5"	2"	3"
26	End	379	434	480	557	580	664	734	852
	Interior	616	692	757	864	917	1030	1125	1285
24	End	624	710	782	903	955	1086	1196	1382
	Interior	1021	1139	1239	1406	1518	1694	1843	2092
22	End	928	1050	1153	1326	1420	1607	1764	2029
	Interior	1527	1695	1836	2074	2271	2521	2731	3085
20	End	1286	1449	1587	1817	1968	2217	2427	2780
	Interior	2126	2350	2538	2854	3162	3495	3775	4245
18	End	1296	1451	1582	1802	1983	2220	2421	2756
	Interior	2158	2370	2549	2849	3211	3526	3792	4238

Web Crippling Constraints

h=1.8"

r=0.125"

θ=45°

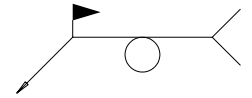
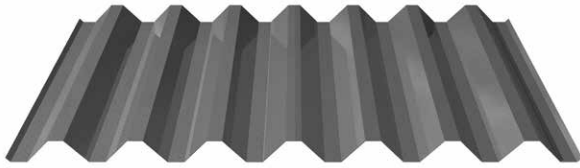
Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	5' - 0"	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"
26	SS	f_b / Ω	136	87	61	45	34	27	22	18	15
		Φf_b	216	138	96	71	54	43	35	29	24
		L/360	47	24	14	9	6	4	3	2	2
		L/240	71	36	21	13	9	6	5	3	3
		L/180	95	49	28	18	12	8	6	5	4
	L/120	-	73	42	27	18	13	9	7	5	
	DS	f_b / Ω	144	92	64	47	36	28	23	19	16
		Φf_b	228	146	101	75	57	45	37	30	25
		L/360	114	59	34	21	14	10	7	6	4
		L/240	-	88	51	32	21	15	11	8	6
		L/180	-	-	-	43	29	20	15	11	8
	L/120	-	-	-	-	-	-	22	17	13	
	TS	f_b / Ω	180	115	80	59	45	36	29	24	20
		Φf_b	285	183	127	93	71	56	46	38	32
		L/360	105	54	31	20	13	9	7	5	4
L/240		157	80	47	29	20	14	10	8	6	
L/180		-	107	62	39	26	18	13	10	8	
L/120	-	-	-	59	39	28	20	15	12		
24	SS	f_b / Ω	194	124	86	63	49	38	31	26	22
		Φf_b	308	197	137	101	77	61	49	41	34
		L/360	65	33	19	12	8	6	4	3	2
		L/240	98	50	29	18	12	9	6	5	4
		L/180	130	67	39	24	16	11	8	6	5
	L/120	-	100	58	37	24	17	13	9	7	
	DS	f_b / Ω	199	127	88	65	50	39	32	26	22
		Φf_b	315	202	140	103	79	62	50	42	35
		L/360	157	80	47	29	20	14	10	8	6
		L/240	-	121	70	44	29	21	15	11	9
		L/180	-	-	-	59	39	28	20	15	12
	L/120	-	-	-	-	-	-	30	23	17	
	TS	f_b / Ω	248	159	110	81	62	49	40	33	28
		Φf_b	394	252	175	129	98	78	63	52	44
		L/360	144	74	43	27	18	13	9	7	5
L/240		216	111	64	40	27	19	14	10	8	
L/180		-	147	85	54	36	25	18	14	11	
L/120	-	-	-	81	54	38	28	21	16		
22	SS	f_b / Ω	242	155	107	79	60	48	39	32	27
		Φf_b	384	245	170	125	96	76	61	51	43
		L/360	81	41	24	15	10	7	5	4	3
		L/240	121	62	36	23	15	11	8	6	4
		L/180	161	82	48	30	20	14	10	8	6
	L/120	242	124	72	45	30	21	15	12	9	
	DS	f_b / Ω	241	154	107	79	60	48	39	32	27
		Φf_b	382	245	170	125	96	75	61	51	42
		L/360	194	99	57	36	24	17	12	9	7
		L/240	-	149	86	54	36	26	19	14	11
		L/180	-	-	-	72	48	34	25	19	14
	L/120	-	-	-	-	-	-	37	28	22	
	TS	f_b / Ω	301	193	134	98	75	59	48	40	33
		Φf_b	478	306	212	156	119	94	76	63	53
		L/360	178	91	53	33	22	16	11	9	7
L/240		267	136	79	50	33	23	17	13	10	
L/180		-	182	105	66	44	31	23	17	13	
L/120	-	-	-	-	67	47	34	26	20		

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	5' - 0"	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"
20	SS	f_b / Ω	297	190	132	97	74	59	47	39	33
		Φf_b	471	301	209	154	118	93	75	62	52
		L/360	97	50	29	18	12	9	6	5	4
		L/240	146	75	43	27	18	13	9	7	5
		L/180	194	100	58	36	24	17	12	9	7
	L/120	292	149	86	54	36	26	19	14	11	
	DS	f_b / Ω	297	190	132	97	74	59	47	39	33
		Φf_b	470	301	209	154	118	93	75	62	52
		L/360	234	120	69	44	29	21	15	11	9
		L/240	-	180	104	66	44	31	22	17	13
		L/180	-	-	-	87	59	41	30	23	17
	L/120	-	-	-	-	-	-	45	34	26	
TS	f_b / Ω	371	237	165	121	93	73	59	49	41	
	Φf_b	588	376	261	192	147	116	94	78	65	
	L/360	214	110	64	40	27	19	14	10	8	
	L/240	322	165	95	60	40	28	21	15	12	
	L/180	-	220	127	80	54	38	27	21	16	
L/120	-	-	-	120	80	56	41	31	24		
18	SS	f_b / Ω	247	158	110	81	62	49	39	33	27
		Φf_b	391	251	174	128	98	77	63	52	43
		L/360	131	67	39	24	16	11	8	6	5
		L/240	196	100	58	37	24	17	13	9	7
		L/180	-	134	77	49	33	23	17	13	10
	L/120	-	-	-	73	49	34	25	19	15	
	DS	f_b / Ω	247	158	110	81	62	49	39	33	27
		Φf_b	391	251	174	128	98	77	63	52	43
		L/360	-	-	93	59	39	28	20	15	12
		L/240	-	-	-	-	59	41	30	23	17
		L/180	-	-	-	-	-	-	-	30	23
	L/120	-	-	-	-	-	-	-	-	-	
TS	f_b / Ω	308	197	137	101	77	61	49	41	34	
	Φf_b	489	313	217	160	122	97	78	65	54	
	L/360	288	148	85	54	36	25	18	14	11	
	L/240	-	-	128	81	54	38	28	21	16	
	L/180	-	-	-	-	72	51	37	28	21	
L/120	-	-	-	-	-	-	-	-	-		

Arc Spot Welds to Support with No. 12 Self Drilling Side Lap Screws

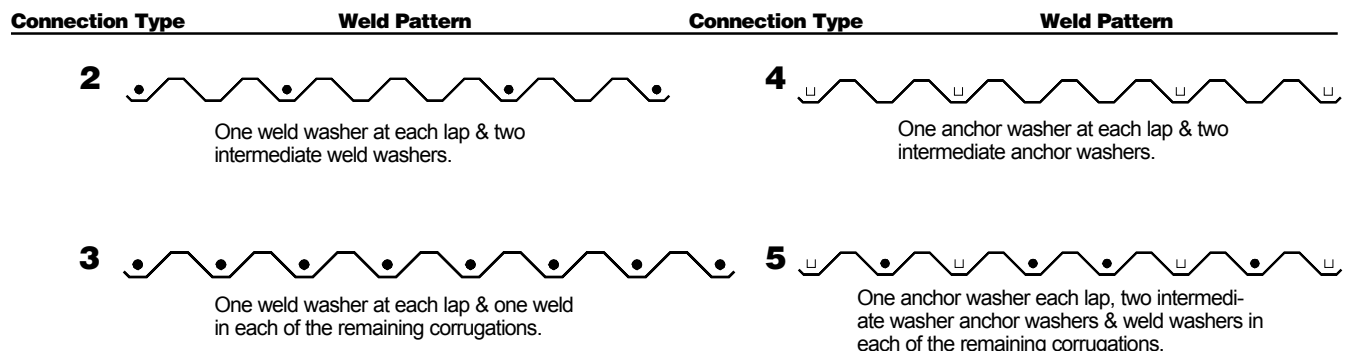


Allowable Diaphragm Shear, q_a (plf)

Flexibility Factor, F (10⁻⁶in/lbs)

Gage	Weld Pattern	Wire Mesh	Span										
			4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
26	2-2	With	392	375	362	351	342	334	328	322			
		Without	491	474	461	450	441	433	426	421			
	3-2	With	446	424	406	391	379	369	460	352			
		Without	571	548	530	515	503	497	483	474			
5-2	With	544	514	490	470	454	440	428	417				
	Without	670	640	616	596	580	573	554	544				
5-3	With	838	798	767	741	720	702	686	673				
	Without	988	948	917	891	870	860	836	823				
24	2-2	With	488	488	488	466	449	434	421	410	400		
		Without	548	548	548	527	509	501	489	449	440		
	3-2	With	565	565	565	537	513	494	477	462	449		
		Without	648	648	648	620	596	586	570	544	531		
5-2	With	701	701	701	663	632	605	582	562	545			
	Without	783	783	783	745	714	700	679	644	627			
5-3	With	1033	1033	1033	985	945	911	882	857	835			
	Without	1111	1111	1111	1063	1023	1006	679	935	913			
22	2-2	With	570	570	570	570	570	546	526	508	493	482	
		Without	601	601	601	601	601	589	570	557	524	510	
	3-2	With	661	661	661	661	661	630	604	581	562	544	
		Without	716	716	716	716	716	700	676	659	617	599	
5-2	With	827	827	827	827	827	786	750	720	693	670		
	Without	880	880	880	880	880	859	827	804	747	724		
5-3	With	1134	1134	1134	1134	1134	1128	1084	1047	1014	984		
	Without	1213	1213	1213	1213	1213	1187	1147	1119	1049	1019		
20	2-2	With	627	627	627	627	627	627	627	603	582	563	547
		Without	641	641	641	641	641	641	641	617	596	578	562
	3-2	With	723	723	723	723	723	723	723	693	661	643	622
		Without	763	763	763	463	763	763	763	733	706	683	662
5-2	With	910	910	910	910	910	910	910	869	833	802	774	
	Without	947	947	947	947	947	947	947	907	871	840	812	
5-3	With	1270	1270	1270	1270	1270	1270	1270	1221	1177	1139	1105	
	Without	1281	1281	1281	1281	1281	1281	1281	1231	1188	1150	1116	

- The values shown are based on a minimum depth of 2" of lightweight insulating concrete over the top flange of the rib.
- For each weld pattern the top shear values are without wire mesh; the bottom shear values are with wire mesh.
- The allowable diaphragm shears are listed in pounds per linear foot (plf).
- Side lap screws at 3' o.c. max spacing.
- The spacing of weld washers to support members running parallel to the flutes are as follows:
 - 24" on center for diaphragms without anchor washers, requiring shears of less than 400 lbs. per linear foot.
 - 12" o.c. for diaphragms without anchor washers, requiring shears of 400 lbs. or greater per linear foot.
 - 8" o.c. for diaphragms, without anchor washers, requiring shears of 950 lbs. or greater per linear foot.
 - Diaphragms, using anchor washers, shall be attached at the boundaries by alternating anchor washers & weld washers at every 12" o.c.
- The first number of the weld pattern (2-2) indicates the welding pattern at the exterior supports; the second number (2-2) indicates the weld pattern at the interior supports.

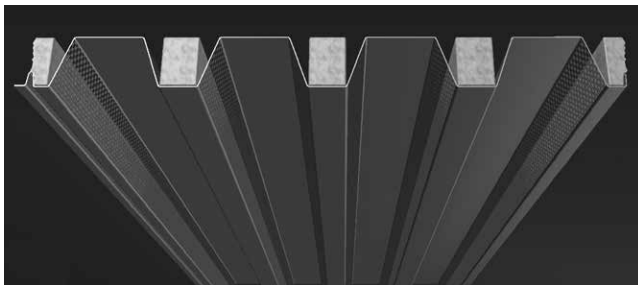


Acustadek®

Acustadek provides the extraordinary beauty of exposed steel, while providing the same noise reduction performance of common Mineral Fiber, Fiberglass, and Bio Acoustic ceiling tile systems. It is an excellent option for reducing noise inside buildings, increasing the comfort for the occupants. Acustadek is a dual-purpose panel which helps lower costs by providing an interior finish while contributing to the structural performance of the building. This is accomplished by perforating the structural steel deck and adding fiberglass batt acoustic media in the webs or in the cells of cellular deck, turning the profile into Acustadek. Our new Smooth Series™ rivets offer a clean attachment solution for the Acustadek cellular deck system.

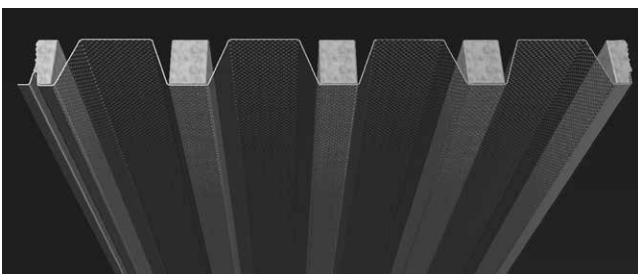
Web-Perforated Acustadek

Web-perforated Acustadek has 0.127" diameter holes spaced 0.375" on center in the webs of the flutes of the deck. Fiberglass batts supplied by ASC Steel Deck are field installed typically by the roofing contractor in the low flutes of the deck before the roof system is applied. Web-perforated roof decks are a component of many common roof systems. Ridged insulation boards, engineered wood panels (Plywood and OSB), fiber reinforced gypsum board, and glass matt covered gypsum board are all suitable cover boards for web-perforated steel decks.



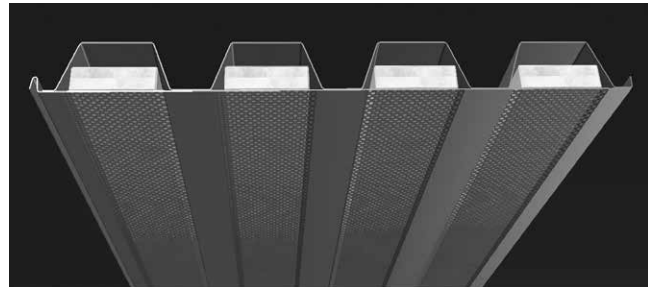
Total Perforation Acustadek

Total perforation Acustadek has 0.127" diameter holes spaced 0.375" on center over the entire width of the profile, except the lower interlock flutes. Fiberglass batts supplied by ASC Steel Deck are field installed by the roofing contractor in the low flutes of the deck before the roof system is applied. Total-perforated roof decks are a component of many common roof systems. Ridged insulation boards, engineered wood panels (Plywood and OSB), fiber reinforced gypsum board and glass matt covered gypsum board are all suitable cover boards for total-perforated steel decks.



Cellular Acustadek

Cellular Acustadek has 0.157" diameter holes spaced 0.433" inches on center in the sections of the pan below the top flutes of the steel deck. Fiberglass batts are factory inserted in the cells of the deck before shipping to the project locations. Any roof system utilizing structural or insulating concrete fill, rigid insulation board, or other roof substrate material suitable for installation on a steel roof deck may be applied to the cellular Acustadek.



Fiberglass Batts

Fiberglass batts are used to absorb sound in the Acustadek assemblies. ASC Steel deck supplies the fiberglass batts that a cut to size for the specified profile. The standard batts are unfaced. Optional batts encapsulated with 0.75 mil clear pvc plastic can be specified.

Acoustical Performance

All Acustadeks have been tested for the sound absorption characteristics of the assemblies. This is commonly presented as a Noise Reduction Coefficient (NRC). The NRC is the average of the 250, 500, 1000, and 2000 hertz sound absorption coefficients. Acustadeks have between a 0.6 and 1.0 NRC, which can meet LEED v4 EQ Credit Acoustic Performance Option 2.

Acustadek should be a portion of a holistic approach to reducing the noise level in a building. Simply specifying an NRC rating for a single material may not get the level of sound control you require. In general, steel decks tend to have better sound absorption coefficients in the higher audible range. Other materials such as fabric wall treatments and carpet tend to have better sound absorption coefficients in the lower audible frequency ranges. The use of Acustadek in combination with other materials may create the best overall quiet environment. An experienced acoustic designer is key to developing the best overall performance using ASC Steel Deck Acustadek products.

The sound absorption coefficient varies across the spectrum of audible sound. In buildings with equipment that creates a specific frequency, the sound absorption coefficient for that frequency range should determine the type of deck rather than the overall NRC rating. For example, if a machine emits a sound in the 2000 Hz range, a total perforation deck such as DGB-36AT with an absorption coefficient of 0.95 would be a better choice than a web-perforated Acustadek such

as DGB-36AW, which only has a 0.53 coefficient for the 2000 Hz range. Some sound absorption coefficients may be greater than 1.0 because of the measurement methods. When designing for a specific frequency, use 1.0 for any absorption coefficients greater than 1.0.

The type of cover board on non-cellular Acustadek has an impact on the sound absorption coefficients and NRC rating of the assembly. The acoustical testing is based on an assembly comprising the Acustadek profile, the fiberglass batts, and the cover board on top of the steel deck that supports the roof system. Historically, fiberglass board was used as the cover board on top of the steel deck. These assemblies have higher acoustical performance than modern assemblies using poly-iso insulation board on top of the deck. The Acustadek tables in this section provide information for both fiberglass and poly-iso deck cover board assemblies.

The NRC should not be confused with the Sound Transmission Coefficient (STC). STCs measure the blocking of sound through an assembly as it relates to the decibel drop in the intensity of the sound. Acustadek may not be a good choice if a high STC is required. As an example, consider a room with noisy equipment. The Acustadek may be a good solution to reduce the noise level in the room for the occupants, but may not be a good material to block the noise from escaping the room. The holes in the perforated Acustadek may in fact let more sound escape the room than a conventional deck.

Detailing and Installation of Acustadek

Acustadek provides an exposed finish in the building. Steel deck is a structural element in the building and is subject to incidental dents in the handling and steel erection process. To minimize the potential damage, use 20 gage or heavier. 22 gage may be an economical option when minor dents can be tolerated; dark paint finishes or high roof structures can mask these types of minor blemishes.

Acustadek can be specified with a galvanized finish or factory prime painted over galvanized steel. Most Acustadeks will receive finish paint to meet the aesthetic requirements of the building. The galvanized steel can be field painted following the paint manufacturer’s preparation and application recommendations. As an option, factory-applied primer can be specified, which may reduce the surface preparation of the deck.

Attaching the Acustadek to the structure and connection of the side laps of the deck can impact the appearance of the installed product. Side lap top seam welds will leave burn marks in the galvanized finish and an occasional burn through should be expected. This may be unsightly if the galvanized finish is intended to be left exposed. The burns can be easily cleaned up prior to prime painting

the deck after installation. A better solution is to use the DeltaGrip® side lap connection. This mechanical interlock connection provides high strength similar to a weld without any thermal damage to the deck or galvanized coating and is not visible from the underside of the deck. Arc spot and arc seam welds may also leave visible burn marks on the deck near the support or on the underside of the supporting steel. A good alternative to welding the deck to supports is to attach the deck with self-drilling screws or power-actuated fasteners (PAF), such as the high shear nails manufactured by Hilti, Inc. or fasteners manufactured by Pneutek Inc. that are intended for decking applications.

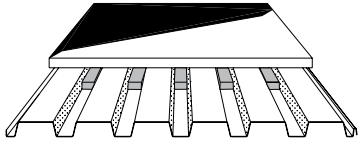
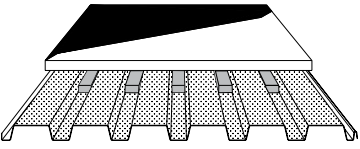
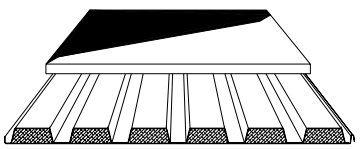
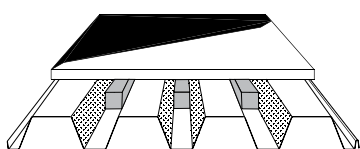
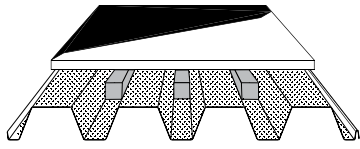
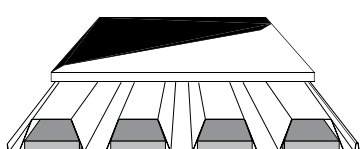
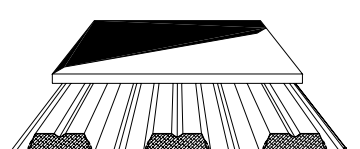
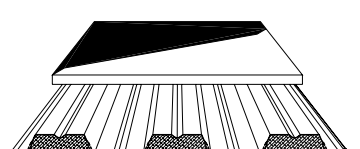
Structural Performance of Acustadek

The perforation of the webs, top and bottom flutes and pans of the Acustadeks has a small impact on the structural performance of the deck profiles. Section properties are reduced from the non-Acustadek version of the profiles leading to reduced vertical load capacity. The reactions at supports are unaffected by the perforation in the Acustadek. The diaphragm shear and flexibility of cellular and web-perforated Acustadek is the same as the non-Acustadek version of the profile. Total perforation Acustadek flexibility is the same as the nonacoustical version of the profile, but the diaphragm shear capacity is 85% of the non-Acustadek profile. (See Figure 7.1.1)

Figure 7.1.1: ACUSTADEK STRUCTURAL PROPERTIES SUMMARY

Section Properties	Use Acustadek section properties
Reactions at Supports (based on Web Crippling)	Use non Acustadek reactions for the profile
Diaphragm Shear	Web perforated and cellular pan perforated use shear for non-Acustadek profile Total perforated Acustadek use 85% of the diaphragm shear for the profile
Diaphragm Flexibility	Use diaphragm flexibility of the non-perforated profile

Sound Absorption Data

Acustadek® Profile (Perforation Type)	Cover Board ^{2,3,4}	Batt ⁵	Absorption Coefficient ¹						Noise Reduction Coefficient ¹
			125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
 DGB-36AW & B-36AW	Poly-Iso	Unfaced	0.08	0.18	0.61	1.05	0.53	0.30	0.60
	Fiberglass	Unfaced	0.23	0.67	1.21	0.82	0.46	0.24	0.80
 DGB-36AT & B-36AT	Poly-Iso	Unfaced	0.08	0.21	0.51	0.83	0.82	0.70	0.60
	Fiberglass	Unfaced	0.23	0.48	0.92	0.97	0.95	0.76	0.85
 DGBF-36A & BF-36A	Poly-Iso	Unfaced	0.20	0.45	0.77	1.09	0.84	0.56	0.80
	Poly-Iso	Encapsulated	0.16	0.37	0.70	1.01	0.64	0.49	0.70
 DGN-32AW & N-32AW	Poly-Iso	Unfaced	0.26	0.42	0.83	0.94	0.54	0.44	0.70
	Fiberglass	Unfaced	0.67	1.11	1.15	1.00	0.49	0.38	0.95
 DGN-32AT & N-32AT	Poly-Iso	Unfaced	0.21	0.33	0.71	0.89	0.78	0.74	0.70
	Fiberglass	Unfaced	0.59	0.96	1.04	1.02	1.00	0.87	1.00
 DGNF-32A & NF-32A	Poly-Iso	Unfaced	0.44	0.57	1.08	1.00	0.82	0.63	0.85
	Poly-Iso	Encapsulated	0.49	0.63	1.17	0.93	0.72	0.48	0.85
 DG2WF-36A & 2WF-36A	Poly-Iso	Unfaced	0.43	0.49	0.80	0.86	0.67	0.56	0.70
	Poly-Iso	Encapsulated	0.38	0.42	0.79	0.79	0.48	0.41	0.60
 DG3WF-36A & 3WF-36A	Poly-Iso	Unfaced	0.49	0.56	1.06	0.90	0.69	0.54	0.80
	Poly-Iso	Encapsulated	0.60	0.79	0.66	0.50	0.46	0.46	0.60

Sound Absorption Data

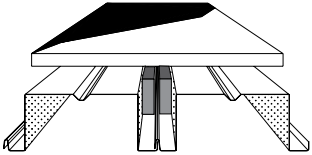
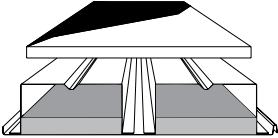
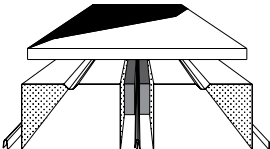
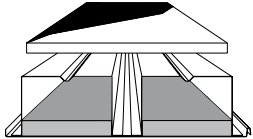
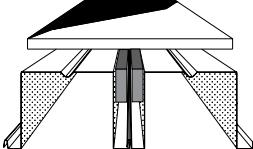
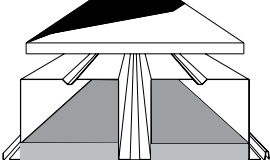
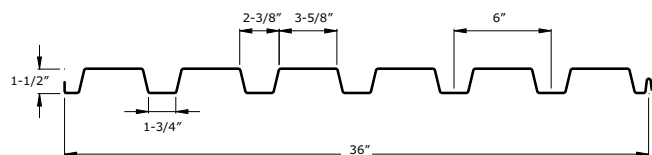
Acustadek® Profile (Perforation Type)	Cover Board ^{2,3,4}	Batt ⁵	Absorption Coefficient ¹						Noise Reduction Coefficient ¹
			125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
 <p>4.5D-12AW</p>	Foil Faced Poly-Iso	Unfaced	0.22	0.49	0.96	0.78	0.53	0.45	0.70
	Poly-Iso	Encapsulated	0.18	0.38	0.83	0.62	0.45	0.29	0.55
 <p>4.5DF-24A</p>	Poly-Iso	Unfaced	0.40	0.75	0.83	0.68	0.70	0.54	0.75
	Poly-Iso	Encapsulated	0.58	0.91	0.93	0.68	0.59	0.46	0.80
 <p>6D-12AW</p>	Foil Faced Poly-Iso	Unfaced	0.27	0.59	0.79	0.69	0.61	0.55	0.65
	Poly-Iso	Encapsulated	INQUIRE						
 <p>6DF-24A</p>	Poly-Iso	Unfaced	0.40	0.89	0.85	0.72	0.70	0.53	0.80
	Poly-Iso	Encapsulated	0.53	0.88	0.82	0.70	0.63	0.52	0.75
 <p>7.5D-12AW</p>	Poly-Iso	Unfaced	0.35	0.68	0.72	0.81	0.68	0.58	0.70
	Poly-Iso	Encapsulated	INQUIRE						
 <p>7.5DF-24A</p>	Poly-Iso	Unfaced	0.78	0.99	0.86	0.79	0.72	0.52	0.85
	Poly-Iso	Encapsulated	0.84	0.93	0.79	0.75	0.65	0.93	0.80

Table Notes:

1. Noise reduction coefficient testing was conducted in accordance with ASTM C423 and ASTM E795.
2. Test conducted with 2" thick 3 pcf fiberglass cover board.
3. Test conducted with 2" thick felt faced Poly-Iso (polyisocyanurate) cover board.
4. Test conducted with 2" thick foil faced Poly-Iso (polyisocyanurate) cover board.
5. Unfaced or encapsulated fiberglass batts wrapped with clear plastic film.

7.3 DGB-36AW & B-36AW

Web Perforated Acustadek®



Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F_y ksi	Tensile Strength F_u ksi	Gross Section Properties				
					Area A_g in ² /ft	Moment of Inertia I_g in ⁴ /ft	Distance to N.A. from Bottom y_b in	Section Modulus S_g in ³ /ft	Radius of Gyration r in
22	1.63	0.0299	38	52	0.501	0.199	0.96	0.206	0.630
20	1.94	0.0359	38	52	0.569	0.238	0.96	0.248	0.647
18	2.56	0.0478	38	52	0.753	0.311	0.96	0.324	0.643
16	3.19	0.0598	38	52	0.936	0.380	0.96	0.396	0.638

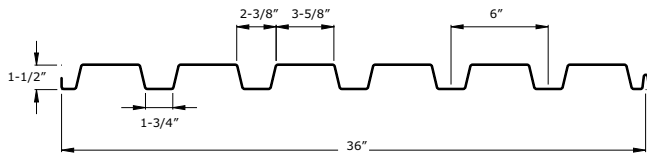
Gage	Effective Section Modulus for Bending at F_y					Effective Moment of Inertia for Deflection at Service Load			
	Area A_{e+} in ² /ft	Section Modulus S_{e+} in ³ /ft	Distance to N.A. from Bottom y_b in	Section Modulus S_{e-} in ³ /ft	Distance to N.A. from Bottom y_b in	Moment of Inertia I_{e+} in ⁴ /ft	Moment of Inertia I_{e-} in ⁴ /ft	Uniform Load Only	
								$I_d = (2I_e + I_g)/3$	
22	0.359	0.180	0.76	0.178	1.03	0.162	0.174	0.174	0.183
20	0.476	0.225	0.81	0.227	1.00	0.205	0.238	0.216	0.238
18	0.659	0.311	0.93	0.315	0.97	0.298	0.295	0.302	0.300
16	0.860	0.368	0.96	0.369	1.01	0.380	0.380	0.380	0.380

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	5' - 0"	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"
22	SS	f_b / Ω	171	109	76	56	43	34	27	23	19
		Φf_b	271	173	120	88	68	53	43	36	30
		L/360	119	61	35	22	15	10	8	6	4
		L/240	-	91	53	33	22	16	11	9	7
		L/180	-	-	71	44	30	21	15	11	9
	L/120	-	-	-	-	-	31	23	17	13	
	DS	f_b / Ω	169	108	75	55	42	33	27	22	19
		Φf_b	268	172	119	88	67	53	43	35	30
		L/360	-	-	-	54	36	25	18	14	11
		L/240	-	-	-	-	-	-	-	21	16
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	211	135	94	69	53	42	34	28	23
		Φf_b	335	214	149	109	84	66	54	44	37
		L/360	-	135	78	49	33	23	17	13	10
L/240		-	-	-	-	49	35	25	19	15	
L/180		-	-	-	-	-	-	34	25	19	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	214	137	95	70	53	42	34	28	24
		Φf_b	339	217	151	111	85	67	54	45	38
		L/360	148	76	44	28	18	13	9	7	5
		L/240	-	113	66	41	28	19	14	11	8
		L/180	-	-	88	55	37	26	19	14	11
	L/120	-	-	-	-	-	39	28	21	16	
	DS	f_b / Ω	216	138	96	70	54	43	34	28	24
		Φf_b	342	219	152	112	85	68	55	45	38
		L/360	-	-	-	66	44	31	23	17	13
		L/240	-	-	-	-	-	-	34	26	20
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	269	172	120	88	67	53	43	36	30
		Φf_b	427	274	190	140	107	84	68	57	47
		L/360	-	167	97	61	41	29	21	16	12
L/240		-	-	-	-	61	43	31	24	18	
L/180		-	-	-	-	-	-	42	31	24	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	295	189	131	96	74	58	47	39	33
		Φf_b	468	300	208	153	117	92	75	62	52
		L/360	206	106	61	39	26	18	13	10	8
		L/240	-	158	92	58	39	27	20	15	11
		L/180	-	-	122	77	52	36	26	20	15
	L/120	-	-	-	-	-	54	40	30	23	
	DS	f_b / Ω	299	191	133	97	75	59	48	39	33
		Φf_b	474	303	211	155	118	94	76	63	53
		L/360	-	-	-	93	62	44	32	24	18
		L/240	-	-	-	-	-	-	48	36	28
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	373	239	166	122	93	74	60	49	41
		Φf_b	592	379	263	193	148	117	95	78	66
		L/360	-	233	135	85	57	40	29	22	17
L/240		-	-	-	-	85	60	44	33	25	
L/180		-	-	-	-	-	-	58	44	34	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	349	223	155	114	87	69	56	46	39
		Φf_b	553	354	246	181	138	109	89	73	61
		L/360	260	133	77	48	32	23	17	12	10
		L/240	-	199	115	73	49	34	25	19	14
		L/180	-	-	154	97	65	46	33	25	19
	L/120	-	-	-	-	-	68	50	37	29	
	DS	f_b / Ω	350	224	156	114	88	69	56	46	39
		Φf_b	555	356	247	181	139	110	89	73	62
		L/360	-	-	-	-	78	55	40	30	23
		L/240	-	-	-	-	-	-	-	45	35
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	438	280	195	143	109	86	70	58	49
		Φf_b	694	444	309	227	174	137	111	92	77
		L/360	-	-	170	107	72	50	37	28	21
L/240		-	-	-	-	107	75	55	41	32	
L/180		-	-	-	-	-	-	-	55	42	
L/120	-	-	-	-	-	-	-	-	-		

7.3 DGB-36AT & B-36AT

Total Perforated Acustadek®



Panel Properties

Gage	Base Metal				Gross Section Properties				
	Weight	Thickness	Yield Strength	Tensile Strength	Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
	w psf	t in	F_y ksi	F_u ksi	A_g in ² /ft	I_g in ⁴ /ft	y_b in	S_g in ³ /ft	r in
22	1.51	0.0299	38	52	0.462	0.177	0.92	0.192	0.618
20	1.80	0.0359	38	52	0.553	0.212	0.92	0.230	0.620
18	2.37	0.0478	38	52	0.731	0.277	0.93	0.298	0.615
16	2.96	0.0598	38	52	0.909	0.338	0.93	0.364	0.610

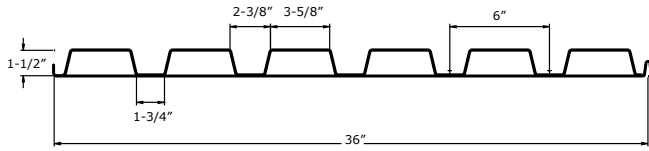
Gage	Effective Section Modulus for Bending at F_y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								$I_d = (2I_e + I_g)/3$	
	A_{e+} in ² /ft	S_{e+} in ³ /ft	y_b in	S_{e-} in ³ /ft	y_b in	I_{e+} in ⁴ /ft	I_{e-} in ⁴ /ft	I_+ in ⁴ /ft	I_- in ⁴ /ft
22	0.382	0.120	0.71	0.139	0.94	0.136	0.174	0.149	0.175
20	0.502	0.164	0.76	0.186	0.87	0.176	0.209	0.188	0.210
18	0.693	0.227	0.85	0.245	0.89	0.263	0.276	0.267	0.276
16	0.900	0.282	0.90	0.309	0.71	0.337	0.337	0.338	0.338

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4' - 0"	5' - 0"	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"
22	SS	f_b / Ω	114	73	51	37	29	23	18	15	13
		Φf_b	181	116	80	59	45	36	29	24	20
		L/360	102	52	30	19	13	9	7	5	4
		L/240	-	-	45	29	19	13	10	7	6
		L/180	-	-	-	-	25	18	13	10	8
	L/120	-	-	-	-	-	-	-	15	11	
	DS	f_b / Ω	131	84	58	43	33	26	21	17	15
		Φf_b	208	133	93	68	52	41	33	28	23
		L/360	-	-	-	-	31	22	16	12	9
		L/240	-	-	-	-	-	-	-	-	14
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	164	105	73	54	41	32	26	22	18
		Φf_b	260	167	116	85	65	51	42	34	29
		L/360	-	-	67	42	28	20	14	11	8
L/240		-	-	-	-	-	30	22	16	12	
L/180		-	-	-	-	-	-	-	22	17	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	155	99	69	51	39	31	25	21	17
		Φf_b	246	158	109	80	62	49	39	33	27
		L/360	128	66	38	24	16	11	8	6	5
		L/240	-	99	57	36	24	17	12	9	7
		L/180	-	-	-	48	32	23	16	12	10
	L/120	-	-	-	-	-	-	25	19	14	
	DS	f_b / Ω	176	113	78	57	44	35	28	23	20
		Φf_b	279	179	124	91	70	55	45	37	31
		L/360	-	-	-	-	39	27	20	15	11
		L/240	-	-	-	-	-	-	-	22	17
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	220	141	98	72	55	43	35	29	24
		Φf_b	349	223	155	114	87	69	56	46	39
		L/360	-	-	84	53	35	25	18	14	10
L/240		-	-	-	-	53	37	27	20	16	
L/180		-	-	-	-	-	-	-	27	21	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	215	138	96	70	54	42	34	28	24
		Φf_b	341	218	152	111	85	67	55	45	38
		L/360	182	93	54	34	23	16	12	9	7
		L/240	-	-	81	51	34	24	18	13	10
		L/180	-	-	-	68	46	32	23	18	14
	L/120	-	-	-	-	-	-	-	26	20	
	DS	f_b / Ω	232	148	103	76	58	46	37	31	26
		Φf_b	368	235	164	120	92	73	59	49	41
		L/360	-	-	-	-	55	39	28	21	16
		L/240	-	-	-	-	-	-	-	-	24
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	290	186	129	95	72	57	46	38	32
		Φf_b	460	294	204	150	115	91	74	61	51
		L/360	-	-	119	75	50	35	26	19	15
L/240		-	-	-	-	-	53	39	29	22	
L/180		-	-	-	-	-	-	-	-	30	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	267	171	119	87	67	53	43	35	30
		Φf_b	424	271	188	138	106	84	68	56	47
		L/360	231	118	68	43	29	20	15	11	9
		L/240	-	-	102	65	43	30	22	17	13
		L/180	-	-	-	86	58	40	30	22	17
	L/120	-	-	-	-	-	-	-	33	26	
	DS	f_b / Ω	293	187	130	96	73	58	47	39	33
		Φf_b	465	297	207	152	116	92	74	61	52
		L/360	-	-	-	-	69	49	36	27	21
		L/240	-	-	-	-	-	-	-	-	31
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	366	234	163	120	92	72	59	48	41
		Φf_b	581	372	258	190	145	115	93	77	65
		L/360	-	-	151	95	64	45	33	24	19
L/240		-	-	-	-	-	67	49	37	28	
L/180		-	-	-	-	-	-	-	-	38	
L/120	-	-	-	-	-	-	-	-	-		

7.3 DGBF-36A & BF-36A

Pan Perforated Cellular Acustadek®



Panel Properties

Gage	Panel Properties				Gross Section Properties				
	Weight	Base Metal Thickness	Yield Strength	Tensile Strength	Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
20/20	3.19	0.0359/0.036	40	55	0.938	0.446	0.64	0.455	0.665
20/18	3.56	0.0359/0.047	40	55	1.046	0.489	0.59	0.467	0.651
20/16	3.96	0.0359/0.059	40	55	1.163	0.520	0.54	0.471	0.634
18/20	3.84	0.0478/0.036	40	55	1.129	0.547	0.70	0.589	0.677
18/18	4.21	0.0478/0.047	40	55	1.237	0.595	0.65	0.602	0.670
18/16	4.61	0.0478/0.059	40	55	1.355	0.641	0.61	0.613	0.659
16/20	4.50	0.0598/0.036	40	55	1.321	0.641	0.75	0.702	0.682
16/18	4.86	0.0598/0.047	40	55	1.429	0.699	0.71	0.728	0.679
16/16	5.26	0.0598/0.059	40	55	1.547	0.753	0.67	0.751	0.674

Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								I _u = (2I _e +I _g)/3	
A _e ⁺ in ² /ft	S _e ⁺ in ³ /ft	y _b in	S _e ⁻ in ³ /ft	y _b in	I _e ⁺ in ⁴ /ft	I _e ⁻ in ⁴ /ft	I _u ⁺ in ⁴ /ft	I _u ⁻ in ⁴ /ft	
20/20	0.618	0.309	0.48	0.447	0.36	0.362	0.321	0.390	0.363
20/18	0.715	0.333	0.44	0.495	0.69	0.391	0.441	0.424	0.457
20/16	0.826	0.338	0.40	0.503	0.62	0.413	0.499	0.449	0.506
18/20	0.841	0.477	0.58	0.607	0.79	0.494	0.473	0.511	0.497
18/18	0.938	0.491	0.54	0.630	0.74	0.535	0.535	0.555	0.555
18/16	1.050	0.503	0.50	0.653	0.69	0.574	0.608	0.596	0.619
16/20	1.061	0.642	0.66	0.703	0.82	0.621	0.567	0.628	0.592
16/18	1.158	0.661	0.62	0.766	0.78	0.675	0.632	0.683	0.654
16/16	1.270	0.678	0.58	0.796	0.73	0.728	0.712	0.736	0.726

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
20/20	SS	f_b / Ω	309	137	77	49	34	25	19	15	12
		Φf_b	490	218	122	78	54	40	31	24	20
		L/360	266	79	33	17	10	6	4	3	2
		L/240	-	118	50	26	15	9	6	4	3
		L/180	-	-	67	34	20	12	8	6	4
	L/120	-	-	-	-	30	19	12	9	6	
	DS	f_b / Ω	446	198	112	71	50	36	28	22	18
		Φf_b	708	315	177	113	79	58	44	35	28
		L/360	-	177	75	38	22	14	9	7	5
		L/240	-	-	-	57	33	21	14	10	7
		L/180	-	-	-	-	44	28	19	13	10
	L/120	-	-	-	-	-	-	-	20	14	
	TS	f_b / Ω	482	214	121	77	54	39	30	24	19
		Φf_b	765	340	191	122	85	62	48	38	31
		L/360	-	162	68	35	20	13	9	6	4
L/240		-	-	103	53	30	19	13	9	7	
L/180		-	-	-	70	41	26	17	12	9	
L/120	-	-	-	-	-	38	26	18	13		
20/18	SS	f_b / Ω	332	148	83	53	37	27	21	16	13
		Φf_b	527	234	132	84	59	43	33	26	21
		L/360	289	86	36	19	11	7	5	3	2
		L/240	-	129	54	28	16	10	7	5	3
		L/180	-	-	72	37	21	13	9	6	5
	L/120	-	-	-	-	32	20	14	10	7	
	DS	f_b / Ω	494	220	123	79	55	40	31	24	20
		Φf_b	784	348	196	125	87	64	49	39	31
		L/360	-	-	94	48	28	18	12	8	6
		L/240	-	-	-	72	42	26	18	12	9
		L/180	-	-	-	-	-	35	23	17	12
	L/120	-	-	-	-	-	-	-	-	18	
	TS	f_b / Ω	519	231	130	83	58	42	32	26	21
		Φf_b	823	366	206	132	91	67	51	41	33
		L/360	-	204	86	44	26	16	11	8	6
L/240		-	-	129	66	38	24	16	11	8	
L/180		-	-	-	-	51	32	22	15	11	
L/120	-	-	-	-	-	-	32	23	17		
20/16	SS	f_b / Ω	337	150	84	54	37	28	21	17	13
		Φf_b	535	238	134	86	59	44	33	26	21
		L/360	307	91	38	20	11	7	5	3	2
		L/240	-	136	57	29	17	11	7	5	4
		L/180	-	-	77	39	23	14	10	7	5
	L/120	-	-	-	-	34	21	14	10	7	
	DS	f_b / Ω	502	223	126	80	56	41	31	25	20
		Φf_b	797	354	199	128	89	65	50	39	32
		L/360	-	-	104	53	31	19	13	9	7
		L/240	-	-	-	80	46	29	19	14	10
		L/180	-	-	-	-	-	39	26	18	13
	L/120	-	-	-	-	-	-	-	-	20	
	TS	f_b / Ω	527	234	132	84	59	43	33	26	21
		Φf_b	836	372	209	134	93	68	52	41	33
		L/360	-	226	95	49	28	18	12	8	6
L/240		-	-	-	73	42	27	18	13	9	
L/180		-	-	-	-	56	36	24	17	12	
L/120	-	-	-	-	-	-	-	25	18		

7.3 DGBF-36A & BF-36A

Pan Perforated Cellular Acustadek®



Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

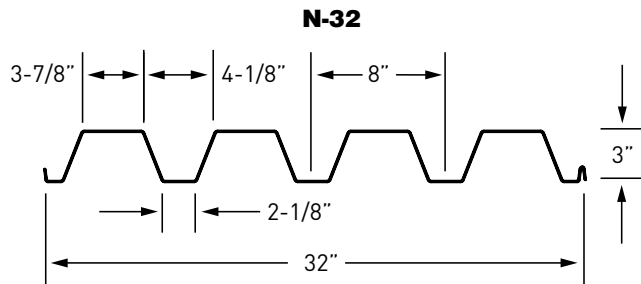
Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
18/20	SS	f_b / Ω	476	211	119	76	53	39	30	23	19
		Φf_b	755	335	189	121	84	62	47	37	30
		L/360	349	103	44	22	13	8	5	4	3
		L/240	-	155	65	34	19	12	8	6	4
		L/180	-	207	87	45	26	16	11	8	6
		L/120	-	-	-	67	39	24	16	11	8
	DS	f_b / Ω	606	269	152	97	67	49	38	30	24
		Φf_b	962	427	240	154	107	78	60	47	38
		L/360	-	242	102	52	30	19	13	9	7
		L/240	-	-	-	79	45	29	19	13	10
		L/180	-	-	-	-	61	38	26	18	13
		L/120	-	-	-	-	-	-	-	27	20
	TS	f_b / Ω	743	330	186	119	83	61	46	37	30
		Φf_b	1179	524	295	189	131	96	74	58	47
		L/360	-	222	94	48	28	17	12	8	6
		L/240	-	-	141	72	42	26	18	12	9
		L/180	-	-	-	96	56	35	23	16	12
		L/120	-	-	-	-	-	52	35	25	18
18/18	SS	f_b / Ω	490	218	122	78	54	40	31	24	20
		Φf_b	777	345	194	124	86	63	49	38	31
		L/360	379	112	47	24	14	9	6	4	3
		L/240	-	169	71	36	21	13	9	6	5
		L/180	-	-	95	49	28	18	12	8	6
		L/120	-	-	-	73	42	27	18	12	9
	DS	f_b / Ω	629	279	157	101	70	51	39	31	25
		Φf_b	998	443	249	160	111	81	62	49	40
		L/360	-	271	114	58	34	21	14	10	7
		L/240	-	-	-	88	51	32	21	15	11
		L/180	-	-	-	-	68	43	29	20	15
		L/120	-	-	-	-	-	-	-	30	22
	TS	f_b / Ω	765	340	191	122	85	62	48	38	31
		Φf_b	1214	539	303	194	135	99	76	60	49
		L/360	-	248	105	54	31	20	13	9	7
		L/240	-	-	157	80	46	29	20	14	10
		L/180	-	-	-	107	62	39	26	18	13
		L/120	-	-	-	-	-	59	39	28	20
18/16	SS	f_b / Ω	502	223	125	80	56	41	31	25	20
		Φf_b	796	354	199	127	88	65	50	39	32
		L/360	407	121	51	26	15	9	6	4	3
		L/240	-	181	76	39	23	14	10	7	5
		L/180	-	-	102	52	30	19	13	9	7
		L/120	-	-	-	78	45	28	19	13	10
	DS	f_b / Ω	651	290	163	104	72	53	41	32	26
		Φf_b	1034	459	258	165	115	84	65	51	41
		L/360	-	-	127	65	38	24	16	11	8
		L/240	-	-	-	98	57	36	24	17	12
		L/180	-	-	-	-	-	48	32	22	16
		L/120	-	-	-	-	-	-	-	-	24
	TS	f_b / Ω	784	348	196	125	87	64	49	39	31
		Φf_b	1244	553	311	199	138	102	78	61	50
		L/360	-	276	117	60	35	22	15	10	7
		L/240	-	-	175	90	52	33	22	15	11
		L/180	-	-	-	119	69	44	29	20	15
		L/120	-	-	-	-	-	-	44	31	22

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
16/20	SS	f_b / Ω	640	285	160	102	71	52	40	32	26
		Φf_b	1016	452	254	163	113	83	63	50	41
		L/360	429	127	54	27	16	10	7	5	3
		L/240	-	190	80	41	24	15	10	7	5
		L/180	-	254	107	55	32	20	13	9	7
	L/120	-	-	-	82	48	30	20	14	10	
	DS	f_b / Ω	701	312	175	112	78	57	44	35	28
		Φf_b	1113	494	278	178	124	91	70	55	45
		L/360	-	289	122	62	36	23	15	11	8
		L/240	-	-	-	93	54	34	23	16	12
		L/180	-	-	-	-	72	45	30	21	16
	L/120	-	-	-	-	-	-	-	32	23	
	TS	f_b / Ω	877	390	219	140	97	72	55	43	35
		Φf_b	1391	618	348	223	155	114	87	69	56
		L/360	-	264	112	57	33	21	14	10	7
L/240		-	-	167	86	50	31	21	15	11	
L/180		-	-	-	114	66	42	28	20	14	
L/120	-	-	-	-	-	62	42	29	21		
16/18	SS	f_b / Ω	660	293	165	106	73	54	41	33	26
		Φf_b	1047	465	262	167	116	85	65	52	42
		L/360	467	138	58	30	17	11	7	5	4
		L/240	-	207	87	45	26	16	11	8	6
		L/180	-	276	117	60	35	22	15	10	7
	L/120	-	-	-	90	52	33	22	15	11	
	DS	f_b / Ω	765	340	191	122	85	62	48	38	31
		Φf_b	1213	539	303	194	135	99	76	60	49
		L/360	-	319	135	69	40	25	17	12	9
		L/240	-	-	-	103	60	38	25	18	13
		L/180	-	-	-	-	80	50	34	24	17
	L/120	-	-	-	-	-	-	-	35	26	
	TS	f_b / Ω	956	425	239	153	106	78	60	47	38
		Φf_b	1517	674	379	243	169	124	95	75	61
		L/360	-	292	123	63	37	23	15	11	8
L/240		-	-	185	95	55	34	23	16	12	
L/180		-	-	-	126	73	46	31	22	16	
L/120	-	-	-	-	-	69	46	32	24		
16/16	SS	f_b / Ω	677	301	169	108	75	55	42	33	27
		Φf_b	1074	477	268	172	119	88	67	53	43
		L/360	503	149	63	32	19	12	8	6	4
		L/240	-	223	94	48	28	18	12	8	6
		L/180	-	298	126	64	37	23	16	11	8
	L/120	-	-	-	97	56	35	24	17	12	
	DS	f_b / Ω	795	353	199	127	88	65	50	39	32
		Φf_b	1261	560	315	202	140	103	79	62	50
		L/360	-	-	149	76	44	28	19	13	10
		L/240	-	-	-	115	66	42	28	20	14
		L/180	-	-	-	-	-	56	37	26	19
	L/120	-	-	-	-	-	-	-	-	29	
	TS	f_b / Ω	993	442	248	159	110	81	62	49	40
		Φf_b	1576	701	394	252	175	129	99	78	63
		L/360	-	324	137	70	41	26	17	12	9
L/240		-	-	205	105	61	38	26	18	13	
L/180		-	-	-	140	81	51	34	24	17	
L/120	-	-	-	-	-	77	51	36	26		

7.3 DGN-32AW & N-32AW

Web Perforated Acustadek®



Panel Properties

Gage	Panel Properties				Gross Section Properties				
	Weight	Base Metal Thickness	Yield Strength	Tensile Strength	Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
22	1.66	0.0299	50	65	0.489	0.800	1.71	0.449	1.195
20	1.99	0.0359	50	65	0.585	0.951	1.71	0.533	1.193
18	2.64	0.0478	50	65	0.775	1.253	1.72	0.698	1.189
16	3.28	0.0598	50	65	0.963	1.547	1.72	0.858	1.185

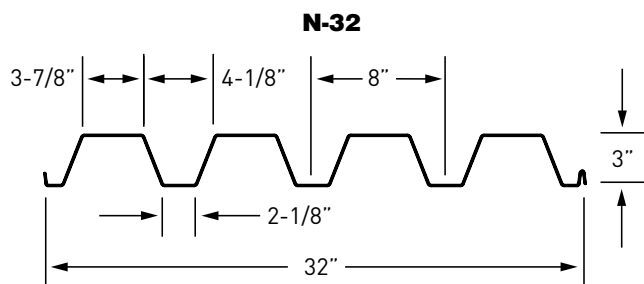
Gage	Effective Section Modulus for Bending at F_y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								$I_d = (2I_e + I_g)/3$	I_+
22	A_{e+} in ² /ft	S_{e+} in ³ /ft	y_b in	S_{e-} in ³ /ft	y_b in	I_{e+} in ⁴ /ft	I_{e-} in ⁴ /ft	I_+ in ⁴ /ft	I_- in ⁴ /ft
22	0.267	0.315	1.35	0.392	1.71	0.654	0.740	0.703	0.760
20	0.366	0.407	1.39	0.487	1.71	0.793	0.913	0.846	0.926
18	0.593	0.610	1.47	0.657	1.75	1.198	1.253	1.216	1.253
16	0.856	0.822	1.54	0.857	1.73	1.529	1.547	1.535	1.547

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			5'-0"	7'-0"	9'-0"	11'-0"	13'-0"	15'-0"	17'-0"	19'-0"	21'-0"
22	SS	f_b / Ω	251	128	78	52	37	28	22	17	14
		Φf_b	399	204	123	82	59	44	35	28	23
		L/360	246	90	42	23	14	9	6	4	3
		L/240	-	-	63	35	21	14	9	7	5
		L/180	-	-	-	46	28	18	13	9	7
	L/120	-	-	-	-	-	27	19	13	10	
	DS	f_b / Ω	313	160	97	65	46	35	27	22	18
		Φf_b	497	253	153	103	73	55	43	34	28
		L/360	-	-	-	60	36	24	16	12	9
		L/240	-	-	-	-	-	-	24	17	13
		L/180	-	-	-	-	-	-	-	-	17
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	391	200	121	81	58	43	34	27	22
		Φf_b	621	317	192	128	92	69	54	43	35
		L/360	-	-	101	55	33	22	15	11	8
L/240		-	-	-	-	50	33	22	16	12	
L/180		-	-	-	-	-	43	30	21	16	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	325	166	100	67	48	36	28	23	18
		Φf_b	516	263	159	107	76	57	45	36	29
		L/360	296	108	51	28	17	11	8	5	4
		L/240	-	162	76	42	25	16	11	8	6
		L/180	-	-	-	56	34	22	15	11	8
	L/120	-	-	-	-	-	33	23	16	12	
	DS	f_b / Ω	389	198	120	80	58	43	34	27	22
		Φf_b	617	315	190	127	91	69	53	43	35
		L/360	-	-	-	73	44	29	20	14	11
		L/240	-	-	-	-	-	-	30	21	16
		L/180	-	-	-	-	-	-	-	-	21
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	486	248	150	100	72	54	42	34	28
		Φf_b	771	393	238	159	114	86	67	53	44
		L/360	-	-	122	67	41	26	18	13	10
L/240		-	-	-	-	61	40	27	20	14	
L/180		-	-	-	-	-	53	36	26	19	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	487	248	150	101	72	54	42	34	28
		Φf_b	773	394	238	160	114	86	67	54	44
		L/360	425	155	73	40	24	16	11	8	6
		L/240	-	232	109	60	36	24	16	12	9
		L/180	-	-	146	80	48	32	22	16	11
	L/120	-	-	-	-	-	47	32	23	17	
	DS	f_b / Ω	525	268	162	108	78	58	45	36	30
		Φf_b	832	425	257	172	123	92	72	58	47
		L/360	-	-	-	99	60	39	27	19	14
		L/240	-	-	-	-	-	-	40	29	21
		L/180	-	-	-	-	-	-	-	-	28
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	656	335	202	135	97	73	57	45	37
		Φf_b	1040	531	321	215	154	116	90	72	59
		L/360	-	-	166	91	55	36	25	18	13
L/240		-	-	-	-	83	54	37	26	20	
L/180		-	-	-	-	-	72	49	35	26	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	656	335	203	136	97	73	57	45	37
		Φf_b	1041	531	321	215	154	116	90	72	59
		L/360	537	196	92	50	31	20	14	10	7
		L/240	-	293	138	76	46	30	20	15	11
		L/180	-	-	184	101	61	40	27	20	14
	L/120	-	-	-	-	92	60	41	29	22	
	DS	f_b / Ω	684	349	211	141	101	76	59	47	39
		Φf_b	1086	554	335	224	161	121	94	75	62
		L/360	-	-	-	122	74	48	33	24	18
		L/240	-	-	-	-	-	72	50	36	26
		L/180	-	-	-	-	-	-	-	-	35
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	855	436	264	177	127	95	74	59	48
		Φf_b	1357	692	419	280	201	151	117	94	77
		L/360	-	435	205	112	68	44	30	22	16
L/240		-	-	-	168	102	66	46	33	24	
L/180		-	-	-	-	-	88	61	44	32	
L/120	-	-	-	-	-	-	-	-	48		

7.3 DGN-32AT & N-32AT

Total Perforated Acustadek®



Panel Properties

Gage	Weight w psf	Base Metal Thickness t in	Yield Strength F _y ksi	Tensile Strength F _u ksi	Gross Section Properties				
					Area A _g in ² /ft	Moment of Inertia I _g in ⁴ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _g in ³ /ft	Radius of Gyration r in
22	1.34	0.0299	50	65	0.394	0.718	1.61	0.342	1.195
20	1.60	0.0359	50	65	0.471	0.853	1.61	0.404	1.193
18	2.12	0.0478	50	65	0.622	1.123	1.62	0.530	1.189
16	2.63	0.0598	50	65	0.772	1.386	1.62	0.650	1.185

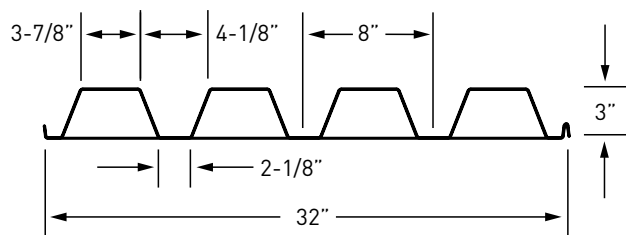
Gage	Effective Section Modulus for Bending at F _y					Effective Moment of Inertia for Deflection at Service Load			
	Area A _{e+} in ² /ft	Section Modulus S _{e+} in ³ /ft	Distance to N.A. from Bottom y _b in	Section Modulus S _{e-} in ³ /ft	Distance to N.A. from Bottom y _b in	Moment of Inertia I _{e+} in ⁴ /ft	Moment of Inertia I _{e-} in ⁴ /ft	Uniform Load Only	
								I _u = (2I _e +I _g)/3	I ₊ in ⁴ /ft
22	0.230	0.246	1.36	0.282	1.61	0.567	0.658	0.618	0.678
20	0.316	0.314	1.40	0.355	1.61	0.669	0.815	0.730	0.828
18	0.513	0.460	1.46	0.491	1.66	1.058	1.123	1.080	1.123
16	0.739	0.627	1.52	0.648	1.63	1.362	1.386	1.370	1.386

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
22	SS	f_b / Ω	307	136	77	49	34	25	19	15	12
		Φf_b	487	216	122	78	54	40	30	24	19
		L/360	-	125	53	27	16	10	7	5	3
		L/240	-	-	-	41	23	15	10	7	5
		L/180	-	-	-	-	31	20	13	9	7
	L/120	-	-	-	-	-	-	-	14	10	
	DS	f_b / Ω	352	156	88	56	39	29	22	17	14
		Φf_b	558	248	140	89	62	46	35	28	22
		L/360	-	-	-	-	-	26	17	12	9
		L/240	-	-	-	-	-	-	-	-	13
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	440	195	110	70	49	36	27	22	18
		Φf_b	698	310	174	112	78	57	44	34	28
		L/360	-	-	-	65	38	24	16	11	8
L/240		-	-	-	-	-	36	24	17	12	
L/180		-	-	-	-	-	-	-	-	16	
L/120	-	-	-	-	-	-	-	-	-		
20	SS	f_b / Ω	392	174	98	63	44	32	24	19	16
		Φf_b	621	276	155	99	69	51	39	31	25
		L/360	-	148	62	32	18	12	8	5	4
		L/240	-	-	93	48	28	17	12	8	6
		L/180	-	-	-	-	37	23	16	11	8
	L/120	-	-	-	-	-	-	23	16	12	
	DS	f_b / Ω	443	197	111	71	49	36	28	22	18
		Φf_b	703	312	176	112	78	57	44	35	28
		L/360	-	-	-	-	-	32	21	15	11
		L/240	-	-	-	-	-	-	-	-	16
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	554	246	138	89	62	45	35	27	22
		Φf_b	878	390	220	141	98	72	55	43	35
		L/360	-	-	-	80	46	29	19	14	10
L/240		-	-	-	-	-	44	29	21	15	
L/180		-	-	-	-	-	-	-	-	20	
L/120	-	-	-	-	-	-	-	-	-		
18	SS	f_b / Ω	574	255	143	92	64	47	36	28	23
		Φf_b	910	405	228	146	101	74	57	45	36
		L/360	-	219	92	47	27	17	12	8	6
		L/240	-	-	138	71	41	26	17	12	9
		L/180	-	-	-	-	55	34	23	16	12
	L/120	-	-	-	-	-	-	35	24	18	
	DS	f_b / Ω	613	272	153	98	68	50	38	30	25
		Φf_b	972	432	243	155	108	79	61	48	39
		L/360	-	-	-	-	-	43	29	20	15
		L/240	-	-	-	-	-	-	-	-	22
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	766	340	191	123	85	63	48	38	31
		Φf_b	1215	540	304	194	135	99	76	60	49
		L/360	-	-	-	108	63	39	26	19	14
L/240		-	-	-	-	-	59	40	28	20	
L/180		-	-	-	-	-	-	-	37	27	
L/120	-	-	-	-	-	-	-	-	-		
16	SS	f_b / Ω	782	348	196	125	87	64	49	39	31
		Φf_b	1241	552	310	199	138	101	78	61	50
		L/360	-	277	117	60	35	22	15	10	7
		L/240	-	-	175	90	52	33	22	15	11
		L/180	-	-	-	120	69	44	29	21	15
	L/120	-	-	-	-	-	-	44	31	22	
	DS	f_b / Ω	808	359	202	129	90	66	51	40	32
		Φf_b	1283	570	321	205	143	105	80	63	51
		L/360	-	-	-	-	84	53	36	25	18
		L/240	-	-	-	-	-	-	-	38	27
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1010	449	253	162	112	82	63	50	40
		Φf_b	1603	713	401	257	178	131	100	79	64
		L/360	-	-	-	134	77	49	33	23	17
L/240		-	-	-	-	-	73	49	34	25	
L/180		-	-	-	-	-	-	-	46	33	
L/120	-	-	-	-	-	-	-	-	-		

7.3 DGNF-32A & NF-32A

Pan Perforated Cellular Acustadek®



Panel Properties

Gage	Base Metal				Gross Section Properties				
	Weight	Thickness	Yield Strength	Tensile Strength	Area	Moment of Inertia	Distance to N.A. from Bottom	Section Modulus	Radius of Gyration
	w psf	t in	F_y ksi	F_u ksi	A_g in ² /ft	I_g in ⁴ /ft	y_b in	S_g in ³ /ft	r in
20/20	3.42	0.0359/0.036	50	65	1.004	1.687	1.18	0.849	1.250
20/18	3.78	0.0359/0.047	50	65	1.111	1.820	1.08	0.867	1.223
20/16	4.17	0.0359/0.059	50	65	1.226	1.939	1.00	0.881	1.192
18/20	4.15	0.0478/0.036	50	65	1.220	2.077	1.29	1.103	1.269
18/18	4.51	0.0478/0.047	50	65	1.326	2.244	1.20	1.128	1.255
18/16	4.91	0.0478/0.059	50	65	1.442	2.397	1.12	1.149	1.235
16/20	4.89	0.0598/0.036	50	65	1.437	2.447	1.37	1.354	1.277
16/18	5.25	0.0598/0.047	50	65	1.543	2.640	1.29	1.382	1.271
16/16	5.64	0.0598/0.059	50	65	1.659	2.823	1.21	1.410	1.259

Gage	Effective Section Modulus for Bending at F_y					Effective Moment of Inertia for Deflection at Service Load			
	Area	Section Modulus	Distance to N.A. from Bottom	Section Modulus	Distance to N.A. from Bottom	Moment of Inertia	Moment of Inertia	Uniform Load Only	
								$I_d = (2I_e + I_g)/3$	I_+
	A_{e+} in ² /ft	S_{e+} in ³ /ft	y_b in	S_{e-} in ³ /ft	y_b in	I_{e+} in ⁴ /ft	I_{e-} in ⁴ /ft	I_+ in ⁴ /ft	I_- in ⁴ /ft
20/20	0.525	0.479	0.85	0.799	1.43	1.342	1.371	1.457	1.476
20/18	0.597	0.482	0.76	0.826	1.31	1.439	1.535	1.566	1.630
20/16	0.700	0.513	0.73	0.848	1.20	1.476	1.732	1.631	1.801
18/20	0.753	0.779	1.09	1.046	1.49	1.782	1.749	1.881	1.858
18/18	0.825	0.796	1.01	1.079	1.38	1.914	1.917	2.024	2.026
18/16	0.927	0.793	0.92	1.104	1.29	2.046	2.130	2.163	2.219
16/20	1.015	1.047	1.22	1.296	1.52	2.250	2.123	2.316	2.231
16/18	1.086	1.071	1.14	1.329	1.43	2.420	2.294	2.494	2.409
16/16	1.189	1.094	1.07	1.358	1.36	2.581	2.517	2.661	2.619

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
20/20	SS	f_b / Ω	597	266	149	96	66	49	37	30	24
		Φf_b	948	421	237	152	105	77	59	47	38
		L/360	-	-	124	64	37	23	16	11	8
		L/240	-	-	-	95	55	35	23	16	12
		L/180	-	-	-	-	-	46	31	22	16
	L/120	-	-	-	-	-	-	-	-	24	
	DS	f_b / Ω	996	443	249	159	111	81	62	49	40
		Φf_b	1580	702	395	253	176	129	99	78	63
		L/360	-	-	-	155	90	57	38	27	19
		L/240	-	-	-	-	-	-	57	40	29
		L/180	-	-	-	-	-	-	-	-	39
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	933	415	233	149	104	76	58	46	37
		Φf_b	1481	658	370	237	165	121	93	73	59
		L/360	-	-	-	142	82	52	35	24	18
L/240		-	-	-	-	-	-	52	37	27	
L/180		-	-	-	-	-	-	-	-	36	
L/120	-	-	-	-	-	-	-	-	-		
20/18	SS	f_b / Ω	601	267	150	96	67	49	38	30	24
		Φf_b	953	424	238	153	106	78	60	47	38
		L/360	-	-	134	68	40	25	17	12	9
		L/240	-	-	-	-	59	37	25	18	13
		L/180	-	-	-	-	-	-	33	23	17
	L/120	-	-	-	-	-	-	-	-	-	
	DS	f_b / Ω	1030	458	257	165	114	84	64	51	41
		Φf_b	1634	726	408	261	182	133	102	81	65
		L/360	-	-	-	-	99	63	42	29	21
		L/240	-	-	-	-	-	-	63	44	32
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	939	417	235	150	104	77	59	46	38
		Φf_b	1489	662	372	238	165	122	93	74	60
		L/360	-	-	-	-	91	57	38	27	20
L/240		-	-	-	-	-	-	58	40	29	
L/180		-	-	-	-	-	-	-	-	-	
L/120	-	-	-	-	-	-	-	-	-		
20/16	SS	f_b / Ω	640	284	160	102	71	52	40	32	26
		Φf_b	1015	451	254	162	113	83	63	50	41
		L/360	-	-	139	71	41	26	17	12	9
		L/240	-	-	-	-	62	39	26	18	13
		L/180	-	-	-	-	-	52	35	24	18
	L/120	-	-	-	-	-	-	-	-	-	
	DS	f_b / Ω	1057	470	264	169	117	86	66	52	42
		Φf_b	1677	746	419	268	186	137	105	83	67
		L/360	-	-	-	-	110	69	46	33	24
		L/240	-	-	-	-	-	-	-	49	36
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	999	444	250	160	111	82	62	49	40
		Φf_b	1586	705	396	254	176	129	99	78	63
		L/360	-	-	-	-	101	63	42	30	22
L/240		-	-	-	-	-	-	-	45	33	
L/180		-	-	-	-	-	-	-	-	-	
L/120	-	-	-	-	-	-	-	-	-		

7.3 DGNF-32A & NF-32A

Pan Perforated Cellular Acustadek®



Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

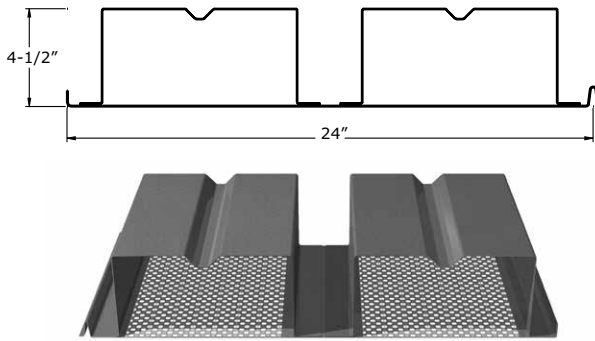
Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
18/20	SS	f_b / Ω	972	432	243	155	108	79	61	48	39
		Φf_b	1541	685	385	247	171	126	96	76	62
		L/360	-	381	161	82	48	30	20	14	10
		L/240	-	-	241	123	71	45	30	21	15
		L/180	-	-	-	-	95	60	40	28	21
	L/120	-	-	-	-	-	-	60	42	31	
	DS	f_b / Ω	1305	580	326	209	145	107	82	64	52
		Φf_b	2071	920	518	331	230	169	129	102	83
		L/360	-	-	-	196	113	71	48	34	24
		L/240	-	-	-	-	-	-	72	50	37
		L/180	-	-	-	-	-	-	-	-	49
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1518	675	380	243	169	124	95	75	61
		Φf_b	2408	1070	602	385	268	197	151	119	96
		L/360	-	-	350	179	104	65	44	31	22
L/240		-	-	-	-	156	98	66	46	34	
L/180		-	-	-	-	-	-	88	61	45	
L/120	-	-	-	-	-	-	-	-	-		
18/18	SS	f_b / Ω	994	442	248	159	110	81	62	49	40
		Φf_b	1576	701	394	252	175	129	99	78	63
		L/360	-	409	173	88	51	32	22	15	11
		L/240	-	-	-	133	77	48	32	23	17
		L/180	-	-	-	-	102	64	43	30	22
	L/120	-	-	-	-	-	-	-	45	33	
	DS	f_b / Ω	1346	598	336	215	150	110	84	66	54
		Φf_b	2135	949	534	342	237	174	133	105	85
		L/360	-	-	-	213	123	78	52	37	27
		L/240	-	-	-	-	-	-	78	55	40
		L/180	-	-	-	-	-	-	-	-	53
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1553	690	388	248	173	127	97	77	62
		Φf_b	2463	1095	616	394	274	201	154	122	99
		L/360	-	-	382	195	113	71	48	34	24
L/240		-	-	-	-	170	107	72	50	37	
L/180		-	-	-	-	-	-	95	67	49	
L/120	-	-	-	-	-	-	-	-	-		
18/16	SS	f_b / Ω	989	439	247	158	110	81	62	49	40
		Φf_b	1569	697	392	251	174	128	98	77	63
		L/360	-	438	185	95	55	34	23	16	12
		L/240	-	-	-	142	82	52	35	24	18
		L/180	-	-	-	-	109	69	46	32	24
	L/120	-	-	-	-	-	-	-	49	35	
	DS	f_b / Ω	1377	612	344	220	153	112	86	68	55
		Φf_b	2185	971	546	350	243	178	137	108	87
		L/360	-	-	-	-	135	85	57	40	29
		L/240	-	-	-	-	-	-	86	60	44
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	1545	687	386	247	172	126	97	76	62
		Φf_b	2451	1089	613	392	272	200	153	121	98
		L/360	-	-	-	214	124	78	52	37	27
L/240		-	-	-	-	-	117	78	55	40	
L/180		-	-	-	-	-	-	-	73	54	
L/120	-	-	-	-	-	-	-	-	-		

Inward Allowable (f_b/Ω) and Factored (Φf_b) Distributed Load (lbs/ft²)

Gage	Span	Limit Condition	Panel Span (Support Spacing)								
			4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
16/20	SS	f_b / Ω	1306	580	327	209	145	107	82	64	52
		Φf_b	2072	921	518	332	230	169	130	102	83
		L/360	-	469	198	101	59	37	25	17	13
		L/240	-	-	296	152	88	55	37	26	19
		L/180	-	-	-	202	117	74	49	35	25
	L/120	-	-	-	-	-	-	74	52	38	
	DS	f_b / Ω	1616	718	404	259	180	132	101	80	65
		Φf_b	2564	1140	641	410	285	209	160	127	103
		L/360	-	-	-	235	136	86	57	40	29
		L/240	-	-	-	-	-	128	86	60	44
		L/180	-	-	-	-	-	-	-	-	59
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2020	898	505	323	224	165	126	100	81
		Φf_b	3205	1425	801	513	356	262	200	158	128
		L/360	-	-	420	215	125	78	53	37	27
L/240		-	-	-	323	187	118	79	55	40	
L/180		-	-	-	-	-	157	105	74	54	
L/120	-	-	-	-	-	-	-	-	-	81	
16/18	SS	f_b / Ω	1336	594	334	214	148	109	84	66	53
		Φf_b	2120	942	530	339	236	173	132	105	85
		L/360	-	505	213	109	63	40	27	19	14
		L/240	-	-	319	163	95	60	40	28	20
		L/180	-	-	-	-	126	79	53	37	27
	L/120	-	-	-	-	-	-	80	56	41	
	DS	f_b / Ω	1658	737	415	265	184	135	104	82	66
		Φf_b	2631	1169	658	421	292	215	164	130	105
		L/360	-	-	-	254	147	92	62	43	32
		L/240	-	-	-	-	-	-	93	65	48
		L/180	-	-	-	-	-	-	-	-	63
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2073	921	518	332	230	169	130	102	83
		Φf_b	3288	1461	822	526	365	268	206	162	132
		L/360	-	-	454	232	134	85	57	40	29
L/240		-	-	-	-	202	127	85	60	44	
L/180		-	-	-	-	-	-	113	80	58	
L/120	-	-	-	-	-	-	-	-	-		
16/16	SS	f_b / Ω	1364	606	341	218	152	111	85	67	55
		Φf_b	2164	962	541	346	240	177	135	107	87
		L/360	-	538	227	116	67	42	28	20	15
		L/240	-	-	341	174	101	64	43	30	22
		L/180	-	-	-	-	135	85	57	40	29
	L/120	-	-	-	-	-	-	85	60	44	
	DS	f_b / Ω	1694	753	424	271	188	138	106	84	68
		Φf_b	2688	1195	672	430	299	219	168	133	108
		L/360	-	-	-	-	160	100	67	47	34
		L/240	-	-	-	-	-	-	101	71	52
		L/180	-	-	-	-	-	-	-	-	-
	L/120	-	-	-	-	-	-	-	-	-	
	TS	f_b / Ω	2118	941	530	339	235	173	132	105	85
		Φf_b	3360	1493	840	538	373	274	210	166	134
		L/360	-	-	493	253	146	92	62	43	32
L/240		-	-	-	-	219	138	93	65	47	
L/180		-	-	-	-	-	-	123	87	63	
L/120	-	-	-	-	-	-	-	-	-		

7.3 4.5DF-24A

Pan Perforated Cellular Acustadek®



Section Properties

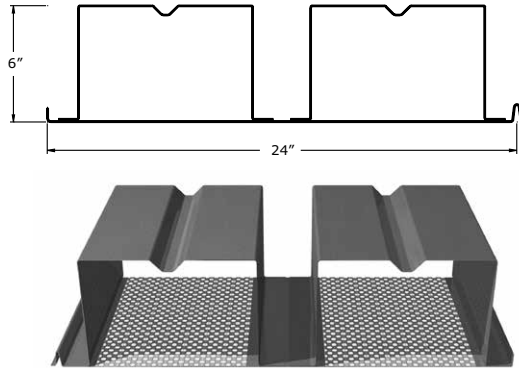
Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.22	3.93	1.14	1.17
20/18	4.77	4.17	1.13	1.46
20/16	5.32	4.60	1.13	1.53
18/20	5.08	4.45	1.75	1.43
18/18	5.63	5.08	1.79	1.72
18/16	6.18	5.63	1.82	2.00
16/16	7.04	6.52	2.44	2.28

AISI 2001 NASPEC with 2004 Supplement

Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"
SINGLE SPAN	20/20	f_b/Ω	173	120	88	67	53	43	35	30	25	22	19
		L/240	173	120	88	63	44	32	24	18	14	11	9
	20/18	f_b/Ω	171	119	87	67	53	42	35	29	25	21	19
		L/240	171	119	87	66	46	34	25	19	15	12	10
	20/16	f_b/Ω	171	119	87	67	53	42	35	29	25	21	19
		L/240	171	119	87	67	51	37	28	21	17	13	11
	18/20	f_b/Ω	266	184	135	103	82	66	54	46	39	33	29
		L/240	266	168	106	71	50	36	27	21	16	13	10
	18/18	f_b/Ω	272	188	138	106	83	68	56	47	40	34	30
		L/240	272	188	121	81	57	41	31	24	18	15	12
	18/16	f_b/Ω	276	192	141	108	85	69	57	48	40	35	30
		L/240	276	192	134	90	63	46	34	26	21	16	13
	16/16	f_b/Ω	370	257	189	144	114	92	76	64	54	47	41
		L/240	370	247	155	104	73	53	40	30	24	19	15
DOUBLE SPAN	20/20	f_b/Ω	178	123	90	69							
		L/240	178	123	90	69							
	20/18	f_b/Ω	221	154	113	86							
		L/240	221	154	113	86							
	20/16	f_b/Ω	233	161	119	91							
		L/240	233	161	119	91							
	18/20	f_b/Ω	217	151	111	85							
		L/240	217	151	111	85							
18/18	f_b/Ω	261	181	133	102								
	L/240	261	181	133	102								
18/16	f_b/Ω	303	211	155	118								
	L/240	303	211	155	118								
16/16	f_b/Ω	346	240	176	135								
	L/240	346	240	176	135								
TRIPLE SPAN	20/20	f_b/Ω	222										
		L/240	222										
	20/18	f_b/Ω	268										
		L/240	268										
	20/16	f_b/Ω	268										
		L/240	268										
	18/20	f_b/Ω	272										
		L/240	272										
18/18	f_b/Ω	326											
	L/240	326											
18/16	f_b/Ω	379											
	L/240	379											
16/16	f_b/Ω	432											
	L/240	432											

Exceeds
Maximum
Product Length



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.59	6.89	1.55	1.66
20/18	5.14	7.82	1.55	2.08
20/16	5.69	8.48	1.55	2.19
18/20	5.57	8.41	2.54	2.08
18/18	6.12	9.49	2.51	2.46
18/16	6.67	10.55	2.49	2.84
16/16	7.65	12.24	3.52	3.25

AISI 2001 NASPEC with 2004 Supplement

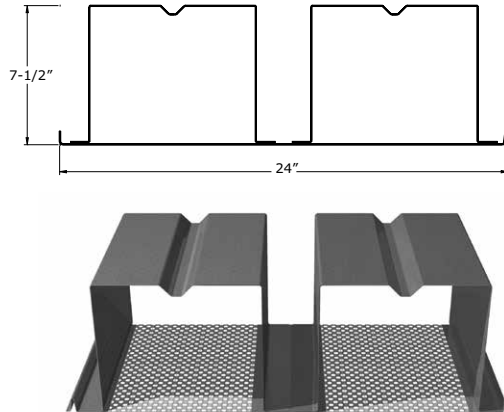
Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"
SINGLE SPAN	20/20	f_b/Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	56	42	32	25	20	16
	20/18	f_b/Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	58	48	37	29	23	19
	20/16	f_b/Ω	235	163	120	92	72	58	48	40	34	30	26
		L/240	235	163	120	92	72	58	48	40	31	25	20
	18/20	f_b/Ω	386	268	196	150	119	96	79	67	57	49	42
		L/240	386	268	196	134	94	69	51	39	31	25	20
18/18	f_b/Ω	381	264	194	149	117	95	78	66	56	48	42	
	L/240	381	264	194	149	106	77	58	45	35	28	23	
18/16	f_b/Ω	378	262	193	147	116	94	78	65	55	48	42	
	L/240	378	262	193	147	116	86	65	50	39	31	25	
16/16	f_b/Ω	535	371	272	209	165	133	110	92	79	68	59	
	L/240	535	371	272	196	137	100	75	58	45	36	29	
DOUBLE SPAN	20/20	f_b/Ω	251	174	128	98							
		L/240	251	174	128	98							
	20/18	f_b/Ω	316	219	161	123							
		L/240	316	219	161	123							
	20/16	f_b/Ω	332	230	169	129							
		L/240	332	230	169	129							
	18/20	f_b/Ω	316	219	161	123							
		L/240	316	219	161	123							
18/18	f_b/Ω	374	260	191	146								
	L/240	374	260	191	146								
18/16	f_b/Ω	431	299	219	168								
	L/240	431	299	219	168								
16/16	f_b/Ω	493	342	251	192								
	L/240	493	342	251	192								
TRIPLE SPAN	20/20	f_b/Ω	314										
		L/240	314										
	20/18	f_b/Ω	368										
		L/240	368										
	20/16	f_b/Ω	368										
		L/240	368										
	18/20	f_b/Ω	395										
		L/240	395										
18/18	f_b/Ω	468											
	L/240	468											
18/16	f_b/Ω	538											
	L/240	538											
16/16	f_b/Ω	616											
	L/240	616											

Exceeds
Maximum
Product Length

7.3 7.5DF-24A

Pan Perforated Cellular Acustadek®



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	4.96	11.42	1.97	2.07
20/18	5.51	12.83	1.97	2.7
20/16	6.06	13.64	1.97	2.88
18/20	6.06	13.9	3.2	2.72
18/18	6.61	15.54	3.18	3.28
18/16	7.16	17.25	3.17	3.75
16/16	8.27	20.03	4.63	4.31

AISI 2001 NASPEC with 2004 Supplement

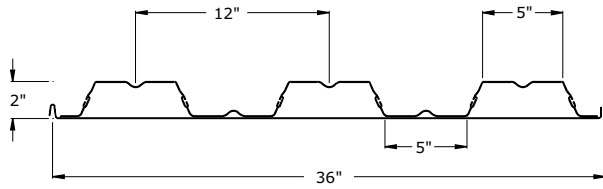
Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage	Span											
		10'0"	12'0"	14'0"	16'0"	18'0"	20'0"	22'0"	24'0"	26'0"	28'0"	30'0"	
SINGLE SPAN	20/20	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		L/240	299	207	152	116	92	74	61	51	42	34	27
	20/18	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		L/240	299	207	152	116	92	74	61	51	44	38	31
	20/16	f_b/Ω	299	207	152	116	92	74	61	51	44	38	33
		L/240	299	207	152	116	92	74	61	51	44	38	33
	18/20	f_b/Ω	486	337	248	190	150	121	100	84	71	62	54
		L/240	486	337	248	190	150	114	85	66	51	41	33
	18/18	f_b/Ω	483	335	246	188	149	120	99	83	71	61	53
		L/240	483	335	246	188	149	120	95	73	58	46	37
	18/16	f_b/Ω	481	334	245	188	148	120	99	83	71	61	53
		L/240	481	334	245	188	148	120	99	81	64	51	41
	16/16	f_b/Ω	703	488	359	274	217	175	145	122	104	89	78
		L/240	703	488	359	274	217	164	123	95	74	59	48
DOUBLE SPAN	20/20	f_b/Ω	315	218	160	123	Exceeds Maximum Product Length						
		L/240	315	218	160	123							
	20/18	f_b/Ω	409	284	209	160							
		L/240	409	284	209	160							
	20/16	f_b/Ω	438	304	223	171							
		L/240	438	304	223	171							
	18/20	f_b/Ω	414	287	211	161							
		L/240	414	287	211	161							
	18/18	f_b/Ω	499	346	254	194							
		L/240	499	346	254	194							
18/16	f_b/Ω	569	395	290	222								
	L/240	569	395	290	222								
16/16	f_b/Ω	654	454	333	255								
	L/240	654	454	333	255								
TRIPLE SPAN	20/20	f_b/Ω	394	Exceeds Maximum Product Length									
		L/240	394										
	20/18	f_b/Ω	467										
		L/240	467										
	20/16	f_b/Ω	467										
		L/240	467										
	18/20	f_b/Ω	517										
		L/240	517										
18/18	f_b/Ω	623											
	L/240	623											
18/16	f_b/Ω	712											
	L/240	712											
16/16	f_b/Ω	818											
	L/240	818											



7.3 DG2WF-36A & 2WF-36A

Pan Perforated Cellular Acustadek®



Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	3.60	0.654	0.416	0.435
20/18	4.18	0.719	0.423	0.451
20/16	4.55	0.773	0.429	0.463
18/20	4.15	0.874	0.601	0.600
18/18	4.67	0.900	0.611	0.592
18/16	5.10	0.973	0.621	0.608
16/16	5.79	1.160	0.771	0.749

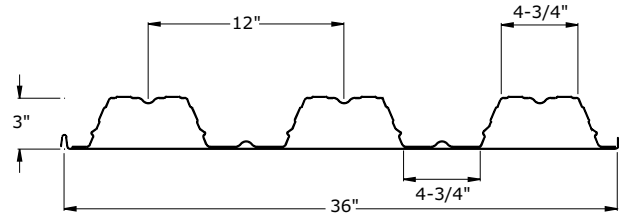
Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span										
			6'0"	7'0"	8'0"	9'0"	10'0"	11'0"	12'0"	13'0"	14'0"	15'0"	16'0"
SINGLE SPAN	20/20	f_b/Ω	175	129	98	78	63	52	43	37	32	28	24
		L/240	175	125	83	58	42	32	24	19	15	12	10
	20/18	f_b/Ω	178	131	100	79	64	53	44	38	32	28	25
		L/240	178	131	92	64	47	35	27	21	17	13	11
	20/16	f_b/Ω	181	133	101	80	65	53	45	38	33	28	25
		L/240	181	133	99	69	50	38	29	23	18	15	12
	18/20	f_b/Ω	253	186	142	112	91	75	63	54	46	40	35
		L/240	253	167	112	78	57	43	33	26	20	17	14
	18/18	f_b/Ω	257	189	145	114	92	76	64	54	47	41	36
		L/240	257	172	115	81	59	44	34	26	21	17	14
	18/16	f_b/Ω	262	192	147	116	94	78	65	55	48	41	36
		L/240	262	186	124	87	63	47	36	29	23	18	15
16/16	f_b/Ω	325	239	183	144	117	96	81	69	59	52	45	
	L/240	325	222	148	104	76	57	44	34	27	22	18	
DOUBLE SPAN	20/20	f_b/Ω	183	134	103	81	66	54	45	39	33	29	25
		L/240	183	134	103	81	66	54	45	39	33	29	25
	20/18	f_b/Ω	190	139	107	84	68	56	47	40	34	30	26
		L/240	190	139	107	84	68	56	47	40	34	30	26
	20/16	f_b/Ω	195	143	109	86	70	58	48	41	35	31	27
		L/240	195	143	109	86	70	58	48	41	35	31	27
	18/20	f_b/Ω	253	186	142	112	91	75	63	53	46	40	35
		L/240	253	186	142	112	91	75	63	53	46	40	33
	18/18	f_b/Ω	249	183	140	111	89	74	62	53	45	39	35
		L/240	249	183	140	111	89	74	62	53	45	39	34
	18/16	f_b/Ω	256	188	144	114	92	76	64	54	47	41	36
		L/240	256	188	144	114	92	76	64	54	47	41	36
16/16	f_b/Ω	316	232	177	140	113	94	79	67	58	50	44	
	L/240	316	232	177	140	113	94	79	67	58	50	44	
TRIPLE SPAN	20/20	f_b/Ω	229	168	129	102	82	68	57	48			
		L/240	229	168	129	102	80	60	46	36			
	20/18	f_b/Ω	238	174	133	105	85	70	59	50			
		L/240	238	174	133	105	85	66	51	40			
	20/16	f_b/Ω	244	179	137	108	87	72	61	52			
		L/240	244	179	137	108	87	71	55	43			
	18/20	f_b/Ω	316	232	178	140	114	94	79	67			
		L/240	316	232	178	140	111	83	64	50			
	18/18	f_b/Ω	312	229	175	138	112	92	78	66			
		L/240	312	229	175	138	111	83	64	50			
	18/16	f_b/Ω	320	235	180	142	115	95	80	68			
		L/240	320	235	180	142	115	90	69	54			
16/16	f_b/Ω	395	290	222	175	142	117	98	84				
	L/240	395	290	222	175	142	107	83	65				

Exceeds
Maximum
Product Length

Section Properties

Gage	Weight psf	I In ⁴ /ft	S+ In ³ /ft	S- In ³ /ft
20/20	3.44	1.288	0.623	0.623
20/18	3.96	1.425	0.634	0.646
20/16	4.45	1.537	0.643	0.666
18/20	4.10	1.612	0.870	0.832
18/18	4.59	1.777	0.885	0.855
18/16	5.11	1.924	0.899	0.873
16/16	5.73	2.280	1.113	1.080



Allowable Total (DL + LL) Uniform Load, psf (f_b/Ω)

Span Condition	Gage		Span											
			10'0"	11'0"	12'0"	13'0"	14'0"	15'0"	16'0"	17'0"	18'0"	19'0"	20'0"	
SINGLE SPAN	20/20	f_b/Ω	94	78	65	56	48	42	36	32	29	26	23	
		L/240	84	63	48	38	30	25	20	17	14	12	10	
	20/18	f_b/Ω	96	79	66	57	49	42	37	33	29	26	24	
		L/240	93	70	54	42	34	27	22	19	16	13	11	
	20/16	f_b/Ω	97	80	67	57	49	43	38	33	30	27	24	
		L/240	97	75	58	45	36	29	24	20	17	14	12	
	18/20	f_b/Ω	132	109	91	78	67	58	51	45	40	36	33	
		L/240	105	79	61	48	38	31	25	21	18	15	13	
	18/18	f_b/Ω	134	111	93	79	68	59	52	46	41	37	33	
		L/240	116	87	67	53	42	34	28	23	20	17	14	
	18/16	f_b/Ω	136	112	94	80	69	60	53	47	42	37	34	
		L/240	126	94	73	57	46	37	30	25	21	18	15	
	16/16	f_b/Ω	169	139	117	100	86	75	66	58	52	46	42	
		L/240	149	112	86	68	54	44	36	30	25	21	18	
DOUBLE SPAN	20/20	f_b/Ω	94	78	65	56	48	42	36	32	29	26	23	
		L/240	94	78	65	56	48	42	36	32	29	26	23	
	20/18	f_b/Ω	98	81	68	58	50	43	38	33	30	27	24	
		L/240	98	81	68	58	50	43	38	33	30	27	24	
	20/16	f_b/Ω	101	83	70	59	51	44	39	35	31	28	25	
		L/240	101	83	70	59	51	44	39	35	31	28	25	
	18/20	f_b/Ω	126	104	87	74	64	56	49	43	39	35	31	
		L/240	126	104	87	74	64	56	49	43	39	35	31	
	18/18	f_b/Ω	129	107	90	76	66	57	50	44	40	36	32	
		L/240	129	107	90	76	66	57	50	44	40	36	32	
	18/16	f_b/Ω	132	109	92	78	67	58	51	45	40	36	33	
		L/240	132	109	92	78	67	58	51	45	40	36	33	
	16/16	f_b/Ω	164	135	114	97	83	72	64	56	50	45	41	
		L/240	164	135	114	97	83	72	64	56	50	45	41	
TRIPLE SPAN	20/20	f_b/Ω	118	97	82	70	Exceeds Maximum Product Length							
		L/240	118	97	82	70								
	20/18	f_b/Ω	122	101	85	72								
		L/240	122	101	85	72								
	20/16	f_b/Ω	126	104	87	74								
		L/240	126	104	87	74								
	18/20	f_b/Ω	158	130	109	93								
		L/240	158	130	109	93								
	18/18	f_b/Ω	162	134	112	96								
		L/240	162	134	112	96								
18/16	f_b/Ω	165	137	115	98									
	L/240	165	137	115	98									
16/16	f_b/Ω	205	169	142	121									
	L/240	205	169	142	121									

Metric Conversion Chart



Metric Conversions

	Multiply	By	To Obtain
Spans, length & thickness	Inches	25.4	Millimeters
	Feet	304.8	Millimeters
	Inches	0.0254	Metres
	Feet	0.3048	Metres
Vertical Load & Superimposed Load	psf	0.0479	kPa
	psi	6.8948	kPa
Area	Square feet	0.0929	Square Metre
	Square	9.2903	Square Metre
Diaphragm Shear	plf	0.0146	KN/m
Section Properties	in ³ /ft	53,763	mm ³ /m
	in ⁴ /ft	1,365,588	mm ⁴ /m
	in ³ /ft	53.763	cm ³ /m
	in ⁴ /ft	136.559	cm ⁴ /m
Weight	Pounds	0.00445	kN
	psf	4.8824	kg/m ²
Volume	pcf	16.018	kg/m ³



Manufacturing Facilities

ASC Steel Deck • Sacramento, CA
2110 Enterprise Boulevard
West Sacramento, CA 95691
916-372-6851
800-726-2727

ASC Steel Deck • Fontana, CA
10905 Beech Avenue
Fontana, CA 92337

Visit us at:
www.ascsd.com