STEEL ROOF DECKS

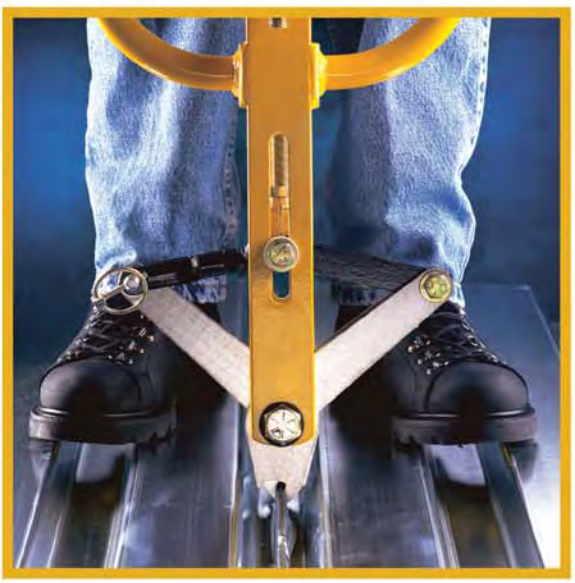
VERCO DECKING, INC.

a NUCOR *company*

VERCO®

Featuring... The Innovative

PunchLok® System



VR3

Innovation . . .

is the key to Verco's success since its founding in 1964. Verco engineers have developed many original products like the shear restraining ShearTranz® system. Now contractors and owners are reducing construction costs with another proven product - the innovative PunchLok® System.

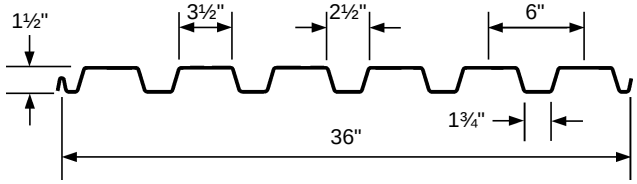
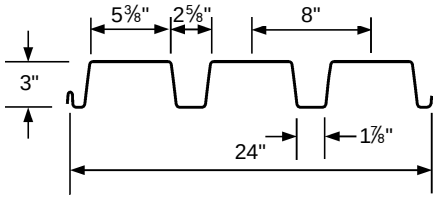
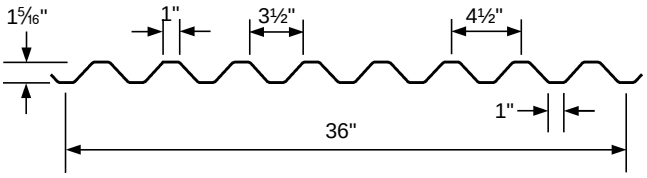
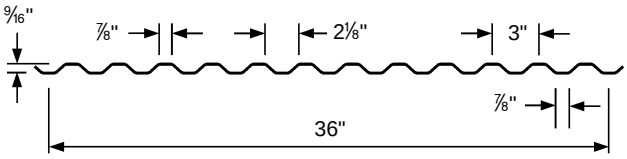
The field tested PunchLok® system reduces construction costs:

- Higher shear values through high quality sidelap connections
- Reduced installation time as well as labor and inspection costs
- Elimination of field painting if roof deck is left exposed to view
- No touch-up painting
- Deck attachment to supports with welds or mechanical fasteners and PunchLok® sidelap connections

Painted deck attached to supports with mechanical fasteners and sidelaps connected with the PunchLok® tool offers the most cost effective steel roof deck system currently available.

This catalog shows the complete line of Verco Roof Deck products for galvanized or painted deck. It lists diaphragm values for various attachments to the steel frame and various sidelap connections.

CATALOG CONTENTS

Type	Dimensioned Profile	Gage	Weight		I_d for Deflection		Moment	
			Galv (psf)	Painted (psf)	Single Span ($in.^4$/ft)	Multiple Spans ($in.^4$/ft)	$+S_{eff}$ ($in.^3$/ft)	$-S_{eff}$ ($in.^3$/ft)
PLB™-36 HSB®-36		22	1.9	1.8	0.180	0.192	0.185	0.194
		20	2.3	2.2	0.223	0.231	0.233	0.244
		18	2.9	2.8	0.305	0.306	0.318	0.331
		16	3.5	3.4	0.381	0.381	0.404	0.410
PLN™-24 N-24		22	2.2	2.1	0.748	0.860	0.359	0.438
		20	2.6	2.5	0.926	1.032	0.464	0.542
		18	3.5	3.4	1.293	1.369	0.663	0.736
		16	4.2	4.1	1.667	1.706	0.850	0.914
DEEP VERCOR™		26	1.1		0.075	0.075	0.099	0.103
		24	1.4		0.097	0.097	0.137	0.138
		22	1.7		0.120	0.120	0.172	0.171
		20	2.1		0.143	0.143	0.204	0.204
SHALLOW VERCOR™		26	1.0		0.013	0.013	0.041	0.043
		24	1.3		0.018	0.018	0.059	0.059
		22	1.6		0.022	0.022	0.073	0.073

1. Section properties have been computed in accordance with AISI's "S100: North American Specification for the Design of Cold-Formed Steel Structural Members." The section properties are based on the following steel strengths:

Profile	Specified Minimum Yield Strength (F_y)	F_y Used for Determining Nominal Strength
PLB™-36, HSB®-36, PLN™-24, N-24	40 ksi	40 ksi
Deep VERCOR™, Shallow VERCOR™	80 ksi	60 ksi

2. Section properties and values shown apply to all available widths.
3. Material thickness is subject to AISI tolerances. See Verco's evaluation report for decimal thickness of material.
4. Weights shown are approximations for design purposes.
5. All dimensions are nominal and are subject to manufacturing tolerances.
6. Nominal flexural strength, $M_n = F_y \cdot S_{eff}$ (+ or –).
   ASD allowable moment, $M = M_n / \Omega_b$, where $\Omega_b = 1.67$.
7. Refer to Verco's evaluation report for section property adjustment factors for acoustical and fully perforated decks.

TECHNICAL GUIDELINES CONTENTS

VERCO® ROOF DECK TECHNICAL GUIDELINES

Verco Decking, Inc. is noted for its innovative development of steel roof decks including the use of shear restraining elements (the ShearTranz® systems) and mechanical sidelap connections (the PunchLok® system). In this catalog, Verco features a complete range of systems utilizing the revolutionary PunchLok system for sidelap connections: 1½" deep PLB™-36 and 3" deep PLN™-24 decks with welds and mechanical fasteners (power actuated fasteners and screws) to the supports, and PLB-36 deck with ShearTranz II-42. With the PunchLok system, Verco continues its industry leading history of improvement and innovation to serve the construction community.

The information in this section is applicable primarily to PLB-36, HSB-36, PLN-24, and N-24 decks. Refer to page 94 for technical guidelines for Deep and Shallow VERCOR decks.

Profile Designations

Deck for PunchLok® Systems:

- PLB-36
- PLN-24

Deck for Button Punch and Top Seam Weld Sidelaps:

- HSB-36
- N-24

Deck for Screwed Sidelaps:

- HSB-36-SS
- N-24-SS

ROOF DECK VERTICAL LOADS

Uniform Load Tables

The tables on pages 29 and 31 list allowable uniform loads. These are the total uniform loads which can be applied to the roof deck. Values are based on the allowable bending moment (stress) and limiting deflection to L/240. The symbol ♦♦♦ indicates that the allowable uniform load based on deflection exceeds the allowable load based on flexure (stress). Note that self-weight of the deck should be included when determining dead load.

The formulas used to determine the allowable uniform loads due to flexure (stress) and deflection are shown on page 6.

Bearing

Verco recommends 2 inches minimum bearing on perpendicular supports. The required bearing should be verified based on specific load and span conditions. Adequate bearing at perpendicular supports is required to prevent web crippling of the deck and to allow for proper attachment. Sufficient bearing at parallel supports should be provided to make the specified connections.

The allowable reactions for one flange loading are shown in Table 1 and the section properties tables. Web crippling due to concentrated loads, such as curbs, located directly over supports (two flange loading) should also be evaluated. Table 2 shows allowable concentrated loads over sup-

ports. Refer to the Commentary of AISI S100 for diagrams and examples showing the various loading conditions.

See Verco's evaluation report for allowable reaction adjustment factors for acoustical decks.

Table 1: Allowable Reactions per ft of Width for One Flange Loading (lb)

Deck Profile	Gage	End Bearing			Interior Bearing	
		2"	3"	4"	3"	4"
PLB-36 or HSB-36	22	748	861	931	1,248	1,337
	20	1,041	1,193	1,287	1,752	1,872
	18	1,745	1,988	2,133	2,972	3,160
	16	2,612	2,959	3,164	4,485	4,751
		2"	3"	4"	4"	5"
PLN-24 or N-24	22	523	602	669	1,040	1,121
	20	737	844	935	1,458	1,569
	18	1,253	1,427	1,573	2,468	2,645
	16	1,893	2,145	2,357	3,719	3,974

Table 2: Allowable Reactions per ft of Width for Two Flange Loading (lb)

Deck Profile	Gage	End Bearing			Interior Bearing	
		2"	3"	4"	3"	4"
PLB-36 or HSB-36	22	770	862	920	1,548	1,667
	20	1,131	1,261	1,340	2,195	2,358
	18	2,041	2,258	2,390	3,771	4,031
	16	3,214	3,537	3,728	5,734	6,105
		2"	3"	4"	4"	5"
PLN-24 or N-24	22	496	556	606	1,224	1,327
	20	745	831	903	1,745	1,887
	18	1,384	1,532	1,656	3,016	3,251
	16	2,221	2,444	2,632	4,605	4,948

Factory Mutual

All Verco 1½" and 3" roof decks are Factory Mutual approved as: STEEL ROOF DECKS, Class I fire and I-60 or I-90 Windstorm Rated (minimum). See Table 3 for Factory Mutual approved spans for fluted decks and Table 18 on page 113 for approved spans for cellular decks. All approved spans are measured center-to-center of support members. Refer to Factory Mutual's RoofNav for additional information.

Table 3: FM Approved Spans (c-c) for 1½" and 3" Fluted Roof Decks

Deck Profile	Deck Type	Deck Gage			
		22	20	18	16
PLB-36 or HSB-36	Plain	6'-1"	6'-7"	7'-9"	9'-6"
	Acoustic	5'-11"	6'-5"	7'-6"	9'-3"
PLN-24 or N-24	Plain	12'-10"	13'-11"	15'-11"	17'-8"
	Acoustic	12'-6"	13'-6"	15'-6"	17'-2"

Suspended Loads

The engineer of record should evaluate suspended or hanging loads attached directly to the roof deck on the basis of the project conditions. The specific method of attachment will determine the load distribution or effective width of deck to be used in the evaluation.

Concentrated Loads

Concentrated loads, such as those due to construction or maintenance workers, should be evaluated based on the deck section properties, material strengths, and web crippling capacities.

Design Formulas

+M = Positive Bending Moment in ft-lb
–M = Negative Bending Moment in ft-lb
Δ = Deflection in inches
E = 29,500,000 psi
w = Allowable uniform live load in psf
L = Span length in feet. Span lengths shown in tables are center-to-center spans.
R_e = End reaction in lb/ft
R_i = Interior reaction in lb/ft

Span	Bending Moment	Deflection	Bearing
Single	$+M = 0.125 \cdot w \cdot L^2$	$\Delta = \frac{0.013 \cdot w \cdot L^4 \cdot 1728}{E \cdot I}$	$R_e = 0.5 \cdot w \cdot L$
Double	$-M = 0.125 \cdot w \cdot L^2$	$\Delta = \frac{0.0054 \cdot w \cdot L^4 \cdot 1728}{E \cdot I}$	$R_e = 0.375 \cdot w \cdot L$ $R_i = 1.25 \cdot w \cdot L$
Triple	$-M = 0.1 \cdot w \cdot L^2$	$\Delta = \frac{0.0069 \cdot w \cdot L^4 \cdot 1728}{E \cdot I}$	$R_e = 0.4 \cdot w \cdot L$ $R_i = 1.1 \cdot w \cdot L$

Cantilevered Deck

The length of Verco roof deck cantilevers can be determined by evaluating section properties and material strengths. Consider construction or maintenance workers and materials attached to the deck, particularly with regard to deflection. Attach cantilevers to supports prior to loading. See Figure 1.

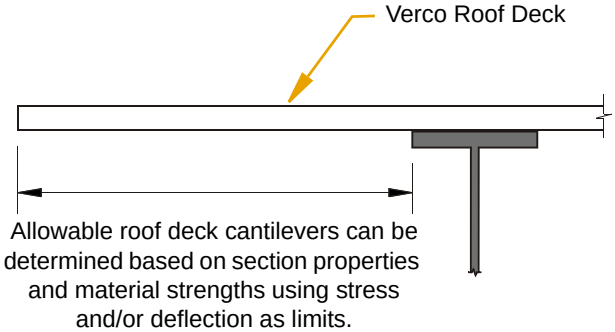


FIGURE 1

Wind Uplift

Determine allowable spans to resist uplift forces based on the deck section properties and material strengths. Evaluation may be warranted on specific projects.

Tension strength of arc spot welds and #12 screw connections should be determined in accordance with AISI S100. Contact the fastener manufacturer for the tension strength of the individual screw.

Allowable tension strengths of Pneutek and Hilti fasteners are based on the specific combination of fastener, substrate thickness, and deck gage. Allowable tension strengths are shown in Verco's evaluation report.

ROOF DECK DIAPHRAGMS

The allowable diaphragm shear values and flexibility factors in the tables for Verco roof decks are based on attachment of the deck to the perpendicular supports with puddle welds or mechanical fasteners. The attachment patterns for each profile are shown in the illustrations included with the tables.

Diaphragm Load Tables

Designers should observe the following notes when working with these tables:

- The allowable stress increase permitted for load combinations in IBC Section 1605.3.2, including wind or seismic forces, shall not be used for allowable diaphragm shears.
- The flexibility factor (F) is the number of microinches a diaphragm web will deflect in a span of 1 ft under a shear load of 1 pound per ft. Refer to Verco's evaluation report for guidance in calculating anticipated deflections using the flexibility factor, F.
- R is the vertical load span (spacing between supports) (L_V) of the deck divided by the length (L_S) of the deck sheet: $R = L_V / L_S$.
- The flexibility limitations in Verco's evaluation report may be used as a guide in lieu of a rational analysis of the anticipated deflections.
- VSC = Verco Sidelap Connection made with the Verco PunchLok tool on PLB-36 or PLN-24 deck.
- BP = Button punched sidelap connection.
- SS = Screwed sidelap connection with minimum #10 x ¾ in. screw.
- TSW = 1½ in. long top seam weld sidelap connection.
- See "Sidelap Connections" on page 11 for information regarding connection spacing.
- Interpolation of diaphragm shear between adjacent spans or sidelap spacings is permissible. For interpolated span lengths, use the diaphragm flexibility of the closest span length.
- The ends of PLB-36, HSB-36, PLN-24, and N-24 deck are to be lapped a minimum of 2 inches.

FORMLOK™ Deck Diaphragms

Refer to Verco's evaluation report or Verco's Floor Deck Catalog for diaphragm values for PLW2-36, W2-36, PLW3-36, and W3-36 FORMLOK deck without concrete fill.

Axial Loads

Axial load strength of steel deck can be evaluated in accordance with AISI's "S100: North American Specification for the Design of Cold-Formed Steel Structural Members."

ATTACHMENT OF ROOF DECK

Support Fastening

The diaphragm shear tables of this catalog include two methods of attaching deck to the supports: welds and mechanical fasteners (power actuated fasteners or self-drilling, self-tapping screws).

- PLB-36, HSB-36, PLN-24, and N-24 decks are attached to the supports with welds. OR
- PLB-36 and PLN-24 decks are attached to supports with either Pneutek or Hilti power actuated fasteners. Fastener selection is based on substrate thickness. Allowable diaphragm shear values are determined by the fastener and substrate thickness. OR
- PLB-36 is attached to minimum 33 mil (20 gage, or 0.0346 in.) supporting steel with minimum F_y = 33 ksi (F_u = 45 ksi), using #12 self-drilling, self-tapping screws. Allowable diaphragm shear values are determined by the substrate thickness and material strength. OR
- PLN-24 is attached to minimum ⅛ in. thick supporting steel using #12 self-drilling, self-tapping screws.

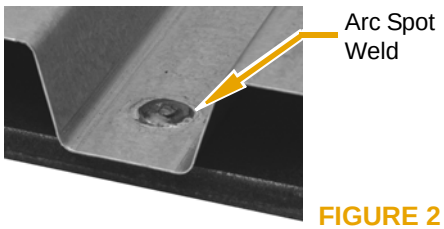


FIGURE 2

Welds: When Verco roof deck is to be welded to supports, the effective fusion area is to be at least ½ in. diameter for arc spot (puddle) welds (Figure 2) or at least ⅜ in. x 1 in. long for arc seam welds. Welds are to be spaced as described in the tables.

Weld washers are not required or recommended for arc spot welds in PLB-36, HSB-36, PLN-24, and N-24 roof decks.

Pneutek Fasteners: When PLB-36 deck is attached to structural supports with Pneutek K66062, K66075, K64062, SDK63075, or SDK61075 fasteners, they are to be installed as shown in Figure 3. The Pneutek fasteners have ½ inch diameter heads. Contact Pneutek for additional information on the fasteners.

Fasteners must be driven with the Pneutek® Air/Safe® fastening system to ensure tight contact between the fastener head and the attached deck as shown in Figure 3. Fasteners shall be located not less than 1 in. from the end of the sheets.

Select the appropriate fastener based on the actual substrate thickness, as shown in the diaphragm shear tables on pages 32-37 for PLB-36 deck and pages 69-80 for PLN-24 deck. Note that K66075 pins are to be used for attachment of four layers of 20 gage deck or three or four layers of 18 or 16 gage deck.

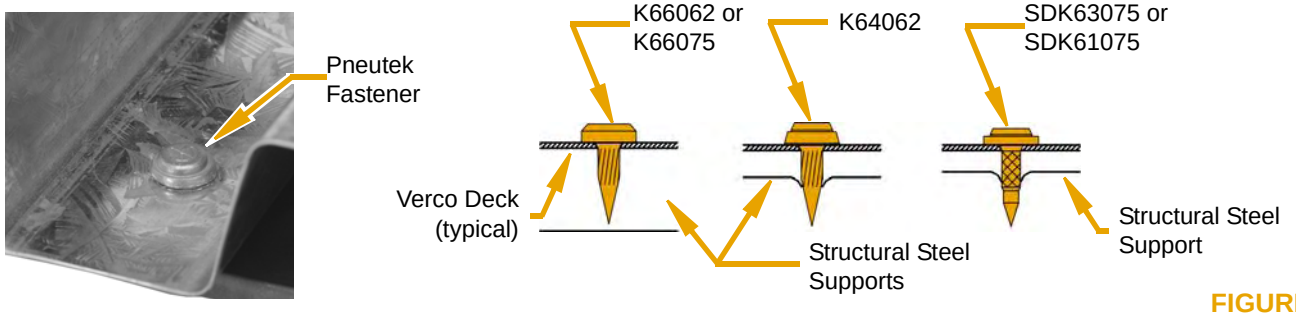


FIGURE 3

Hilti Fasteners: When PLB-36 or PLN-24 decks are fastened to the structural supports with Hilti X-EDN19 THQ12, X-EDNK22 THQ12, or X-ENP-19 L15 fasteners, they are to be installed as shown in Figure 4. Hilti X-EDN19 and X-EDNK22 fasteners have a dome style head, a 15⁄32 inch diameter steel flat washer, and a steel top hat washer. The Hilti X-ENP-19 fastener has a fully knurled tip and tapered shank fitted with two 0.590 inch diameter steel cupped washers. Contact Hilti for additional information on the fasteners.

Proper penetration of the Hilti fasteners into structural supports is shown in Figure 4. Fasteners shall be located not less than 1 in. from the end of the sheets.

Select the appropriate fastener based on the actual substrate thickness, as shown in the diaphragm shear tables on pages 38-43 for PLB-36 deck and pages 81-86 for PLN-24 deck.

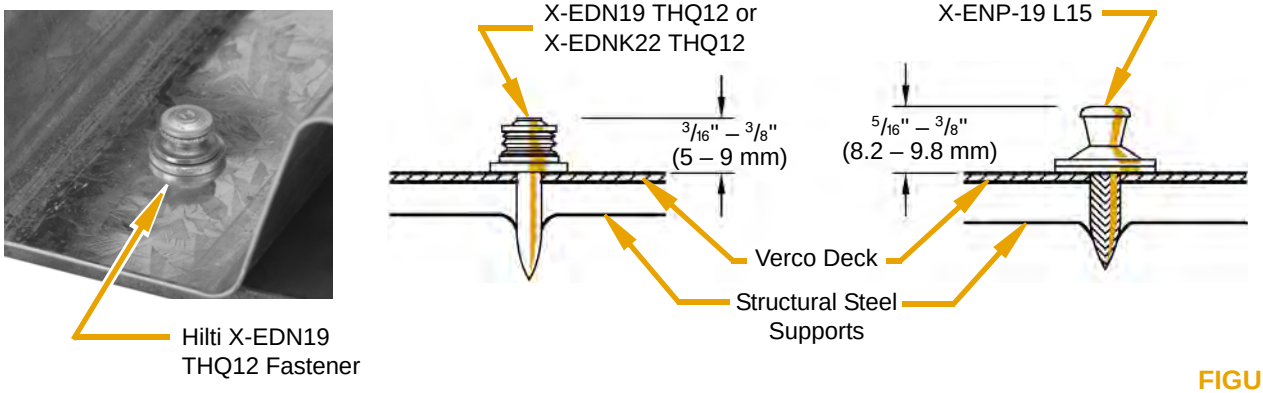


FIGURE 4

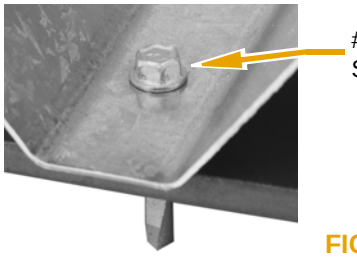


FIGURE 5

Screws: When PLB-36 or PLN-24 decks are attached to supports with #12 self-drilling, self-tapping screws, they are to be installed as shown in Figure 5. See Table 4 for suggested screw selection based on actual substrate thickness.

Diaphragm shear and flexibility values for PLB-36 deck given in the corresponding tables assume 54 mil (16 gage, or 0.0566 in.) cold-formed steel supports with F_y = 33 ksi (F_u = 45 ksi). These shear and flexibility values may be modified for supports with different thickness and/or material strength using the adjustment factors shown in Table 5.

Diaphragm shear and flexibility values for PLN-24 deck are shown on pages 87-89 and assume minimum ⅛ in. thick steel supports. Contact Verco's engineering department if using supports thinner than ⅛ in.

Table 4: Suggested Screw Selection

Substrate Thickness	Fastener Designation
33 mil (0.0346") to 3/16"	#3 Drill Point
1/8" to 1/4"	#4 Drill Point
1/4" to 1/2"	#5 Drill Point

Table 5: Diaphragm Shear and Flexibility Adjustment Factors, R_q and R_F, for PLB-36 Deck Attached to Supports with #12 Screws

Gage		Substrate Thickness and Strength (F_y / F_u), ksi					
		33 mil (0.0346 in.)		43 mil (0.0451 in.)		≥ 54 mil (0.0566 in.)	
		33 / 45	50 / 65	33 / 45	50 / 65	33 / 45	50 / 65
22	R_q	0.65	0.88	0.93	1.00	1.00	1.00
	R_F	1.27	1.24	1.16	1.00	1.00	1.00
20	R_q	0.51	0.73	0.79	1.00	1.00	1.00
	R_F	1.34	1.35	1.21	1.00	1.00	1.00
18	R_q	0.46	0.67	0.69	1.00	1.00	1.14
	R_F	1.18	1.32	1.11	1.14	1.00	1.00
16	R_q	0.48	0.69	0.71	1.02	1.00	1.33
	R_F	1.09	1.30	1.05	1.19	1.00	1.00

Multiply tabulated shear, q, and flexibility, F, values by the adjustment factors as follows:

- Adjusted allowable diaphragm shear = $q \times R_q$
- Adjusted flexibility factor = $F \times R_F$

ShearTranz® Systems: Verco introduced the use of restraining elements to increase roof deck diaphragm strength and rigidity with the ShearTranz system. The ShearTranz family of products now includes the following:

- 14 gage ShearTranz II-42 elements are used with PLB-36 deck with sidelaps connected using the PunchLok system.
- 16 gage ShearTranz II elements are used with HSB-36 deck with sidelaps connected using button punches or top seam welds.
- 16 gage original ShearTranz system is used with HSB-36 deck with sidelaps connected using button punches or top seam welds. The original ShearTranz elements are also used in System 80 in conjunction with HSB-36 deck and insulating fill.

The ShearTranz elements are used at shear collecting support elements perpendicular to the deck corrugations. When ShearTranz II-42 or ShearTranz II elements are used, the deck does not need to terminate at the support as it may be cantilevered.

End laps at supports must be at least 2 inches and fastened to supports with arc spot puddle welds. ShearTranz system installation details are shown on pages 66 and 67. See page 68 for System 80 details.

Sidelap Connections

Verco roof decks are to be fastened at the sidelaps by one of four methods: VSC's made with the PunchLok® tool, 1½ in. long top seam welds, button punches, or #10 x ¾ in. long screws. Spacing of sidelap connections shall be as specified in the tables.

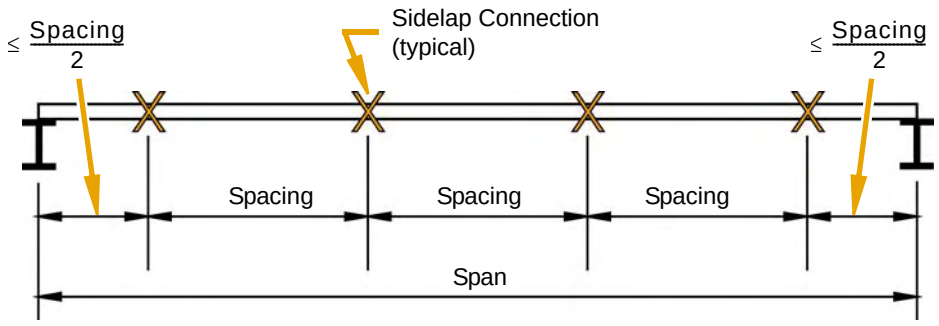


FIGURE 6

The dimension from the centerline of the supports to the first and last sidelap connection within each span is to be no more than one half the specified spacing as shown in Figure 6. The number of connections per span based on spacing are noted in Table 6.

Table 6: Number of Sidelap Connections per Span Based on Spacing

Connection Spacing	Span (ft-in.)												
	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
24"	2	3	3	4	4	5	5	6	6	7	7	8	8
18"	3	4	4	5	6	6	7	8	8	9	10	10	11
12"	4	5	6	7	8	9	10	11	12	13	14	15	16
8"	6	8	9	11	12	14	15	17	18	20	21	23	24
6"	8	10	12	14	16	18	20	22	24	26	28	30	32
4"	12	15	18	21	24	27	30	33	36	39	42	45	48

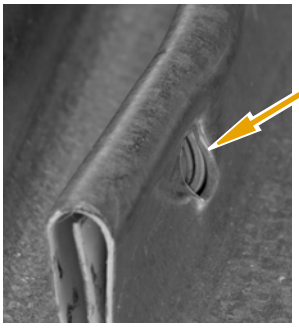


FIGURE 7

PunchLok® System: Connect sidelaps of the PLB-36 and PLN-24 roof decks with the Verco PunchLok tool. The PunchLok tool creates a positive connection between the male and female lips of the PLB-36 or PLN-24 roof deck. The connection made by the PunchLok tool is referred to as a VSC (Verco Sidelap Connection). An acceptable VSC connection has been made when the sidelap material has been sheared and offset so the sheared surface of the male leg is visible (Figure 7).

The VSC connection may be made in either direction relative to the sidelap.

Top Seam Welds: When sidelaps of the HSB-36 and N-24 roof deck are connected with top seam welds (TSW) (Figure 8, left), the 1½ in. long weld must engage the top of the inner (male) leg. Clinch the joint before welding to create contact between the lips.

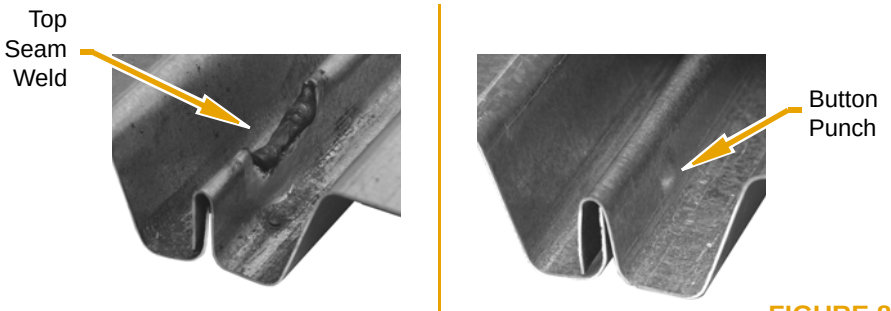


FIGURE 8

Button Punches: When sidelaps of the HSB-36 and N-24 roof deck are connected with button punches (Figure 8, right), an average-sized person should be able to stand (not jump) on the flute adjacent to the attachment without the joint coming apart.

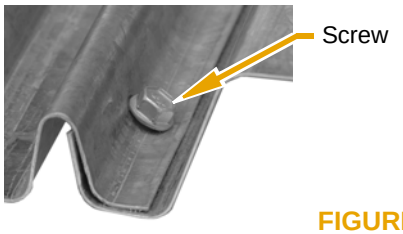


FIGURE 9

Screws: When self-drilling, self-tapping screws are used to connect the sidelaps of HSB-36-SS and N-24-SS roof decks (Figure 9), they are to be minimum #10 x ¾ in. long. The diaphragm shear values and flexibility factors for deck fastened with screws are the same as those shown for button punched sidelaps. The screws are to be placed at the same spacing as the button punch spacing. The "SS" designation indicates deck provided with extended female lip for screw fastening.

Parallel Collectors

Spacing of the attachments at collectors parallel to the deck ribs is based on the type of attachment being used. The maximum spacing of attachments at parallel collectors is 3 ft.

Arc Spot Welds: Spacing of arc spot welds at collectors parallel to the deck ribs should be based on the shear to be transferred. Table 7 lists allowable shear, in pounds, for ½ in. effective diameter welds.

Table 7: Allowable Shear per Weld

Deck Gage	lb
22	1,047
20	1,257
18	1,673
16	2,093

Fillet Welds: Spacing of fillet welds used at collectors parallel to the deck flutes should be based on the shear to be transferred. Allowable shear for fillet welds is determined in accordance with AISI S100.

Pneutek Fasteners: Spacing of Pneutek fasteners at collectors parallel to the deck flutes is to be the same as the spacing of the sidelap connections. If the required shear transfer between the deck and an interior collector element parallel to the deck flutes exceeds the shear strength of the diaphragm, provide two Pneutek fasteners at the same spacing as the sidelap connections.

Hilti Fasteners: The spacing of Hilti fasteners at collectors parallel to deck flutes is to be the same as the spacing of the sidelap connections. If the required shear transfer between the deck and an interior collector element parallel to the deck flutes exceeds the shear strength of the diaphragm, provide two Hilti fasteners at the same spacing as the sidelap connections.

Screws: The spacing of #12 self-drilling, self-tapping screws at collectors parallel to the deck flutes should be based on the shear to be transferred. Allowable strength of screw connections in various thicknesses and material strengths of supporting steel are provided in Table 8. Contact the fastener manufacturer to verify the shear strength of the individual fastener meets or exceeds the strength of the connection, as required in AISI S100.

Table 8: Allowable Shear per #12 Screw Connection (lb)

Deck Gage	Substrate Thickness and Strength (F_y / F_u), ksi					
	33 mil (0.0346 in.)		43 mil (0.0451 in.)		≥ 54 mil (0.0566 in.)	
	33 / 45	50 / 65	33 / 45	50 / 65	33 / 45	50 / 65
22	200	277	294	320	320	320
20	188	272	298	384	384	384
18	188	272	280	405	407	511
16	188	272	280	405	394	600

VERCO ROOF DECK FINISHES

Verco roof decks are offered in various finishes:

Primer Painted

Acrylic primer is applied to cold rolled steel (ASTM A 1008 or A 1039) that has been cleaned and chemically pre-treated. The gray acrylic primer is applied by a roller coat process and oven cured. Verco gray primer is approved by UL for use in fire-rated assemblies. Refer to page 20 for specific listings.

Primer paint is intended to protect steel deck for a short period of exposure in ordinary atmospheric conditions. It should be considered as an impermanent and provisional coating.

Galvanized

Cold rolled zinc coated steel (ASTM A 653 or A 1063) with coating designation G60 is the standard zinc coated material of the deck industry. Coating designation G90 is a heavier, more costly zinc coating often specified for exposed exterior applications or other project specific requirements.

Galvanized with Primer

Galvanized roof deck is available with factory gray or double white (double thickness for better coverage and whiter white) primer applied to the side of the deck exposed to view. Primed galvanized deck is suitable for applications where the deck will be field-painted (eliminates the need for field priming) or must meet other specific requirements. You have the option to leave the primer paint exposed and eliminate finish paint.

Custom color primers are available. Contact your Verco representative regarding availability.

Exposed Product Appearance

Roof deck is a structural product. Minor dents and scratches which do not affect the structural capacity of the deck are acceptable.

Packaging

Deck to be exposed to view should be identified on the contract drawings so it can be appropriately packaged and handled.

ROOF DECK PRODUCT SELECTION

Spans

Span length is one of the key factors in determining an appropriate roof deck profile. Determine logical span lengths (three span minimum if possible) based on the bay size. Contact your Verco representative regarding the availability of deck lengths greater than 40 ft. Consider handling the weight of the deck during installation when evaluating long deck lengths, especially in heavier gages. Also see the Roof Deck Design Example on page 16.

Roofing

Verco roof deck is a structural product resisting horizontal and vertical loads. Normally, insulation and roofing is applied over Verco roof deck. However, it can be used for walkways, canopies, sunshades, or other structures which do not require a watertight roof. Attachments for exposed applications should comply with building code requirements.

Fire-Rated Verco Roof Deck

Verco roof decks may be used in assemblies which are required to meet hourly fire ratings. Hourly fire ratings may be obtained by:

- Placing insulating concrete fill, with or without insulation board, over the top of the deck;
- Applying fireproofing to the underside of the deck; or
- Installing a fire-rated ceiling system.

Refer to page 20 for a listing of UL fire-rated assemblies utilizing Verco roof deck profiles. Refer to the particular UL assembly being considered for full details of construction, including specific information about fill or fireproofing thicknesses and span limitations.

Venting Verco Roof Deck

Verco roof deck is available with factory punched vent tabs to provide positive venting (see Figure 10). Determine venting requirements based on the specific materials installed over the deck. Some leakage during insulating fill placement should be anticipated with vented deck. Vent tabs projecting upwards are staggered in interior low flutes at approximately 6 in. on center:

- 5 rows in PLB-36 and HSB-36.
- 2 rows in PLN-24 and N-24.

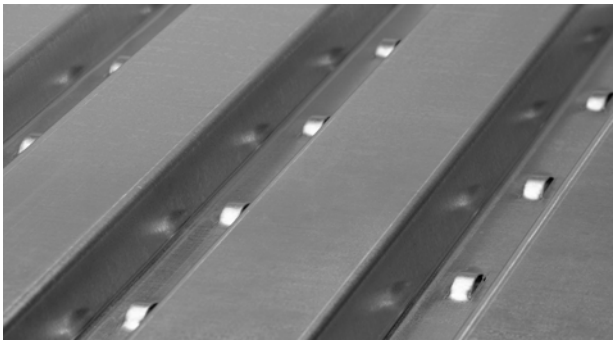


FIGURE 10

Acoustical Roof Deck

PLB-36, HSB-36, PLN-24, and N-24 roof decks are available as acoustical deck. Acoustical deck can provide sound attenuation in buildings where the deck is exposed to the interior. Acoustical uses are limited to non-fire-resistive assemblies. The roofing contractor should install the acoustical insulation furnished with the deck before placement of roof insulation as shown in Figure 11. Noise reduction coefficient (NRC) values in Table 9 were determined by tests in accordance with ANSI/ASTM C423 conducted by Riverbank Acoustical Laboratory. Test reports furnished upon request.

See Verco's evaluation report for section property and allowable reaction adjustment factors for acoustical decks.

Table 9: Noise Reduction Coefficients of Acoustical Deck

Profile	Absorption Coefficients						Noise Reduction Coefficient
	125	250	500	1000	2000	4000	
PLB-36 or HSB-36	0.60	0.99	0.92	0.79	0.43	0.23	0.80
PLN-24 or N–24	0.58	1.00	0.94	0.85	0.54	0.27	0.85

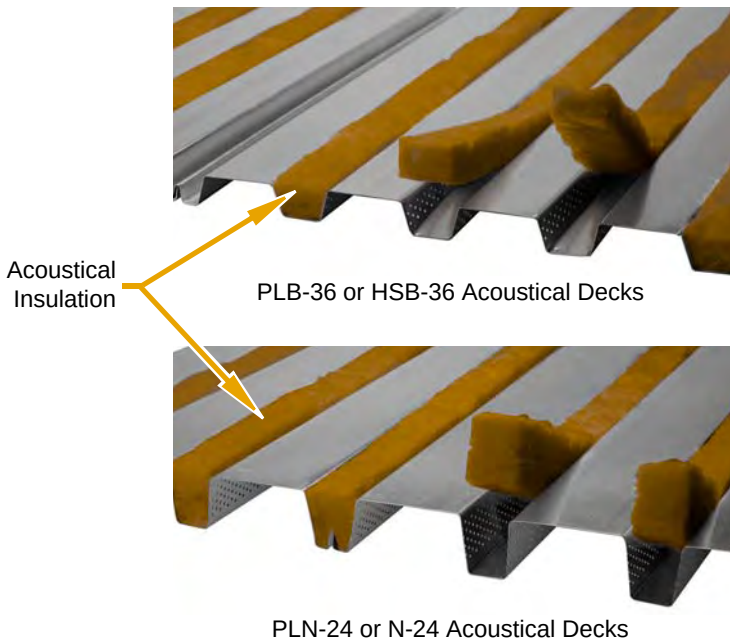


FIGURE 11

ROOF DECK DESIGN EXAMPLE

This design example illustrates the basic issues involved in the design and selection of Verco roof deck. Various choices are outlined for each point to be considered. *This example illustrates the issues, not all of the possible options.* If you have additional questions, please contact the Verco Engineering Department.

Design Goals

The design goals for this example are as follows:

- Resist specified uniform vertical loads
- Resist specified horizontal diaphragm loads
- Select an economical roof deck system

Given: 40'-0" x 30'-0" bay size
Deck oriented parallel to 40 ft dimension
Perimeter walls provide lateral restraint
Fire rating not required
Underside of deck exposed to view from interior
Loads:

Dead Load	30 psf
Live Load	20 psf
Total Vertical Load	50 psf
Maximum diaphragm shear	550 plf
Average flexibility factor required	35.0

Span Options

Spacing between the beams or joists will suggest the deck profile options. Refer to "Spans" on page 14 for more information. Based on the profile options, determine the minimum gages to meet vertical load requirements.

1. 10'-0" c-c spans
   Choices: 18 gage PLB-36 roof deck *or* 22 gage PLN-24 roof deck.
2. 8'-0" c-c spans
   Choice: 20 gage PLB-36 roof deck.
3. 6'-8" c-c spans
   Choice: 22 gage PLB-36 roof deck.

→ **Selection:** Option 1 is the most expensive deck choice, but minimizes the number of supports. Option 2 optimizes deck gage based on span. Option 3 minimizes the deck cost but requires the most supports.

Diaphragm Attachment Options

Determine the minimum deck gage and minimum attachments necessary to meet the specified requirements for maximum horizontal diaphragm strength (q). Verify that the horizontal deflection of the diaphragm is within acceptable limits. For purposes of this example, the average required F has been defined to allow a comparison of the options presented, all of which meet the average required F.

ROOF DECK DESIGN EXAMPLE (CONTINUED)

In general, using a lighter gage deck with more attachments is more economical than using a heavier gage deck with fewer attachments. When considering attachment systems, sidelap connections are generally the most expensive component. Therefore, choose the PunchLok® system, which minimizes installation time as well as labor and inspection costs of the sidelap attachments, compared to top seam welds.

1. 10'-0" c-c spans
   Attachment Choices:

Deck	Supports		Sidelaps		q (lb)	F
	Type	Pattern	Type	Spacing		
3" Deep Roof Deck						
22 ga PLN-24	Pneutek	24/4	VSC	8" o.c.	572	8.6 + 77R = 34.3
22 ga PLN-24	Hilti	24/4	VSC	8" o.c.	561	7.2 + 77R = 32.9
22 ga PLN-24	Screw	24/6	VSC	8" o.c.	554	7.2 + 77R = 32.9
22 ga PLN-24	Weld	24/4	VSC	6" o.c.	596	6.7 + 39R = 19.7
1½" Deep Roof Deck						
18 ga PLB-36	Pneutek	36/7	VSC	24" o.c.	866	11.6 + 2R = 12.3
18 ga PLB-36	Hilti	36/7	VSC	18" o.c.	653	21.3 + 10R = 24.6
18 ga PLB-36	Screw	36/7	VSC	12" o.c.	616	7.4 + 3R = 8.4
18 ga PLB-36	Weld	36/4	VSC	24" o.c.	796	17.5 + 16R = 22.8

2. 8'-0" c-c spans
   Attachment Choices:

Deck	Supports		Sidelaps		q (lb)	F
	Type	Pattern	Type	Spacing		
1½" Deep Roof Deck						
20 ga PLB-36	Pneutek	36/7	VSC	24" o.c.	720	12.5 + 6R = 14.5
20 ga PLB-36	Hilti	36/7	VSC	18" o.c.	606	15.3 + 21R = 22.3
20 ga PLB-36	Screw	36/7	VSC	12" o.c.	553	8.1 + 9R = 11.1
20 ga PLB-36	Weld	36/5	VSC	24" o.c.	650	15.1 + 19R = 21.4

3. 6'-8" c-c spans (Values shown for 7'-0" spans.)
   Attachment Choices:

Deck	Supports		Sidelaps		q (lb)	F
	Type	Pattern	Type	Spacing		
1½" Deep Roof Deck						
22 ga PLB-36	Pneutek	36/7	VSC	24" o.c.	653	12.1 + 14R = 16.8
22 ga PLB-36	Hilti	36/7	VSC	12" o.c.	609	9.2 + 35R = 20.9
22 ga PLB-36	Screw	36/7	VSC	4" o.c.	712	5.6 + 17R = 11.3
22 ga PLB-36	Weld	36/7	VSC	24" o.c.	592	8.8 + 12R = 12.8

Notes:

- F is based on R = ⅓ for 3 span sheets.
- Diaphragm shear and flexibility values listed for all mechanical fasteners assume minimum ¼ in. thick steel supports.

ROOF DECK DESIGN EXAMPLE (CONTINUED)

- Values shown are those necessary to meet the maximum shear (q) and average Flexibility Factor (F) specified. Maximum economy can be achieved by zoning the diaphragm, reducing deck gage and/or attachments as shear requirements diminish across the building.
- Gages shown meet minimum gages noted above for vertical loads even though lighter gages may meet shear requirements.
- Attachment of deck to parallel chords is required but not shown.

→ **Selection:** Option 2 optimizes the deck gage based on span (number of supports required) while minimizing the sidelap attachments required. When selecting the attachment system, consider the use of mechanical fasteners (power actuated fasteners or screws) in conjunction with the PunchLok® system to minimize installation labor and inspection costs, and minimize or eliminate the need for touch-up of the deck and support structure. Together, these benefits offer an economical deck system which can be installed in a minimum amount of time.

Finish Options

Options are listed in order of increasing deck cost. The total installed cost, including field painting, should be used to determine the deck finish choice.

1. Primer painted.
2. Galvanized.
3. Galvanized with primer painted underside.

→ **Selection:** Since deck underside is exposed to view, the costs of field painting make Options 1 and 2 more expensive. Therefore choose Option 3 with Verco Double White primer left exposed to view. Refer to "Fire Ratings" below for finish considerations when a fire-rated system is required.

Specification Considerations

Specifications should indicate deck is exposed so that proper packaging can be provided.

Architectural Considerations

The end use or aesthetics of the structure may influence the roof deck system selection and should be considered in addition to vertical and horizontal load requirements. Since the deck is exposed, consideration of the benefits of acoustical deck compared to the added costs may be appropriate.

Fire Ratings

Hourly fire ratings, if required, may affect the maximum allowable deck span and/or minimum deck gage. Refer to the UL Fire Resistance Directory or Verco's evaluation report for further information. Note that galvanized decks with primer painted underside are not approved for use in fire-rated assemblies. Therefore, Finish Option 1. Primer painted or 2. Galvanized should be selected for fire-rated systems.

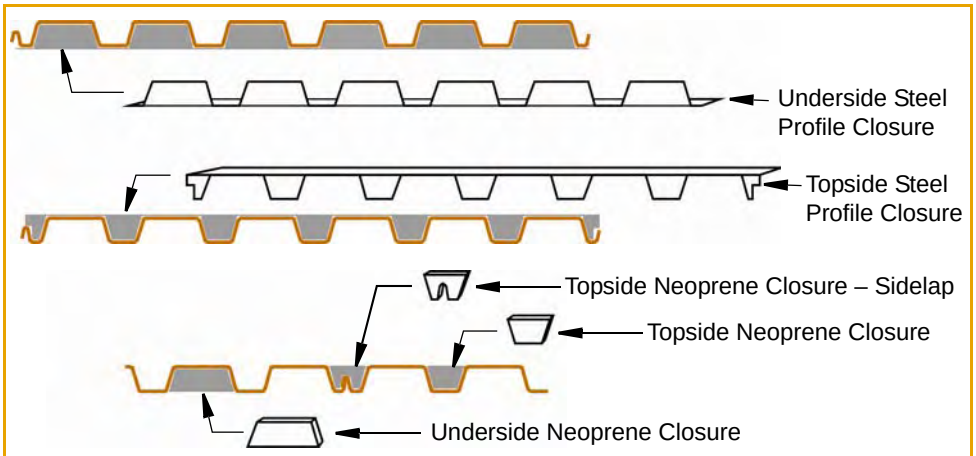
ROOF DECK ACCESSORIES

Profile Closures

Profile closures made from steel or neoprene are designed to fit Verco's deck products. See Table 10 for availability of closures by deck profile. Steel closures are 22 gage with a 1 in. return lip for fastening to deck with screws or tack welds. Neoprene closures for PLB-36, HSB-36, PLN-24, and N-24 decks are 1 in. thick individual plugs. See Figure 12 for typical installation of closures. Refer to page 99 for information on profile closures for VERCOR decks.

Table 10: Availability of Profile Closures

Deck Profile	Steel Closures		Neoprene Closures	
	Underside	Topside	Underside	Topside
PLB-36 or HSB-36	✓	✓	✓	✓
PLN-24 or N-24	✓		✓	✓



Note: PLB-36 or HSB-36 deck and closures shown; closures for other profiles are installed similarly.

FIGURE 12

Sump Pan

- 14 gage
- Flat recessed

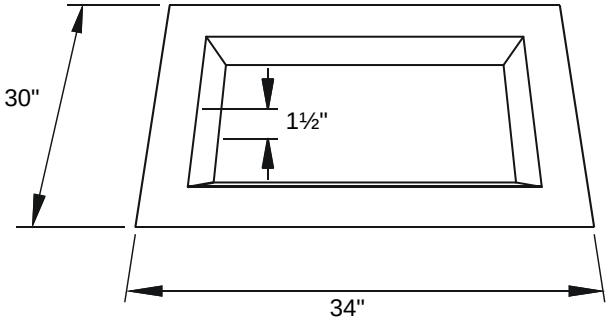


FIGURE 13

ROOF DECK FIRE RESISTANCE RATINGS

Table 11 [2, 3, 4, 6, 7]

RESTRAINED ASSEMBLY RATING (hr)	UL #	FRAME	SYSTEM	DECK[1]						PROTECTED[5]
				B	N	W2	W3	VERCOR	SYSTEM 80	
¾–2	P701	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P711	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P717	Beam/Joist	Deck/Board	✓	✓					SFRM
1–3	P719	Beam/Joist	Deck/Board	✓	✓	✓				SFRM
1–3	P723	Beam/Joist	Deck/Board	✓	✓	✓				SFRM
¾–2	P726	Beam/Joist	Deck/Board	✓	✓					SFRM
1–3	P732	Beam/Joist	Deck/Board	✓	✓					SFRM
¾–2	P734	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P736	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P739	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P740	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P741	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P742	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P743	Beam/Joist	Deck/Board	✓	✓					SFRM
¾–2	P748	Beam/Joist	Deck/Board	✓	✓					SFRM
1–3	P750	Beam/Joist	Deck/Board	✓	✓	✓				SFRM
1–3	P751	Beam/Joist	Deck/Board	✓	✓	✓				SFRM
1–2	P815	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P816	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P819	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P829	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P837	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P838	Beam/Joist	Deck/Board	✓	✓					SFRM
1–2	P907	Beam/Joist	Insulating Concrete					✓		No
1–2	P908	Beam/Joist	Insulating Concrete					✓		No
1–2	P920	Beam/Joist	Insulating Concrete	✓	✓	✓				No
1–2	P921	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P922	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P923	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P925	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P926	Beam/Joist	Insulating Concrete					✓		No
1–2	P927	Beam/Joist	Insulating Concrete					✓		No

(continued on next page)

Table 11 (continued)

RESTRAINED ASSEMBLY RATING (hr)	UL #	FRAME	SYSTEM	DECK[1]						PROTECTED[5]
				B	N	W2	W3	VERCOR	SYSTEM 80	
1–2	P928	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P929	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P930	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P936	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P937	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P938	Beam/Joist	Insulating Concrete					✓		No
1–2	P939	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P940	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P943	Beam/Joist	Insulating Concrete					✓		No
1–2	P944	Beam/Joist	Insulating Concrete	✓	✓	✓				No
1–2	P945	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No
1–2	P947	Beam/Joist	Insulating Concrete	✓	✓	✓		✓	✓	No

1 "B" = PLB and HSB, PLB and B FORMLOK "W2" = PLW2 and W2 FORMLOK "VERCOR" = 1⁵⁄₁₆" Deep VERCOR
"N" = PLN and N, PLN and N FORMLOK "W3" = PLW3 and W3 FORMLOK

2 Refer to UL Fire Resistance Directory, evaluation reports for Verco Steel Deck, or municipality requirements for full details of construction including usage limitations and mesh requirements.

3 Also see various "unclassified" listings that may apply to Verco decks.

4 Code-compliant Verco gray primer paint is formulated for compatibility with spray-applied fireproofing. Verco steel decks in the SFRM (protected) assemblies listed above may be galvanized or painted, excluding assemblies P726 and P748, which shall be galvanized only. Verco steel decks in the unprotected assemblies listed above shall be galvanized only. Galvanized decks with primer painted underside are not approved for use in fire-rated systems.

5 Protected assemblies have spray-applied fireproofing applied directly to the underside of the deck. Unprotected assemblies do not require spray-applied fireproofing applied to the underside of the deck. "SFRM = Spray-Applied Fire Resistive Materials."

6 Verco Decking, Inc. assumes no responsibility for adhesion of any spray-applied fireproofing material, nor for any treatment, cleaning, or surface preparation of the deck required for adhesion of fire protection material.

7 Sidelap fastening with the PunchLok® tool, button punches, or seam welds is required for fluted decks, except for P717, P719, P732, P739, P741, and P929, which also allow screws.

STEEL ROOF DECK SPECIFICATION 05 31 23

The following suggested specification for VERCO® roof deck is in the Standard Form CSI MasterFormat 2011. Electronic versions are available for download from Verco's website.

Standard Form CSI 3-Part Section Format	Notes To Specifier
PART 1 -- GENERAL	
1.01 WORK INCLUDED	
A. The extent of steel decking is shown on the drawings, including basic layout, types of deck units, and attachment required.	
1.02 RELATED WORK SPECIFIED ELSEWHERE	
A. Structural Steel Framing: Section 05 12 00.	
B. Rigid Insulation: Section 07 21 13.	For installation over roof deck.
****OR****	
B. Insulating Concrete: Section 03 52 16.	
C. Roofing: Section 07 40 00.	
D. Painting: Section 09 90 00.	For field painting of deck if factory primer painted deck is to be finish painted after installation.
E. Flashing and Sheet Metal: Section 07 60 00.	
F. Fireproofing: Section 07 81 00.	
1.03 WORK FURNISHED BUT NOT INSTALLED	
A. Acoustical batts: Section 09 81 00.	For installation by roofing contractor. Delete if not acoustical deck.
1.04 QUALITY ASSURANCE	
A. Codes and Standards:	
1. AISI, "S100: North American Specification for the Design of Cold-Formed Steel Structural Members."	American Iron & Steel Institute.
2. AWS D1.3, "Structural Welding Code – Sheet Steel."	American Welding Society.
3. ASTM, designations as specified.	American Society for Testing & Materials.
4. ICC-ES Report ESR-1735P.	International Code Council Evaluation Service
5. IAPMO ES Report ER-0217.	International Association of Plumbing and Mechanical Officials Evaluation Service.
6. 2006 International Building Code.	
7. 2009 International Building Code.	
8. Factory Mutual Approval Guide.	Delete if Deep or Shallow VERCOR™ decks.
1.05 PERFORMANCE REQUIREMENTS	
A. Diaphragm Values: The gage, attachment to supports, and PunchLok® sidelap connections (VSC) of the deck are designed to provide allowable diaphragm shear and flexibility factor in accordance with Verco evaluation reports. Other ICC-ES or IAPMO ES recognized systems will be acceptable as an equal only if they meet the required allowable diaphragm shear and flexibility factor shown on the structural drawings. The proposed sidelap connection shall be hazard-free with no exposed sharp edges that can cut cables or hoses, and shall allow measurement-free visual inspection.	Delete if PunchLok® system not utilized. VSC = Verco Sidelap Connection made with the PunchLok® tool.

Standard Form CSI 3-Part Section Format (cont.)

B. Factory Mutual Listing:
Provide roof deck units which have been evaluated by Factory Mutual and are listed in the Factory Mutual Approval Guide for "Class 1" fire rated construction.

1.06 SUBMITTALS

A. Shop Drawings:
1. Deck layout, framing, and supports, with dimensions, and sections.
2. Type and location of attachments.
3. PunchLok® sidelap connection spacing.
4. Details of accessories.
5. Deck manufacturer with profiles, properties, vertical loads, allowable shear capacities, and flexibility factors.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Steel Deck
1. Do not bend or mar decking.
2. Store off ground with one end elevated for drainage.
3. Cover deck with waterproof material, ventilated to avoid condensation.
4. Architecturally exposed deck shall be appropriately packaged or protected to minimize damage during shipment.

B. Acoustic Insulation
1. Store in enclosed area protected from weather.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Cold Rolled Steel: ASTM A 1008 or A 1039, SS, Grade 45 minimum.
1. Primer painted finish: Acrylic primer applied to steel which has been cleaned and chemically pre-treated. The gray primer is applied by a roller coat process and oven cured having a 0.3 mil nominal dry film thickness each side.

**** OR ****

A. Galvanized Steel: ASTM A 653 or A 1063, SS, Grade 40, minimum.
1. Zinc coated per ASTM A 653 or A 1063, G60.

2. Factory Primer Painted Gray: The gray primer is applied by a roller coat process and oven cured having a 0.3 mil nominal dry film thickness on side exposed to view.

**** OR ****

Notes to Specifier (cont.)

Delete if Deep or Shallow VERCOR™ decks.

Delete if the PunchLok® system is not utilized and insert Top Seam Welds **OR** Button Punches **OR** Screws.

Delete if deck is used for normal structural applications not requiring special packaging and handling.

Delete if not acoustical deck.

For primer painted decks. ASTM A 1008 formerly A 611. Not applicable to VERCOR™ decks.

For galvanized decks. ASTM A 653 formerly A 446. Not applicable to VERCOR™ decks.

Select if gray primer over galvanized.

Standard Form CSI 3-Part Section Format (cont.)

Notes to Specifier (cont.)

2. Factory Primer Painted Double White: The double thickness white primer is applied by a roller coat process and oven cured having a 0.6 mil nominal thickness on side exposed to view.

Select if double white primer over galvanized.

**** OR ****

A. Galvanized Steel: ASTM A653 or A1063, SS, Grade 80, minimum.
   1. Zinc coated per ASTM A653 or A1063, G90.

For galvanized Deep and Shallow VERCOR™ deck.

B. Acoustical Insulation Batts: Glass fiber strips cut to proper width.

Delete if not acoustical decking.

2.02 FABRICATION

A. General: Form deck units in lengths to span 3 or more supports, with 2" minimum end laps and interlocking sidelaps formed with standing seam allowing connection with PunchLok® tool.

Delete if Deep or Shallow VERCOR™ decks.
Delete if PunchLok® system not utilized.

B. Roof Deck Units: Provide deck configurations manufactured and labeled by Verco as follows:
   1. Type PLB™-36, __ gage, 36" wide, 1½" deep, with ShearTranz® II-42.

Designate gage: 22, 20, 18, or 16.
Delete if not required.

**** OR ****

   1. Type HSB®-36, ___ gage, 36" wide, 1½" deep, with ShearTranz® II **** OR **** ShearTranz®.

Designate gage: 22, 20, 18, or 16.
Select ShearTranz® system. Delete if not required.

**** OR ****

   1. Type HSB®-36-SS, ___ gage, 36" wide, 1½" deep, with ShearTranz® II **** OR **** ShearTranz®.

For screw fastened sidelaps. Designate gage: 22, 20, 18, or 16. Select ShearTranz® system. Delete if not required.

**** OR ****

   1. Type PLN™-24, ___ gage, 24" wide, 3" deep.

Designate gage: 22, 20, 18, or 16.

**** OR ****

   1. Type N-24, ___ gage, 24" wide, 3" deep with ShearTranz®.

Designate gage: 22, 20, 18, or 16. Delete if not required.

**** OR ****

   1. Type N-24-SS, ___ gage, 24" wide, 3" deep.

For screw fastened sidelaps. Designate gage: 22, 20, 18, or 16.

**** OR ****

   1. System 80, ____ gage, 36" wide, 1½" deep. Provide factory punched vent tabs projecting upwards in interior bottom flanges at approximately 6" on center and ShearTranz® at shear collectors.

Designate gage: 22, 20, or 18.

**** OR ****

   1. Deep VERCOR™, ___ gage, 36" wide, 1⅝" deep, with VentLok louvers in each web ****OR**** sidelap vents at approximately 10" on center.

Designate gage: 26, 24, 22, or 20.
Select type of venting. Delete if not required. VentLok louvers not available for 26 gage deck.

**** OR ****

   1. Shallow VERCOR™, ___ gage, 36" wide, ⅜" deep, with sidelap vents at approximately 10" on center.

Designate gage: 26, 24, or 22.
Delete if venting not required.

Standard Form CSI 3-Part Section Format (cont.)	Notes to Specifier (cont.)
C. Acoustical Deck	Delete if not acoustical deck.
1. Type ____ deck. Vertical webs except at side joint perforated with 5/32" diameter holes on staggered 7/16" centers to provide ___ Noise Reduction Coefficient. NRC of completed assembly shall be as determined by tests in accordance with ASTM designation C423 conducted by Riverbank Acoustical Laboratories.	Select PLB™-36, HSB®-36, PLN™-24, or N-24. Delete if PLN™-24 or N-24. Designate 0.80 NRC for PLB™-36 and HSB®-36 or 0.85 for PLN™-24 and N-24.
2.03 ACCESSORIES	
A. Metal Accessories: Same gage as decking except where noted or specified to be heavier material on drawings.	
B. Steel profile closures.	Delete if not required.
PART 3 – EXECUTION	
3.01 INSPECTION	
A. Check supporting members for correct layout and alignment.	
B. Verify that surfaces to receive roof deck are free of debris.	
C. Do not proceed with installation until defects are corrected.	
D. Verify deck is labeled for PunchLok® System use.	Delete if PunchLok® system not utilized.
3.02 INSTALLATION	
A. General: Install roof deck units and accessories in accordance with approved shop drawings.	
B. Placing Roof Deck Units:	
1. Position on supporting steel framework and adjust to final position with ends bearing a minimum of 2 in.	
2. Ends of units shall be lapped a minimum of 2 in. over supports.	
3. Mark supports at regular intervals to maintain alignment and proper spacing.	
C. Fastening Deck Units To Supports:	
1. Secure with ½ in. effective diameter arc spot welds.	
**** OR ****	
1. Secure with Pneutek fasteners.	PLB™-36 or PLN™-24 decks only.
**** OR ****	
1. Secure with Hilti fasteners.	PLB™-36 or PLN™-24 decks only.
**** OR ****	
1. Secure with #12 self-drilling, self-tapping screws.	Not applicable to Deep VERCOR™.
**** OR ****	
1. Secure with ITW Buildex screws.	For Deep VERCOR™ deck.
**** OR ****	
1. Secure to supporting members with plug welds through 3/8" diameter hole in 14 gage weld washer and 7/16" diameter hole in 16 gage anchor weld washer.	For Deep VERCOR™ deck. Delete if not specifying weld pattern 5 as shown on page 100.

Standard Form CSI 3-Part Section Format (cont.)

D. Connecting Sidelaps:
   1. Use Verco PunchLok® tool to create interlocking VSC connection at spacing designated on the shop/erection drawings. VSC's may be made in either direction.

**** OR ****

   1. Connect sidelap as shown on approved shop/erection drawings.

E. Comply with AWS requirements and procedures for welding sheet steel in structures.

3.03 PROTECTION

A. Do not use deck units for storage or working platforms until permanently secured in position.
B. Construction loads must not exceed flexural strength and serviceability requirements of deck.

*** END OF SECTION ***

Notes to Specifier (cont.)

Delete if PunchLok® system not utilized.
VSC = Verco Sidelap Connection made with the PunchLok® tool.

Using the Tables

These illustrations highlight important considerations for using the deck tables. The values in the tables were determined in standard US units.

Type PLB™-36 or HSB®-36

- 1½" Deep Roof Deck
- Primer Painted or Galvanized

Allowable Uniform Loads (psf)

Uniform load which produces maximum **allowable stress** in deck

SPAN GAGE			SPAN (ft-in.) 4'-0"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
SINGLE	22	Stress	185	118	98	82	70	60	53	46	41	37
		L/240	185	95	71	55	43	34	28	23	19	16
	20	Stress	223	149	123	104	88	76	66	58	52	46

Uniform load which produces **L/240 deflection** in deck

How to use the uniform load tables:

1. Using the total load, select the gage and the span with equal or greater value for stress.
2. Using the appropriate load combinations, select the gage and the span with equal or greater value for L/240 deflection.
3. Select the gage and the span for the roof deck that meets the criteria of both steps 1 and 2.

Type PLB™-36

- 7 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	VSC @ 24"	q	792	707	620	592	544	535	50
		F	8.1+22R	7.8+17R	9.2+15R	8.8+12R	10.0+11R	9.5+10R	10.5+9R
	VSC @ 18"	q	836	743	655	62	599	561	554
		F	6.5+22R	6.6+17R	7.7+15R	7.6+12R	7.6+11R	8.4+10R	8.2+9R
	VSC @ 12"	q	873	774	713	673			
		F	5.6+22R	5.9+17R	6.1+15R	6.3+12R			

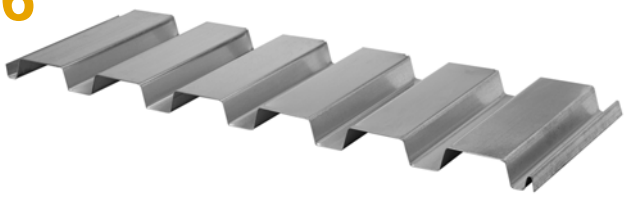
Sidelap Attachment Type and Spacing (VSC = Verco Sidelap Connection made with PunchLok® tool)

Diaphragm Shear Capacity (q) and **Flexibility Factors** (F) based on sidelaps attached with VSC's at 24" oc and 36/7 weld pattern at supports

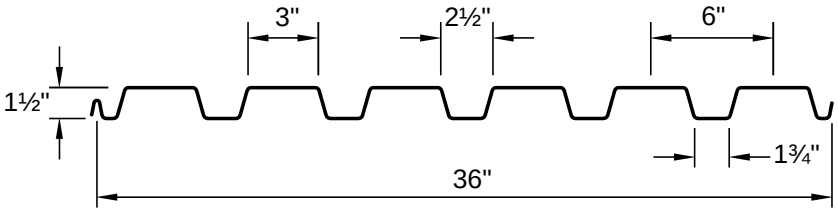
(Examples above were taken from the tables on pages 29 and 52.)

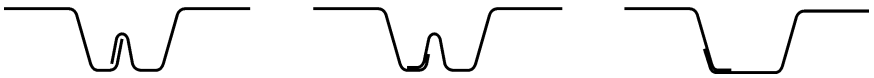
Type PLB™-36 or HSB®-36

- 1½" Deep Roof Deck
- Primer Painted or Galvanized



Dimensions





PLB-36 or HSB-36	HSB-SS-36	HSB-30 NESTABLE
Standard Interlocking Sidelap	Screw Fastened Sidelap	Overlapping Sidelap Available 30" Wide – Special Order

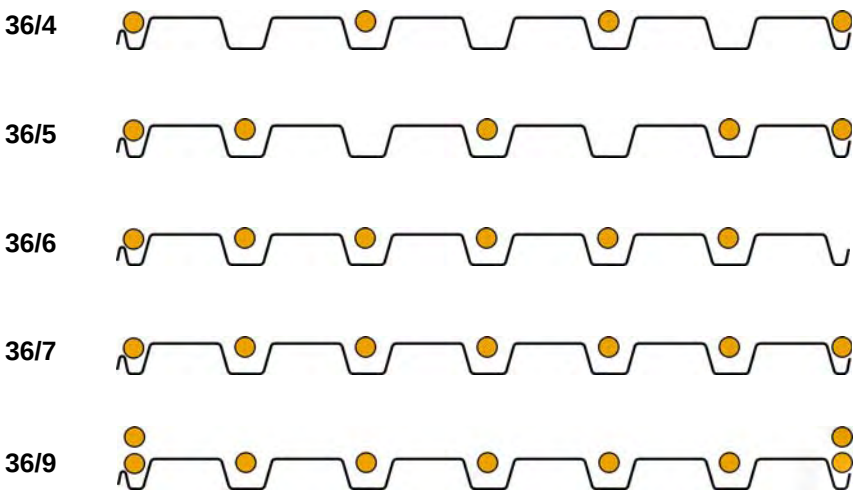
Deck Weight and Section Properties

Gage	Weight		I_d for Deflection		Moment		Allowable Reactions per ft of Width (lb)				
	Galv	Painted	Single Span	Multi Span	$+S_{eff}$	$-S_{eff}$	End Bearing			Interior Bearing	
	(psf)	(psf)	($in.^4$/ft)	($in.^4$/ft)	($in.^3$/ft)	($in.^3$/ft)	2"	3"	4"	3"	4"
22	1.9	1.8	0.180	0.192	0.185	0.194	748	861	931	1248	1337
20	2.3	2.2	0.223	0.231	0.233	0.244	1041	1193	1287	1752	1872
18	2.9	2.8	0.305	0.306	0.318	0.331	1745	1988	2133	2972	3160
16	3.5	3.4	0.381	0.381	0.404	0.410	2612	2959	3164	4485	4751

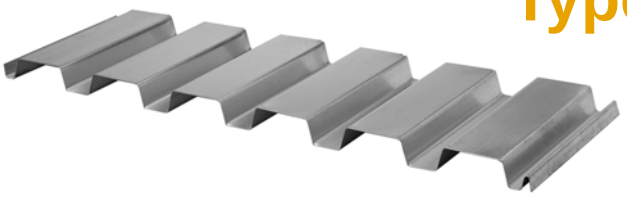
Notes:

1. Section properties are based on F_y = 40,000 psi.
2. See Verco's evaluation report for section property and allowable reaction adjustment factors for acoustical decks.

Attachment Patterns to Supports



Note: ● indicates location of weld, power actuated fastener, or screw as indicated in the load tables.



Type PLB™-36 or HSB®-36

1½" Deep Roof Deck
Primer Painted or Galvanized

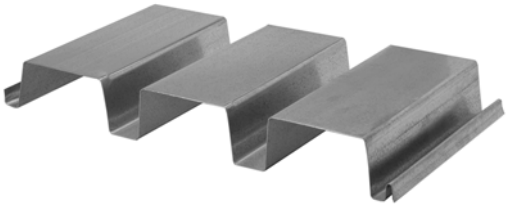
Allowable Uniform Loads (psf)

SPAN	GAGE		SPAN (ft-in.) 4'-0"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
SINGLE	22	Stress	185	118	98	82	70	60	53	46	41	37	33	30				
		L/240	185	95	71	55	43	34	28	23	19	16	14	12				
	20	Stress	223	149	123	104	88	76	66	58	52	46	41	37	34	31	28	26
		L/240	229	117	88	68	53	43	35	29	24	20	17	15	13	11	10	8
	18	Stress	300	204	168	141	120	104	90	80	70	63	56	51	46	42	38	35
		L/240	♦♦♦	160	120	93	73	58	47	39	33	27	23	20	17	15	13	12
	16	Stress	300	259	214	180	153	132	115	101	89	80	72	65	59	53	49	45
		L/240	♦♦♦	200	150	116	91	73	59	49	41	34	29	25	22	19	16	14
DOUBLE	22	Stress	194	124	103	86	73	63	55	49	43	38	34	31				
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	30				
	20	Stress	244	156	129	108	92	80	69	61	54	48	43	39	35	32	30	27
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	43	37	32	27	24	21
	18	Stress	300	212	175	147	125	108	94	83	73	65	59	53	48	44	40	37
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	56	48	42	36	32	28
	16	Stress	300	262	217	182	155	134	117	103	91	81	73	66	60	54	50	46
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	70	60	52	45	40	35
TRIPLE	22	Stress	243	155	128	108	92	79	69	61	54	48	43	39				
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	86	69	56	46	39	33	28	24				
	20	Stress	300	195	161	136	116	100	87	76	68	60	54	49	44	40	37	34
		L/240	♦♦♦	♦♦♦	♦♦♦	132	104	83	68	56	47	39	33	29	25	21	19	17
	18	Stress	300	265	219	184	157	135	118	103	92	82	73	66	60	55	50	46
		L/240	♦♦♦	♦♦♦	♦♦♦	175	138	110	90	74	62	52	44	38	33	28	25	22
	16	Stress	300	300	271	228	194	167	146	128	113	101	91	82	74	68	62	57
		L/240	♦♦♦	♦♦♦	♦♦♦	218	172	137	112	92	77	65	55	47	41	35	31	27

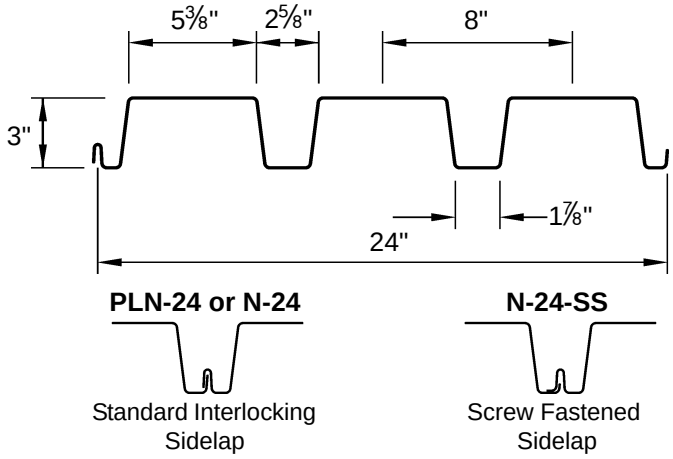
Notes:
1. Stress = Uniform load which produces maximum allowable stress in deck.
2. L/240 = Uniform load which produces L/240 deflection in deck.
3. Self-weight of the deck should be included when determining dead load.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.

Type PLN™-24 or N-24

- 3" Deep Roof Deck
- Primer Painted or Galvanized



Dimensions



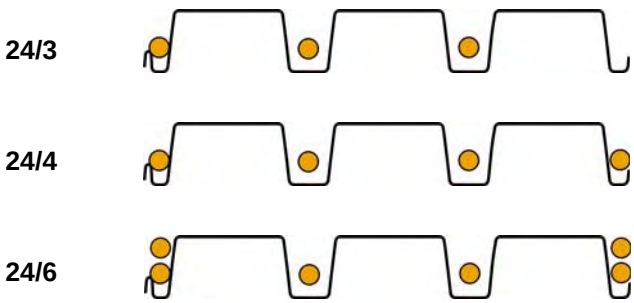
Deck Weight and Section Properties

Gage	Weight		I_d for Deflection		Moment		Allowable Reactions per ft of Width (lb)				
	Galv	Painted	Single Span	Multi Span	$+S_{eff}$	$-S_{eff}$	End Bearing			Interior Bearing	
	(psf)	(psf)	($in.^4$/ft)	($in.^4$/ft)	($in.^3$/ft)	($in.^3$/ft)	2"	3"	4"	4"	5"
22	2.2	2.1	0.748	0.860	0.359	0.438	523	602	669	1040	1121
20	2.6	2.5	0.926	1.032	0.464	0.542	737	844	935	1458	1569
18	3.5	3.4	1.293	1.369	0.663	0.736	1253	1427	1573	2468	2645
16	4.2	4.1	1.667	1.706	0.850	0.914	1893	2145	2357	3719	3974

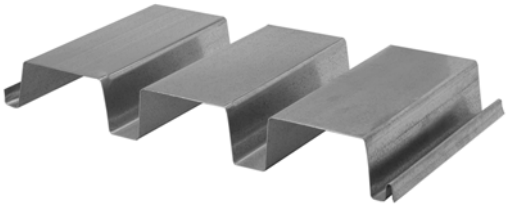
Notes:

1. Section properties are based on F_y = 40,000 psi.
2. See Verco's evaluation report for section property and allowable reaction adjustment factors for acoustical decks.

Attachment Patterns to Supports



Note: ● indicates location of weld, power actuated fastener, or screw as indicated in the load tables.



Type PLN™-24 or N-24

3" Deep Roof Deck
Primer Painted or Galvanized

Allowable Uniform Loads (psf)

SPAN	GAGE		SPAN (ft-in.)															
			6'-0"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
SINGLE	22	Stress	160	117	102	90	80	71	64	57	52	47	43	40	34	29	26	22
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	67	57	49	42	37	32	28	22	18	15	12
	20	Stress	206	152	132	116	103	92	82	74	67	61	56	52	44	38	33	29
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	99	83	71	61	53	46	40	35	28	22	18	15
	18	Stress	295	216	189	166	147	131	118	106	96	88	80	74	63	54	47	41
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	138	116	99	85	73	64	56	49	39	31	25	21
	16	Stress	300	278	242	213	188	168	151	136	123	112	103	94	80	69	60	53
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	178	150	128	109	95	82	72	63	50	40	32	27
DOUBLE	22	Stress	195	143	125	110	97	87	78	70	64	58	53	49	41	36	31	27
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	20	Stress	241	177	154	136	120	107	96	87	79	72	66	60	51	44	39	34
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	18	Stress	300	240	209	184	163	145	130	118	107	97	89	82	70	60	52	46
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	16	Stress	300	298	260	229	202	181	162	146	133	121	111	102	87	75	65	57
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	22	Stress	243	179	156	137	121	108	97	88	79	72	66	61	52	45	39	34
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	48	39	32	26
	20	Stress	300	221	193	169	150	134	120	108	98	90	82	75	64	55	48	42
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	74	58	47	38	31
	18	Stress	300	300	262	230	204	182	163	147	134	122	111	102	87	75	65	58
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	98	77	62	50	41
	16	Stress	300	300	300	286	253	226	203	183	166	151	138	127	108	93	81	71
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	122	96	77	63	52

Notes:
1. Stress = Uniform load which produces maximum allowable stress in deck.
2. L/240 = Uniform load which produces L/240 deflection in deck.
3. Self-weight of the deck should be included when determining dead load.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.

Type PLB™-36

- **7 Pneutek® Fastener Pattern at Supports**
  K66 at Supports 0.281" thick and thicker
  K64 at Supports 0.187-0.312" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	823	781	678	653	592	582	540		
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R		
	VSC @ 18"	q	933	843	733	698	671	617	604		
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R		
	VSC @ 12"	q	1003	897	826	776	738	708	684		
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R		
	VSC @ 8"	q	1121	1033	940	903	850	830	753		
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R		
	VSC @ 6"	q	1220	1110	1036	984	944	913	753		
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R		
	VSC @ 4"	q	1387	1273	1197	1143	1102	929	753		
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R		
20	VSC @ 24"	q	981	1008	810	843	720	751	665	693	627
		F	6.3+13R	7.0+10R	9.3+8R	10.0+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	1203	1088	947	902	867	798	781	767	688
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	1295	1158	1068	1003	954	916	885	818	688
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	1447	1335	1215	1168	1099	1075	990	818	688
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1576	1435	1340	1272	1222	1182	990	818	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1793	1647	1549	1479	1427	1223	990	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R

Notes:
1. K66 = Pneutek K66062 or K66075 fasteners
2. K 64 = Pneutek K64062 fastener
3. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Pneutek® Fastener Pattern at Supports
  - K66 at Supports 0.281" thick and thicker
  - K64 at Supports 0.187-0.312" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1260	1302	1047	1094	935	978	866	904	819
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1678	1523	1311	1267	1221	1124	1102	1084	1023
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1809	1624	1500	1412	1346	1294	1253	1219	1057
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	2029	1878	1713	1650	1555	1523	1460	1257	1057
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	2215	2022	1893	1801	1731	1678	1521	1257	1057
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	2526	2327	2194	2099	2027	1878	1521	1257	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	1518	1576	1269	1331	1139	1194	1058	1107	1003
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	2057	1926	1594	1596	1555	1392	1407	1386	1287
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	2284	2058	1907	1799	1717	1654	1604	1562	1478
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	2571	2390	2184	2109	1990	1953	1874	1759	1478
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	2813	2577	2418	2305	2220	2154	2101	1759	1478
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	3219	2975	2811	2694	2606	2538	2129	1759	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

Notes:
1. K66 = Pneutek K66062 or K66075 fasteners
2. K64 = Pneutek K64062 fastener
3. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Pneutek® Fastener Pattern at Supports**
  SDK63 at Supports 0.155-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	782	742	644	621	562	553	513		
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R		
	VSC @ 18"	q	887	801	697	663	637	586	574		
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R		
	VSC @ 12"	q	953	852	785	737	701	673	650		
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R		
	VSC @ 8"	q	1065	982	893	858	807	789	753		
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R		
	VSC @ 6"	q	1159	1055	985	934	897	867	753		
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R		
	VSC @ 4"	q	1318	1210	1138	1086	1047	929	753		
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R		
20	VSC @ 24"	q	932	958	770	801	684	714	632	658	596
		F	6.3+13R	7.0+10R	9.3+8R	10.0+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	1143	1034	899	857	824	758	742	728	687
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	1230	1101	1014	952	906	870	841	817	688
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	1375	1268	1155	1109	1044	1021	978	818	688
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1498	1363	1273	1209	1160	1123	990	818	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1703	1564	1472	1405	1356	1223	990	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R

Notes:
1. SDK63 = Pneutek SDK63075 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Pneutek® Fastener Pattern at Supports
  SDK63 at Supports 0.155-0.250" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1197	1237	995	1039	888	929	822	859	778
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1594	1446	1246	1203	1160	1068	1047	1030	972
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1718	1543	1425	1341	1278	1229	1190	1158	1057
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	1928	1784	1628	1567	1477	1447	1387	1257	1057
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	2104	1921	1798	1711	1645	1594	1521	1257	1057
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	2400	2211	2084	1994	1926	1873	1521	1257	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	1442	1498	1206	1264	1082	1134	1005	1052	953
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	1954	1829	1514	1516	1477	1322	1337	1317	1222
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	2170	1955	1811	1709	1632	1572	1523	1484	1451
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	2443	2270	2075	2003	1891	1855	1780	1759	1478
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	2673	2448	2297	2190	2109	2046	1996	1759	1478
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	3058	2826	2670	2559	2476	2411	2129	1759	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

Notes:
1. SDK63 = Pneutek SDK63075 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Pneutek® Fastener Pattern at Supports**
  SDK61 at Supports 0.113-0.155" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	535	508	441	425	385	378	351		
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R		
	VSC @ 18"	q	607	548	477	454	436	401	393		
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R		
	VSC @ 12"	q	652	583	537	504	480	460	445		
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R		
	VSC @ 8"	q	729	672	611	587	552	540	517		
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R		
	VSC @ 6"	q	793	722	674	639	614	594	577		
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R		
	VSC @ 4"	q	901	828	778	743	716	696	679		
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R		
20	VSC @ 24"	q	638	655	527	548	468	488	432	451	408
		F	6.3+13R	7.0+10R	9.3+8R	10.0+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	782	707	615	586	564	519	508	498	470
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	841	753	694	652	620	595	575	559	546
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	941	868	790	759	714	699	669	660	639
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1025	933	871	827	794	768	748	731	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1165	1070	1007	962	928	901	880	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R

Notes:
1. SDK61 = Pneutek SDK61075 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Pneutek® Fastener Pattern at Supports
  SDK61 at Supports 0.113-0.155" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	819	846	680	711	608	636	563	588	532
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1090	990	852	823	794	731	717	705	665
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1176	1056	975	918	875	841	814	792	774
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	1319	1221	1114	1072	1011	990	949	937	908
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	1440	1314	1230	1170	1125	1090	1062	1039	1020
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	1642	1513	1426	1364	1318	1282	1253	1229	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	987	1025	825	865	740	776	688	720	652
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	1337	1252	1036	1037	1011	904	915	901	836
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	1485	1338	1239	1169	1116	1075	1042	1015	993
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	1671	1553	1420	1371	1294	1269	1218	1204	1167
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	1829	1675	1572	1498	1443	1400	1366	1337	1314
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	2092	1933	1827	1751	1694	1649	1614	1585	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

Notes:
1. SDK61 = Pneutek SDK61075 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Hilti Fastener Pattern at Supports**
  X-ENP-19 at Supports ¼" thick and thicker
  X-EDN19 at Supports 0.313-⅜" thick
  X-EDNK22 at Supports 0.188-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	687	627	527	501	442	428	388		
		F	11.3+23R	11.9+27R	20.4+31R	21.0+35R	32.3+38R	32.8+42R	46.9+45R		
	VSC @ 18"	q	777	689	579	540	509	456	438		
		F	6.9+23R	8.2+27R	13.2+31R	14.8+35R	16.7+38R	24.2+42R	26.4+45R		
	VSC @ 12"	q	853	743	666	609	565	530	501		
		F	5.2+23R	6.4+27R	7.7+31R	9.2+35R	10.9+38R	12.8+42R	14.9+45R		
	VSC @ 8"	q	980	878	773	722	660	629	588		
		F	3.9+23R	4.3+27R	5.1+31R	5.6+35R	6.6+38R	7.1+42R	8.4+45R		
	VSC @ 6"	q	1087	955	862	793	740	697	661		
		F	3.5+23R	3.8+27R	4.1+31R	4.5+35R	5.0+38R	5.5+42R	6.0+45R		
	VSC @ 4"	q	1267	1118	1013	935	874	824	753		
		F	3.1+23R	3.2+27R	3.4+31R	3.6+35R	3.8+38R	4.0+42R	4.3+45R		
20	VSC @ 24"	q	826	750	631	598	528	511	464	453	419
		F	10.1+13R	10.7+15R	18.5+17R	19.2+19R	29.7+21R	30.3+23R	43.6+25R	44.2+27R	60.0 +29R
	VSC @ 18"	q	929	821	691	644	606	544	522	503	465
		F	6.1+13R	7.3+15R	11.9+17R	13.5+19R	15.3+21R	22.3+23R	24.5+25R	26.8+27R	36.1+29R
	VSC @ 12"	q	1016	883	791	723	671	629	595	566	542
		F	4.5+13R	5.6+15R	6.9+17R	8.3+19R	10.0+21R	11.7+23R	13.7+25R	15.8+27R	18.1+29R
	VSC @ 8"	q	1161	1039	913	853	780	744	695	672	637
		F	3.4+13R	3.7+15R	4.5+17R	4.9+19R	5.9+21R	6.4+23R	7.6+25R	8.2+27R	9.6+29R
	VSC @ 6"	q	1284	1126	1017	935	872	822	780	745	688
		F	2.9+13R	3.2+15R	3.6+17R	4.0+19R	4.4+21R	4.9+23R	5.4+25R	5.9+27R	6.5+29R
	VSC @ 4"	q	1489	1313	1190	1098	1027	969	922	818	688
		F	2.6+13R	2.7+15R	2.9+17R	3.1+19R	3.3+21R	3.5+23R	3.7+25R	4.0+27R	4.3+29R

Notes:
1. X-ENP-19 = Hilti X-ENP-19 L15 fastener
2. X-EDN19 = Hilti X-EDN19 THQ12 fastener
3. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
4. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Hilti Fastener Pattern at Supports**
  - **X-ENP-19 at Supports ¼" thick and thicker**
  - **X-EDN19 at Supports 0.313-⅜" thick**
  - **X-EDNK22 at Supports 0.188-0.250" thick**
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1040	941	793	750	663	640	583	569	528
		F	8.3+5R	8.9+6R	15.6+7R	16.3+8R	25.6+8R	26.3+9R	38.0+10R	38.8+11R	53.0+11R
	VSC @ 18"	q	1162	1025	864	804	757	680	653	630	584
		F	4.9+5R	6.0+6R	10.0+7R	11.4+8R	13.1+8R	19.3+9R	21.3+10R	23.5+11R	31.9+11R
	VSC @ 12"	q	1265	1099	984	900	835	784	742	707	678
		F	3.6+5R	4.6+6R	5.7+7R	7.0+8R	8.4+8R	10.0+9R	11.8+10R	13.8+11R	15.9+11R
	VSC @ 8"	q	1438	1285	1131	1056	967	923	864	835	793
		F	2.6+5R	2.9+6R	3.6+7R	4.0+8R	4.9+8R	5.4+9R	6.5+10R	7.0+11R	8.3+11R
	VSC @ 6"	q	1583	1389	1254	1155	1078	1017	967	925	890
		F	2.3+5R	2.5+6R	2.8+7R	3.2+8R	3.6+8R	4.0+9R	4.5+10R	5.0+11R	5.5+11R
	VSC @ 4"	q	1827	1612	1462	1350	1264	1195	1139	1092	1052
		F	2.0+5R	2.1+6R	2.3+7R	2.4+8R	2.6+8R	2.8+9R	3.0+10R	3.2+11R	3.5+11R
16	VSC @ 24"	q	1215	1096	926	874	775	748	682	667	619
		F	7.0+2R	7.6+3R	13.6+3R	14.3+4R	22.6+4R	23.4+4R	34.0+5R	34.9+5R	47.9+5R
	VSC @ 18"	q	1352	1191	1007	937	881	794	763	736	683
		F	4.1+2R	5.1+3R	8.7+3R	10.0+4R	11.5+4R	17.1+4R	19.0+5R	21.1+5R	28.7+5R
	VSC @ 12"	q	1468	1275	1142	1045	971	912	864	825	791
		F	3.0+2R	3.9+3R	4.9+3R	6.1+4R	7.4+4R	8.9+4R	10.5+5R	12.3+5R	14.2+5R
	VSC @ 8"	q	1662	1485	1309	1223	1121	1071	1004	972	924
		F	2.2+2R	2.5+3R	3.1+3R	3.4+4R	4.2+4R	4.7+4R	5.7+5R	6.2+5R	7.4+5R
	VSC @ 6"	q	1826	1603	1449	1335	1248	1179	1122	1075	1036
		F	1.9+2R	2.1+3R	2.4+3R	2.7+4R	3.0+4R	3.4+4R	3.9+5R	4.3+5R	4.9+5R
	VSC @ 4"	q	2100	1854	1684	1558	1461	1383	1320	1268	1223
		F	1.6+2R	1.7+3R	1.9+3R	2.0+4R	2.2+4R	2.3+4R	2.5+5R	2.8+5R	3.0+5R

Notes:
1. X-ENP-19 = Hilti X-ENP-19 L15 fastener
2. X-EDN19 = Hilti X-EDN19 THQ12 fastener
3. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
4. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Hilti Fastener Pattern at Supports**
  X-EDN19 at Supports 0.250-0.313" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	563	514	432	411	362	351	318		
		F	17.0+23R	17.9+27R	30.6+31R	31.5+35R	48.5+38R	49.2+42R	70.4+45R		
	VSC @ 18"	q	637	565	475	443	417	374	359		
		F	10.4+23R	12.3+27R	19.8+31R	22.2+35R	25.1+38R	36.3+42R	39.6+45R		
	VSC @ 12"	q	699	609	546	499	463	435	411		
		F	7.8+23R	9.6+27R	11.6+31R	13.8+35R	16.4+38R	19.2+42R	22.4+45R		
	VSC @ 8"	q	804	720	634	592	541	516	482		
		F	5.9+23R	6.5+27R	7.7+31R	8.4+35R	9.9+38R	10.7+42R	12.6+45R		
	VSC @ 6"	q	891	783	707	650	607	572	542		
		F	5.3+23R	5.7+27R	6.2+31R	6.8+35R	7.5+38R	8.3+42R	9.0+45R		
	VSC @ 4"	q	1039	917	831	767	717	676	617		
		F	4.7+23R	4.8+27R	5.1+31R	5.4+35R	5.7+38R	6.0+42R	6.5+45R		
20	VSC @ 24"	q	677	615	517	490	433	419	380	371	344
		F	15.2+13R	16.1+15R	27.8+17R	28.8+19R	44.6+21R	45.5+23R	65.4+25R	66.3+27R	90.0+29R
	VSC @ 18"	q	762	673	567	528	497	446	428	412	381
		F	9.1+13R	11.0+15R	17.9+17R	20.3+19R	23.0+21R	33.5+23R	36.8+25R	40.2+27R	54.2+29R
	VSC @ 12"	q	833	724	649	593	550	516	488	464	444
		F	6.8+13R	8.4+15R	10.4+17R	12.5+19R	15.0+21R	17.6+23R	20.6+25R	23.7+27R	27.2+29R
	VSC @ 8"	q	952	852	749	699	640	610	570	551	522
		F	5.1+13R	5.6+15R	6.8+17R	7.4+19R	8.8+21R	9.6+23R	11.4+25R	12.3+27R	14.4+29R
	VSC @ 6"	q	1053	923	834	767	715	674	640	611	564
		F	4.4+13R	4.8+15R	5.4+17R	6.0+19R	6.6+21R	7.4+23R	8.1+25R	8.9+27R	9.8+29R
	VSC @ 4"	q	1221	1077	976	900	842	795	756	671	564
		F	3.9+13R	4.1+15R	4.4+17R	4.7+19R	5.0+21R	5.3+23R	5.6+25R	6.0+27R	6.5+29R

Notes:
1. X-EDN19 = Hilti X-EDN19 THQ12 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Hilti Fastener Pattern at Supports
- X-EDN19 at Supports 0.250-0.313" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	853	772	650	615	544	525	478	467	433
		F	12.5+5R	13.4+6R	23.4+7R	24.5+8R	38.4+8R	39.5+9R	57.0+10R	58.2+11R	79.5+11R
	VSC @ 18"	q	953	841	708	659	621	558	535	517	479
		F	7.4+5R	9.0+6R	15.0+7R	17.1+8R	19.7+8R	29.0+9R	32.0+10R	35.3+11R	47.9+11R
	VSC @ 12"	q	1037	901	807	738	685	643	608	580	556
		F	5.4+5R	6.9+6R	8.6+7R	10.5+8R	12.6+8R	15.0+9R	17.7+10R	20.7+11R	23.9+11R
	VSC @ 8"	q	1179	1054	927	866	793	757	708	685	650
		F	3.9+5R	4.4+6R	5.4+7R	6.0+8R	7.4+8R	8.1+9R	9.7+10R	10.5+11R	12.5+11R
	VSC @ 6"	q	1298	1139	1028	947	884	834	793	759	730
		F	3.5+5R	3.8+6R	4.2+7R	4.8+8R	5.4+8R	6.0+9R	6.8+10R	7.5+11R	8.3+11R
	VSC @ 4"	q	1498	1322	1199	1107	1036	980	934	895	863
		F	3.0+5R	3.2+6R	3.5+7R	3.6+8R	3.9+8R	4.2+9R	4.5+10R	4.8+11R	5.3+11R
16	VSC @ 24"	q	996	899	759	717	636	613	559	547	508
		F	10.5+2R	11.4+3R	20.4+3R	21.5+4R	33.9+4R	35.1+4R	51.0+5R	52.4+5R	71.9+5R
	VSC @ 18"	q	1109	977	826	768	722	651	626	604	560
		F	6.2+2R	7.7+3R	13.1+3R	15.0+4R	17.3+4R	25.7+4R	28.5+5R	31.7+5R	43.1+5R
	VSC @ 12"	q	1204	1046	936	857	796	748	708	677	649
		F	4.5+2R	5.9+3R	7.4+3R	9.1+4R	11.1+4R	13.4+4R	15.8+5R	18.5+5R	21.3+5R
	VSC @ 8"	q	1363	1218	1073	1003	919	878	823	797	758
		F	3.3+2R	3.8+3R	4.7+3R	5.1+4R	6.3+4R	7.1+4R	8.6+5R	9.3+5R	11.1+5R
	VSC @ 6"	q	1497	1314	1188	1095	1023	967	920	882	850
		F	2.9+2R	3.2+3R	3.6+3R	4.1+4R	4.5+4R	5.1+4R	5.9+5R	6.5+5R	7.4+5R
	VSC @ 4"	q	1722	1520	1381	1278	1198	1134	1082	1040	1003
		F	2.4+2R	2.6+3R	2.9+3R	3.0+4R	3.3+4R	3.5+4R	3.8+5R	4.2+5R	4.5+5R

Notes:
1. X-EDN19 = Hilti X-EDN19 THQ12 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- **7 Hilti Fastener Pattern at Supports**
  X-EDNK22 at Supports ⅛-0.188" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	522	477	401	381	336	325	295		
		F	18.1+23R	19.0+27R	32.6+31R	33.6+35R	51.7+38R	52.5+42R	75.0+45R		
	VSC @ 18"	q	591	524	440	410	387	347	333		
		F	11.0+23R	13.1+27R	21.1+31R	23.7+35R	26.7+38R	38.7+42R	42.2+45R		
	VSC @ 12"	q	648	565	506	463	429	403	381		
		F	8.3+23R	10.2+27R	12.3+31R	14.7+35R	17.4+38R	20.5+42R	23.8+45R		
	VSC @ 8"	q	745	667	587	549	502	478	447		
		F	6.2+23R	6.9+27R	8.2+31R	9.0+35R	10.6+38R	11.4+42R	13.4+45R		
	VSC @ 6"	q	826	726	655	603	562	530	502		
		F	5.6+23R	6.1+27R	6.6+31R	7.2+35R	8.0+38R	8.8+42R	9.6+45R		
	VSC @ 4"	q	963	850	770	711	664	626	572		
		F	5.0+23R	5.1+27R	5.4+31R	5.8+35R	6.1+38R	6.4+42R	6.9+45R		
20	VSC @ 24"	q	628	570	480	454	401	388	353	344	318
		F	16.2+13R	17.1+15R	29.6+17R	30.7+19R	47.5+21R	48.5+23R	69.8+25R	70.7+27R	96.0+29R
	VSC @ 18"	q	706	624	525	489	461	413	397	382	353
		F	9.8+13R	11.7+15R	19.0+17R	21.6+19R	24.5+21R	35.7+23R	39.2+25R	42.9+27R	57.8+29R
	VSC @ 12"	q	772	671	601	549	510	478	452	430	412
		F	7.2+13R	9.0+15R	11.0+17R	13.3+19R	16.0+21R	18.7+23R	21.9+25R	25.3+27R	29.0+29R
	VSC @ 8"	q	882	790	694	648	593	565	528	511	484
		F	5.4+13R	5.9+15R	7.2+17R	7.8+19R	9.4+21R	10.2+23R	12.2+25R	13.1+27R	15.4+29R
	VSC @ 6"	q	976	856	773	711	663	625	593	566	523
		F	4.6+13R	5.1+15R	5.8+17R	6.4+19R	7.0+21R	7.8+23R	8.6+25R	9.4+27R	10.4+29R
	VSC @ 4"	q	1132	998	904	834	781	736	701	622	523
		F	4.2+13R	4.3+15R	4.6+17R	5.0+19R	5.3+21R	5.6+23R	5.9+25R	6.4+27R	6.9+29R

Notes:
1. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Hilti Fastener Pattern at Supports
- X-EDNK22 at Supports ⅛-0.188" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	790	715	603	570	504	486	443	432	401
		F	13.3+5R	14.2+6R	25.0+7R	26.1+8R	41.0+8R	42.1+9R	60.8+10R	62.1+11R	84.8+11R
	VSC @ 18"	q	883	779	657	611	575	517	496	479	444
		F	7.8+5R	9.6+6R	16.0+7R	18.2+8R	21.0+8R	30.9+9R	34.1+10R	37.6+11R	51.0+11R
	VSC @ 12"	q	961	835	748	684	635	596	564	537	515
		F	5.8+5R	7.4+6R	9.1+7R	11.2+8R	13.4+8R	16.0+9R	18.9+10R	22.1+11R	25.4+11R
	VSC @ 8"	q	1093	977	860	803	735	701	657	635	603
		F	4.2+5R	4.6+6R	5.8+7R	6.4+8R	7.8+8R	8.6+9R	10.4+10R	11.2+11R	13.3+11R
	VSC @ 6"	q	1203	1056	953	878	819	773	735	703	676
		F	3.7+5R	4.0+6R	4.5+7R	5.1+8R	5.8+8R	6.4+9R	7.2+10R	8.0+11R	8.8+11R
	VSC @ 4"	q	1389	1225	1111	1026	961	908	866	830	800
		F	3.2+5R	3.4+6R	3.7+7R	3.8+8R	4.2+8R	4.5+9R	4.8+10R	5.1+11R	5.6+11R
16	VSC @ 24"	q	923	833	704	664	589	568	518	507	470
		F	11.2+2R	12.2+3R	21.8+3R	22.9+4R	36.2+4R	37.4+4R	54.4+5R	55.8+5R	76.6+5R
	VSC @ 18"	q	1028	905	765	712	670	603	580	559	519
		F	6.6+2R	8.2+3R	13.9+3R	16.0+4R	18.4+4R	27.4+4R	30.4+5R	33.8+5R	45.9+5R
	VSC @ 12"	q	1116	969	868	794	738	693	657	627	601
		F	4.8+2R	6.2+3R	7.8+3R	9.8+4R	11.8+4R	14.2+4R	16.8+5R	19.7+5R	22.7+5R
	VSC @ 8"	q	1263	1129	995	929	852	814	763	739	702
		F	3.5+2R	4.0+3R	5.0+3R	5.4+4R	6.7+4R	7.5+4R	9.1+5R	9.9+5R	11.8+5R
	VSC @ 6"	q	1388	1218	1101	1015	948	896	853	817	787
		F	3.0+2R	3.4+3R	3.8+3R	4.3+4R	4.8+4R	5.4+4R	6.2+5R	6.9+5R	7.8+5R
	VSC @ 4"	q	1596	1409	1280	1184	1110	1051	1003	964	929
		F	2.6+2R	2.7+3R	3.0+3R	3.2+4R	3.5+4R	3.7+4R	4.0+5R	4.5+5R	4.8+5R

Notes:
1. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
2. VSC = Verco Sidelap Connection

Type PLB™-36

- **4 Screw Pattern at Supports**
  #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	VSC @ 24"	q	322	318	267	272	237	246	221	230	211
		F	-24.2+542R	-12.1+360R	-4.6+269R	-1.0+215R	2.9+178R	4.4+153R	7.0+133R	7.6+118R	9.6+106R
	VSC @ 12"	q	387	366	354	343	336	330	326	322	319
		F	-25.3+542R	-13.2+361R	-7.0+270R	-3.2+216R	-0.6+180R	1.3+154R	2.7+135R	3.8+120R	4.7+108R
	VSC @ 8"	q	426	424	406	408	395	398	389	392	385
		F	-26.0+543R	-14.5+362R	-8.3+271R	-4.9+217R	-2.3+180R	-0.7+155R	0.8+135R	1.7+120R	2.6+108R
	VSC @ 4"	q	476	472	471	469	468	467	466	466	465
		F	-27.1+543R	-15.8+362R	-10.1+271R	-6.6+217R	-4.4+181R	-2.7+155R	-1.5+136R	-0.5+121R	0.2+109R
20	VSC @ 24"	q	409	412	351	362	319	332	301	315	291
		F	-13.2+342R	-5.4+228R	-0.1+170R	2.1+136R	5.0+112R	5.8+96R	7.8+84R	8.1+74R	9.6+66R
	VSC @ 12"	q	490	471	459	449	442	437	433	430	427
		F	-14.2+343R	-6.4+228R	-2.3+171R	0.2+136R	1.9+114R	3.1+97R	4.0+85R	4.8+76R	5.4+68R
	VSC @ 8"	q	534	535	517	520	508	512	503	507	500
		F	-14.9+343R	-7.6+229	-3.5+171R	-1.4+137R	0.4+114R	1.4+98R	2.4+85R	2.9+76R	3.6+68R
	VSC @ 4"	q	584	581	580	578	578	577	576	576	576
		F	-15.9+344R	-8.7+229R	-5.0+172R	-2.8+137R	-1.4+114R	-0.3+98R	0.4+86R	1.0+76R	1.5+69R
18	VSC @ 24"	q	488	505	445	463	386	400	350	365	329
		F	-2.3+166R	1.3+111R	4.9+82R	5.6+66R	7.7+54R	7.7+47R	9.2+40R	8.9+36R	10.1+32R
	VSC @ 12"	q	569	559	553	548	544	541	539	537	536
		F	-4.0+167R	0+111R	2.0+83R	3.3+67R	4.1+55R	4.7+47R	5.2+42R	5.5+37R	5.8+33R
	VSC @ 8"	q	604	607	596	599	592	595	590	593	589
		F	-4.9+168R	-1.4+112R	0.7+84R	1.7+67R	2.6+56R	3.0+48R	3.6+42R	3.8+37R	4.2+33R
	VSC @ 4"	q	635	634	634	633	633	633	633	633	633
		F	-6.1+168R	-2.6+112R	-0.8+84R	0.3+67R	1.0+56R	1.5+48R	1.9+42R	2.2+37R	2.4+34R
16	VSC @ 24"	q	517	537	442	449	374	388	340	354	319
		F	1.7+94R	3.5+63R	6.3+47R	6.3+37R	8.0+31R	7.7+26R	8.9+23R	8.5+20R	9.5+18R
	VSC @ 12"	q	583	577	575	572	571	569	568	565	555
		F	-0.3+95R	2.1+63R	3.3+47R	4.0+38R	4.5+32R	4.9+27R	5.1+24R	5.4+21R	5.5+19R
	VSC @ 8"	q	605	607	602	604	600	602	599	601	599
		F	-1.2+96R	0.7+64R	2.1+48R	2.5+38R	3.2+32R	3.3+27R	3.7+24R	3.8+21R	4.0+19R
	VSC @ 4"	q	623	623	623	622	622	622	622	622	622
		F	-2.4+96R	-0.3+64R	0.7+48R	1.3+38R	1.7+32R	2.0+27R	2.2+24R	2.4+21R	2.5+19R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection
3. See Table 5 on page 10 for adjustment factors when attaching to supports with different strength and/or thickness.

Type PLB™-36

5 Screw Pattern at Supports
#12 Screw at 33 ksi Supports 54 mil (0.0566") thick
Sidelaps Connected with PunchLok® Tool
Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	VSC @ 24"	q	388	373	310	310	269	275	246	253	232
		F	-15.1+381R	-6.3+253R	-0.6+189R	2.1+151R	5.1+125R	6.3+107R	8.4+93R	8.9+82R	10.6+74R
	VSC @ 12"	q	461	428	409	392	380	371	365	359	354
		F	-15.9+381R	-7.2+254R	-2.6+190R	0.3+152R	2.2+126R	3.7+108R	4.8+94R	5.6+84R	6.4+75R
	VSC @ 8"	q	509	503	475	475	456	459	446	449	439
		F	-16.5+382R	-8.2+254R	-3.7+190R	-1.2+152R	0.8+127R	1.9+109R	3.1+95R	3.7+84R	4.4+76R
	VSC @ 4"	q	580	573	569	565	562	561	559	558	557
		F	-17.4+382R	-9.3+255R	-5.2+191R	-2.8+153R	-1.1+127R	0+109R	0.9+95R	1.6+85R	2.2+76R
20	VSC @ 24"	q	491	482	406	412	360	372	334	347	319
		F	-7.6+241R	-1.9+160R	2.1+119R	3.9+95R	6.2+78R	6.9+67R	8.5+58R	8.8+52R	10.1+46R
	VSC @ 12"	q	585	553	534	517	506	497	490	484	480
		F	-8.4+241R	-2.7+160R	0.4+120R	2.3+96R	3.6+80R	4.5+68R	5.3+59R	5.9+53R	6.3+47R
	VSC @ 8"	q	642	638	611	613	594	598	584	589	578
		F	-8.9+241R	-3.6+161R	-0.6+120R	1.0+96R	2.3+80R	3.0+69R	3.8+60R	4.2+53R	4.7+48R
	VSC @ 4"	q	715	709	706	704	702	700	699	699	698
		F	-9.8+242R	-4.6+161R	-2.0+121R	-0.4+97R	0.6+81R	1.4+69R	2.0+60R	2.4+54R	2.7+48R
18	VSC @ 24"	q	582	593	511	506	422	431	377	390	351
		F	0.1+117R	2.9+78R	5.8+57R	6.3+46R	8.2+38R	8.1+32R	9.5+28R	9.2+25R	10.3+22R
	VSC @ 12"	q	685	666	655	645	638	632	621	606	595
		F	-1.3+117R	1.7+78R	3.3+58R	4.3+47R	4.9+39R	5.4+33R	5.8+29R	6.1+26R	6.3+23R
	VSC @ 8"	q	734	737	719	723	711	716	707	711	704
		F	-2.0+118R	0.5+78R	2.1+59R	2.8+47R	3.5+39R	3.8+34R	4.3+29R	4.4+26R	4.7+23R
	VSC @ 4"	q	785	783	782	781	781	780	780	779	779
		F	-3.1+118R	-0.6+79R	0.7+59R	1.5+47R	2.0+39R	2.3+34R	2.6+30R	2.8+26R	3.0+24R
16	VSC @ 24"	q	618	638	495	491	409	418	366	378	340
		F	2.8+66R	4.3+44R	6.6+32R	6.7+26R	8.2+21R	7.9+18R	9.0+16R	8.7+14R	9.6+12R
	VSC @ 12"	q	708	698	692	680	645	621	602	588	577
		F	1.2+67R	3.0+44R	4.0+33R	4.6+26R	5.0+22R	5.3+19R	5.5+16R	5.6+15R	5.8+13R
	VSC @ 8"	q	743	747	736	740	733	736	731	734	730
		F	0.4+67R	1.8+45R	2.8+33R	3.2+27R	3.7+22R	3.8+19R	4.1+17R	4.1+15R	4.4+13R
	VSC @ 4"	q	774	773	773	773	772	772	772	772	772
		F	-0.7+67R	0.8+45R	1.5+34R	2.0+27R	2.2+22R	2.5+19R	2.6+17R	2.7+15R	2.8+13R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection
3. See Table 5 on page 10 for adjustment factors when attaching to supports with different strength and/or thickness.

Type PLB™-36

- **7 Screw Pattern at Supports**
  #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	VSC @ 24"	q	445	421	341	339	289	295	261	269	245
		F	4.1+60R	6.3+39R	8.4+28R	9.3+22R	10.8+18R	11.2+15R	12.5+12R	12.6+11R	13.7+9R
	VSC @ 12"	q	547	495	467	442	425	412	403	395	389
		F	3.5+60R	5.6+39R	6.9+29R	7.8+23R	8.4+19R	8.9+16R	9.4+14R	9.7+12R	10.0+11R
	VSC @ 8"	q	623	609	563	562	531	535	514	519	504
		F	3.0+60R	4.7+40R	5.9+30R	6.5+24R	7.1+19R	7.4+17R	7.8+14R	7.9+13R	8.2+11R
	VSC @ 4"	q	754	738	729	721	716	712	709	706	704
		F	2.2+61R	3.7+40R	4.5+30R	5.0+24R	5.4+20R	5.6+17R	5.8+15R	5.9+13R	6.1+12R
20	VSC @ 24"	q	567	551	450	455	390	403	358	372	339
		F	4.4+37R	6.0+24R	7.7+17R	8.3+14R	9.6+11R	9.8+9R	10.9+7R	10.9+6R	11.9+5R
	VSC @ 12"	q	705	651	621	595	577	563	553	545	538
		F	3.8+38R	5.3+25R	6.3+18R	6.9+14R	7.4+12R	7.8+10R	8.1+9R	8.4+7R	8.6+7R
	VSC @ 8"	q	800	792	742	744	711	718	694	702	684
		F	3.4+38R	4.5+25R	5.4+19R	5.8+15R	6.3+12R	6.4+10R	6.8+9R	6.8+8R	7.1+7R
	VSC @ 4"	q	946	933	925	919	915	912	909	907	906
		F	2.6+38R	3.7+25R	4.2+19R	4.5+15R	4.7+13R	4.9+11R	5.0+9R	5.1+8R	5.2+8R
18	VSC @ 24"	q	689	701	565	549	458	462	404	414	372
		F	5.7+17R	6.5+11R	8.3+8R	8.4+6R	9.7+4R	9.5+4R	10.6+3R	10.2+3R	11.1+2R
	VSC @ 12"	q	858	820	799	745	702	671	648	631	616
		F	4.6+18R	5.5+12R	6.1+9R	6.5+7R	6.8+6R	7.0+5R	7.1+4R	7.3+4R	7.4+3R
	VSC @ 8"	q	953	957	919	927	902	911	892	901	860
		F	3.9+18R	4.4+12R	5.1+9R	5.1+7R	5.5+6R	5.5+5R	5.7+4R	5.7+4R	5.9+3R
	VSC @ 4"	q	1067	1062	1059	1056	1054	1053	1052	1051	1051
		F	2.9+19R	3.4+12R	3.7+9R	3.9+7R	4.0+6R	4.1+5R	4.1+5R	4.2+4R	4.2+4R
16	VSC @ 24"	q	752	704	548	533	444	448	392	401	361
		F	5.9+9R	6.3+6R	7.9+4R	7.7+3R	9.0+2R	8.6+2R	9.6+1R	9.2+1R	10+1R
	VSC @ 12"	q	916	862	784	722	680	651	629	611	598
		F	4.5+10R	5.2+6R	5.6+5R	5.8+4R	6.0+3R	6.1+3R	6.3+2R	6.3+2R	6.4+2R
	VSC @ 8"	q	991	998	975	982	917	921	865	874	834
		F	3.8+10R	4.0+7R	4.5+5R	4.5+4R	4.8+3R	4.7+3R	4.9+2R	4.9+2R	5.0+2R
	VSC @ 4"	q	1066	1064	1063	1062	1061	1060	1060	1060	1060
		F	2.8+11R	3.1+7R	3.2+5R	3.3+4R	3.4+4R	3.4+3R	3.5+3R	3.5+2R	3.5+2R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection
3. See Table 5 on page 10 for adjustment factors when attaching to supports with different strength and/or thickness.

Type PLB™-36

9 Screw Pattern at Supports
#12 Screw at 33 ksi Supports 54 mil (0.0566") thick
Sidelaps Connected with PunchLok® Tool
Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	VSC @ 24"	q	613	551	451	430	366	362	315	319	287
		F	3.0+60R	5.1+39R	6.9+29R	7.8+23R	9.1+18R	9.6+15R	10.7+13R	10.9+11R	11.9+9R
	VSC @ 12"	q	710	626	578	536	506	484	467	454	443
		F	2.7+60R	4.7+40R	6.0+29R	6.9+23R	7.5+19R	8.1+16R	8.5+14R	8.9+12R	9.2+11R
	VSC @ 8"	q	787	747	681	667	623	620	591	592	571
		F	2.4+60R	4.1+40R	5.3+30R	5.9+24R	6.6+19R	6.9+17R	7.3+14R	7.4+13R	7.8+11R
	VSC @ 4"	q	937	903	883	866	854	845	837	832	756
		F	1.9+61R	3.5+40R	4.3+30R	4.8+24R	5.2+20R	5.4+17R	5.6+15R	5.8+13R	5.9+12R
20	VSC @ 24"	q	767	707	581	564	483	484	430	437	397
		F	3.4+38R	5.0+25R	6.4+18R	7.1+14R	8.1+11R	8.5+9R	9.4+7R	9.6+6R	10.4+5R
	VSC @ 12"	q	900	810	757	712	679	655	637	622	610
		F	3.1+38R	4.6+25R	5.5+18R	6.2+14R	6.7+12R	7.1+10R	7.4+8R	7.7+7R	7.9+7R
	VSC @ 8"	q	1001	966	893	883	833	835	801	805	780
		F	2.9+38R	4.1+25R	4.9+19R	5.3+15R	5.8+12R	6.0+10R	6.4+9R	6.5+8R	6.7+7R
	VSC @ 4"	q	1177	1147	1130	1115	1105	1097	1091	1086	991
		F	2.4+38R	3.4+25R	4.0+19R	4.3+15R	4.6+13R	4.8+11R	4.9+9R	5.0+8R	5.1+7R
18	VSC @ 24"	q	897	870	723	676	563	553	483	484	436
		F	4.7+18R	5.7+11R	7.1+8R	7.4+6R	8.5+4R	8.5+4R	9.5+3R	9.3+3R	10.2+2R
	VSC @ 12"	q	1072	1002	961	871	807	762	727	701	680
		F	4.0+18R	5.0+12R	5.6+9R	6.0+7R	6.3+5R	6.6+5R	6.8+4R	6.9+3R	7.0+3R
	VSC @ 8"	q	1184	1173	1113	1115	1051	1041	971	972	924
		F	3.5+18R	4.1+12R	4.7+9R	4.9+7R	5.2+6R	5.3+5R	5.5+4R	5.5+4R	5.7+3R
	VSC @ 4"	q	1340	1326	1318	1311	1306	1303	1300	1298	1296
		F	2.8+19R	3.3+12R	3.6+9R	3.8+7R	3.9+6R	4.0+5R	4.1+5R	4.1+4R	4.1+4R
16	VSC @ 24"	q	954	896	701	655	546	536	469	469	422
		F	4.9+10R	5.5+6R	6.9+4R	7.0+3R	8.1+2R	7.9+2R	8.8+1R	8.5+1R	9.3+1R
	VSC @ 12"	q	1137	1054	937	845	783	738	705	680	659
		F	4.0+10R	4.7+6R	5.2+5R	5.5+4R	5.7+3R	5.9+2R	6.0+2R	6.1+2R	6.2+2R
	VSC @ 8"	q	1236	1237	1174	1128	1019	1009	942	942	895
		F	3.5+10R	3.8+7R	4.3+5R	4.3+4R	4.6+3R	4.6+3R	4.8+2R	4.8+2R	4.9+2R
	VSC @ 4"	q	1349	1343	1340	1337	1335	1334	1333	1332	1331
		F	2.7+11R	3.0+7R	3.2+5R	3.3+4R	3.4+3R	3.4+3R	3.4+3R	3.5+2R	3.5+2R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection
3. See Table 5 on page 10 for adjustment factors when attaching to supports with different strength and/or thickness.

Type PLB™-36

- 4 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	545	497	434	417	380	374	349		
		F	13.7+161R	16.4+115R	20.2+87R	22.7+69R	26.6+57R	29.0+48R	32.9+41R		
	VSC @ 18"	q	590	531	465	443	426	395	387		
		F	12.8+161R	15.5+115R	19.0+87R	21.6+69R	24.0+57R	27.6+48R	29.9+41R		
	VSC @ 12"	q	627	561	518	487	465	449	436		
		F	12.2+161R	14.8+115R	17.4+87R	19.9+69R	22.3+57R	24.6+48R	26.9+41R		
	VSC @ 8"	q	691	636	582	561	531	522	503		
		F	11.4+161R	13.4+115R	15.8+87R	17.6+69R	19.9+57R	21.6+48R	23.7+41R		
	VSC @ 6"	q	744	679	636	607	586	571	559		
		F	10.8+161R	12.8+115R	14.7+87R	16.5+69R	18.2+57R	19.9+48R	21.6+41R		
	VSC @ 4"	q	833	769	727	699	679	665	654		
		F	9.9+161R	11.6+115R	13.2+87R	14.7+69R	16.1+57R	17.5+48R	18.9+41R		
20	VSC @ 24"	q	802	722	628	598	544	532	496	492	466
		F	10.4+111R	12.6+80R	15.6+61R	17.8+48R	20.9+39R	22.9+33R	26.1+28R	28.0+24R	31.2+21R
	VSC @ 18"	q	861	767	670	633	606	560	547	537	510
		F	9.9+111R	12.0+80R	14.8+61R	16.9+48R	19.0+39R	21.9+33R	23.8+28R	25.8+24R	28.7+21R
	VSC @ 12"	q	910	807	739	692	658	632	612	596	584
		F	9.5+111R	11.6+80R	13.6+61R	15.7+48R	17.7+39R	19.6+33R	21.6+28R	23.5+24R	25.3+21R
	VSC @ 8"	q	994	906	824	789	745	729	701	694	675
		F	8.9+111R	10.6+80R	12.5+61R	14.0+48R	15.9+39R	17.3+33R	19.1+28R	20.5+24R	22.2+21R
	VSC @ 6"	q	1064	962	896	851	818	794	776	762	688
		F	8.4+111R	10.1+80R	11.7+61R	13.2+48R	14.7+39R	16.1+33R	17.5+28R	18.9+24R	20.2+21R
	VSC @ 4"	q	1181	1081	1016	972	941	918	902	818	688
		F	7.8+111R	9.2+80R	10.5+61R	11.8+48R	13.0+39R	14.2+33R	15.4+28R	16.5+24R	17.6+21R

Notes:
1. VSC = Verco Sidelap Connection

Type PLB™-36

- 4 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1336	1187	1029	971	881	855	796	785	743
		F	6.8+63R	8.3+45R	10.2+34R	11.7+27R	13.8+22R	15.3+19R	17.5+16R	19.0+14R	21.2+12R
	VSC @ 18"	q	1421	1253	1089	1021	971	896	872	853	808
		F	6.5+63R	7.9+45R	9.8+34R	11.2+27R	12.7+22R	14.7+19R	16.2+16R	17.6+14R	19.7+12R
	VSC @ 12"	q	1493	1310	1191	1108	1047	1002	967	940	919
		F	6.2+63R	7.6+45R	9.1+34R	10.5+27R	11.9+22R	13.3+19R	14.7+16R	16.1+14R	17.5+12R
	VSC @ 8"	q	1614	1455	1315	1250	1175	1145	1099	1084	1053
		F	5.9+63R	7.1+45R	8.4+34R	9.5+27R	10.8+22R	11.9+19R	13.2+16R	14.2+14R	15.5+12R
	VSC @ 6"	q	1716	1536	1420	1340	1283	1241	1210	1185	1057
		F	5.7+63R	6.8+45R	7.9+34R	9.0+27R	10.0+22R	11.1+19R	12.1+16R	13.2+14R	14.2+12R
	VSC @ 4"	q	1887	1710	1596	1519	1464	1425	1395	1257	1057
		F	5.3+63R	6.3+45R	7.2+34R	8.1+27R	9.0+22R	9.9+19R	10.8+16R	11.6+14R	12.4+12R
16	VSC @ 24"	q	1831	1618	1400	1316	1193	1155	1075	1058	1001
		F	4.8+40R	5.9+29R	7.2+22R	8.4+17R	9.9+14R	11.0+12R	12.6+10R	13.7+9R	15.4+8R
	VSC @ 18"	q	1940	1701	1478	1380	1309	1208	1173	1146	1086
		F	4.6+40R	5.6+29R	6.9+22R	8.0+17R	9.1+14R	10.6+12R	11.7+10R	12.8+9R	14.3+8R
	VSC @ 12"	q	2032	1775	1608	1492	1408	1345	1297	1259	1230
		F	4.5+40R	5.5+29R	6.5+22R	7.5+17R	8.6+14R	9.6+12R	10.7+10R	11.7+9R	12.8+8R
	VSC @ 8"	q	2186	1960	1768	1675	1573	1529	1467	1446	1405
		F	4.2+40R	5.1+29R	6.0+22R	6.9+17R	7.8+14R	8.6+12R	9.6+10R	10.4+9R	11.4+8R
	VSC @ 6"	q	2316	2064	1902	1791	1712	1654	1611	1578	1478
		F	4.1+40R	4.9+29R	5.7+22R	6.5+17R	7.3+14R	8.1+12R	8.9+10R	9.7+9R	10.4+8R
	VSC @ 4"	q	2533	2286	2128	2021	1945	1891	1851	1759	1478
		F	3.9+40R	4.6+29R	5.2+22R	5.9+17R	6.6+14R	7.3+12R	7.9+10R	8.5+9R	9.2+8R

Notes:
1. VSC = Verco Sidelap Connection

Type PLB™-36

- 5 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	676	604	524	497	451	439	409		
		F	9.9+78R	11.9+56R	14.5+42R	16.5+34R	19.3+28R	21.2+23R	24.2+20R		
	VSC @ 18"	q	722	639	557	523	499	461	449		
		F	9.4+78R	11.4+56R	13.8+42R	15.8+34R	17.7+28R	20.4+23R	22.2+20R		
	VSC @ 12"	q	761	670	611	570	540	517	500		
		F	9.1+78R	11.0+56R	12.9+42R	14.7+34R	16.6+28R	18.4+23R	20.3+20R		
	VSC @ 8"	q	826	748	678	646	608	593	570		
		F	8.6+78R	10.1+56R	11.9+42R	13.3+34R	15.1+28R	16.4+23R	18.1+20R		
	VSC @ 6"	q	881	792	734	694	666	644	628		
		F	8.2+78R	9.7+56R	11.2+42R	12.6+34R	14.0+28R	15.3+23R	16.7+20R		
	VSC @ 4"	q	973	885	828	790	762	742	727		
		F	7.7+78R	9.0+56R	10.2+42R	11.4+34R	12.6+28R	13.7+23R	14.8+20R		
20	VSC @ 24"	q	1000	884	764	718	650	629	585	575	544
		F	7.6+54R	9.2+39R	11.2+29R	12.9+23R	15.1+19R	16.7+16R	19.1+14R	20.6+12R	23.1+10R
	VSC @ 18"	q	1060	930	807	754	715	658	639	623	590
		F	7.3+54R	8.8+39R	10.8+29R	12.4+23R	14.0+19R	16.1+16R	17.7+14R	19.2+12R	21.4+10R
	VSC @ 12"	q	1111	971	879	815	769	733	706	685	668
		F	7.0+54R	8.5+39R	10.1+29R	11.6+23R	13.1+19R	14.7+16R	16.2+14R	17.7+12R	19.2+10R
	VSC @ 8"	q	1197	1073	967	916	859	835	800	787	688
		F	6.7+ 54R	7.9+39R	9.4+29R	10.6+23R	12.0+19R	13.2+16R	14.6+14R	15.7+12R	17.1+10R
	VSC @ 6"	q	1269	1131	1042	980	936	903	878	818	688
		F	6.5+54R	7.7+39R	8.9+29R	10.0+23R	11.2+19R	12.4+16R	13.5+14R	14.6+12R	15.7+10R
	VSC @ 4"	q	1390	1254	1166	1107	1064	1033	990	818	688
		F	6.1+54R	7.1+39R	8.2+29R	9.2+23R	10.1+19R	11.1+16R	12.0+14R	12.9+12R	13.9+10R

Notes:
1. VSC = Verco Sidelap Connection

Type PLB™-36

- 5 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1667	1457	1256	1171	1058	1017	944	924	873
		F	5.0+31R	6.0+22R	7.4+17R	8.5+13R	10.1+11R	11.2+9R	12.9+8R	14.0+7R	15.7+6R
	VSC @ 18"	q	1755	1525	1319	1223	1152	1060	1024	995	942
		F	4.8+31R	5.8+22R	7.1+17R	8.2+13R	9.4+11R	10.8+9R	12.0+8R	13.1+7R	14.7+6R
	VSC @ 12"	q	1829	1584	1424	1313	1232	1171	1124	1087	1057
		F	4.7+31R	5.7+22R	6.7+17R	7.8+13R	8.9+11R	10.0+9R	11.1+8R	12.2+7R	13.3+6R
	VSC @ 8"	q	1953	1733	1553	1461	1365	1320	1262	1238	1057
		F	4.5+31R	5.3+22R	6.3+17R	7.2+13R	8.2+11R	9.0+9R	10.1+8R	10.9+7R	11.9+6R
	VSC @ 6"	q	2057	1817	1662	1555	1478	1421	1378	1257	1057
		F	4.4+31R	5.2+22R	6.0+17R	6.9+13R	7.7+11R	8.5+9R	9.4+8R	10.2+7R	11.0+6R
	VSC @ 4"	q	2233	1996	1844	1740	1666	1612	1521	1257	1057
		F	4.2+31R	4.9+22R	5.6+17R	6.3+13R	7.0+11R	7.7+9R	8.4+8R	9.1+7R	9.8+6R
16	VSC @ 24"	q	2284	1987	1711	1589	1435	1377	1278	1249	1179
		F	3.6+20R	4.3+14R	5.3+11R	6.1+8R	7.2+7R	8.1+6R	9.3+5R	10.2+4R	11.5+4R
	VSC @ 18"	q	2396	2073	1792	1656	1557	1432	1381	1341	1269
		F	3.5+20R	4.2+14R	5.1+11R	5.9+8R	6.8+7R	7.9+6R	8.7+5R	9.6+4R	10.8+4R
	VSC @ 12"	q	2490	2149	1927	1772	1660	1576	1511	1461	1421
		F	3.4+20R	4.1+14R	4.9+11R	5.6+8R	6.4+7R	7.3+6R	8.1+5R	8.9+4R	9.8+4R
	VSC @ 8"	q	2648	2340	2092	1963	1832	1769	1690	1658	1478
		F	3.3+20R	3.9+14R	4.6+11R	5.2+8R	6.0+7R	6.6+6R	7.4+5R	8.0+4R	8.8+4R
	VSC @ 6"	q	2781	2447	2232	2084	1978	1900	1841	1759	1478
		F	3.2+20R	3.8+14R	4.4+11R	5.0+8R	5.6+7R	6.3+6R	6.9+5R	7.5+4R	8.1+4R
	VSC @ 4"	q	3005	2676	2466	2322	2221	2148	2094	1759	1478
		F	3.1+20R	3.6+14R	4.1+11R	4.6+8R	5.2+7R	5.7+6R	6.2+5R	6.7+4R	7.3+4R

Notes:
1. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	792	707	620	592	544	535	505		
		F	8.1+22R	7.8+17R	9.2+15R	8.8+12R	10.0+11R	9.5+10R	10.5+9R		
	VSC @ 18"	q	836	743	655	621	599	561	554		
		F	6.5+22R	6.6+17R	7.7+15R	7.6+12R	7.6+11R	8.4+10R	8.2+9R		
	VSC @ 12"	q	873	774	713	673	646	628	616		
		F	5.6+22R	5.9+17R	6.1+15R	6.3+12R	6.4+11R	6.5+10R	6.5+9R		
	VSC @ 8"	q	936	853	784	757	724	718	701		
		F	4.7+22R	4.8+17R	5.0+15R	5.0+12R	5.1+11R	5.1+10R	5.2+9R		
	VSC @ 6"	q	988	898	844	811	790	778	753		
		F	4.3+22R	4.4+17R	4.5+15R	4.5+12R	4.5+11R	4.5+10R	4.6+9R		
	VSC @ 4"	q	1077	992	944	917	901	894	753		
		F	3.8+22R	3.9+17R	3.9+15R	3.9+12R	3.9+11R	3.9+10R	3.9+9R		
20	VSC @ 24"	q	1156	1025	897	852	782	766	722	721	688
		F	6.3+15R	6.2+12R	7.3+10R	7.0+9R	8.0+8R	7.6+7R	8.4+6R	8.1+6R	8.8+5R
	VSC @ 18"	q	1216	1074	944	892	857	802	789	782	688
		F	5.1+15R	5.3+12R	6.1+10R	6.1+9R	6.1+8R	6.7+7R	6.7+6R	6.6+6R	7.1+5R
	VSC @ 12"	q	1266	1117	1023	962	921	893	874	818	688
		F	4.5+15R	4.7+12R	4.9+10R	5.1+9R	5.2+8R	5.3+7R	5.3+6R	5.4+6R	5.4+5R
	VSC @ 8"	q	1351	1224	1120	1078	1028	1016	990	818	688
		F	3.8+15R	3.9+12R	4.1+10R	4.1+9R	4.2+8R	4.2+7R	4.3+6R	4.2+6R	4.3+5R
	VSC @ 6"	q	1422	1284	1202	1150	1119	1099	990	818	688
		F	3.5+15R	3.6+12R	3.6+10R	3.7+9R	3.7+8R	3.7+7R	3.8+6R	3.8+6R	3.8+5R
	VSC @ 4"	q	1542	1413	1338	1295	1270	1223	990	818	688
		F	3.1+15R	3.2+12R	3.2+10R	3.2+9R	3.2+8R	3.2+7R	3.2+6R	3.2+6R	3.2+5R

Notes:
1. VSC = Verco Sidelap Connection

Type PLB™-36

- 7 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	1871	1651	1443	1364	1252	1224	1154	1150	1057
		F	4.3+9R	4.3+7R	5.0+6R	4.9+5R	5.5+4R	5.3+4R	5.9+3R	5.7+3R	6.2+3R
	VSC @ 18"	q	1961	1724	1515	1427	1368	1279	1258	1245	1057
		F	3.6+9R	3.7+7R	4.3+6R	4.3+5R	4.3+4R	4.7+4R	4.7+3R	4.7+3R	5.0+3R
	VSC @ 12"	q	2038	1789	1635	1534	1466	1420	1389	1257	1057
		F	3.2+9R	3.3+7R	3.5+6R	3.6+5R	3.7+4R	3.7+4R	3.8+3R	3.8+3R	3.9+3R
	VSC @ 8"	q	2166	1952	1783	1711	1631	1610	1521	1257	1057
		F	2.7+9R	2.8+7R	2.9+6R	2.9+5R	3.0+4R	3.0+4R	3.1+3R	3.1+3R	3.1+3R
	VSC @ 6"	q	2274	2044	1907	1822	1770	1738	1521	1257	1057
		F	2.5+9R	2.6+7R	2.6+6R	2.7+5R	2.7+4R	2.7+4R	2.7+3R	2.7+3R	2.8+3R
	VSC @ 4"	q	2455	2240	2116	2044	2002	1878	1521	1257	1057
		F	2.3+9R	2.3+7R	2.3+6R	2.3+5R	2.4+4R	2.4+4R	2.4+3R	2.4+3R	2.4+3R
16	VSC @ 24"	q	2524	2227	1948	1843	1692	1657	1564	1561	1478
		F	3.2+5R	3.2+4R	3.7+4R	3.7+3R	4.1+3R	4.0+2R	4.4+2R	4.3+2R	4.7+2R
	VSC @ 18"	q	2645	2325	2044	1926	1849	1731	1704	1690	1478
		F	2.7+5R	2.8+4R	3.2+4R	3.2+3R	3.2+3R	3.6+2R	3.6+2R	3.6+2R	3.8+2R
	VSC @ 12"	q	2746	2412	2205	2071	1982	1922	1882	1759	1478
		F	2.4+5R	2.5+4R	2.6+4R	2.7+3R	2.8+3R	2.8+2R	2.9+2R	2.9+2R	3.0+2R
	VSC @ 8"	q	2917	2630	2403	2308	2203	2178	2126	1759	1478
		F	2.1+5R	2.1+4R	2.2+4R	2.2+3R	2.3+3R	2.3+2R	2.4+2R	2.4+2R	2.4+2R
	VSC @ 6"	q	3060	2752	2570	2458	2391	2351	2129	1759	1478
		F	1.9+5R	2.0+4R	2.0+4R	2.1+3R	2.1+3R	2.1+2R	2.1+2R	2.1+2R	2.1+2R
	VSC @ 4"	q	3301	3013	2849	2755	2704	2628	2129	1759	1478
		F	1.8+5R	1.8+4R	1.8+4R	1.8+3R	1.8+3R	1.9+2R	1.9+2R	1.9+2R	1.9+2R

Notes:
1. VSC = Verco Sidelap Connection

Type HSB®-36

- 4 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	BP @ 24"	q	303	308	289	291	277	262	232		
		F	4.7+281R	5.7+224R	7.2+187R	8.8+160R	11.0+140R	13.2+125R	16.2+112R		
	BP @ 12"	q	363	356	349	343	336	312	284		
		F	4.4+281R	5.3+224R	6.5+187R	7.9+160R	9.6+140R	11.5+125R	13.8+112R		
	TSW @ 24"	q	567	519	434	417	366	359	325		
		F	38.7+159R	32.6+127R	42.6+106R	37.1+91R	45.3+80R	40.3+71R	47.3+64R		
	TSW @ 18"	q	646	577	484	456	435	389	378		
		F	23.8+159R	22.9+127R	29.6+106R	27.8+91R	26.7+80R	31.6+71R	30.1+64R		
	TSW @ 12"	q	718	632	573	531	498	472	451		
		F	17.0+159R	17.5+127R	17.9+106R	18.2+91R	18.4+80R	18.6+71R	18.8+64R		
	TSW @ 6"	q	971	874	807	757	719	689	665		
		F	8.0+159R	8.1+127R	8.2+106R	8.2+91R	8.2+80R	8.2+71R	8.2+64R		
20	BP @ 24"	q	457	459	434	418	359	327	290	269	244
		F	4.3+162R	5.4+130R	7.0+108R	8.7+93R	11.0+81R	13.4+72R	16.5+65R	19.6+59R	23.7+54R
	BP @ 12"	q	528	517	506	478	421	378	343	314	290
		F	4.0+162R	5.0+130R	6.3+108R	7.9+93R	9.7+81R	11.9+72R	14.4+65R	17.2+59R	20.3+54R
	TSW @ 24"	q	794	710	595	561	493	477	432	424	390
		F	30.5+88R	26.4+70R	34.5+59R	30.6+50R	37.5+44R	33.8+39R	39.8+35R	36.4+32R	41.8+29R
	TSW @ 18"	q	884	777	651	607	573	512	494	478	441
		F	19.2+88R	18.8+70R	24.4+59R	23.2+50R	22.5+44R	26.8+39R	25.7+35R	25.0+32R	28.5+29R
	TSW @ 12"	q	967	840	755	693	646	609	579	554	534
		F	13.9+88R	14.5+70R	15.0+59R	15.4+50R	15.8+44R	16.1+39R	16.3+35R	16.5+32R	16.7+29R
	TSW @ 6"	q	1258	1119	1024	954	902	860	826	798	688
		F	6.8+88R	6.9+70R	7.0+59R	7.1+50R	7.1+44R	7.2+39R	7.2+35R	7.3+32R	7.3+29R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

Type HSB®-36

- 4 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	BP @ 24"	q	883	820	671	586	506	458	408	376	342
		F	3.8+69R	5.0+55R	6.7+46R	8.6+39R	11.0+34R	13.6+31R	16.9+27R	20.3+25R	24.6+23R
	BP @ 12"	q	978	891	747	644	567	507	459	420	387
		F	3.6+69R	4.8+55R	6.2+46R	7.9+39R	10.0+34R	12.4+31R	15.2+27R	18.4+25R	21.9+23R
	TSW @ 24"	q	1253	1092	914	845	743	707	639	619	571
		F	20.2+35R	18.0+28R	23.6+23R	21.5+20R	26.4+17R	24.3+15R	28.8+14R	26.8+13R	30.8+12R
	TSW @ 18"	q	1359	1170	980	899	837	748	713	684	631
		F	13.1+35R	13.1+28R	17.0+23R	16.6+20R	16.3+17R	19.5+15R	19.0+14R	18.7+13R	21.5+12R
	TSW @ 12"	q	1455	1244	1102	1000	923	863	815	775	742
		F	9.7+35R	10.3+28R	10.8+23R	11.3+20R	11.7+17R	12.0+15R	12.3+14R	12.6+13R	12.9+12R
	TSW @ 6"	q	1796	1571	1419	1310	1227	1162	1110	1067	1031
		F	5.0+35R	5.1+28R	5.3+23R	5.4+20R	5.5+17R	5.6+15R	5.6+14R	5.7+13R	5.8+12R
16	BP @ 24"	q	1296	1056	868	755	654	589	526	483	440
		F	3.6+35R	4.8+28R	6.5+23R	8.5+20R	11.0+18R	13.7+16R	17.1+14R	20.7+13R	25.1+12R
	BP @ 12"	q	1399	1124	941	810	712	636	575	525	483
		F	3.4+35R	4.6+28R	6.1+23R	8.0+20R	10.2+18R	12.8+16R	15.8+14R	19.2+13R	23.0+12R
	TSW @ 24"	q	1667	1431	1198	1094	962	907	820	788	726
		F	14.2+17R	13.0+13R	17.1+11R	15.8+10R	19.5+8R	18.2+7R	21.6+7R	20.3+6R	23.5+6R
	TSW @ 18"	q	1781	1516	1270	1153	1065	952	901	860	793
		F	9.4+17R	9.6+13R	12.5+11R	12.3+10R	12.3+8R	14.7+7R	14.5+7R	14.4+6R	16.6+6R
	TSW @ 12"	q	1885	1596	1402	1263	1159	1077	1012	959	915
		F	7.1+17R	7.6+13R	8.1+11R	8.5+10R	8.9+8R	9.3+7R	9.6+7R	9.9+6R	10.2+6R
	TSW @ 6"	q	2252	1950	1746	1600	1490	1404	1335	1279	1233
		F	3.8+17R	3.9+13R	4.1+11R	4.2+10R	4.3+8R	4.4+7R	4.5+7R	4.6+6R	4.6+6R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

Type HSB®-36

- 5 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	BP @ 24"	q	451	445	416	407	351	319	284		
		F	4.5+157R	5.4+126R	6.9+105R	8.4+90R	10.6+79R	12.8+70R	15.8+63R		
	BP @ 12"	q	511	492	476	458	405	364	331		
		F	4.3+157R	5.2+126R	6.3+105R	7.8+90R	9.5+79R	11.6+70R	13.9+63R		
	TSW @ 24"	q	699	627	525	496	437	423	383		
		F	26.3+77R	22.8+62R	29.6+51R	26.4+44R	32.1+39R	29.1+34R	34.1+31R		
	TSW @ 18"	q	780	687	576	538	508	454	439		
		F	16.8+77R	16.5+62R	21.2+51R	20.2+44R	19.6+39R	23.2+34R	22.3+31R		
	TSW @ 12"	q	854	744	669	615	574	541	516		
		F	12.4+77R	12.9+62R	13.3+51R	13.7+44R	14.0+39R	14.2+34R	14.4+31R		
	TSW @ 6"	q	1115	993	910	850	804	768	738		
		F	6.5+77R	6.6+62R	6.7+51R	6.7+44R	6.8+39R	6.8+34R	6.9+31R		
20	BP @ 24"	q	690	675	590	516	447	405	361	334	304
		F	4.0+91R	5.1+73R	6.5+61R	8.2+52R	10.4+45R	12.8+40R	15.9+36R	19.0+33R	23.1+30R
	BP @ 12"	q	762	733	656	568	501	450	408	374	346
		F	3.9+91R	4.9+73R	6.1+61R	7.7+52R	9.5+45R	11.7+40R	14.3+36R	17.2+33R	20.6+30R
	TSW @ 24"	q	991	872	730	679	598	572	518	504	465
		F	20.5+43R	18.2+34R	23.7+28R	21.5+24R	26.2+21R	24.1+19R	28.3+17R	26.3+16R	30.2+14R
	TSW @ 18"	q	1084	941	788	727	680	608	583	561	518
		F	13.4+43R	13.4+34R	17.2+28R	16.6+24R	16.3+21R	19.4+19R	18.8+17R	18.5+16R	21.1+14R
	TSW @ 12"	q	1169	1006	895	816	756	709	672	641	615
		F	10.0+43R	10.6+34R	11.0+28R	11.4+24R	11.8+21R	12.1+19R	12.4+17R	12.6+16R	12.8+14R
	TSW @ 6"	q	1469	1293	1174	1088	1023	972	931	818	688
		F	5.4+43R	5.5+34R	5.6+28R	5.7+24R	5.8+21R	5.9+19R	5.9+17R	6.0+16R	6.0+14R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

Type HSB®-36

- 5 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	BP @ 24"	q	1264	1030	849	738	641	577	516	475	433
		F	3.5+39R	4.6+31R	6.1+26R	7.9+22R	10.2+19R	12.7+17R	15.9+15R	19.4+14R	23.6+13R
	BP @ 12"	q	1353	1089	914	788	694	621	562	514	475
		F	3.4+39R	4.5+31R	5.8+26R	7.5+22R	9.5+19R	12.0+17R	14.8+15R	18.0+14R	21.7+13R
	TSW @ 24"	q	1582	1359	1138	1040	914	862	780	750	691
		F	13.4+17R	12.3+13R	16.0+11R	14.9+10R	18.3+8R	17.1+7R	20.2+7R	19.1+6R	22.0+6R
	TSW @ 18"	q	1690	1440	1206	1096	1012	905	858	818	755
		F	9.0+17R	9.2+13R	11.9+11R	11.7+10R	11.7+8R	13.9+7R	13.8+7R	13.7+6R	15.7+6R
	TSW @ 12"	q	1790	1516	1333	1201	1102	1025	964	914	872
		F	6.9+17R	7.4+13R	7.8+11R	8.2+10R	8.6+8R	8.9+7R	9.2+7R	9.5+6R	9.8+6R
	TSW @ 6"	q	2140	1853	1661	1523	1419	1338	1273	1220	1057
		F	3.9+17R	4.1+13R	4.2+11R	4.3+10R	4.4+8R	4.5+7R	4.6+7R	4.7+6R	4.7+6R
16	BP @ 24"	q	1656	1343	1110	962	837	751	673	617	563
		F	3.2+20R	4.3+16R	5.9+13R	7.7+11R	10.0+10R	12.7+9R	16.0+8R	19.5+7R	23.9+7R
	BP @ 12"	q	1741	1400	1172	1010	888	793	717	655	603
		F	3.1+20R	4.2+16R	5.6+13R	7.4+11R	9.5+10R	12.1+9R	15.1+8R	18.5+7R	22.4+7R
	TSW @ 24"	q	2115	1794	1502	1358	1194	1117	1011	964	888
		F	9.5+8R	8.9+6R	11.6+5R	10.9+5R	13.5+4R	12.8+4R	15.2+3R	14.5+3R	16.7+3R
	TSW @ 18"	q	2232	1882	1576	1420	1302	1164	1096	1039	959
		F	6.5+8R	6.7+6R	8.7+5R	8.7+5R	8.8+4R	10.5+4R	10.5+3R	10.5+3R	12.1+3R
	TSW @ 12"	q	2339	1964	1713	1534	1400	1296	1212	1145	1088
		F	5.1+8R	5.5+6R	5.9+5R	6.2+5R	6.5+4R	6.8+4R	7.1+3R	7.4+3R	7.7+3R
	TSW @ 6"	q	2716	2329	2070	1884	1745	1638	1552	1482	1424
		F	3.0+8R	3.1+6R	3.2+5R	3.4+5R	3.5+4R	3.6+4R	3.6+3R	3.7+3R	3.8+3R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

Type HSB®-36

- 7 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	BP @ 24"	q	623	598	522	458	397	360	322		
		F	4.1+70R	4.9+56R	6.1+47R	7.5+40R	9.3+35R	11.3+31R	13.9+28R		
	BP @ 12"	q	683	646	579	502	445	400	364		
		F	4.0+70R	4.8+56R	5.8+47R	7.0+40R	8.6+35R	10.5+31R	12.7+28R		
	TSW @ 24"	q	731	720	595	600	521	529	474		
		F	12.2+6R	11.8+5R	16.0+4R	15.3+4R	19.4+3R	18.5+3R	22.6+3R		
	TSW @ 18"	q	907	851	704	689	667	597	578		
		F	8.4+6R	8.9+5R	11.8+4R	12.0+4R	12.3+3R	15.0+3R	15.1+3R		
	TSW @ 12"	q	1072	972	877	808	756	715	682		
		F	6.6+6R	7.3+5R	7.9+4R	8.5+4R	9.1+3R	9.6+3R	10.1+3R		
	TSW @ 6"	q	1464	1310	1204	1127	1068	929	753		
		F	4.2+6R	4.5+5R	4.7+4R	4.8+4R	5.0+3R	5.2+3R	5.3+3R		
20	BP @ 24"	q	962	804	663	578	502	454	406	375	342
		F	3.7+41R	4.5+32R	5.7+27R	7.1+23R	9.0+20R	11.1+18R	13.8+16R	16.7+15R	20.4+14R
	BP @ 12"	q	1034	854	719	622	549	493	448	411	380
		F	3.6+41R	4.4+32R	5.4+27R	6.8+23R	8.5+20R	10.4+18R	12.8+16R	15.5+15R	18.6+14R
	TSW @ 24"	q	999	969	800	796	691	695	621	629	573
		F	9.8+4R	9.5+3R	13.0+3R	12.5+2R	16.0+2R	15.4+2R	18.8+2R	18.2+2R	21.5+1R
	TSW @ 18"	q	1224	1134	937	908	882	779	769	757	688
		F	6.8+4R	7.3+3R	9.6+3R	9.9+2R	10.2+2R	12.5+2R	12.7+2R	12.9+2R	15.1+1R
	TSW @ 12"	q	1431	1292	1189	1091	1016	958	912	818	688
		F	5.4+4R	6.0+3R	6.6+3R	7.1+2R	7.6+2R	8.1+2R	8.5+2R	9.0+2R	9.4+1R
	TSW @ 6"	q	1965	1745	1596	1488	1406	1223	990	818	688
		F	3.5+4R	3.7+3R	3.9+3R	4.1+2R	4.2+2R	4.4+2R	4.5+2R	4.6+2R	4.8+1R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

Type HSB®-36

- 7 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	BP @ 24"	q	1405	1140	943	818	712	640	574	527	482
		F	3.1+17R	4.0+14R	5.2+11R	6.7+10R	8.7+9R	10.9+8R	13.7+7R	16.8+6R	20.6+6R
	BP @ 12"	q	1475	1188	996	860	757	678	614	562	518
		F	3.0+17R	3.9+14R	5.0+11R	6.5+10R	8.3+9R	10.4+8R	12.9+7R	15.9+6R	19.2+6R
	TSW @ 24"	q	1571	1495	1229	1206	1044	1039	926	928	844
		F	6.8+2R	6.7+2R	9.1+1R	9.0+1R	11.4+1R	11.2+1R	13.7+1R	13.4+1R	15.9+1R
	TSW @ 18"	q	1895	1730	1424	1363	1312	1155	1131	1110	1010
		F	4.8+2R	5.2+2R	6.9+1R	7.1+1R	7.4+1R	9.1+1R	9.4+1R	9.6+1R	11.3+1R
	TSW @ 12"	q	2191	1952	1767	1612	1495	1405	1332	1257	1057
		F	3.9+2R	4.3+2R	4.8+1R	5.2+1R	5.6+1R	6.0+1R	6.4+1R	6.7+1R	7.1+1R
	TSW @ 6"	q	2878	2535	2304	2139	2014	1878	1521	1257	1057
		F	2.6+2R	2.8+2R	2.9+1R	3.0+1R	3.2+1R	3.3+1R	3.4+1R	3.5+1R	3.6+1R
16	BP @ 24"	q	1825	1475	1223	1058	922	826	741	679	621
		F	2.8+9R	3.7+7R	4.9+6R	6.5+5R	8.5+4R	10.8+4R	13.6+4R	16.8+3R	20.6+3R
	BP @ 12"	q	1891	1521	1273	1097	964	862	779	712	656
		F	2.7+9R	3.6+7R	4.8+6R	6.3+5R	8.1+4R	10.4+4R	13.0+4R	16.1+3R	19.6+3R
	TSW @ 24"	q	2171	2043	1675	1630	1406	1390	1236	1233	1119
		F	5.0+1R	5.1+1R	6.9+1R	6.8+1R	8.7+1R	8.6+1R	10.6+1R	10.4	12.4
	TSW @ 18"	q	2599	2350	1929	1833	1734	1540	1487	1431	1324
		F	3.6+1R	4.0+1R	5.2+1R	5.5+1R	5.7+1R	7.1+1R	7.3+1R	7.5	8.9
	TSW @ 12"	q	2985	2556	2270	2065	1912	1793	1699	1622	1478
		F	3.0+1R	3.3+1R	3.7+1R	4.0+1R	4.3+1R	4.7+1R	5.0+1R	5.3	5.6
	TSW @ 6"	q	3664	3215	2914	2698	2538	2413	2129	1759	1478
		F	2.0+1R	2.2+1R	2.3+1R	2.4+1R	2.5+1R	2.6+1R	2.7+1R	2.8	2.9

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

ShearTranz® II-42 with PLB™-36 Deck

- 7 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	VSC @ 24"	q	1167	986	844	766	689	650	602		
		F	5.5+4R	5.6+4R	6.7+5R	6.8+6R	7.8+7R	7.8+8R	8.8+9R		
	VSC @ 18"	q	1199	1012	869	788	729	668	637		
		F	4.7+4R	5.0+4R	5.8+5R	6.1+6R	6.3+7R	7.1+8R	7.2+9R		
	VSC @ 12"	q	1225	1034	910	825	762	716	681		
		F	4.3+4R	4.6+4R	4.9+5R	5.2+6R	5.5+7R	5.7+8R	6.0+9R		
	VSC @ 8"	q	1270	1091	961	885	819	780	741		
		F	3.9+4R	4.0+4R	4.3+5R	4.4+6R	4.6+7R	4.7+8R	4.9+9R		
	VSC @ 6"	q	1308	1123	1004	923	866	824	753		
		F	3.6+4R	3.8+4R	3.9+5R	4.1+6R	4.2+7R	4.3+8R	4.4+9R		
	VSC @ 4"	q	1371	1190	1076	999	945	906	753		
		F	3.4+4R	3.5+4R	3.6+5R	3.7+6R	3.7+7R	3.8+8R	3.9+9R		
20	VSC @ 24"	q	1513	1287	1105	1009	911	864	802	778	688
		F	4.6+3R	4.7+3R	5.6+4R	5.7+5R	6.5+6R	6.5+6R	7.4+7R	7.3+8R	8.1+8R
	VSC @ 18"	q	1558	1323	1140	1040	968	891	853	818	688
		F	3.9+3R	4.2+3R	4.9+4R	5.1+5R	5.2+6R	5.9+6R	6.0+7R	6.1+8R	6.7+8R
	VSC @ 12"	q	1597	1356	1200	1093	1017	960	917	818	688
		F	3.6+3R	3.9+3R	4.1+4R	4.3+5R	4.6+6R	4.8+6R	4.9+7R	5.1+8R	5.3+8R
	VSC @ 8"	q	1661	1437	1274	1181	1098	1053	990	818	688
		F	3.2+3R	3.3+3R	3.6+4R	3.7+5R	3.9+6R	3.9+6R	4.1+7R	4.1+8R	4.3+8R
	VSC @ 6"	q	1715	1483	1335	1236	1166	1116	990	818	688
		F	3.0+3R	3.2+3R	3.3+4R	3.4+5R	3.5+6R	3.6+6R	3.6+7R	3.7+8R	3.8+8R
	VSC @ 4"	q	1806	1580	1439	1345	1281	1223	990	818	688
		F	2.8+3R	2.9+3R	3.0+4R	3.0+5R	3.1+6R	3.2+6R	3.2+7R	3.2+8R	3.3+8R

Notes:
1. ShearTranz II-42 element installation per details on pages 66 and 67.
2. VSC = Verco Sidelap Connection

ShearTranz® II-42 with PLB™-36 Deck

- 7 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
18	VSC @ 24"	q	2171	1870	1616	1496	1359	1304	1218	1195	1057
		F	3.4+2R	3.5+2R	4.2+3R	4.3+3R	4.9+4R	4.9+4R	5.5+5R	5.5+5R	6.1+6R
	VSC @ 18"	q	2250	1934	1678	1549	1459	1351	1308	1257	1057
		F	3.0+2R	3.1+2R	3.7+3R	3.8+3R	3.9+4R	4.4+4R	4.5+5R	4.6+5R	5.0+6R
	VSC @ 12"	q	2315	1990	1782	1642	1544	1473	1421	1257	1057
		F	2.7+2R	2.9+2R	3.1+3R	3.2+3R	3.4+4R	3.5+4R	3.7+5R	3.8+5R	3.9+6R
	VSC @ 8"	q	2426	2130	1910	1794	1686	1637	1521	1257	1057
		F	2.4+2R	2.5+2R	2.7+3R	2.7+3R	2.9+4R	2.9+4R	3.0+5R	3.1+5R	3.2+6R
	VSC @ 6"	q	2519	2210	2017	1891	1805	1747	1521	1257	1057
		F	2.3+2R	2.4+2R	2.4+3R	2.5+3R	2.6+4R	2.6+4R	2.7+5R	2.7+5R	2.8+6R
	VSC @ 4"	q	2676	2378	2197	2082	2006	1878	1521	1257	1057
		F	2.1+2R	2.2+2R	2.2+3R	2.3+3R	2.3+4R	2.3+4R	2.4+5R	2.4+5R	2.4+6R
16	VSC @ 24"	q	2839	2476	2154	2018	1844	1790	1682	1667	1478
		F	2.8+1R	2.8+2R	3.4+2R	3.4+3R	3.9+3R	3.9+3R	4.4+4R	4.3+4R	4.8+4R
	VSC @ 18"	q	2958	2573	2249	2100	1999	1863	1821	1759	1478
		F	2.4+1R	2.5+2R	2.9+2R	3.0+3R	3.1+3R	3.5+3R	3.6+4R	3.6+4R	3.9+4R
	VSC @ 12"	q	3058	2659	2408	2243	2130	2051	1996	1759	1478
		F	2.2+1R	2.3+2R	2.5+2R	2.6+3R	2.7+3R	2.8+3R	2.9+4R	3.0+4R	3.1+4R
	VSC @ 8"	q	3226	2873	2604	2477	2349	2304	2129	1759	1478
		F	1.9+1R	2.0+2R	2.1+2R	2.2+3R	2.3+3R	2.3+3R	2.4+4R	2.4+4R	2.5+4R
	VSC @ 6"	q	3368	2994	2768	2625	2533	2475	2129	1759	1478
		F	1.8+1R	1.9+2R	1.9+2R	2.0+3R	2.0+3R	2.1+3R	2.1+4R	2.2+4R	2.2+4R
	VSC @ 4"	q	3606	3252	3044	2918	2843	2628	2129	1759	1478
		F	1.7+1R	1.7+2R	1.8+2R	1.8+3R	1.8+3R	1.8+3R	1.9+4R	1.9+4R	1.9+4R

Notes:
1. ShearTranz II-42 element installation per details on pages 66 and 67.
2. VSC = Verco Sidelap Connection

ShearTranz® II with HSB®-36 Deck

- 7 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)										
			5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
22	BP @ 24"	q	953	880	819	767	724	686	653	624	598	576	555
		F	7.8	8.4	8.9	9.5	10.0	10.5	11.1	11.6	12.2	12.7	13.3
	BP @ 18"	q	997	924	863	813	769	732	699	671	646	623	603
		F	7.6	8.1	8.6	9.1	9.6	10.1	10.5	11.0	11.5	12.0	12.4
	BP @ 12"	q	1084	1012	953	903	860	824	792	765	740	719	700
		F	7.2	7.6	8.1	8.5	8.9	9.2	9.6	10.0	10.4	10.7	11.1
	TSW @ 24"	q	865	808	759	719	684	654	628	605	585	567	551
		F	5.1	5.3	5.5	5.7	5.9	6.1	6.2	6.4	6.5	6.7	6.8
	TSW @ 18"	q	961	904	855	815	780	750	724	701	681	663	647
		F	4.9	5.1	5.2	5.4	5.5	5.6	5.8	5.9	6.0	6.1	6.2
	TSW @ 12"	q	1153	1095	1047	1007	972	942	916	893	873	855	839
		F	4.6	4.7	4.8	4.9	5.0	5.1	5.1	5.2	5.3	5.4	5.5
20	BP @ 24"	q	1120	1032	959	898	845	799	760	725	694	667	643
		F	6.1	6.5	6.9	7.3	7.7	8.2	8.6	9.1	9.5	9.9	10.4
	BP @ 18"	q	1165	1078	1005	944	892	847	808	773	743	716	692
		F	5.9	6.3	6.7	7.1	7.5	7.8	8.2	8.6	9.0	9.4	9.8
	BP @ 12"	q	1255	1168	1097	1037	985	942	903	870	841	815	792
		F	5.7	6.0	6.3	6.6	7.0	7.3	7.6	7.9	8.2	8.6	8.9
	TSW @ 24"	q	1309	1218	1143	1079	1025	978	938	902	870	842	817
		F	4.1	4.2	4.4	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.4
	TSW @ 18"	q	1447	1356	1281	1218	1163	1117	1076	1040	1008	980	955
		F	3.9	4.0	4.1	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
	TSW @ 12"	q	1724	1633	1558	1494	1440	1393	1352	1317	1285	1209	1091
		F	3.6	3.7	3.8	3.9	4.0	4.0	4.1	4.2	4.3	4.3	4.4

Notes:
1. ShearTranz II element installation per details on pages 66 and 67.
2. BP = Button Punch
3. TSW = Top Seam Weld
4. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

ShearTranz® II with HSB®-36 Deck

- 7 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)										
			5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
18	BP @ 24"	q	1453	1335	1238	1156	1085	1025	972	926	885	848	815
		F	4.1	4.4	4.6	4.9	5.2	5.5	5.8	6.2	6.5	6.8	7.1
	BP @ 18"	q	1499	1382	1286	1204	1135	1075	1022	977	936	900	868
		F	4.0	4.3	4.5	4.8	5.1	5.4	5.6	5.9	6.2	6.5	6.8
	BP @ 12"	q	1592	1477	1381	1301	1233	1174	1123	1079	1040	1005	974
		F	3.9	4.1	4.3	4.6	4.8	5.1	5.3	5.5	5.8	6.0	6.2
	TSW @ 24"	q	1862	1751	1659	1583	1518	1463	1416	1375	1339	1308	1281
		F	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
	TSW @ 18"	q	2045	1936	1847	1773	1711	1659	1614	1576	1543	1514	1453
		F	2.7	2.8	2.9	3.0	3.1	3.1	3.2	3.3	3.4	3.4	3.5
	TSW @ 12"	q	2411	2307	2224	2155	2098	2051	2011	1978	1794	1610	1453
		F	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1
16	BP @ 24"	q	1787	1640	1518	1415	1328	1252	1185	1127	1076	1030	989
		F	3.0	3.2	3.4	3.7	3.9	4.1	4.4	4.6	4.8	5.1	5.3
	BP @ 18"	q	1835	1689	1568	1466	1379	1304	1238	1181	1130	1085	1045
		F	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.7	4.9	5.1
	BP @ 12"	q	1932	1787	1668	1567	1482	1408	1344	1288	1239	1195	1156
		F	2.9	3.1	3.3	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
	TSW @ 24"	q	2279	2140	2026	1932	1852	1784	1725	1675	1631	1592	1559
		F	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.8	2.9
	TSW @ 18"	q	2491	2356	2246	2154	2078	2013	1958	1911	1870	1835	1803
		F	2.1	2.2	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.7
	TSW @ 12"	q	2915	2787	2684	2600	2530	2472	2424	2383	2226	1998	1803
		F	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4

Notes:
1. ShearTranz II element installation per details on pages 66 and 67.
2. BP = Button Punch
3. TSW = Top Seam Weld
4. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

ShearTranz® with HSB®-36 Deck

- 6 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	BP @ 24"	q	340	270	270	260	260	
		F	4.8+34.6R	6.4+28.9R	7.8+24.7R	9.5+21.6R	11.5+19.2R	
	BP @ 12"	q	390	330	330	320	320	
		F	4.6+34.6R	5.7+28.9R	6.9+24.7R	8.2+21.6R	9.8+19.2R	
	TSW @ 24"	q	740	600	550	510	480	460
		F	12.7	15.1	16.2	17.2	18.1	18.8
	TSW @12"	q	1000	920	870	840	810	790
		F	10.1	10.7	11.2	11.5	11.9	12.1
20	BP @ 24"	q	530	420	410	400	390	
		F	4.4+20.0R	6.0+16.7R	7.5+14.3R	9.3+12.5R	11.4+11.1R	
	BP @ 12"	q	580	490	480	470	460	
		F	4.2+20.0R	5.5+16.7R	6.7+14.3R	8.2+12.5R	10.0+11.1R	
	TSW @ 24"	q	930	780	710	650	610	580
		F	9.8	11.9	12.9	13.6	14.3	15.0
	TSW @12"	q	1230	1180	1100	1050	1010	970
		F	8.0	8.6	9.0	9.3	9.6	9.8
18	BP @ 24"	q	890	730	630	560	500	450
		F	4.2+8.5R	5.6+7.1R	7.2+6.1R	9.1+5.3R	11.3+4.7R	13.9+4.2R
	BP @ 12"	q	950	820	710	630	560	510
		F	3.9+8.5R	5.2+7.1R	6.6+6.1R	8.3+5.3R	10.2+4.7R	12.5+4.2R
	TSW @ 24"	q	1160	990	930	880	860	840
		F	6.6	7.9	8.7	9.4	10.0	10.5
	TSW @12"	q	1480	1420	1380	1370	1370	1360
		F	5.6	6.0	6.4	6.7	6.9	7.1
16	BP @ 24"	q	1080	900	770	680	610	550
		F	3.6+4.3R	5.4+3.6R	7.0+3.1R	8.9+2.7R	11.2+2.4R	13.9+2.2R
	BP @ 12"	q	1140	970	840	740	670	600
		F	3.5+4.3R	5.0+3.6R	6.5+3.1R	8.3+2.7R	10.4+2.4R	12.8+2.2R
	TSW @ 24"	q	1390	1190	1110	1050	1020	1000
		F	4.9	5.8	6.4	7.0	7.5	8.0
	TSW @12"	q	1740	1660	1610	1580	1580	1590
		F	4.2	4.6	4.9	5.1	5.4	5.5

Notes:
1. ShearTranz element installation per details on pages 66 and 67.
2. BP = Button Punch
3. TSW = Top Seam Weld
4. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

ShearTranz® with HSB®-36 Deck

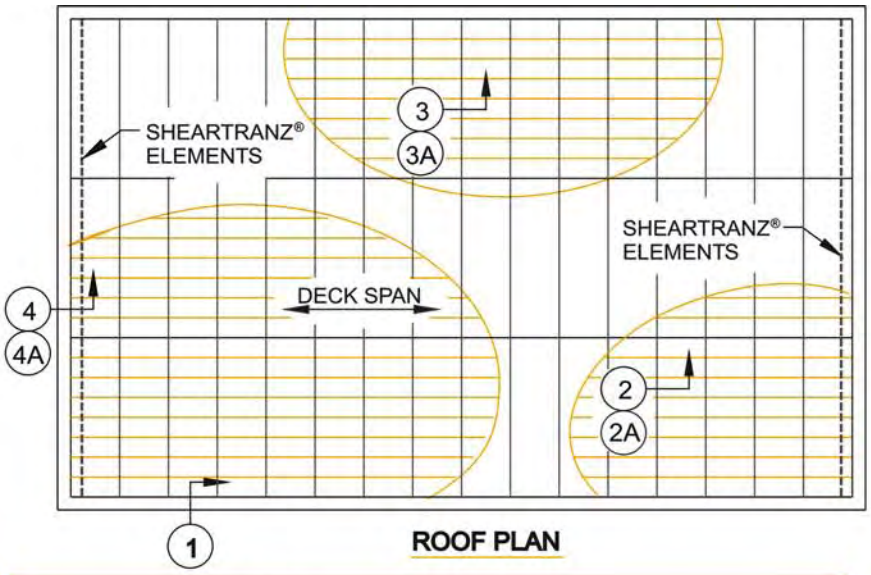
- 7 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

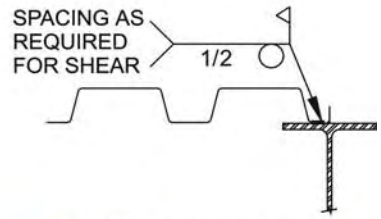
GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
22	BP @ 24"	q	450	400	380	370	350	
		F	5.1+28.1R	6.1+23.4R	7.5+20.0R	9.3+17.5R	11.4+15.6R	
	BP @ 12"	q	510	460	440	430	410	
		F	4.9+28.1R	5.7+23.4R	6.9+20.0R	8.4+17.5R	10.1+15.6R	
	TSW @ 24"	q	940	780	730	680	620	580
		F	9.3	11.1	12.3	13.5	14.6	15.5
	TSW @12"	q	1160	1090	1050	1010	950	900
		F	8.1	8.8	9.5	10.0	10.5	10.9
20	BP @ 24"	q	710	620	590	560	520	
		F	4.7+16.2R	5.7+13.5R	7.2+11.6R	9.0+10.1R	11.2+9.0R	
	BP @ 12"	q	770	690	660	640	580	
		F	4.5+16.2R	5.4+13.5R	6.7+11.6R	8.3+10.1R	10.1+9.0R	
	TSW @ 24"	q	1100	930	860	810	780	720
		F	7.3	8.7	9.8	10.7	11.7	12.5
	TSW @12"	q	1340	1250	1200	1180	1170	1120
		F	6.4	7.1	7.6	8.1	8.5	8.9
18	BP @ 24"	q	1200	970	840	740	660	600
		F	4.2+6.6R	5.3+5.7R	6.8+4.9R	8.7+4.3R	10.9+3.8R	13.6+3.4R
	BP @ 12"	q	1270	1050	910	800	720	660
		F	4.1+6.6R	5.0+5.7R	6.4+4.9R	8.1+4.3R	10.2+3.8R	12.6+3.4R
	TSW @ 24"	q	1420	1200	1100	1040	1000	970
		F	5.0	6.0	6.8	7.6	8.3	8.9
	TSW @12"	q	1690	1560	1500	1470	1460	1470
		F	4.5	5.0	5.5	5.8	6.2	6.5
16	BP @ 24"	q	1140	1200	1030	910	810	730
		F	3.9+3.5R	5.0+2.9R	6.5+2.5R	8.5+2.2R	10.8+1.9R	13.5+1.8R
	BP @ 12"	q	1540	1270	1100	970	870	780
		F	3.8+3.5R	4.8+2.9R	6.2+2.5R	8.0+2.2R	10.2+1.9R	12.8+1.8R
	TSW @ 24"	q	1740	1470	1350	1270	1210	1180
		F	3.8	4.6	5.2	5.8	6.4	6.9
	TSW @12"	q	2050	1880	1800	1760	1750	1760
		F	3.5	3.9	4.2	4.5	4.8	5.1

Notes:
1. ShearTranz element installation per details on pages 66 and 67.
2. BP = Button Punch
3. TSW = Top Seam Weld
4. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

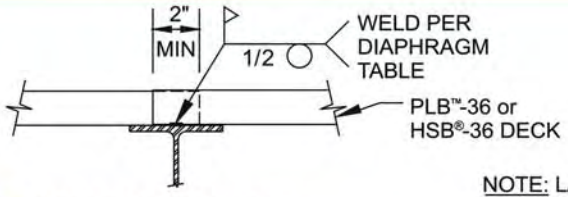
ShearTranz® Details



ROOF PLAN

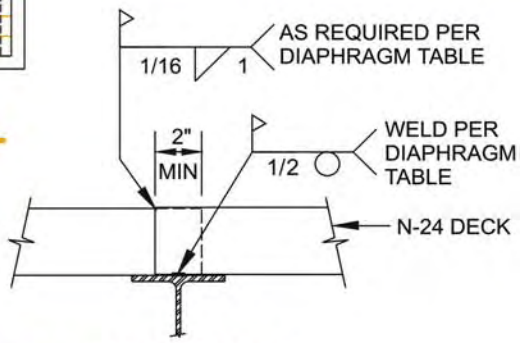


1 PARALLEL SUPPORTS



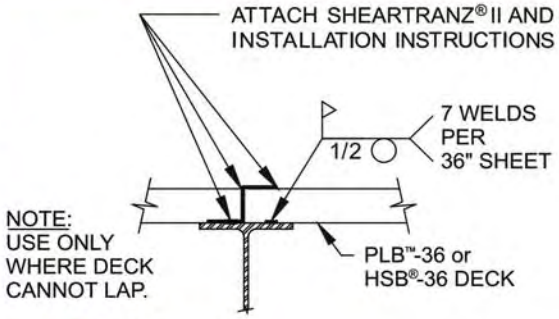
NOTE: LAP DECK MIN. 2" AT ENDLAPS.

2 INTERIOR ENDLAP for PLB™-36 or HSB®-36 Deck



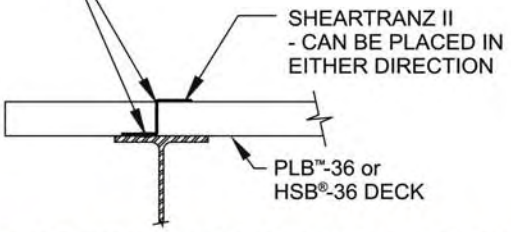
2A INTERIOR ENDLAP for N-24 Deck

ShearTranz® II Systems



3 BUTT JOINT for ShearTranz® II Systems

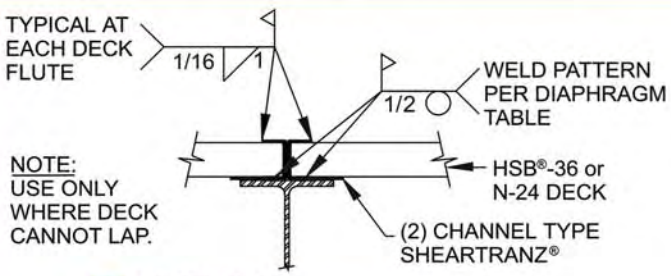
SHEARTRANZ® II CONTINUOUS AT BUTT JOINTS. ATTACH TOP FLANGE OF SHEARTRANZ® II TO BOTH PIECES OF DECK AT BUTT JOINTS.



4 PERPENDICULAR PERIMETER SUPPORT for ShearTranz® II Systems

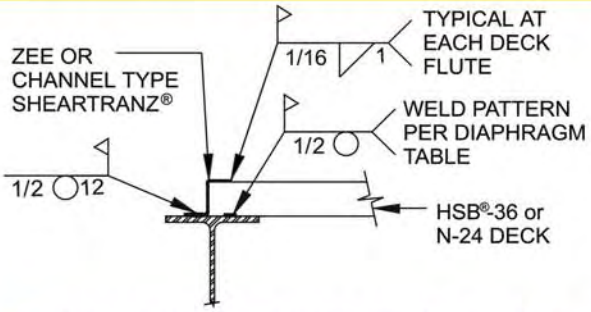
DECK MAY BE CANTILEVERED OR STOP AT SUPPORT.

ShearTranz® System



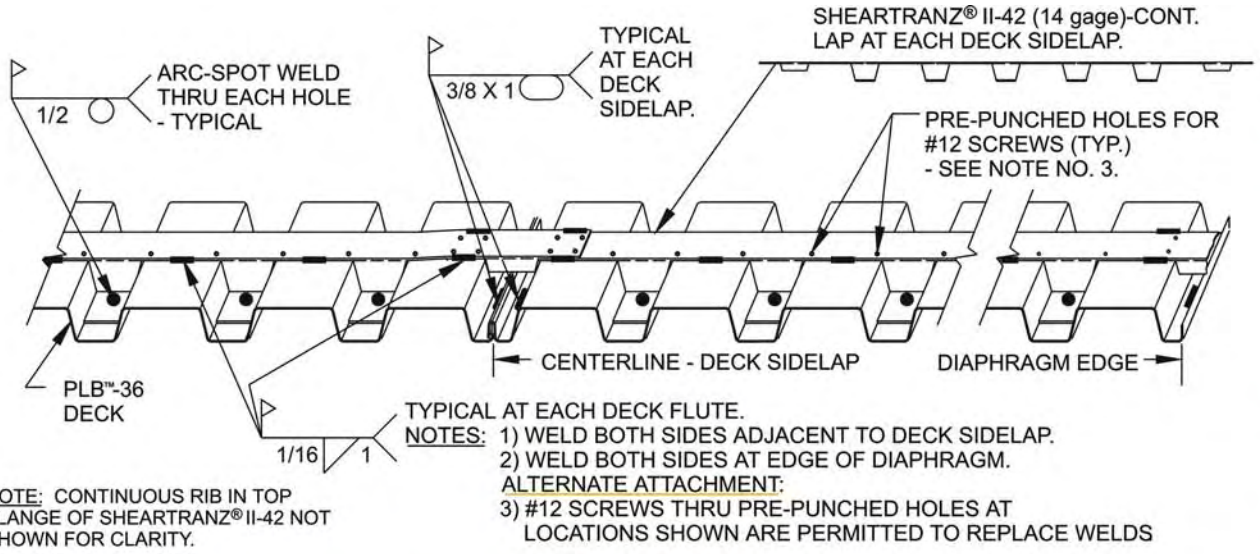
3A BUTT JOINT for ShearTranz® System

CHANNEL TYPE SHEARTRANZ® SHOWN. ZEE TYPE PERMITTED IF SPACE ALLOWS.



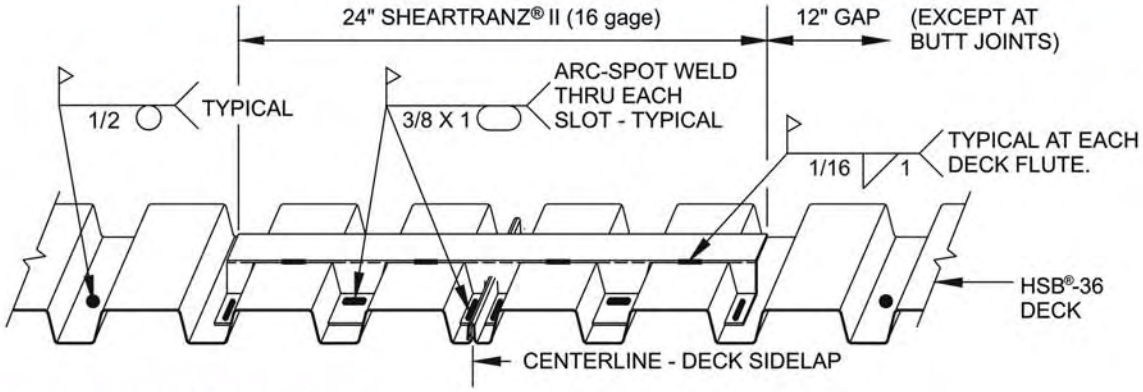
4A PERPENDICULAR PERIMETER SUPPORT for ShearTranz® System

ShearTranz® Element Installation Instructions



SHEARTRANZ® II-42 FOR PLB™-36 DECK with THE PUNCHLOK® SYSTEM
with VSC SIDELAP CONNECTIONS MADE with THE PUNCHLOK® TOOL

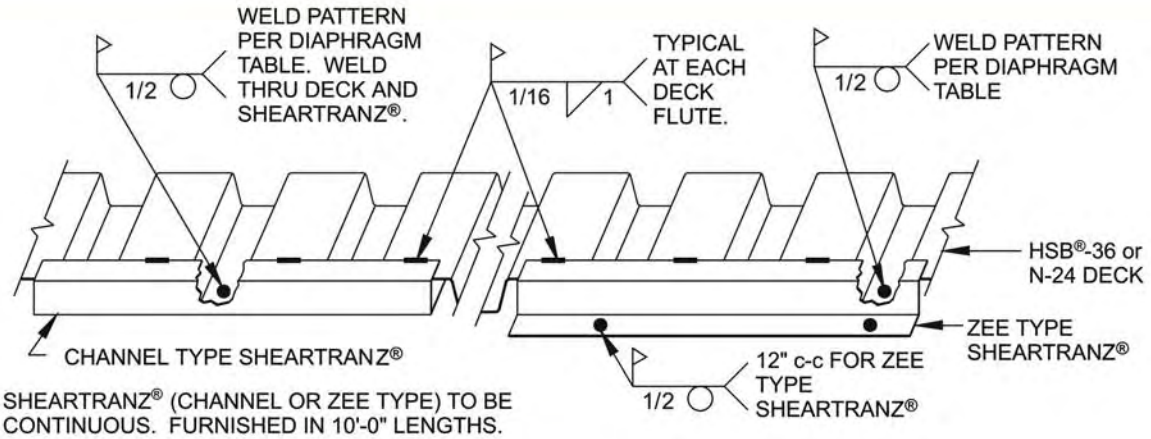
ShearTranz® II-42 System for the PunchLok® System



SHEARTRANZ® II FOR HSB®-36 DECK
with BUTTON PUNCHED (BP), SCREW FASTENED,
OR TOP SEAM WELD (TSW) SIDELAPS

ShearTranz® II System for HSB®-36 Deck

SHEAR-TRANZ®

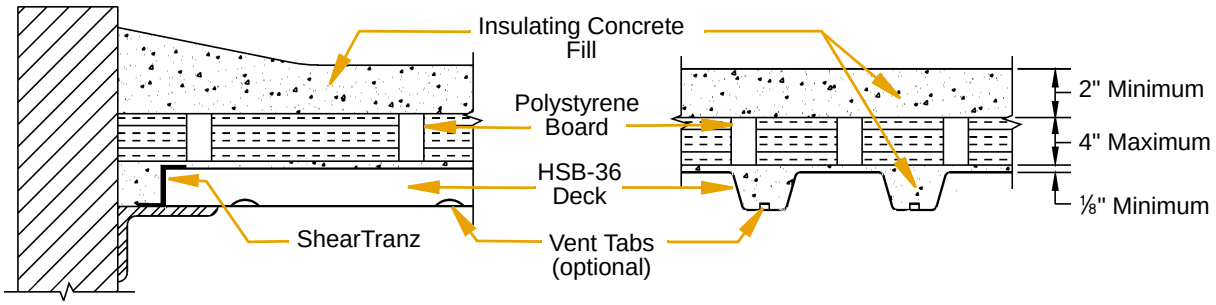


SHEARTRANZ® FOR HSB®-36 OR N-24 DECK
with BUTTON PUNCHED (BP), SCREW FASTENED,
OR TOP SEAM WELD (TSW) SIDELAPS

ShearTranz® System for HSB®-36 and N-24 Deck

System 80

- **HSB®-36 Deck with ShearTranz® System**
- **Insulating Concrete Fill**
- **7 Weld Pattern at Supports**
- **Button Punch, Screw, or 1½" Top Seam Weld**
- **Galvanized**



Allowable Diaphragm Shear Values, q (plf), and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACHMENT		MAXIMUM CLEAR SPAN (ft-in.) 8'-0"	9'-0"	10'-0"
22	BP @ 24"	q	880		
		F	13.0		
	TSW @ 24"	q	1050		
		F	8.0		
	TSW @ 16"	q	1160		
		F	4.5		
20	BP @ 24"	q	970	890	820
		F	13.0	13.0	13.0
	TSW @ 24"	q	1290	1190	1090
		F	8.0	8.0	8.0
	TSW @ 16"	q	1430	1340	1260
		F	4.5	4.5	4.5
18	BP @ 24"	q	1030	990	960
		F	13.0	13.0	13.0
	TSW @ 24"	q	1370	1320	1280
		F	8.0	8.0	8.0
	TSW @ 16"	q	1520	1490	1480
		F	4.5	4.5	4.5

Notes:
1. ShearTranz element installation per details on pages 66 and 67.
2. BP = Button Punch
3. TSW = Top Seam Weld
4. #10 x ¾" long screw may be substituted for button punch at same spacing when using HSB-36-SS deck. See page 12 for additional information.

System 80 consists of galvanized HSB-36 deck and the ShearTranz system combined with insulating concrete for maximum shear capacity and outstanding insulation.

Positive venting of the HSB-36 deck is accomplished through the use of vent tabs spaced at approximately 6 in. on center in the interior bottom flanges of the deck.

ShearTranz elements are located at shear collectors perpendicular to the deck corrugations. See pages 66 and 67 for ShearTranz installation details.

Insulating concrete and polystyrene board thicknesses may be varied to provide the required U factor.

System 80 diaphragm values are based on aggregate type insulating concrete, such as Zonolite. Other aggregate type insulating concretes complying with the requirements of Verco's evaluation report may also be used.

A 2-hour fire rating is possible for System 80 with a 2-inch minimum thickness of insulating concrete and key deck mesh.

If insulating concrete material other than those specified here is used, refer to the fill manufacturer for diaphragm capacity and venting requirements. An alternative is to consider the deck alone, or deck in conjunction with a ShearTranz system for diaphragm capacity, utilizing the insulating concrete to achieve fire ratings and meet insulation requirements.

Type PLN™-24

- 3 Pneutek® Fastener Pattern at Supports
  K66 at Supports 0.281" thick and thicker
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	246	262	229	243	219	231	212	207	203
		F	19.3+127R	18.6+109R	22.4+95R	21.3+84R	24.3+75R	23.1+69R	25.6+63R	26.5+54R	27.2+47R
	VSC @ 12"	q	415	405	397	390	385	381	377	372	368
		F	9.2+129R	10.6+110R	11.5+97R	12.3+86R	12.9+77R	13.4+70R	13.9+64R	14.5+55R	15.0+48R
	VSC @ 8"	q	544	552	529	537	519	527	513	508	505
		F	5.4+129R	6.3+111R	7.6+97R	8.0+86R	8.8+78R	9.1+71R	9.7+65R	10.3+55R	10.8+48R
	VSC @ 4"	q	799	795	791	789	787	785	783	781	779
		F	1.3+130R	2.5+111R	3.3+97R	4.0+86R	4.6+78R	5.0+71R	5.4+65R	6.0+56R	6.4+49R
20	VSC @ 24"	q	349	375	328	351	315	335	307	301	296
		F	17.9+80R	17.0+69R	20.0+59R	19+53R	21.3+47R	20.2+43R	22.2+39R	22.8+34R	23.3+30R
	VSC @ 12"	q	582	570	560	553	547	543	539	532	527
		F	9.3+81R	10.2+70R	10.8+61R	11.4+54R	11.8+49R	12.1+44R	12.4+41R	12.8+35R	13.1+30R
	VSC @ 8"	q	755	767	738	750	728	739	721	716	712
		F	6.1+82R	6.6+70R	7.5+61R	7.7+55R	8.3+49R	8.4+45R	8.9+41R	9.3+35R	9.6+31R
	VSC @ 4"	q	1060	1056	1053	1051	1049	1047	1046	1044	1042
		F	2.7+82R	3.4+70R	4.0+62R	4.4+55R	4.8+49R	5.0+45R	5.3+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	555	601	526	565	508	541	497	488	481
		F	15.6+38R	14.6+33R	16.8+29R	15.8+26R	17.5+23R	16.6+21R	18.0+19R	18.4+16R	18.7+14R
	VSC @ 12"	q	907	891	880	871	863	857	852	844	838
		F	8.7+40R	9.2+34R	9.5+30R	9.8+26R	10.0+24R	10.1+22R	10.3+20R	10.5+17R	10.7+15R
	VSC @ 8"	q	1160	1179	1140	1157	1128	1144	1120	1114	1109
		F	6.2+40R	6.3+34R	6.8+30R	6.9+27R	7.3+24R	7.3+22R	7.5+20R	7.7+17R	7.9+15R
	VSC @ 4"	q	1558	1554	1551	1549	1547	1545	1544	1542	1540
		F	3.5+40R	3.8+34R	4.1+30R	4.3+27R	4.5+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	765	826	727	777	705	744	688	674	665
		F	13.9+21R	12.9+19R	14.7+16R	13.8+14R	15.3+13R	14.4+12R	15.6+11R	15.9+9R	16.1+8R
	VSC @ 12"	q	1236	1217	1203	1191	1182	1174	1168	1158	1150
		F	8.0+22R	8.3+19R	8.5+17R	8.6+15R	8.8+13R	8.9+12R	9.0+11R	9.1+10R	9.2+8R
	VSC @ 8"	q	1569	1595	1546	1569	1531	1552	1521	1514	1509
		F	5.8+23R	5.8+19R	6.2+17R	6.2+15R	6.5+14R	6.4+12R	6.6+11R	6.7+10R	6.8+9R
	VSC @ 4"	q	2070	2065	2062	2059	2057	2055	2054	2051	2049
		F	3.5+23R	3.7+20R	3.8+17R	4.0+15R	4.1+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K66 = Pneutek K66062 or K66075 fasteners
2. VSC = Verco Sidelap Connection

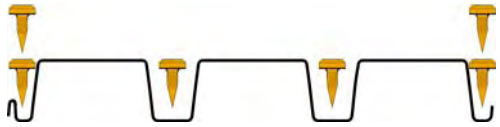
Type PLN™-24

- **4 Pneutek® Fastener Pattern at Supports**
  K66 at Supports 0.281" thick and thicker
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	321	326	285	293	264	272	249	239	231
		F	17.1+126R	17.0+108R	20.5+94R	19.9+84R	22.7+75R	21.9+68R	24.2+62R	25.3+53R	26.1+46R
	VSC @ 12"	q	493	473	457	445	436	428	421	410	402
		F	8.6+128R	10.0+110R	11.0+96R	11.8+85R	12.5+77R	13.0+70R	13.5+64R	14.2+55R	14.7+48R
	VSC @ 8"	q	633	634	601	606	582	587	569	559	552
		F	5.1+129R	6.0+111R	7.3+97R	7.8+86R	8.6+77R	8.9+70R	9.5+65R	10.2+55R	10.6+48R
	VSC @ 4"	q	945	935	926	919	914	910	906	900	895
		F	1.2+130R	2.4+111R	3.3+97R	4.0+86R	4.5+78R	5.0+71R	5.3+65R	5.9+56R	6.4+49R
20	VSC @ 24"	q	441	454	397	412	371	385	353	341	331
		F	16.2+79R	15.8+68R	18.6+59R	17.9+53R	20.1+47R	19.3+43R	21.1+39R	21.9+33R	22.5+29R
	VSC @ 12"	q	682	658	640	626	615	605	597	585	576
		F	8.8+81R	9.7+69R	10.4+61R	11.0+54R	11.4+49R	11.8+44R	12.1+40R	12.5+35R	12.9+30R
	VSC @ 8"	q	876	881	841	849	819	828	804	793	785
		F	5.9+82R	6.4+70R	7.3+61R	7.5+54R	8.2+49R	8.3+45R	8.7+41R	9.2+35R	9.5+31R
	VSC @ 4"	q	1274	1263	1255	1248	1243	1239	1235	1229	1225
		F	2.6+82R	3.4+70R	3.9+62R	4.4+55R	4.7+49R	5.0+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	683	711	622	650	585	612	561	543	530
		F	14.3+38R	13.7+33R	15.8+28R	15+25R	16.7+22R	15.9+20R	17.3+18R	17.7+16R	18.1+14R
	VSC @ 12"	q	1055	1024	1001	982	967	955	945	928	916
		F	8.3+39R	8.8+34R	9.2+29R	9.5+26R	9.7+24R	9.9+21R	10.1+20R	10.3+17R	10.5+15R
	VSC @ 8"	q	1349	1362	1306	1321	1279	1294	1260	1247	1237
		F	6+40R	6.2+34R	6.7+30R	6.8+27R	7.2+24R	7.2+22R	7.5+20R	7.7+17R	7.8+15R
	VSC @ 4"	q	1900	1889	1880	1873	1868	1863	1859	1853	1848
		F	3.4+40R	3.8+34R	4.1+30R	4.3+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	932	974	852	894	804	843	772	750	733
		F	12.9+21R	12.2+18R	13.9+15R	13.2+14R	14.5+12R	13.8+11R	15.0+10R	15.3+9R	15.6+7R
	VSC @ 12"	q	1436	1397	1367	1344	1325	1309	1296	1276	1260
		F	7.7+22R	8.0+19R	8.2+17R	8.4+15R	8.6+13R	8.7+12R	8.8+11R	9.0+9R	9.1+8R
	VSC @ 8"	q	1831	1850	1777	1799	1744	1765	1721	1704	1692
		F	5.6+23R	5.7+19R	6.1+17R	6.1+15R	6.4+14R	6.3+12R	6.5+11R	6.7+10R	6.8+8R
	VSC @ 4"	q	2540	2527	2517	2509	2502	2497	2492	2485	2480
		F	3.4+23R	3.7+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K66 = Pneutek K66062 or K66075 fasteners
2. VSC = Verco Sidelap Connection



Type PLN™-24

- 6 Pneutek® Fastener Pattern at Supports
  K66 at Supports 0.281" thick and thicker
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	447	434	380	377	339	341	312	293	279
		F	13.8+125R	14.4+108R	17.6+93R	17.5+83R	20.1+74R	19.7+67R	21.8+61R	23.1+52R	24.1+45R
	VSC @ 12"	q	625	586	557	535	517	502	490	470	456
		F	7.4+128R	8.9+110R	10.0+96R	10.9+85R	11.7+76R	12.3+69R	12.8+64R	13.6+54R	14.2+48R
	VSC @ 8"	q	794	778	728	722	688	687	660	640	625
		F	4.5+129R	5.5+110R	6.8+97R	7.4+86R	8.2+77R	8.5+70R	9.2+64R	9.9+55R	10.4+48R
	VSC @ 4"	q	1172	1144	1123	1106	1092	1080	1071	1055	1044
		F	1.1+130R	2.3+111R	3.2+97R	3.8+86R	4.4+78R	4.9+71R	5.2+65R	5.8+55R	6.3+49R
20	VSC @ 24"	q	596	586	513	515	463	469	430	407	389
		F	13.5+79R	13.7+67R	16.3+58R	16.0+52R	18.0+46R	17.6+42R	19.3+38R	20.2+32R	21.0+28R
	VSC @ 12"	q	860	813	778	750	728	710	695	671	654
		F	7.9+81R	8.9+69R	9.7+60R	10.3+54R	10.8+48R	11.2+44R	11.5+40R	12.1+34R	12.5+30R
	VSC @ 8"	q	1086	1072	1010	1007	962	964	930	907	889
		F	5.4+81R	6.0+70R	6.9+61R	7.2+54R	7.9+49R	8.0+44R	8.5+41R	8.9+35R	9.3+30R
	VSC @ 4"	q	1599	1569	1546	1528	1513	1501	1490	1474	1462
		F	2.5+82R	3.3+70R	3.8+61R	4.3+55R	4.6+49R	4.9+45R	5.2+41R	5.6+35R	5.8+31R
18	VSC @ 24"	q	897	894	782	793	714	728	668	635	610
		F	12.3+37R	12.2+32R	14.0+28R	13.6+25R	15.2+22R	14.7+20R	16+18R	16.6+15R	17.0+13R
	VSC @ 12"	q	1327	1263	1214	1176	1145	1119	1098	1064	1038
		F	7.7+39R	8.2+33R	8.7+29R	9.0+26R	9.3+23R	9.5+21R	9.7+19R	10.0+17R	10.2+14R
	VSC @ 8"	q	1665	1654	1565	1568	1503	1511	1461	1431	1408
		F	5.6+40R	5.9+34R	6.5+30R	6.6+26R	6.9+24R	7.0+22R	7.3+20R	7.5+17R	7.7+15R
	VSC @ 4"	q	2424	2389	2362	2340	2323	2308	2296	2277	2262
		F	3.3+40R	3.7+34R	4.0+30R	4.2+27R	4.4+24R	4.5+22R	4.7+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	1210	1212	1061	1079	971	995	912	869	837
		F	11.2+21R	10.9+18R	12.5+15R	12+13R	13.3+12R	12.8+11R	13.9+10R	14.4+8R	14.7+7R
	VSC @ 12"	q	1797	1715	1652	1603	1563	1530	1503	1459	1426
		F	7.1+22R	7.5+19R	7.8+16R	8.0+15R	8.2+13R	8.3+12R	8.5+11R	8.7+9R	8.8+8R
	VSC @ 8"	q	2258	2249	2132	2139	2054	2067	2001	1962	1933
		F	5.4+22R	5.5+19R	5.9+17R	5.9+15R	6.2+13R	6.2+12R	6.4+11R	6.5+10R	6.7+8R
	VSC @ 4"	q	3265	3222	3190	3164	3143	3126	3111	3088	3070
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K66 = Pneutek K66062 or K66075 fasteners
2. VSC = Verco Sidelap Connection

Type PLN™-24

- **3 Pneutek® Fastener Pattern at Supports**
  K64 at Supports 0.187-0.312" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	242	258	226	240	216	229	210	205	202
		F	19.3+127R	18.6+109R	22.4+95R	21.3+84R	24.3+75R	23.1+69R	25.6+63R	26.5+54R	27.2+47R
	VSC @ 12"	q	407	398	390	384	380	376	372	367	363
		F	9.2+129R	10.6+110R	11.5+97R	12.3+86R	12.9+77R	13.4+70R	13.9+64R	14.5+55R	15.0+48R
	VSC @ 8"	q	533	541	519	527	510	517	504	500	497
		F	5.4+129R	6.3+111R	7.6+97R	8.0+86R	8.8+78R	9.1+71R	9.7+65R	10.3+55R	10.8+48R
	VSC @ 4"	q	772	769	766	763	762	760	759	757	755
		F	1.3+130R	2.5+111R	3.3+97R	4.0+86R	4.6+78R	5.0+71R	5.4+65R	6.0+56R	6.4+49R
20	VSC @ 24"	q	348	374	327	349	315	334	306	300	296
		F	17.9+80R	17.0+69R	20.0+59R	19.0+53R	21.3+47R	20.2+43R	22.2+39R	22.8+34R	23.3+30R
	VSC @ 12"	q	578	566	557	550	545	540	536	530	525
		F	9.3+81R	10.2+70R	10.8+61R	11.4+54R	11.8+49R	12.1+44R	12.4+41R	12.8+35R	13.1+30R
	VSC @ 8"	q	749	761	733	745	723	734	717	712	708
		F	6.1+82R	6.6+70R	7.5+61R	7.7+55R	8.3+49R	8.4+45R	8.9+41R	9.3+35R	9.6+31R
	VSC @ 4"	q	1048	1044	1041	1039	1037	1035	1034	1032	1031
		F	2.7+82R	3.4+70R	4.0+62R	4.4+55R	4.8+49R	5.0+45R	5.3+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	551	596	523	560	506	536	494	485	478
		F	15.6+38R	14.6+33R	16.8+29R	15.8+26R	17.5+23R	16.6+21R	18.0+19R	18.4+16R	18.7+14R
	VSC @ 12"	q	894	880	869	860	853	847	843	835	829
		F	8.7+40R	9.2+34R	9.5+30R	9.8+26R	10.0+24R	10.1+22R	10.3+20R	10.5+17R	10.7+15R
	VSC @ 8"	q	1139	1157	1121	1138	1109	1125	1102	1096	1092
		F	6.2+40R	6.3+34R	6.8+30R	6.9+27R	7.3+24R	7.3+22R	7.5+20R	7.7+17R	7.9+15R
	VSC @ 4"	q	1514	1511	1508	1506	1504	1503	1502	1500	1498
		F	3.5+40R	3.8+34R	4.1+30R	4.3+27R	4.5+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	751	802	713	757	689	728	673	662	653
		F	13.9+21R	12.9+19R	14.7+16R	13.8+14R	15.3+13R	14.4+12R	15.6+11R	15.9+9R	16.1+8R
	VSC @ 12"	q	1191	1175	1162	1153	1145	1139	1133	1125	1118
		F	8.0+22R	8.3+19R	8.5+17R	8.6+15R	8.8+13R	8.9+12R	9.0+11R	9.1+10R	9.2+8R
	VSC @ 8"	q	1494	1518	1475	1496	1463	1482	1455	1450	1445
		F	5.8+23R	5.8+19R	6.2+17R	6.2+15R	6.5+14R	6.4+12R	6.6+11R	6.7+10R	6.8+9R
	VSC @ 4"	q	1920	1916	1914	1912	1910	1909	1908	1906	1905
		F	3.5+23R	3.7+20R	3.8+17R	4.0+15R	4.1+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K64 = Pneutek K64062 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 4 Pneutek® Fastener Pattern at Supports
- K64 at Supports 0.187-0.312" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

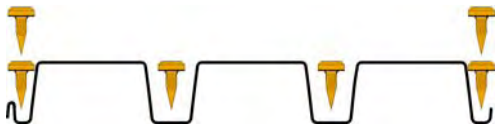
Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	313	319	279	288	259	268	245	236	228
		F	17.1+126R	17.0+108R	20.5+94R	19.9+84R	22.7+75R	21.9+68R	24.2+62R	25.3+53R	26.1+46R
	VSC @ 12"	q	482	463	448	437	428	421	414	405	397
		F	8.6+128R	10.0+110R	11.0+96R	11.8+85R	12.5+77R	13.0+70R	13.5+64R	14.2+55R	14.7+48R
	VSC @ 8"	q	619	620	590	594	572	577	560	551	544
		F	5.1+129R	6.0+111R	7.3+97R	7.8+86R	8.6+77R	8.9+70R	9.5+65R	10.2+55R	10.6+48R
	VSC @ 4"	q	918	908	901	895	890	886	883	877	873
		F	1.2+130R	2.4+111R	3.3+97R	4.0+86R	4.5+78R	5.0+71R	5.3+65R	5.9+56R	6.4+49R
20	VSC @ 24"	q	438	451	395	410	369	383	351	339	330
		F	16.2+79R	15.8+68R	18.6+59R	17.9+53R	20.1+47R	19.3+43R	21.1+39R	21.9+33R	22.5+29R
	VSC @ 12"	q	677	654	636	623	611	602	595	582	573
		F	8.8+81R	9.7+69R	10.4+61R	11.0+54R	11.4+49R	11.8+44R	12.1+40R	12.5+35R	12.9+30R
	VSC @ 8"	q	869	875	835	844	814	823	800	789	781
		F	5.9+82R	6.4+70R	7.3+61R	7.5+54R	8.2+49R	8.3+45R	8.7+41R	9.2+35R	9.5+31R
	VSC @ 4"	q	1260	1250	1242	1236	1231	1227	1223	1218	1214
		F	2.6+82R	3.4+70R	3.9+62R	4.4+55R	4.7+49R	5.0+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	674	703	615	644	579	606	556	539	526
		F	14.3+38R	13.7+33R	15.8+28R	15+25R	16.7+22R	15.9+20R	17.3+18R	17.7+16R	18.1+14R
	VSC @ 12"	q	1039	1010	988	970	956	944	935	919	908
		F	8.3+39R	8.8+34R	9.2+29R	9.5+26R	9.7+24R	9.9+21R	10.1+20R	10.3+17R	10.5+15R
	VSC @ 8"	q	1327	1340	1286	1301	1261	1276	1244	1231	1222
		F	6.0+40R	6.2+34R	6.7+30R	6.8+27R	7.2+24R	7.2+22R	7.5+20R	7.7+17R	7.8+15R
	VSC @ 4"	q	1853	1843	1835	1829	1824	1820	1816	1811	1806
		F	3.4+40R	3.8+34R	4.1+30R	4.3+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	901	938	829	866	786	819	756	734	717
		F	12.9+21R	12.2+18R	13.9+15R	13.2+14R	14.5+12R	13.8+11R	15+10R	15.3+9R	15.6+7R
	VSC @ 12"	q	1381	1348	1322	1302	1286	1272	1261	1243	1230
		F	7.7+22R	8.0+19R	8.2+17R	8.4+15R	8.6+13R	8.7+12R	8.8+11R	9.0+9R	9.1+8R
	VSC @ 8"	q	1751	1772	1707	1728	1679	1699	1660	1646	1636
		F	5.6+23R	5.7+19R	6.1+17R	6.1+15R	6.4+14R	6.3+12R	6.5+11R	6.7+10R	6.8+8R
	VSC @ 4"	q	2377	2367	2359	2353	2348	2344	2341	2335	2331
		F	3.4+23R	3.7+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K64 = Pneutek K64062 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 6 Pneutek® Fastener Pattern at Supports
  K64 at Supports 0.187-0.312" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized



Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	432	421	368	367	330	332	304	286	273
		F	13.8+125R	14.4+108R	17.6+93R	17.5+83R	20.1+74R	19.7+67R	21.8+61R	23.1+52R	24.1+45R
	VSC @ 12"	q	609	573	545	524	507	493	482	464	450
		F	7.4+128R	8.9+110R	10.0+96R	10.9+85R	11.7+76R	12.3+69R	12.8+64R	13.6+54R	14.2+48R
	VSC @ 8"	q	773	759	712	707	674	674	648	630	616
		F	4.5+129R	5.5+110R	6.8+97R	7.4+86R	8.2+77R	8.5+70R	9.2+64R	9.9+55R	10.4+48R
	VSC @ 4"	q	1141	1116	1096	1081	1068	1058	1049	1035	1025
		F	1.1+130R	2.3+111R	3.2+97R	3.8+86R	4.4+78R	4.9+71R	5.2+65R	5.8+55R	6.3+49R
20	VSC @ 24"	q	589	581	508	511	460	466	427	404	387
		F	13.5+79R	13.7+67R	16.3+58R	16.0+52R	18.0+46R	17.6+42R	19.3+38R	20.2+32R	21.0+28R
	VSC @ 12"	q	854	808	773	746	724	707	692	669	651
		F	7.9+81R	8.9+69R	9.7+60R	10.3+54R	10.8+48R	11.2+44R	11.5+40R	12.1+34R	12.5+30R
	VSC @ 8"	q	1077	1064	1003	1000	956	959	925	902	885
		F	5.4+81R	6.0+70R	6.9+61R	7.2+54R	7.9+49R	8.0+44R	8.5+41R	8.9+35R	9.3+30R
	VSC @ 4"	q	1584	1556	1533	1516	1502	1490	1480	1464	1452
		F	2.5+82R	3.3+70R	3.8+61R	4.3+55R	4.6+49R	4.9+45R	5.2+41R	5.6+35R	5.8+31R
18	VSC @ 24"	q	879	879	769	781	703	719	659	627	604
		F	12.3+37R	12.2+32R	14.0+28R	13.6+25R	15.2+22R	14.7+20R	16.0+18R	16.6+15R	17.0+13R
	VSC @ 12"	q	1303	1242	1196	1159	1129	1105	1085	1052	1028
		F	7.7+39R	8.2+33R	8.7+29R	9.0+26R	9.3+23R	9.5+21R	9.7+19R	10.0+17R	10.2+14R
	VSC @ 8"	q	1636	1628	1542	1546	1484	1492	1444	1415	1393
		F	5.6+40R	5.9+34R	6.5+30R	6.6+26R	6.9+24R	7.0+22R	7.3+20R	7.5+17R	7.7+15R
	VSC @ 4"	q	2374	2342	2317	2297	2281	2268	2256	2238	2225
		F	3.3+40R	3.7+34R	4.0+30R	4.2+27R	4.4+24R	4.5+22R	4.7+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	1153	1164	1018	1041	937	963	883	845	816
		F	11.2+21R	10.9+18R	12.5+15R	12.0+13R	13.3+12R	12.8+11R	13.9+10R	14.4+8R	14.7+7R
	VSC @ 12"	q	1718	1646	1591	1547	1512	1483	1459	1420	1391
		F	7.1+22R	7.5+19R	7.8+16R	8.0+15R	8.2+13R	8.3+12R	8.5+11R	8.7+9R	8.8+8R
	VSC @ 8"	q	2162	2159	2053	2064	1986	2001	1940	1907	1881
		F	5.4+22R	5.5+19R	5.9+17R	5.9+15R	6.2+13R	6.2+12R	6.4+11R	6.5+10R	6.7+8R
	VSC @ 4"	q	3090	3056	3029	3009	2992	2978	2966	2947	2933
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. K64 = Pneutek K64062 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 3 Pneutek® Fastener Pattern at Supports
- SDK63 at Supports 0.155-0.250" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	242	258	226	240	216	229	210	205	202
		F	19.3+127R	18.6+109R	22.4+95R	21.3+84R	24.3+75R	23.1+69R	25.6+63R	26.5+54R	27.2+47R
	VSC @ 12"	q	407	397	390	384	379	375	372	367	363
		F	9.2+129R	10.6+110R	11.5+97R	12.3+86R	12.9+77R	13.4+70R	13.9+64R	14.5+55R	15.0+48R
	VSC @ 8"	q	532	540	518	526	509	517	504	499	496
		F	5.4+129R	6.3+111R	7.6+97R	8.0+86R	8.8+78R	9.1+71R	9.7+65R	10.3+55R	10.8+48R
	VSC @ 4"	q	771	767	764	762	760	759	757	755	754
		F	1.3+130R	2.5+111R	3.3+97R	4.0+86R	4.6+78R	5.0+71R	5.4+65R	6.0+56R	6.4+49R
20	VSC @ 24"	q	339	366	320	344	309	329	302	297	293
		F	17.9+80R	17.0+69R	20.0+59R	19.0+53R	21.3+47R	20.2+43R	22.2+39R	22.8+34R	23.3+30R
	VSC @ 12"	q	556	546	539	533	528	524	521	516	512
		F	9.3+81R	10.2+70R	10.8+61R	11.4+54R	11.8+49R	12.1+44R	12.4+41R	12.8+35R	13.1+30R
	VSC @ 8"	q	714	726	701	712	693	703	688	684	681
		F	6.1+82R	6.6+70R	7.5+61R	7.7+55R	8.3+49R	8.4+45R	8.9+41R	9.3+35R	9.6+31R
	VSC @ 4"	q	971	968	966	964	963	962	961	960	958
		F	2.7+82R	3.4+70R	4.0+62R	4.4+55R	4.8+49R	5.0+45R	5.3+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	523	559	498	529	483	510	472	465	459
		F	15.6+38R	14.6+33R	16.8+29R	15.8+26R	17.5+23R	16.6+21R	18.0+19R	18.4+16R	18.7+14R
	VSC @ 12"	q	823	813	805	799	795	791	788	782	778
		F	8.7+40R	9.2+34R	9.5+30R	9.8+26R	10.0+24R	10.1+22R	10.3+20R	10.5+17R	10.7+15R
	VSC @ 8"	q	1021	1037	1010	1024	1003	1015	998	995	992
		F	6.2+40R	6.3+34R	6.8+30R	6.9+27R	7.3+24R	7.3+22R	7.5+20R	7.7+17R	7.9+15R
	VSC @ 4"	q	1283	1281	1280	1279	1278	1277	1277	1276	1275
		F	3.5+40R	3.8+34R	4.1+30R	4.3+27R	4.5+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	690	740	662	705	646	683	634	626	620
		F	13.9+21R	12.9+19R	14.7+16R	13.8+14R	15.3+13R	14.4+12R	15.6+11R	15.9+9R	16.1+8R
	VSC @ 12"	q	1063	1053	1046	1040	1036	1032	1029	1024	1020
		F	8.0+22R	8.3+19R	8.5+17R	8.6+15R	8.8+13R	8.9+12R	9.0+11R	9.1+10R	9.2+8R
	VSC @ 8"	q	1285	1303	1275	1290	1269	1282	1265	1262	1260
		F	5.8+23R	5.8+19R	6.2+17R	6.2+15R	6.5+14R	6.4+12R	6.6+11R	6.7+10R	6.8+9R
	VSC @ 4"	q	1544	1542	1541	1540	1540	1539	1539	1538	1538
		F	3.5+23R	3.7+20R	3.8+17R	4.0+15R	4.1+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK63 = Pneutek SDK63075 fastener
2. VSC = Verco Sidelap Connection

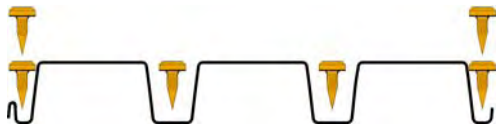
Type PLN™-24

- **4 Pneutek® Fastener Pattern at Supports**
  SDK63 at Supports 0.155-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	313	319	279	287	259	267	245	235	228
		F	17.1+126R	17.0+108R	20.5+94R	19.9+84R	22.7+75R	21.9+68R	24.2+62R	25.3+53R	26.1+46R
	VSC @ 12"	q	481	462	448	437	428	420	414	404	397
		F	8.6+128R	10.0+110R	11.0+96R	11.8+85R	12.5+77R	13+70R	13.5+64R	14.2+55R	14.7+48R
	VSC @ 8"	q	618	620	589	594	571	577	559	550	544
		F	5.1+129R	6.0+111R	7.3+97R	7.8+86R	8.6+77R	8.9+70R	9.5+65R	10.2+55R	10.6+48R
	VSC @ 4"	q	916	906	899	893	888	885	881	876	872
		F	1.2+130R	2.4+111R	3.3+97R	4.0+86R	4.5+78R	5.0+71R	5.3+65R	5.9+56R	6.4+49R
20	VSC @ 24"	q	419	435	381	397	358	373	342	331	323
		F	16.2+79R	15.8+68R	18.6+59R	17.9+53R	20.1+47R	19.3+43R	21.1+39R	21.9+33R	22.5+29R
	VSC @ 12"	q	648	628	613	601	592	584	577	567	559
		F	8.8+81R	9.7+69R	10.4+61R	11.0+54R	11.4+49R	11.8+44R	12.1+40R	12.5+35R	12.9+30R
	VSC @ 8"	q	830	838	802	811	784	794	772	764	757
		F	5.9+82R	6.4+70R	7.3+61R	7.5+54R	8.2+49R	8.3+45R	8.7+41R	9.2+35R	9.5+31R
	VSC @ 4"	q	1179	1172	1166	1161	1157	1154	1151	1147	1144
		F	2.6+82R	3.4+70R	3.9+62R	4.4+55R	4.7+49R	5.0+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	624	650	577	603	548	572	528	514	503
		F	14.3+38R	13.7+33R	15.8+28R	15.0+25R	16.7+22R	15.9+20R	17.3+18R	17.7+16R	18.1+14R
	VSC @ 12"	q	955	934	918	905	895	886	879	868	860
		F	8.3+39R	8.8+34R	9.2+29R	9.5+26R	9.7+24R	9.9+21R	10.1+20R	10.3+17R	10.5+15R
	VSC @ 8"	q	1203	1217	1176	1191	1159	1173	1147	1139	1133
		F	6.0+40R	6.2+34R	6.7+30R	6.8+27R	7.2+24R	7.2+22R	7.5+20R	7.7+17R	7.8+15R
	VSC @ 4"	q	1600	1595	1590	1587	1584	1582	1580	1577	1575
		F	3.4+40R	3.8+34R	4.1+30R	4.3+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	812	853	759	797	726	762	705	689	677
		F	12.9+21R	12.2+18R	13.9+15R	13.2+14R	14.5+12R	13.8+11R	15.0+10R	15.3+9R	15.6+7R
	VSC @ 12"	q	1239	1217	1200	1187	1177	1168	1161	1149	1140
		F	7.7+22R	8.0+19R	8.2+17R	8.4+15R	8.6+13R	8.7+12R	8.8+11R	9.0+9R	9.1+8R
	VSC @ 8"	q	1534	1554	1508	1527	1492	1509	1481	1473	1467
		F	5.6+23R	5.7+19R	6.1+17R	6.1+15R	6.4+14R	6.3+12R	6.5+11R	6.7+10R	6.8+8R
	VSC @ 4"	q	1953	1949	1945	1943	1940	1939	1937	1935	1933
		F	3.4+23R	3.7+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK63 = Pneutek SDK63075 fastener
2. VSC = Verco Sidelap Connection



Type PLN™-24

- 6 Pneutek® Fastener Pattern at Supports
- SDK63 at Supports 0.155-0.250" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	431	420	367	366	329	332	304	286	272
		F	13.8+125R	14.4+108R	17.6+93R	17.5+83R	20.1+74R	19.7+67R	21.8+61R	23.1+52R	24.1+45R
	VSC @ 12"	q	608	572	545	524	507	493	481	463	450
		F	7.4+128R	8.9+110R	10.0+96R	10.9+85R	11.7+76R	12.3+69R	12.8+64R	13.6+54R	14.2+48R
	VSC @ 8"	q	772	758	711	707	673	673	648	629	615
		F	4.5+129R	5.5+110R	6.8+97R	7.4+86R	8.2+77R	8.5+70R	9.2+64R	9.9+55R	10.4+48R
	VSC @ 4"	q	1140	1114	1095	1079	1067	1057	1048	1034	1024
		F	1.1+130R	2.3+111R	3.2+97R	3.8+86R	4.4+78R	4.9+71R	5.2+65R	5.8+55R	6.3+49R
20	VSC @ 24"	q	554	551	482	487	439	447	410	389	373
		F	13.5+79R	13.7+67R	16.3+58R	16.0+52R	18.0+46R	17.6+42R	19.3+38R	20.2+32R	21.0+28R
	VSC @ 12"	q	818	778	747	722	702	686	672	651	634
		F	7.9+81R	8.9+69R	9.7+60R	10.3+54R	10.8+48R	11.2+44R	11.5+40R	12.1+34R	12.5+30R
	VSC @ 8"	q	1025	1017	961	962	921	926	894	875	860
		F	5.4+81R	6.0+70R	6.9+61R	7.2+54R	7.9+49R	8.0+44R	8.5+41R	8.9+35R	9.3+30R
	VSC @ 4"	q	1498	1475	1457	1443	1431	1422	1414	1401	1391
		F	2.5+82R	3.3+70R	3.8+61R	4.3+55R	4.6+49R	4.9+45R	5.2+41R	5.6+35R	5.8+31R
18	VSC @ 24"	q	792	804	704	723	651	671	615	590	571
		F	12.3+37R	12.2+32R	14.0+28R	13.6+25R	15.2+22R	14.7+20R	16.0+18R	16.6+15R	17.0+13R
	VSC @ 12"	q	1183	1137	1101	1074	1051	1032	1017	992	974
		F	7.7+39R	8.2+33R	8.7+29R	9.0+26R	9.3+23R	9.5+21R	9.7+19R	10.0+17R	10.2+14R
	VSC @ 8"	q	1488	1490	1420	1429	1378	1390	1349	1328	1312
		F	5.6+40R	5.9+34R	6.5+30R	6.6+26R	6.9+24R	7.0+22R	7.3+20R	7.5+17R	7.7+15R
	VSC @ 4"	q	2101	2081	2066	2054	2044	2036	2029	2018	2010
		F	3.3+40R	3.7+34R	4.0+30R	4.2+27R	4.4+24R	4.5+22R	4.7+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	1025	1054	922	956	860	894	819	790	768
		F	11.2+21R	10.9+18R	12.5+15R	12+13R	13.3+12R	12.8+11R	13.9+10R	14.4+8R	14.7+7R
	VSC @ 12"	q	1528	1478	1439	1409	1385	1365	1348	1321	1300
		F	7.1+22R	7.5+19R	7.8+16R	8.0+15R	8.2+13R	8.3+12R	8.5+11R	8.7+9R	8.8+8R
	VSC @ 8"	q	1915	1925	1846	1862	1802	1820	1773	1751	1735
		F	5.4+22R	5.5+19R	5.9+17R	5.9+15R	6.2+13R	6.2+12R	6.4+11R	6.5+10R	6.7+8R
	VSC @ 4"	q	2622	2605	2591	2580	2572	2564	2558	2549	2541
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK63 = Pneutek SDK63075 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- **3 Pneutek® Fastener Pattern at Supports**
  SDK61 at Supports 0.155-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	235	252	221	236	212	225	206	202	199
		F	19.3+127R	18.6+109R	22.4+95R	21.3+84R	24.3+75R	23.1+69R	25.6+63R	26.5+54R	27.2+47R
	VSC @ 12"	q	393	384	378	373	369	365	363	358	355
		F	9.2+129R	10.6+110R	11.5+97R	12.3+86R	12.9+77R	13.4+70R	13.9+64R	14.5+55R	15.0+48R
	VSC @ 8"	q	510	518	498	506	491	499	487	483	480
		F	5.4+129R	6.3+111R	7.6+97R	8.0+86R	8.8+78R	9.1+71R	9.7+65R	10.3+55R	10.8+48R
	VSC @ 4"	q	720	717	715	714	712	711	710	709	708
		F	1.3+130R	2.5+111R	3.3+97R	4.0+86R	4.6+78R	5.0+71R	5.4+65R	6.0+56R	6.4+49R
20	VSC @ 24"	q	333	361	316	339	306	324	299	294	289
		F	17.9+80R	17.0+69R	20.0+59R	19.0+53R	21.3+47R	20.2+43R	22.2+39R	22.8+34R	23.3+30R
	VSC @ 12"	q	542	533	526	521	517	513	510	506	502
		F	9.3+81R	10.2+70R	10.8+61R	11.4+54R	11.8+49R	12.1+44R	12.4+41R	12.8+35R	13.1+30R
	VSC @ 8"	q	691	702	680	690	673	682	668	665	662
		F	6.1+82R	6.6+70R	7.5+61R	7.7+55R	8.3+49R	8.4+45R	8.9+41R	9.3+35R	9.6+31R
	VSC @ 4"	q	920	918	917	915	914	913	913	911	911
		F	2.7+82R	3.4+70R	4.0+62R	4.4+55R	4.8+49R	5.0+45R	5.3+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	520	556	496	527	481	508	471	463	458
		F	15.6+38R	14.6+33R	16.8+29R	15.8+26R	17.5+23R	16.6+21R	18.0+19R	18.4+16R	18.7+14R
	VSC @ 12"	q	817	808	800	795	790	786	783	778	774
		F	8.7+40R	9.2+34R	9.5+30R	9.8+26R	10.0+24R	10.1+22R	10.3+20R	10.5+17R	10.7+15R
	VSC @ 8"	q	1012	1027	1001	1015	995	1007	990	987	984
		F	6.2+40R	6.3+34R	6.8+30R	6.9+27R	7.3+24R	7.3+22R	7.5+20R	7.7+17R	7.9+15R
	VSC @ 4"	q	1266	1265	1263	1262	1262	1261	1260	1259	1259
		F	3.5+40R	3.8+34R	4.1+30R	4.3+27R	4.5+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	696	746	668	711	650	688	639	630	624
		F	13.9+21R	12.9+19R	14.7+16R	13.8+14R	15.3+13R	14.4+12R	15.6+11R	15.9+9R	16.1+8R
	VSC @ 12"	q	1077	1067	1059	1053	1048	1044	1041	1035	1031
		F	8.0+22R	8.3+19R	8.5+17R	8.6+15R	8.8+13R	8.9+12R	9.0+11R	9.1+10R	9.2+8R
	VSC @ 8"	q	1308	1326	1297	1313	1291	1305	1286	1283	1280
		F	5.8+23R	5.8+19R	6.2+17R	6.2+15R	6.5+14R	6.4+12R	6.6+11R	6.7+10R	6.8+9R
	VSC @ 4"	q	1582	1580	1579	1578	1578	1577	1577	1576	1575
		F	3.5+23R	3.7+20R	3.8+17R	4.0+15R	4.1+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK61 = Pneutek SDK61075 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 4 Pneutek® Fastener Pattern at Supports
  SDK61 at Supports 0.113-0.155" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

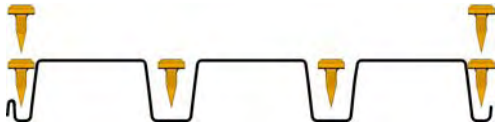
Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	298	306	268	278	250	259	238	229	223
		F	17.1+126R	17.0+108R	20.5+94R	19.9+84R	22.7+75R	21.9+68R	24.2+62R	25.3+53R	26.1+46R
	VSC @ 12"	q	461	444	432	422	414	408	402	394	387
		F	8.6+128R	10.0+110R	11.0+96R	11.8+85R	12.5+77R	13.0+70R	13.5+64R	14.2+55R	14.7+48R
	VSC @ 8"	q	592	595	567	573	552	558	542	535	529
		F	5.1+129R	6.0+111R	7.3+97R	7.8+86R	8.6+77R	8.9+70R	9.5+65R	10.2+55R	10.6+48R
	VSC @ 4"	q	864	856	850	846	842	839	836	832	829
		F	1.2+130R	2.4+111R	3.3+97R	4.0+86R	4.5+78R	5.0+71R	5.3+65R	5.9+56R	6.4+49R
20	VSC @ 24"	q	408	426	372	390	351	367	337	326	319
		F	16.2+79R	15.8+68R	18.6+59R	17.9+53R	20.1+47R	19.3+43R	21.1+39R	21.9+33R	22.5+29R
	VSC @ 12"	q	630	612	598	588	579	572	566	557	549
		F	8.8+81R	9.7+69R	10.4+61R	11.0+54R	11.4+49R	11.8+44R	12.1+40R	12.5+35R	12.9+30R
	VSC @ 8"	q	805	813	780	789	764	773	754	746	740
		F	5.9+82R	6.4+70R	7.3+61R	7.5+54R	8.2+49R	8.3+45R	8.7+41R	9.2+35R	9.5+31R
	VSC @ 4"	q	1126	1119	1114	1111	1107	1105	1103	1099	1097
		F	2.6+82R	3.4+70R	3.9+62R	4.4+55R	4.7+49R	5.0+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	620	646	573	600	545	569	526	512	501
		F	14.3+38R	13.7+33R	15.8+28R	15.0+25R	16.7+22R	15.9+20R	17.3+18R	17.7+16R	18.1+14R
	VSC @ 12"	q	948	928	912	900	890	882	875	864	856
		F	8.3+39R	8.8+34R	9.2+29R	9.5+26R	9.7+24R	9.9+21R	10.1+20R	10.3+17R	10.5+15R
	VSC @ 8"	q	1193	1208	1167	1182	1151	1165	1140	1132	1126
		F	6.0+40R	6.2+34R	6.7+30R	6.8+27R	7.2+24R	7.2+22R	7.5+20R	7.7+17R	7.8+15R
	VSC @ 4"	q	1582	1576	1572	1569	1566	1564	1562	1559	1557
		F	3.4+40R	3.8+34R	4.1+30R	4.3+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	821	861	766	805	733	767	710	693	681
		F	12.9+21R	12.2+18R	13.9+15R	13.2+14R	14.5+12R	13.8+11R	15.0+10R	15.3+9R	15.6+7R
	VSC @ 12"	q	1254	1231	1214	1200	1189	1180	1172	1160	1151
		F	7.7+22R	8.0+19R	8.2+17R	8.4+15R	8.6+13R	8.7+12R	8.8+11R	9.0+9R	9.1+8R
	VSC @ 8"	q	1558	1578	1530	1549	1513	1531	1502	1493	1487
		F	5.6+23R	5.7+19R	6.1+17R	6.1+15R	6.4+14R	6.3+12R	6.5+11R	6.7+10R	6.8+8R
	VSC @ 4"	q	1997	1992	1989	1986	1983	1981	1980	1977	1975
		F	3.4+23R	3.7+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK61 = Pneutek SDK61075 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 6 Pneutek® Fastener Pattern at Supports
  SDK61 at Supports 0.113-0.155" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized



Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	404	397	347	348	313	317	291	274	262
		F	13.8+125R	14.4+108R	17.6+93R	17.5+83R	20.1+74R	19.7+67R	21.8+61R	23.1+52R	24.1+45R
	VSC @ 12"	q	581	549	525	506	491	478	468	452	440
		F	7.4+128R	8.9+110R	10.0+96R	10.9+85R	11.7+76R	12.3+69R	12.8+64R	13.6+54R	14.2+48R
	VSC @ 8"	q	735	725	682	680	649	650	627	611	599
		F	4.5+129R	5.5+110R	6.8+97R	7.4+86R	8.2+77R	8.5+70R	9.2+64R	9.9+55R	10.4+48R
	VSC @ 4"	q	1082	1061	1045	1033	1022	1014	1007	995	987
		F	1.1+130R	2.3+111R	3.2+97R	3.8+86R	4.4+78R	4.9+71R	5.2+65R	5.8+55R	6.3+49R
20	VSC @ 24"	q	533	533	466	473	426	435	399	380	366
		F	13.5+79R	13.7+67R	16.3+58R	16.0+52R	18.0+46R	17.6+42R	19.3+38R	20.2+32R	21.0+28R
	VSC @ 12"	q	790	753	725	702	684	669	657	637	622
		F	7.9+81R	8.9+69R	9.7+60R	10.3+54R	10.8+48R	11.2+44R	11.5+40R	12.1+34R	12.5+30R
	VSC @ 8"	q	992	987	935	937	899	904	875	857	844
		F	5.4+81R	6.0+70R	6.9+61R	7.2+54R	7.9+49R	8.0+44R	8.5+41R	8.9+35R	9.3+30R
	VSC @ 4"	q	1441	1421	1405	1393	1383	1375	1368	1357	1349
		F	2.5+82R	3.3+70R	3.8+61R	4.3+55R	4.6+49R	4.9+45R	5.2+41R	5.6+35R	5.8+31R
18	VSC @ 24"	q	787	799	699	719	647	668	612	588	569
		F	12.3+37R	12.2+32R	14.0+28R	13.6+25R	15.2+22R	14.7+20R	16+18R	16.6+15R	17.0+13R
	VSC @ 12"	q	1174	1129	1095	1067	1045	1027	1012	988	970
		F	7.7+39R	8.2+33R	8.7+29R	9.0+26R	9.3+23R	9.5+21R	9.7+19R	10.0+17R	10.2+14R
	VSC @ 8"	q	1477	1480	1411	1421	1370	1382	1342	1322	1306
		F	5.6+40R	5.9+34R	6.5+30R	6.6+26R	6.9+24R	7.0+22R	7.3+20R	7.5+17R	7.7+15R
	VSC @ 4"	q	2081	2062	2047	2035	2026	2018	2011	2001	1993
		F	3.3+40R	3.7+34R	4.0+30R	4.2+27R	4.4+24R	4.5+22R	4.7+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	1037	1064	931	964	868	900	825	795	772
		F	11.2+21R	10.9+18R	12.5+15R	12.0+13R	13.3+12R	12.8+11R	13.9+10R	14.4+8R	14.7+7R
	VSC @ 12"	q	1547	1495	1455	1424	1398	1377	1359	1331	1310
		F	7.1+22R	7.5+19R	7.8+16R	8.0+15R	8.2+13R	8.3+12R	8.5+11R	8.7+9R	8.8+8R
	VSC @ 8"	q	1941	1950	1868	1884	1822	1840	1791	1768	1751
		F	5.4+22R	5.5+19R	5.9+17R	5.9+15R	6.2+13R	6.2+12R	6.4+11R	6.5+10R	6.7+8R
	VSC @ 4"	q	2672	2653	2639	2627	2617	2610	2603	2593	2585
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. SDK61 = Pneutek SDK61075 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 3 Hilti Fastener Pattern at Supports
  X-ENP-19 at Supports ¼" thick and thicker
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	238	255	223	238	214	227	208	203	200
		F	11.3+126R	12.3+107R	15.2+93R	15.6+83R	17.9+74R	17.9+67R	19.8+61R	21.3+52R	22.4+45R
	VSC @ 12"	q	399	390	383	378	373	370	367	362	359
		F	6.4+128R	8.0+109R	9.2+95R	10.1+85R	10.9+76R	11.6+69R	12.1+63R	13.0+54R	13.6+47R
	VSC @ 8"	q	520	528	507	515	499	507	494	490	488
		F	4.0+129R	5.1+110R	6.4+96R	7.0+86R	7.9+77R	8.2+70R	8.9+64R	9.6+55R	10.1+48R
	VSC @ 4"	q	743	739	737	735	734	732	731	729	728
		F	0.9+129R	2.1+111R	3+97R	3.7+86R	4.3+78R	4.8+71R	5.2+65R	5.8+55R	6.2+48R
20	VSC @ 24"	q	337	365	319	343	308	328	301	296	292
		F	11.5+79R	12.1+67R	14.4+58R	14.4+52R	16.3+46R	16.1+42R	17.7+38R	18.8+32R	19.6+28R
	VSC @ 12"	q	553	543	536	530	525	521	518	513	509
		F	7.1+81R	8.2+69R	9+60R	9.7+53R	10.2+48R	10.6+43R	11+40R	11.6+34R	12.1+30R
	VSC @ 8"	q	708	720	696	707	688	698	683	679	676
		F	5.0+81R	5.7+70R	6.6+61R	6.9+54R	7.6+49R	7.8+44R	8.2+40R	8.7+35R	9.1+30R
	VSC @ 4"	q	958	955	953	951	950	949	948	947	946
		F	2.4+82R	3.1+70R	3.7+61R	4.2+55R	4.6+49R	4.9+45R	5.1+41R	5.5+35R	5.8+31R
18	VSC @ 24"	q	532	568	505	537	489	516	478	470	464
		F	10.8+37R	10.9+32R	12.6+27R	12.5+24R	13.9+21R	13.6+20R	14.8+18R	15.5+15R	16.0+13R
	VSC @ 12"	q	840	829	821	815	809	805	802	796	791
		F	7.1+39R	7.7+33R	8.2+29R	8.5+26R	8.8+23R	9.1+21R	9.3+19R	9.7+16R	9.9+14R
	VSC @ 8"	q	1050	1067	1037	1052	1030	1043	1024	1021	1018
		F	5.3+39R	5.6+34R	6.2+30R	6.3+26R	6.7+24R	6.8+21R	7.1+20R	7.3+17R	7.5+15R
	VSC @ 4"	q	1338	1335	1334	1333	1332	1331	1330	1329	1328
		F	3.2+40R	3.6+34R	3.9+30R	4.1+27R	4.3+24R	4.5+22R	4.6+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	715	766	683	727	664	702	651	641	634
		F	9.9+21R	9.9+18R	11.3+15R	11.1+13R	12.2+11R	11.9+11R	12.9+9R	13.5+8R	13.9+7R
	VSC @ 12"	q	1117	1105	1096	1089	1083	1078	1074	1068	1063
		F	6.6+22R	7.0+19R	7.4+16R	7.6+14R	7.8+13R	8.0+12R	8.2+11R	8.4+9R	8.6+8R
	VSC @ 8"	q	1373	1394	1360	1378	1352	1368	1346	1342	1339
		F	5.1+22R	5.3+19R	5.7+17R	5.7+15R	6.0+13R	6.0+12R	6.3+11R	6.4+9R	6.5+8R
	VSC @ 4"	q	1695	1693	1691	1690	1689	1689	1688	1687	1686
		F	3.3+23R	3.5+19R	3.7+17R	3.8+15R	4.0+14R	4.0+12R	4.1+11R	4.2+10R	4.3+9R

Notes:
1. X-ENP-19 = Hilti X-ENP-19 L15 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- **4 Hilti Fastener Pattern at Supports**
  X-ENP-19 at Supports ¼" thick and thicker
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	304	312	273	282	254	263	241	232	225
		F	8.1+126R	9.5+108R	12.0+93R	12.8+83R	14.8+74R	15.1+67R	16.8+61R	18.4+51R	19.7+44R
	VSC @ 12"	q	469	452	439	429	420	413	408	398	392
		F	4.9+128R	6.5+109R	7.8+95R	8.9+84R	9.7+76R	10.4+69R	11+63R	12+54R	12.7+47R
	VSC @ 8"	q	603	606	577	582	561	567	550	542	536
		F	3.1+128R	4.3+110R	5.6+96R	6.3+85R	7.2+77R	7.6+70R	8.3+64R	9.1+55R	9.7+48R
	VSC @ 4"	q	887	878	872	867	863	859	856	852	849
		F	0.6+129R	1.9+111R	2.8+97R	3.5+86R	4.1+78R	4.6+70R	5.0+65R	5.6+55R	6.1+48R
20	VSC @ 24"	q	416	433	379	395	356	372	341	330	322
		F	8.8+79R	9.8+67R	11.7+58R	12.2+52R	13.8+46R	13.9+41R	15.3+37R	16.5+32R	17.5+27R
	VSC @ 12"	q	643	624	609	598	589	581	574	564	557
		F	5.9+80R	7.0+69R	7.9+60R	8.6+53R	9.2+48R	9.7+43R	10.1+40R	10.8+34R	11.3+29R
	VSC @ 8"	q	824	831	796	805	779	788	767	759	753
		F	4.3+81R	5.1+69R	6.0+61R	6.4+54R	7.1+48R	7.3+44R	7.8+40R	8.3+34R	8.7+30R
	VSC @ 4"	q	1165	1158	1152	1148	1144	1141	1139	1135	1132
		F	2.1+82R	3.0+70R	3.6+61R	4.0+54R	4.4+49R	4.7+45R	5.0+41R	5.4+35R	5.7+31R
18	VSC @ 24"	q	638	663	587	613	556	580	535	520	509
		F	8.7+38R	9.2+32R	10.6+27R	10.8+24R	12+21R	11.9+19R	13+17R	13.8+14R	14.4+12R
	VSC @ 12"	q	975	952	935	921	910	901	893	881	872
		F	6.2+39R	6.8+33R	7.4+29R	7.8+25R	8.1+23R	8.4+21R	8.7+19R	9.1+16R	9.4+14R
	VSC @ 8"	q	1233	1248	1203	1218	1184	1199	1172	1162	1155
		F	4.8+39R	5.2+34R	5.8+29R	6.0+26R	6.4+23R	6.5+21R	6.8+19R	7.1+17R	7.3+15R
	VSC @ 4"	q	1661	1654	1649	1645	1642	1639	1637	1634	1631
		F	3.1+40R	3.5+34R	3.8+30R	4.0+27R	4.2+24R	4.4+22R	4.5+20R	4.7+17R	4.9+15R
16	VSC @ 24"	q	849	887	788	825	750	785	725	707	693
		F	8.1+21R	8.4+18R	9.6+15R	9.6+13R	10.6+11R	10.5+10R	11.4+9R	12.1+7R	12.6+6R
	VSC @ 12"	q	1298	1272	1252	1236	1223	1213	1204	1190	1179
		F	5.9+22R	6.3+19R	6.7+16R	7.0+14R	7.3+13R	7.5+11R	7.7+10R	7.9+9R	8.2+8R
	VSC @ 8"	q	1625	1646	1593	1613	1572	1591	1558	1548	1541
		F	4.7+22R	4.9+19R	5.3+17R	5.4+15R	5.7+13R	5.8+12R	6.0+11R	6.2+9R	6.3+8R
	VSC @ 4"	q	2126	2120	2115	2111	2108	2106	2103	2100	2097
		F	3.2+23R	3.4+19R	3.6+17R	3.7+15R	3.9+14R	4.0+12R	4.0+11R	4.2+10R	4.3+8R

Notes:
1. X-ENP-19 = Hilti X-ENP-19 L15 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 6 Hilti Fastener Pattern at Supports
- X-ENP-19 at Supports ¼" thick and thicker
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	415	407	356	356	320	323	296	279	267
		F	4.6+127R	6.3+108R	8.3+94R	9.3+83R	11+74R	11.6+67R	13+61R	14.6+51R	16.0+44R
	VSC @ 12"	q	593	559	533	513	498	485	474	457	444
		F	3.0+128R	4.6+109R	6.0+95R	7.0+84R	7.9+76R	8.7+69R	9.3+63R	10.4+53R	11.2+47R
	VSC @ 8"	q	751	739	694	691	660	660	636	619	606
		F	1.9+128R	3.2+110R	4.5+96R	5.3+85R	6.2+76R	6.7+69R	7.4+64R	8.2+54R	8.9+47R
	VSC @ 4"	q	1107	1085	1067	1053	1042	1033	1025	1013	1003
		F	0.1+129R	1.4+111R	2.4+97R	3.2+86R	3.8+77R	4.3+70R	4.7+64R	5.4+55R	5.9+48R
20	VSC @ 24"	q	549	546	478	484	435	444	407	387	371
		F	5.9+80R	7.0+68R	8.6+59R	9.3+52R	10.6+46R	11.0+42R	12.1+38R	13.4+32R	14.4+27R
	VSC @ 12"	q	811	771	741	717	697	681	668	647	631
		F	4.3+80R	5.5+69R	6.4+60R	7.2+53R	7.8+47R	8.3+43R	8.8+39R	9.6+33R	10.2+29R
	VSC @ 8"	q	1017	1009	954	955	916	920	889	870	856
		F	3.3+81R	4.2+69R	5.1+60R	5.6+54R	6.3+48R	6.6+44R	7.1+40R	7.6+34R	8.1+30R
	VSC @ 4"	q	1483	1461	1443	1430	1419	1410	1402	1390	1380
		F	1.8+82R	2.6+70R	3.2+61R	3.7+54R	4.1+49R	4.5+44R	4.7+41R	5.2+35R	5.5+30R
18	VSC @ 24"	q	812	821	718	736	662	682	625	598	578
		F	6.3+38R	7.0+32R	8.1+28R	8.5+24R	9.5+21R	9.7+19R	10.5+17R	11.4+14R	12.1+12R
	VSC @ 12"	q	1210	1161	1123	1093	1069	1049	1033	1006	986
		F	5.0+39R	5.6+33R	6.2+29R	6.7+25R	7.1+23R	7.4+21R	7.7+19R	8.2+16R	8.5+14R
	VSC @ 8"	q	1523	1523	1449	1457	1404	1415	1372	1350	1332
		F	4.1+39R	4.6+34R	5.1+29R	5.4+26R	5.8+23R	5.9+21R	6.2+19R	6.6+16R	6.8+14R
	VSC @ 4"	q	2167	2145	2127	2114	2102	2093	2085	2073	2063
		F	2.8+40R	3.2+34R	3.6+30R	3.8+26R	4.0+24R	4.2+22R	4.4+20R	4.6+17R	4.8+15R
16	VSC @ 24"	q	1074	1096	959	989	890	920	844	811	786
		F	6.1+21R	6.6+18R	7.5+15R	7.7+13R	8.5+11R	8.7+10R	9.4+9R	10.0+7R	10.6+6R
	VSC @ 12"	q	1604	1545	1501	1465	1437	1413	1393	1362	1338
		F	4.8+22R	5.3+18R	5.7+16R	6.1+14R	6.4+13R	6.6+11R	6.8+10R	7.2+9R	7.5+8R
	VSC @ 8"	q	2017	2022	1932	1946	1879	1896	1844	1817	1798
		F	4.1+22R	4.4+19R	4.8+16R	4.9+15R	5.2+13R	5.3+12R	5.5+11R	5.8+9R	6.0+8R
	VSC @ 4"	q	2816	2793	2775	2760	2749	2739	2731	2718	2708
		F	2.9+23R	3.2+19R	3.4+17R	3.6+15R	3.7+13R	3.8+12R	3.9+11R	4.1+10R	4.2+8R

Notes:
1. X-ENP-19 = Hilti X-ENP-19 L15 fastener
2. VSC = Verco Sidelap Connection

Type PLN™-24

- **3 Hilti Fastener Pattern at Supports**
  X-EDN19 at Supports 0.250-⅜" thick
  X-EDNK22 at Supports ⅛-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	234	251	220	235	211	224	206	202	199
		F	14.7+126R	15.1+108R	18.4+93R	18.2+83R	20.8+74R	20.3+68R	22.5+61R	23.8+52R	24.7+46R
	VSC @ 12"	q	389	381	375	370	366	363	361	356	353
		F	7.7+128R	9.2+110R	10.3+96R	11.2+85R	11.9+77R	12.5+70R	13.0+64R	13.8+55R	14.4+48R
	VSC @ 8"	q	505	513	494	502	487	494	483	479	477
		F	4.7+129R	5.7+111R	7+97R	7.5+86R	8.4+77R	8.6+70R	9.3+64R	10.0+55R	10.5+48R
	VSC @ 4"	q	709	706	704	703	702	700	700	698	697
		F	1.1+130R	2.3+111R	3.2+97R	3.9+86R	4.4+78R	4.9+71R	5.3+65R	5.9+56R	6.3+49R
20	VSC @ 24"	q	332	359	315	337	305	323	298	293	288
		F	14.3+79R	14.3+68R	16.9+58R	16.5+52R	18.6+46R	18.1+42R	19.8+38R	20.7+33R	21.4+28R
	VSC @ 12"	q	538	530	523	518	514	511	508	503	500
		F	8.2+81R	9.2+69R	9.9+60R	10.5+54R	11+48R	11.4+44R	11.7+40R	12.2+34R	12.6+30R
	VSC @ 8"	q	685	696	674	684	668	677	663	660	657
		F	5.5+81R	6.1+70R	7.0+61R	7.3+54R	8.0+49R	8.1+44R	8.6+41R	9.0+35R	9.3+30R
	VSC @ 4"	q	908	906	905	904	903	902	901	900	899
		F	2.5+82R	3.3+70R	3.9+61R	4.3+55R	4.7+49R	4.9+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	520	556	495	527	480	508	470	463	458
		F	12.9+37R	12.6+32R	14.5+28R	14+25R	15.6+22R	15.0+20R	16.4+18R	16.9+15R	17.3+13R
	VSC @ 12"	q	816	806	799	793	789	785	782	777	773
		F	7.9+39R	8.4+33R	8.8+29R	9.1+26R	9.4+23R	9.6+21R	9.8+19R	10.1+17R	10.3+15R
	VSC @ 8"	q	1009	1025	999	1012	992	1004	988	985	982
		F	5.7+40R	6.0+34R	6.5+30R	6.6+26R	7.0+24R	7.0+22R	7.3+20R	7.6+17R	7.7+15R
	VSC @ 4"	q	1262	1260	1259	1258	1257	1256	1256	1255	1254
		F	3.3+40R	3.7+34R	4+30R	4.2+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	698	749	669	713	652	689	640	631	625
		F	11.7+21R	11.3+18R	12.9+15R	12.4+14R	13.7+12R	13.1+11R	14.2+10R	14.6+8R	15.0+7R
	VSC @ 12"	q	1082	1072	1064	1057	1052	1048	1045	1039	1035
		F	7.3+22R	7.6+19R	7.9+16R	8.1+15R	8.3+13R	8.5+12R	8.6+11R	8.8+9R	8.9+8R
	VSC @ 8"	q	1315	1334	1304	1321	1298	1312	1293	1290	1287
		F	5.5+23R	5.5+19R	5.9+17R	6.0+15R	6.2+13R	6.2+12R	6.4+11R	6.6+10R	6.7+8R
	VSC @ 4"	q	1595	1593	1592	1591	1590	1590	1589	1588	1588
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. X-EDN19 = Hilti X-EDN19 THQ12 fastener
2. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
3. VSC = Verco Sidelap Connection

Type PLN™-24

- 4 Hilti Fastener Pattern at Supports
  - X-EDN19 at Supports 0.250-⅜" thick
  - X-EDNK22 at Supports ⅛-0.250" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	295	304	266	276	248	258	236	228	222
		F	11.6+126R	12.6+107R	15.5+93R	15.8+83R	18.2+74R	18.1+67R	20.1+61R	21.5+52R	22.7+45R
	VSC @ 12"	q	456	441	428	419	411	405	400	392	385
		F	6.5+128R	8.1+109R	9.3+95R	10.2+85R	11.0+76R	11.7+69R	12.2+63R	13.1+54R	13.7+47R
	VSC @ 8"	q	586	590	562	568	548	554	538	531	526
		F	4.0+129R	5.1+110R	6.4+96R	7.0+86R	7.9+77R	8.3+70R	8.9+64R	9.6+55R	10.2+48R
	VSC @ 4"	q	852	845	839	835	831	829	826	822	819
		F	0.9+129R	2.1+111R	3.0+97R	3.7+86R	4.3+78R	4.8+71R	5.2+65R	5.8+55R	6.2+49R
20	VSC @ 24"	q	406	423	370	388	349	366	335	325	318
		F	11.7+79R	12.3+67R	14.6+58R	14.6+52R	16.5+46R	16.3+42R	17.9+38R	19.0+32R	19.8+28R
	VSC @ 12"	q	625	608	595	584	576	569	563	554	547
		F	7.2+81R	8.3+69R	9.1+60R	9.7+53R	10.3+48R	10.7+44R	11.1+40R	11.7+34R	12.1+30R
	VSC @ 8"	q	798	807	774	783	759	768	749	742	736
		F	5.1+81R	5.7+70R	6.6+61R	7.0+54R	7.6+49R	7.8+44R	8.3+40R	8.7+35R	9.1+30R
	VSC @ 4"	q	1113	1107	1102	1098	1095	1093	1091	1088	1085
		F	2.4+82R	3.2+70R	3.7+61R	4.2+55R	4.6+49R	4.9+45R	5.1+41R	5.5+35R	5.8+31R
18	VSC @ 24"	q	619	645	573	599	544	569	525	511	501
		F	11.0+37R	11.1+32R	12.8+27R	12.6+24R	14+21R	13.7+20R	14.9+18R	15.6+15R	16.2+13R
	VSC @ 12"	q	947	926	911	899	889	881	874	863	855
		F	7.2+39R	7.8+33R	8.2+29R	8.6+26R	8.9+23R	9.2+21R	9.4+19R	9.7+16R	10.0+14R
	VSC @ 8"	q	1191	1205	1165	1180	1149	1163	1138	1130	1124
		F	5.4+39R	5.7+34R	6.2+30R	6.4+26R	6.8+24R	6.8+21R	7.1+20R	7.4+17R	7.6+15R
	VSC @ 4"	q	1576	1571	1567	1564	1561	1559	1557	1554	1552
		F	3.2+40R	3.6+34R	3.9+30R	4.2+27R	4.3+24R	4.5+22R	4.6+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	824	864	769	807	735	769	712	695	682
		F	10.1+21R	10.0+18R	11.4+15R	11.2+13R	12.4+12R	12.1+11R	13.1+9R	13.6+8R	14.0+7R
	VSC @ 12"	q	1259	1236	1218	1204	1193	1184	1176	1163	1154
		F	6.7+22R	7.1+19R	7.4+16R	7.7+14R	7.9+13R	8.1+12R	8.2+11R	8.5+9R	8.6+8R
	VSC @ 8"	q	1565	1585	1537	1557	1520	1538	1508	1500	1493
		F	5.2+22R	5.3+19R	5.7+17R	5.8+15R	6.0+13R	6.0+12R	6.3+11R	6.4+9R	6.6+8R
	VSC @ 4"	q	2012	2007	2003	2000	1997	1995	1994	1991	1989
		F	3.3+23R	3.5+20R	3.7+17R	3.8+15R	4.0+14R	4.0+12R	4.1+11R	4.2+10R	4.3+9R

Notes:
1. X-EDN19 = Hilti X-EDN19 THQ12 fastener
2. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
3. VSC = Verco Sidelap Connection

Type PLN™-24

- **6 Hilti Fastener Pattern at Supports**
  X-EDN19 at Supports 0.250-⅜" thick
  X-EDNK22 at Supports ⅛-0.250" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	398	392	343	344	310	314	288	272	260
		F	7.8+126R	9.3+108R	11.7+93R	12.5+83R	14.5+74R	14.9+67R	16.5+61R	18.1+51R	19.4+44R
	VSC @ 12"	q	576	544	521	502	487	475	465	450	438
		F	4.7+128R	6.4+109R	7.7+95R	8.7+84R	9.6+76R	10.3+69R	10.9+63R	11.9+54R	12.6+47R
	VSC @ 8"	q	727	717	676	674	644	645	622	607	595
		F	3.0+128R	4.3+110R	5.6+96R	6.3+85R	7.2+77R	7.6+70R	8.2+64R	9.0+55R	9.6+48R
	VSC @ 4"	q	1070	1050	1034	1022	1012	1004	997	986	978
		F	0.6+129R	1.8+111R	2.8+97R	3.5+86R	4.1+77R	4.6+70R	5.0+65R	5.6+55R	6.1+48R
20	VSC @ 24"	q	528	529	463	470	423	433	397	378	364
		F	8.6+79R	9.5+67R	11.5+58R	11.9+52R	13.5+46R	13.7+41R	15.0+37R	16.3+32R	17.2+27R
	VSC @ 12"	q	784	748	720	698	680	666	653	634	619
		F	5.8+80R	6.9+69R	7.8+60R	8.5+53R	9.1+48R	9.6+43R	10.0+39R	10.7+34R	11.3+29R
	VSC @ 8"	q	985	980	928	931	894	899	870	853	840
		F	4.2+81R	5.0+69R	6.0+61R	6.4+54R	7.0+48R	7.3+44R	7.7+40R	8.3+34R	8.7+30R
	VSC @ 4"	q	1427	1408	1393	1381	1372	1364	1357	1347	1339
		F	2.1+82R	2.9+70R	3.5+61R	4.0+54R	4.4+49R	4.7+45R	5.0+41R	5.4+35R	5.7+31R
18	VSC @ 24"	q	785	798	698	718	646	667	612	587	568
		F	8.5+38R	9+32R	10.4+27R	10.6+24R	11.8+21R	11.8+19R	12.8+17R	13.6+14R	14.3+12R
	VSC @ 12"	q	1172	1127	1093	1066	1044	1026	1011	987	968
		F	6.1+39R	6.8+33R	7.3+29R	7.7+25R	8.1+23R	8.4+21R	8.6+19R	9.0+16R	9.3+14R
	VSC @ 8"	q	1474	1477	1409	1418	1368	1380	1340	1320	1304
		F	4.8+39R	5.2+34R	5.7+29R	5.9+26R	6.3+23R	6.4+21R	6.7+19R	7.0+17R	7.3+15R
	VSC @ 4"	q	2075	2056	2042	2030	2021	2013	2006	1996	1988
		F	3.0+40R	3.5+34R	3.8+30R	4.0+27R	4.2+24R	4.4+22R	4.5+20R	4.7+17R	4.9+15R
16	VSC @ 24"	q	1041	1068	934	967	870	902	827	797	774
		F	7.9+21R	8.2+18R	9.4+15R	9.5+13R	10.5+11R	10.4+10R	11.3+9R	11.9+7R	12.4+6R
	VSC @ 12"	q	1553	1501	1460	1428	1402	1381	1363	1335	1313
		F	5.8+22R	6.3+18R	6.6+16R	6.9+14R	7.2+13R	7.4+11R	7.6+10R	7.9+9R	8.1+8R
	VSC @ 8"	q	1950	1959	1875	1891	1829	1846	1797	1774	1757
		F	4.7+22R	4.9+19R	5.3+17R	5.4+15R	5.7+13R	5.7+12R	6.0+11R	6.2+9R	6.3+8R
	VSC @ 4"	q	2689	2669	2654	2642	2633	2625	2618	2607	2599
		F	3.1+23R	3.4+19R	3.6+17R	3.7+15R	3.9+14R	4.0+12R	4.0+11R	4.2+10R	4.3+8R

Notes:
1. X-EDN19 = Hilti X-EDN19 THQ12 fastener
2. X-EDNK22 = Hilti X-EDNK22 THQ12 fastener
3. VSC = Verco Sidelap Connection

Type PLN™-24

- 3 Screw Pattern at Supports
  #12 Screw at Supports ⅛" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	210	225	200	213	194	206	190	187	185
		F	14.9+126R	15.3+108R	18.6+93R	18.4+83R	21.0+74R	20.5+68R	22.7+61R	23.9+52R	24.9+46R
	VSC @ 12"	q	330	327	324	321	319	318	317	315	313
		F	7.8+128R	9.3+110R	10.4+96R	11.3+85R	12.0+77R	12.6+70R	13.0+64R	13.8+55R	14.4+48R
	VSC @ 8"	q	409	415	405	410	402	407	400	399	398
		F	4.7+129R	5.7+111R	7.0+97R	7.5+86R	8.4+77R	8.7+70R	9.3+64R	10.0+55R	10.5+48R
	VSC @ 4"	q	511	511	510	510	509	509	509	508	508
		F	1.1+130R	2.3+111R	3.2+97R	3.9+86R	4.4+78R	4.9+71R	5.3+65R	5.9+56R	6.3+49R
20	VSC @ 24"	q	293	314	282	300	275	291	271	266	261
		F	14.5+79R	14.5+68R	17.1+58R	16.7+52R	18.8+46R	18.2+42R	20.0+38R	20.9+33R	21.5+28R
	VSC @ 12"	q	448	444	441	439	437	436	435	433	431
		F	8.2+81R	9.2+69R	10.0+60R	10.5+54R	11.0+48R	11.4+44R	11.7+40R	12.2+34R	12.6+30R
	VSC @ 8"	q	537	544	533	539	531	536	529	528	527
		F	5.6+81R	6.2+70R	7.1+61R	7.4+54R	8.0+49R	8.1+44R	8.6+41R	9.0+35R	9.3+30R
	VSC @ 4"	q	637	637	636	636	636	636	635	635	635
		F	2.5+82R	3.3+70R	3.9+61R	4.3+55R	4.7+49R	5.0+45R	5.2+41R	5.6+35R	5.9+31R
18	VSC @ 24"	q	417	445	390	415	373	395	362	354	348
		F	13.0+38R	12.7+32R	14.7+28R	14.1+25R	15.7+22R	15.1+20R	16.5+18R	17.0+15R	17.4+13R
	VSC @ 12"	q	662	659	656	653	652	650	649	647	645
		F	7.9+39R	8.4+34R	8.9+29R	9.2+26R	9.4+23R	9.7+21R	9.8+19R	10.1+17R	10.3+15R
	VSC @ 8"	q	768	776	764	771	762	768	761	760	759
		F	5.8+40R	6.0+34R	6.5+30R	6.6+26R	7.0+24R	7.0+22R	7.3+20R	7.6+17R	7.7+15R
	VSC @ 4"	q	871	871	870	870	870	870	870	870	869
		F	3.3+40R	3.7+34R	4.0+30R	4.2+27R	4.4+24R	4.6+22R	4.7+20R	4.9+17R	5.0+15R
16	VSC @ 24"	q	522	557	488	519	467	494	453	443	436
		F	11.8+21R	11.4+18R	13.0+15R	12.5+14R	13.8+12R	13.2+11R	14.3+10R	14.7+8R	15.0+7R
	VSC @ 12"	q	868	865	861	859	850	843	837	827	819
		F	7.3+22R	7.7+19R	7.9+16R	8.2+15R	8.3+13R	8.5+12R	8.6+11R	8.8+9R	8.9+8R
	VSC @ 8"	q	989	999	986	994	984	991	983	982	981
		F	5.5+23R	5.6+19R	6.0+17R	6.0+15R	6.3+13R	6.2+12R	6.5+11R	6.6+10R	6.7+8R
	VSC @ 4"	q	1101	1101	1100	1100	1100	1100	1100	1099	1099
		F	3.4+23R	3.6+20R	3.8+17R	3.9+15R	4.0+14R	4.1+12R	4.2+11R	4.3+10R	4.4+9R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection

Type PLN™-24

- **4 Screw Pattern at Supports**
  #12 Screw at Supports ⅛" thick
- **Sidelaps Connected with PunchLok® Tool**
- **Primer Painted or Galvanized**

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	251	261	232	243	220	230	213	207	203
		F	11.9+125R	12.8+107R	15.8+93R	16.1+83R	18.4+74R	18.3+67R	20.3+61R	21.7+52R	22.9+45R
	VSC @ 12"	q	383	375	369	364	360	357	354	349	346
		F	6.6+128R	8.2+109R	9.4+96R	10.3+85R	11.1+76R	11.7+69R	12.3+63R	13.1+54R	13.8+47R
	VSC @ 8"	q	482	488	472	478	465	471	461	457	455
		F	4.1+129R	5.2+110R	6.5+96R	7.1+86R	8.0+77R	8.3+70R	8.9+64R	9.7+55R	10.2+48R
	VSC @ 4"	q	639	636	635	634	632	632	631	630	629
		F	0.9+129R	2.1+111R	3.1+97R	3.8+86R	4.3+78R	4.8+71R	5.2+65R	5.8+55R	6.2+49R
20	VSC @ 24"	q	344	362	322	339	309	323	296	287	280
		F	12.0+79R	12.5+67R	14.8+58R	14.8+52R	16.7+46R	16.5+42R	18.1+38R	19.1+32R	20.0+28R
	VSC @ 12"	q	523	514	508	503	499	495	492	488	484
		F	7.3+81R	8.4+69R	9.2+60R	9.8+53R	10.3+48R	10.8+44R	11.1+40R	11.7+34R	12.2+30R
	VSC @ 8"	q	644	652	634	642	628	635	624	621	618
		F	5.1+81R	5.8+70R	6.7+61R	7.0+54R	7.6+49R	7.8+44R	8.3+40R	8.8+35R	9.1+30R
	VSC @ 4"	q	809	808	806	805	805	804	803	803	802
		F	2.4+82R	3.2+70R	3.8+61R	4.2+55R	4.6+49R	4.9+45R	5.1+41R	5.5+35R	5.8+31R
18	VSC @ 24"	q	483	501	439	458	412	431	395	382	373
		F	11.1+37R	11.2+32R	13.0+27R	12.8+24R	14.2+21R	13.9+20R	15.1+18R	15.8+15R	16.3+13R
	VSC @ 12"	q	783	764	745	731	719	709	701	689	679
		F	7.2+39R	7.8+33R	8.3+29R	8.7+26R	9.0+23R	9.2+21R	9.4+19R	9.7+16R	10.0+14R
	VSC @ 8"	q	938	949	928	938	922	931	918	915	913
		F	5.4+39R	5.7+34R	6.3+30R	6.4+26R	6.8+24R	6.8+21R	7.1+20R	7.4+17R	7.6+15R
	VSC @ 4"	q	1122	1120	1119	1118	1118	1117	1117	1116	1115
		F	3.2+40R	3.6+34R	3.9+30R	4.2+27R	4.3+24R	4.5+22R	4.6+20R	4.8+17R	5.0+15R
16	VSC @ 24"	q	604	627	549	573	516	539	494	478	466
		F	10.2+21R	10.1+18R	11.6+15R	11.3+13R	12.5+12R	12.2+11R	13.2+9R	13.7+8R	14.1+7R
	VSC @ 12"	q	987	956	932	914	899	887	877	862	850
		F	6.8+22R	7.2+19R	7.5+16R	7.7+14R	7.9+13R	8.1+12R	8.3+11R	8.5+9R	8.7+8R
	VSC @ 8"	q	1221	1234	1211	1223	1205	1215	1200	1197	1195
		F	5.2+22R	5.3+19R	5.7+17R	5.8+15R	6.1+13R	6.1+12R	6.3+11R	6.5+10R	6.6+8R
	VSC @ 4"	q	1426	1424	1423	1423	1422	1422	1421	1420	1420
		F	3.3+23R	3.5+20R	3.7+17R	3.9+15R	4.0+14R	4.1+12R	4.1+11R	4.2+10R	4.3+9R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 6 Screw Pattern at Supports
- #12 Screw at Supports ⅛" thick
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	318	323	283	291	262	270	248	238	230
		F	8.0+126R	9.5+108R	12.0+93R	12.7+83R	14.7+74R	15.1+67R	16.8+61R	18.4+51R	19.7+44R
	VSC @ 12"	q	475	456	443	432	423	415	409	400	392
		F	4.9+128R	6.5+109R	7.8+95R	8.8+84R	9.7+76R	10.4+69R	11+63R	12.0+54R	12.7+47R
	VSC @ 8"	q	597	598	570	574	554	559	543	534	528
		F	3.1+128R	4.3+110R	5.6+96R	6.3+85R	7.2+77R	7.6+70R	8.3+64R	9.1+55R	9.7+48R
	VSC @ 4"	q	841	833	827	822	818	815	813	808	805
		F	0.6+129R	1.9+111R	2.8+97R	3.5+86R	4.1+78R	4.6+70R	5.0+65R	5.6+55R	6.1+48R
20	VSC @ 24"	q	434	447	391	407	366	377	345	329	317
		F	8.8+79R	9.7+67R	11.7+58R	12.1+52R	13.7+46R	13.9+41R	15.3+37R	16.5+32R	17.4+27R
	VSC @ 12"	q	645	625	610	598	588	580	573	559	547
		F	5.9+80R	7.0+69R	7.9+60R	8.6+53R	9.2+48R	9.7+43R	10.1+40R	10.8+34R	11.3+29R
	VSC @ 8"	q	807	812	780	787	762	770	751	742	736
		F	4.3+81R	5.1+69R	6.0+61R	6.4+54R	7.1+48R	7.3+44R	7.8+40R	8.3+34R	8.7+30R
	VSC @ 4"	q	1093	1087	1082	1078	1074	1072	1069	1066	1063
		F	2.1+82R	2.9+70R	3.6+61R	4.0+54R	4.4+49R	4.7+45R	5.0+41R	5.4+35R	5.7+31R
18	VSC @ 24"	q	613	613	537	545	491	502	460	438	422
		F	8.7+38R	9.1+32R	10.6+27R	10.7+24R	11.9+21R	11.9+19R	13.0+17R	13.8+14R	14.4+12R
	VSC @ 12"	q	920	876	843	818	797	781	767	745	728
		F	6.2+39R	6.8+33R	7.4+29R	7.8+25R	8.1+23R	8.4+21R	8.7+19R	9.1+16R	9.4+14R
	VSC @ 8"	q	1199	1209	1150	1158	1104	1115	1073	1051	1035
		F	4.8+39R	5.2+34R	5.8+29R	6.0+26R	6.4+23R	6.5+21R	6.8+19R	7.1+17R	7.3+15R
	VSC @ 4"	q	1553	1547	1542	1539	1536	1533	1531	1528	1526
		F	3.1+40R	3.5+34R	3.8+30R	4.0+27R	4.2+24R	4.4+22R	4.5+20R	4.7+17R	4.9+15R
16	VSC @ 24"	q	767	767	671	682	614	628	575	548	527
		F	8.1+21R	8.4+18R	9.6+15R	9.6+13R	10.6+11R	10.5+10R	11.4+9R	12.0+7R	12.5+6R
	VSC @ 12"	q	1151	1096	1055	1023	997	977	959	932	911
		F	5.9+22R	6.3+19R	6.7+16R	7.0+14R	7.3+13R	7.5+11R	7.6+10R	7.9+9R	8.2+8R
	VSC @ 8"	q	1535	1535	1439	1449	1381	1395	1343	1315	1295
		F	4.7+22R	4.9+19R	5.3+17R	5.4+15R	5.7+13R	5.8+12R	6.0+11R	6.2+9R	6.3+8R
	VSC @ 4"	q	1996	1990	1986	1982	1979	1977	1975	1972	1969
		F	3.2+23R	3.4+19R	3.6+17R	3.7+15R	3.9+14R	4.0+12R	4.0+11R	4.2+10R	4.3+8R

Notes:
1. Screw = #12 self-drilling, self-tapping screw
2. VSC = Verco Sidelap Connection

Type PLN™-24

- 4 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	VSC @ 24"	q	480	457	410	399	367	362	339	318	303
		F	20.4+51R	19.3+47R	24.3+44R	23.2+41R	27.9+39R	26.7+37R	31.2+36R	34.3+33R	37.2+31R
	VSC @ 18"	q	518	487	463	422	409	398	373	361	340
		F	15.0+51R	15.2+47R	15.5+44R	18.8+41R	18.9+39R	19.1+37R	22.1+36R	22.2+33R	25.0+31R
	VSC @ 12"	q	583	540	508	483	462	445	431	409	392
		F	10.0+51R	10.8+47R	11.5+44R	12.1+41R	12.8+39R	13.4+37R	13.9+36R	15.0+33R	16.1+31R
	VSC @ 8"	q	662	627	583	564	535	523	502	479	461
		F	7.0+51R	7.2+47R	7.8+44R	7.9+41R	8.5+39R	8.6+37R	9.2+36R	9.8+33R	10.3+31R
	VSC @ 6"	q	728	682	647	619	596	578	562	537	519
		F	5.7+51R	6.0+47R	6.2+44R	6.4+41R	6.7+39R	6.9+37R	7.1+36R	7.4+33R	7.8+31R
	VSC @ 4"	q	840	791	753	723	699	679	662	602	545
		F	4.5+51R	4.6+47R	4.7+44R	4.9+41R	5.0+39R	5.1+37R	5.2+36R	5.4+33R	5.6+31R
20	VSC @ 24"	q	680	646	580	563	518	510	477	448	426
		F	16.1+34R	15.4+31R	19.4+29R	18.5+27R	22.4+26R	21.5+25R	25.2+24R	27.8+22R	30.3+21R
	VSC @ 18"	q	733	687	652	595	576	560	525	507	477
		F	11.9+34R	12.1+31R	12.4+29R	15.1+27R	15.2+26R	15.4+25R	17.9+24R	18.1+22R	20.5+21R
	VSC @ 12"	q	820	759	713	677	648	624	604	573	549
		F	8.0+34R	8.7+31R	9.3+29R	9.8+27R	10.3+26R	10.9+25R	11.3+24R	12.3+22R	13.2+21R
	VSC @ 8"	q	927	877	815	787	747	730	701	668	644
		F	5.7+34R	5.8+31R	6.4+29R	6.5+27R	7.0+26R	7.0+25R	7.5+24R	8.0+22R	8.5+21R
	VSC @ 6"	q	1017	952	902	862	831	804	783	749	723
		F	4.6+34R	4.9+31R	5.1+29R	5.3+27R	5.4+26R	5.6+25R	5.8+24R	6.1+22R	6.4+21R
	VSC @ 4"	q	1169	1099	1046	1004	971	943	920	869	786
		F	3.7+34R	3.8+31R	3.9+29R	4.0+27R	4.1+26R	4.2+25R	4.3+24R	4.5+22R	4.6+21R

Notes:
1. VSC = Verco Sidelap Connection

Type PLN™-24

- 4 Weld Pattern at Supports
- Sidelaps Connected with PunchLok® Tool
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
18	VSC @ 24"	q	1072	1016	913	885	816	802	752	707	674
		F	10.9+18R	10.5+16R	13.2+15R	12.7+14R	15.4+14R	14.8+13R	17.4+12R	19.4+12R	21.3+11R
	VSC @ 18"	q	1151	1079	1023	934	904	879	825	798	754
		F	8.1+18R	8.3+16R	8.6+15R	10.4+14R	10.5+14R	10.7+13R	12.5+12R	12.7+12R	14.4+11R
	VSC @ 12"	q	1284	1188	1116	1060	1015	978	948	900	865
		F	5.6+18R	6.0+16R	6.4+15R	6.8+14R	7.2+14R	7.6+13R	8.0+12R	8.7+12R	9.3+11R
	VSC @ 8"	q	1446	1367	1272	1229	1167	1141	1097	1048	1012
		F	4.0+18R	4.1+16R	4.5+15R	4.6+14R	4.9+14R	5.0+13R	5.3+12R	5.7+12R	6.1+11R
	VSC @ 6"	q	1583	1481	1404	1343	1295	1256	1224	1173	1136
		F	3.3+18R	3.5+16R	3.6+15R	3.8+14R	3.9+14R	4.0+13R	4.2+12R	4.4+12R	4.6+11R
	VSC @ 4"	q	1812	1705	1624	1561	1511	1469	1435	1383	1345
		F	2.6+18R	2.7+16R	2.8+15R	2.9+14R	3.0+14R	3.0+13R	3.1+12R	3.2+12R	3.4+11R
16	VSC @ 24"	q	1439	1364	1227	1192	1101	1084	1017	959	916
		F	7.9+11R	7.7+10R	9.7+9R	9.4+9R	11.3+8R	11.0+8R	12.9+8R	14.4+7R	15.8+7R
	VSC @ 18"	q	1544	1448	1375	1257	1219	1187	1116	1083	1025
		F	6.0+11R	6.1+10R	6.3+9R	7.7+9R	7.8+8R	7.9+8R	9.2+8R	9.4+7R	10.8+7R
	VSC @ 12"	q	1720	1594	1500	1426	1368	1321	1282	1221	1178
		F	4.1+11R	4.5+10R	4.8+9R	5.1+9R	5.4+8R	5.7+8R	6.0+8R	6.5+7R	7.0+7R
	VSC @ 8"	q	1937	1834	1709	1654	1573	1541	1484	1423	1378
		F	3.0+11R	3.1+10R	3.4+9R	3.4+9R	3.7+8R	3.8+8R	4.0+8R	4.3+7R	4.6+7R
	VSC @ 6"	q	2119	1985	1885	1808	1746	1696	1655	1593	1547
		F	2.5+11R	2.6+10R	2.7+9R	2.9+9R	3.0+8R	3.1+8R	3.2+8R	3.3+7R	3.5+7R
	VSC @ 4"	q	2424	2285	2181	2100	2036	1985	1942	1877	1831
		F	2.0+11R	2.1+10R	2.2+9R	2.2+9R	2.3+8R	2.3+8R	2.4+8R	2.5+7R	2.6+7R

Notes:
1. VSC = Verco Sidelap Connection

Type N-24

- 4 Weld Pattern at Supports
- Button Punch, Screw, or 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
22	BP @ 24"	q	234	216	189	180	163	158	145	130	119
		F	21.3+166R	23.3+143R	26.7+125R	28.4+111R	31.8+100R	33.2+91R	36.6+83R	41.1+71R	45.4+62R
	BP @ 12"	q	285	260	241	227	216	207	198	184	173
		F	18.0+166R	19.8+143R	21.5+125R	23.1+111R	24.6+100R	26.1+91R	27.4+83R	29.9+71R	32.1+62R
	TSW @ 24"	q	234	231	201	202	181	183	167	158	151
		F	15.5+166R	13.9+143R	14.1+125R	12.9+111R	13.1+100R	12.1+91R	12.2+83R	11.5+71R	11.0+62R
	TSW @ 12"	q	343	324	309	298	289	282	276	267	260
		F	11.4+166R	10.7+143R	10.1+125R	9.6+111R	9.2+100R	8.8+91R	8.5+83R	8.0+71R	7.5+62R
20	BP @ 24"	q	355	323	283	266	240	231	212	189	171
		F	16.3+96R	18.2+82R	20.9+72R	22.5+64R	25.3+58R	26.8+52R	29.6+48R	33.8+41R	37.8+36R
	BP @ 12"	q	415	374	344	321	303	289	277	253	235
		F	14.3+96R	16.0+82R	17.6+72R	19.1+64R	20.5+58R	21.9+52R	23.2+48R	25.7+41R	28.1+36R
	TSW @ 24"	q	384	371	322	320	286	287	262	245	232
		F	12.3+96R	11.3+82R	11.5+72R	10.6+64R	10.8+58R	10.1+52R	10.2+48R	9.7+41R	9.3+36R
	TSW @ 12"	q	540	505	479	459	443	429	418	401	389
		F	9.4+96R	8.9+82R	8.5+72R	8.1+64R	7.8+58R	7.5+52R	7.2+48R	6.8+41R	6.5+36R
18	BP @ 24"	q	637	568	498	461	416	394	362	324	296
		F	10.6+41R	12.0+35R	13.8+31R	15.2+27R	17.1+24R	18.5+22R	20.5+20R	23.9+17R	27.3+15R
	BP @ 12"	q	710	632	574	530	494	466	443	407	381
		F	9.7+41R	11.0+35R	12.2+31R	13.5+27R	14.7+24R	15.9+22R	17.1+20R	19.4+17R	21.6+15R
	TSW @ 24"	q	819	773	670	652	582	576	524	483	453
		F	8.4+41R	7.9+35R	8.0+31R	7.6+27R	7.7+24R	7.3+22R	7.4+20R	7.2+17R	6.9+15R
	TSW @ 12"	q	1096	1011	948	899	860	828	802	761	730
		F	6.7+41R	6.4+35R	6.2+31R	6.0+27R	5.8+24R	5.6+22R	5.5+20R	5.2+17R	5.0+15R
16	BP @ 24"	q	918	812	712	654	590	554	509	453	411
		F	7.5+21R	8.6+18R	9.9+16R	11.0+14R	12.5+12R	13.6+11R	15.1+10R	17.9+9R	20.7+8R
	BP @ 12"	q	1000	884	797	731	678	636	601	547	508
		F	7.0+21R	8.0+18R	9.0+16R	10.0+14R	11.0+12R	12.0+11R	13.0+10R	15.0+9R	17.0+8R
	TSW @ 24"	q	1197	1137	1002	982	891	888	821	774	742
		F	6.1+21R	5.8+18R	5.9+16R	5.7+14R	5.8+12R	5.6+11R	5.7+10R	5.5+9R	5.4+8R
	TSW @ 12"	q	1558	1453	1378	1322	1280	1248	1223	1190	1170
		F	5.0+21R	4.8+18R	4.7+16R	4.6+14R	4.5+12R	4.4+11R	4.3+10R	4.1+9R	3.9+8R

Notes:
1. BP = Button Punch
2. TSW = Top Seam Weld
3. #10 x ¾" long screw may be substituted for button punch at same spacing when using N-24-SS deck. See page 12 for additional information.

ShearTranz® with N-24 Deck

- 4 Weld Pattern at Supports
- 1½" Top Seam Weld
- Primer Painted or Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)									
			END LAP NOT WELDED					END LAP WELDED WITH 1 in. FILLET WELD ON TOP FLUTES				
			6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"
22	TSW @ 12"	q	620	620	540	450	380	750	670	540	450	380
		F	11.5	12.2	12.6	12.9	13.1	11.5	12.2	12.6	12.9	13.1
20	TSW @ 12"	q	750	750	650	540	460	1020	810	650	540	460
		F	9.2	9.8	10.3	10.6	10.8	9.2	9.8	10.3	10.6	10.8
18	TSW @ 12"	q	1000	1000	Use N Deck Values			1430	1080	Use N Deck Values		
		F	6.5	7.0				6.5	7.0			

Notes:
1. ShearTranz element installation per details on pages 66 and 67.
2. TSW = Top Seam Weld

VERCOR™ DECK TECHNICAL DATA

Material

Deep and Shallow VERCOR™ decks are fabricated from G90 galvanized steel, conforming to ASTM A 653 or A 1063, SS Grade 80.

Uniform Load Tables

The tables on pages 101 and 103 list the allowable uniform loads for Deep and Shallow VERCOR decks, respectively. These are the total uniform loads which can be applied to the decks. Values are based on the allowable bending moment (stress) and limiting deflection to L/240. The symbol ♦♦♦ indicates that the allowable uniform load based on deflection exceeds the allowable load based on flexure (stress). Note that self-weight of the deck should be included when determining dead load.

Refer to page 6 for the design formulas used to determine the allowable uniform loads due to stress and deflection.

Diaphragms with VERCOR™ Decks

Diaphragm values for Deep and Shallow VERCOR decks attached to the supports with screws, without fill are shown pages 104-105, and pages 108-111, respectively. See pages 106–107 for diaphragm values for Deep VERCOR deck welded to the supports with insulating concrete fill. The attachment patterns for each system are shown on pages 100 and 102.

- The allowable stress increase permitted for load combinations in IBC Section 1605.3.2, including wind or seismic forces, shall not be used for allowable diaphragm shears.
- The flexibility factor (F) is the number of microinches a diaphragm web will deflect in a span of 1 ft under a shear load of 1 pound per ft.
- R is the vertical load span (spacing between supports) (L_V) of the deck divided by the length (L_S) of the deck sheet: $R = L_V / L_S$.
- The flexibility limitations in Verco's evaluation reports may be used as a guide in lieu of a rational analysis of the anticipated deflections.

Deep VERCOR™ Deck Attached with TEKS Screws

Support Attachment: Attach Deep VERCOR deck to the supports with ITW Buildex TEKS® (or TRAXX) self-drilling, self-tapping screws as shown in Figure 14. Select the appropriate screw based on the thickness of the substrate as shown in Table 12. See pages 104 and 105 for diaphragm values.

Table 12: ITW Buildex TEKS Screw Selection

Support Thickness	Fastener Designation
16 gage to 3⁄16 inch	#12-14 x ¾" TEKS 3 (or TRAXX 3)
⅛ inch to ¼ inch	#12-24 x ⅞" TEKS 4 (or TRAXX 4)
⅛ inch to ½ inch	#12-24 x 1¼" TEKS 5 (or TRAXX 5)

Deep VERCOR™ Deck Attached with TEKS Screws (continued)

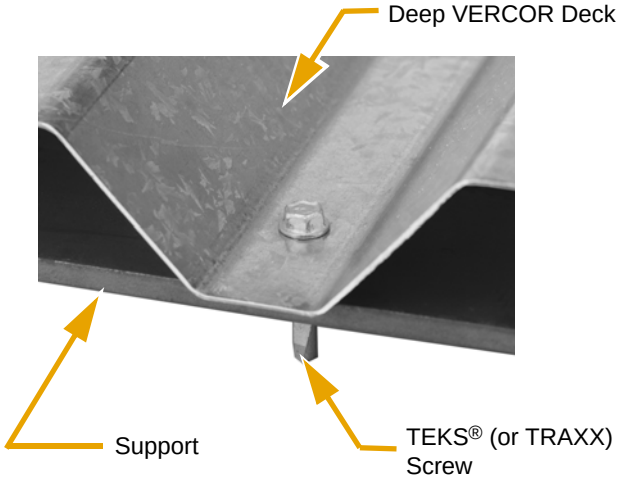


FIGURE 14

Sidelap Connections: Fasten sidelaps of Deep VERCOR deck with ITW Buildex #12-14 x ¾" TEKS® 1 (or TRAXX 1) self-drilling, self-tapping screws at spacings indicated in the load tables. The dimension from the centerline of the supports to the first and last sidelap connection within each span is to be no more than one half the specified spacing as shown in Figure 6 on page 11. The number of connections per span based on spacing are noted in Table 6 on page 11.

Parallel Collectors: Spacing of screws at shear collectors parallel to the corrugations of the deck is to be based on the shear strength per screw for the gage of deck selected. See Table 13. The maximum spacing of attachments at parallel collectors is 3 ft.

Table 13: Allowable Shear per ITW Buildex TEKS Screw

Deep VERCOR Deck Gage	Allowable Shear (lb)
26	226
24	295
22	364
20	434

Wind Uplift: Determine allowable spans to resist uplift forces based on the deck section properties and material strengths. Evaluation may be warranted on specific projects.

See Verco's evaluation report for allowable tension strengths of ITW Buildex TEKS screws.

Deep VERCOR™ Deck with Insulating Fill

Support Attachment: Attach galvanized Deep VERCOR deck and Deep VERCOR VENTLOK deck with insulating concrete fill to the supports with welds through weld washers as shown in Figure 15.

Weld patterns perpendicular to the corrugations are described with two digits (x-y). The first digit (x) is the weld pattern at the exterior of the diaphragm and at lines of interior shear collectors. The second digit (y) is the weld pattern at all other supports.

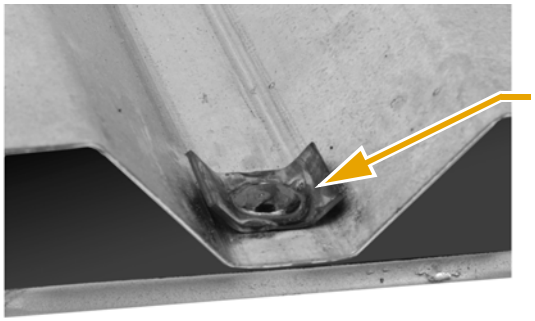


FIGURE 15

Weld Washers: Weld washers are required at all welds for Deep VERCOR deck (see Figure 16). When anchor weld washers are required, provide a No. 3 rebar continuous at exterior boundaries of the diaphragm that are perpendicular to the corrugations.

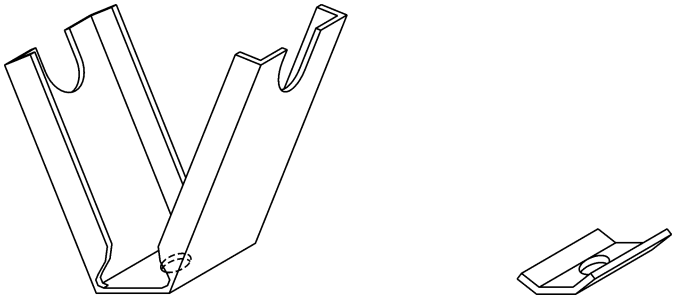
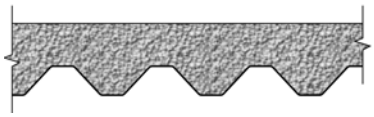


FIGURE 16

Sidelap Connections: No sidelap attachment between supports is required.

Parallel Collectors: Spacing of welds with weld washers at shear collectors parallel to the corrugations of the deck is to be based on an allowable shear of 800 lb per connection.

Deep VERCOR™ Deck with Insulating Fill (continued)



Insulating Concrete Fill: Insulating concrete fill must have a minimum 2 inch depth above the top flute of the Deep VERCOR or Deep VERCOR VENTLOK deck. The aggregate type insulating concrete fill is to conform to the specifications listed in Verco's evaluation report.

For systems which use insulating fill other than as described, or for systems which include polystyrene board, refer to the literature of the insulating fill manufacturer for diaphragm load values and venting requirements for deck.

Wire Mesh: If mesh is specified, it is to be 2 inch hexagonal mesh woven from 19 gage galvanized wire with longitudinal 16 gage galvanized wire spaced 3½ in. on center. The mesh is placed at the approximate center of the fill.

Wind Uplift: Determine tension strength of arc spot welds in accordance with AISI's "S100: North American Specification for the Design of Cold-Formed Steel Structural Members."

Shallow VERCOR™ Deck Attached with Screws

Support Attachment: Attach Shallow VERCOR deck to the supports with minimum #12 self-drilling, self-tapping screws. See Table 14 for suggested screw selection. Diaphragm values are shown on pages 108-111 and assume minimum 54 mil (16 gage, or 0.0566 in.) cold-formed steel supports with F_y = 33 ksi (F_u = 45 ksi). These shear and flexibility values may be modified for supports with different thickness and/or material strength using the adjustment factors shown in Table 15.

Table 14: Suggested Screw Selection

Substrate Thickness	Fastener Designation
33 mil (0.0346") to 3/16"	#3 Drill Point
1/8" to 1/4"	#4 Drill Point
1/4" to 1/2"	#5 Drill Point

Table 15: Diaphragm Shear and Flexibility Adjustment Factors, R_q and R_F, for Shallow VERCOR Deck Attached to Supports with #12 Screws

Gage		Substrate Thickness and Strength (F_y / F_u), ksi					
		33 mil (0.0346 in.)		43 mil (0.0451 in.)		≥ 54 mil (0.0566 in.)	
		33 / 45	50 / 65	33 / 45	50 / 65	33 / 45	50 / 65
26	R_q	0.95	1.00	1.00	1.00	1.00	1.00
	R_F	1.23	1.00	1.00	1.00	1.00	1.00
24	R_q	0.76	0.96	0.99	1.00	1.00	1.00
	R_F	1.47	1.35	1.25	1.00	1.00	1.00
22	R_q	0.56	0.78	0.85	1.00	1.00	1.00
	R_F	1.64	1.53	1.33	1.00	1.00	1.00

Multiply tabulated shear, q, and flexibility, F, values by the adjustment factors as follows:

- Adjusted allowable diaphragm shear = q × R_q
- Adjusted flexibility factor = F × R_F

Shallow VERCOR™ Deck Attached with Screws (continued)

Sidelap Connections: Sidelaps shall be fastened with minimum #10 x ¾" long self-drilling, self-tapping screws. The dimension from the centerline of the supports to the first and last sidelap connection within each span is to be no more than one half the specified spacing as shown in Figure 6 on page 11. The number of connections per span based on spacing are noted in Table 6 on page 11.

Parallel Collectors: Spacing of #12 screws at shear collectors parallel to the corrugations of the deck is to be based on the shear to be transfered, but shall be no greater than the spacing of the sidelaps. The maximum spacing of attachments at parallel collectors is 3 ft. Allowable strength of screw connections in various thicknesses and material strengths of supporting steel are provided in Table 16. Contact the fastener manufacturer to verify the shear strength of the individual fastener exceeds the strength of the connection as required in AISI S100.

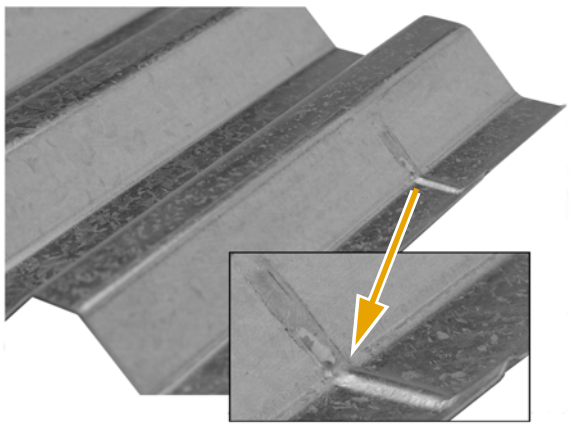
Table 16: Allowable Shear per #12 Screw Connection (lb)

Shallow VERCOR Deck Gage	Substrate Thickness and Strength (F_y / F_u), ksi					
	33 mil (0.0346 in.)		43 mil (0.0451 in.)		≥ 54 mil (0.0566 in.)	
	33 / 45	50 / 65	33 / 45	50 / 65	33 / 45	50 / 65
26	205	216	216	216	216	216
24	218	277	285	288	288	288
22	200	281	308	360	360	360

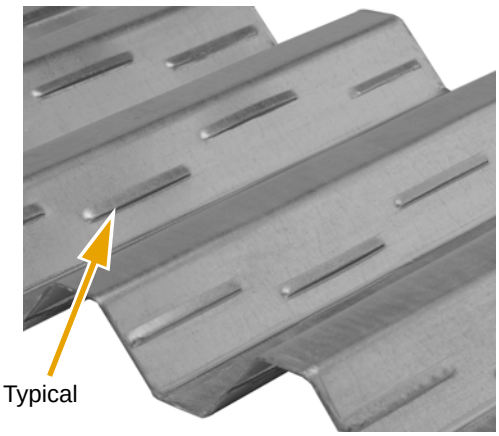
Wind Uplift: Determine screw connection tension strength for #12 screws in accordance with AISI S100. Contact the fastener manufacturer for the tension strength of the individual screw.

VERCOR™ Venting

Deep and Shallow VERCOR decks are available with rolled-in sidelap vents on both edges of the sheets, as shown in Figure 17 (left). These sidelap vents are spaced at approximately 10 inches on center. VENT-LOK louvers in the webs of the deck, as shown in Figure 17 (right), are available for Deep VERCOR only.



Typical Sidelap Vent (Deep and Shallow VERCOR)

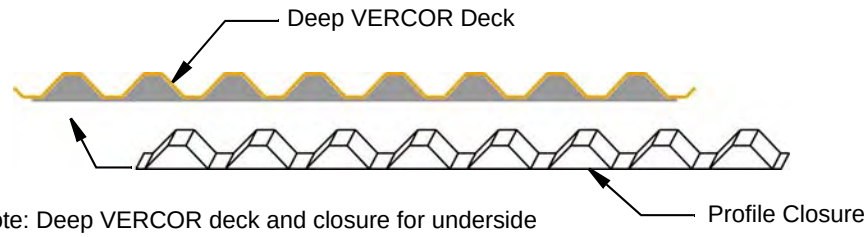


Deep VERCOR VENTLOK

FIGURE 17

VERCOR™ Profile Closures

Neoprene profile closures are available for both Deep and Shallow VERCOR decks. These closures are 1 in. thick, 36 in. long strips and are designed to fit into either the underside or topside of the profile. See Figure 18.



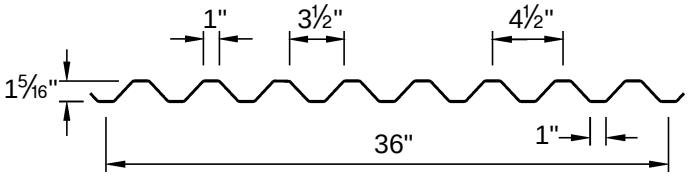
Note: Deep VERCOR deck and closure for underside application is shown; closures for Shallow VERCOR and topside application are installed similarly.

FIGURE 18

Deep VERCOR™

- 1⅝" Deep Deck
- Galvanized

Dimensions



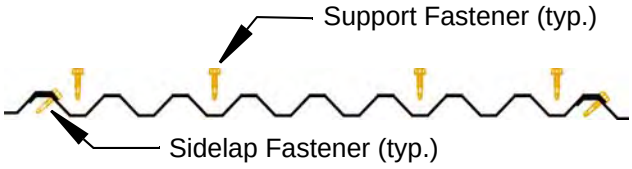
Deck Weight and Section Properties Table Notes:

1. Section properties are based on F_y = 60,000 psi (specified minimum F_y = 80,000 psi).
2. Reduce values by 6% for Deep VERCOR VENTLOK.
3. 26 gage Deep VERCOR VENTLOK not available.

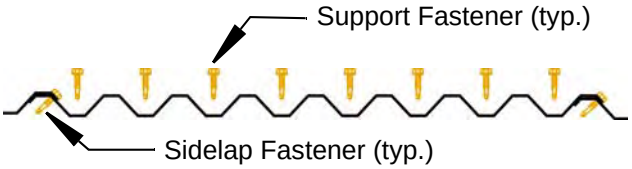
Deck Weight and Section Properties

Gage	Weight	I_d for Deflection		Moment	
	Galv G90	Single Span	Multiple Spans	$+S_{eff}$	$-S_{eff}$
	(psf)	($in.^4$/ft)	($in.^4$/ft)	($in.^3$/ft)	($in.^3$/ft)
26	1.1	0.075	0.075	0.099	0.103
24	1.4	0.097	0.097	0.137	0.138
22	1.7	0.120	0.120	0.172	0.171
20	2.1	0.143	0.143	0.204	0.204

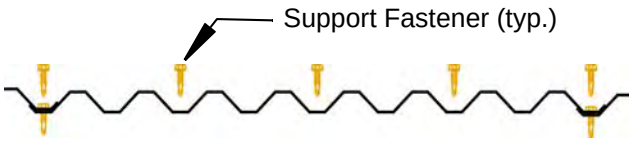
Attachment Patterns – TEKS® Screws



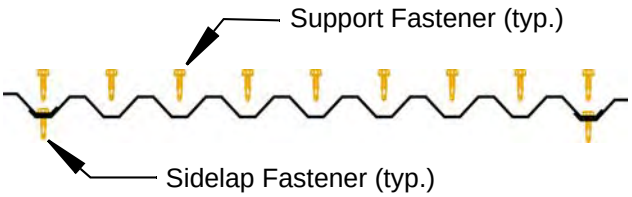
36/4 Pattern – Inverted Position



36/8 Pattern – Inverted Position



36/5 Pattern – Normal Position

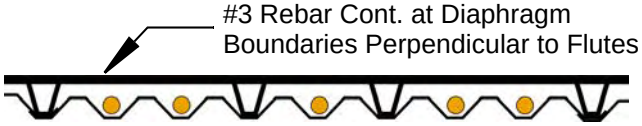


36/9 Pattern – Normal Position

Attachment Patterns – Welds

Weld Pattern 2

Weld Pattern 3



Weld Pattern 5

● = Weld with 14 gage standard weld washer

V = Weld with 16 gage anchor weld washer

Deep VERCOR™

1 5/16" Deep Deck
Galvanized

Allowable Uniform Loads (psf)

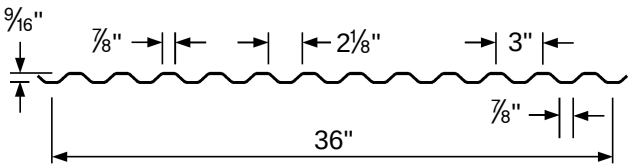
SPAN	GAGE		SPAN (ft-in.) 3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
SINGLE	26	Stress	264	194	149	117	95	79	66	56	48	42					
		L/240	182	115	77	54	39	30	23	18	14	12					
	24	Stress	300	268	206	162	132	109	91	78	67	58	51				
		L/240	236	149	100	70	51	38	29	23	19	15	12				
	22	Stress	300	300	258	204	165	136	115	98	84	74	65	57	51		
		L/240	292	184	123	86	63	47	36	29	23	19	15	13	11		
	20	Stress	300	300	300	242	196	162	136	116	100	87	77	68	60	54	
		L/240	♦♦♦	219	147	103	75	56	43	34	27	22	18	15	13	11	
DOUBLE	26	Stress	275	202	155	122	99	82	69	59	50	44	39	34	31	27	
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	95	71	55	43	35	28	23	19	16	14	
	24	Stress	300	270	207	164	132	109	92	78	68	59	52	46	41	37	33
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	123	92	71	56	45	36	30	26	21	18	15
	22	Stress	300	300	257	203	164	136	114	97	84	73	64	57	51	45	41
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	152	114	88	69	55	45	37	31	26	22	19
	20	Stress	300	300	300	242	196	162	136	116	100	87	77	68	60	54	49
		L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	181	136	105	82	66	54	44	37	31	26	23
TRIPLE	26	Stress	300	252	193	153	124	102	86	73	63	55	48	43	38	34	31
		L/240	♦♦♦	216	145	102	74	56	43	34	27	22	18	15	13	11	9
	24	Stress	300	300	259	204	166	137	115	98	84	74	65	57	51	46	41
		L/240	♦♦♦	280	187	132	96	72	56	44	35	28	23	20	16	14	12
	22	Stress	300	300	300	253	205	170	143	121	105	91	80	71	63	57	51
		L/240	♦♦♦	♦♦♦	232	163	119	89	69	54	43	35	29	24	20	17	15
	20	Stress	300	300	300	300	245	202	170	145	125	109	96	85	76	68	61
		L/240	♦♦♦	♦♦♦	276	194	142	106	82	64	52	42	35	29	24	21	18

Notes:
1. Stress = Uniform load which produces maximum allowable stress in deck.
2. L/240 = Uniform load which produces L/240 deflection in deck.
3. Self-weight of the deck should be included when determining dead load.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.
5. Reduce values by 6% for Deep VERCOR VENTLOK.
6. 26 gage Deep VERCOR VENTLOK not available.

Shallow VERCOR™

- 9/16" Deep Deck
- Galvanized

Dimensions



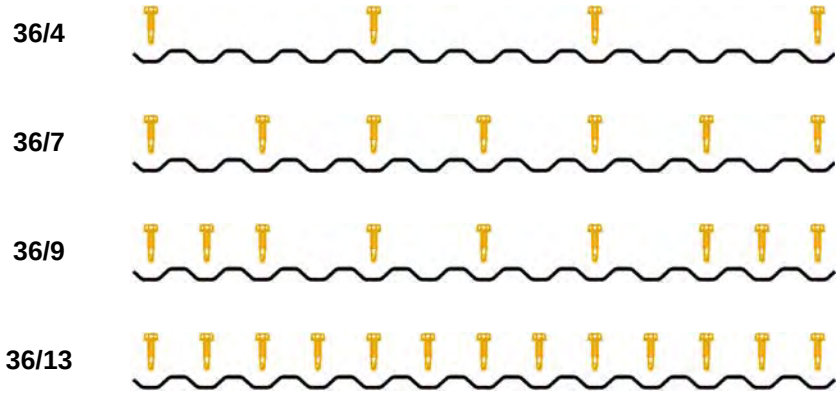
Deck Weight and Section Properties Table Notes:

1. Section properties are based on F_y = 60,000 psi (specified minimum F_y = 80,000 psi).

Deck Weight and Section Properties

Gage	Weight	I_d for Deflection		Moment	
	Galv G90	Single Span	Multiple Spans	$+S_{eff}$	$-S_{eff}$
	(psf)	($in.^4$/ft)	($in.^4$/ft)	($in.^3$/ft)	($in.^3$/ft)
26	1.0	0.013	0.013	0.041	0.043
24	1.4	0.018	0.018	0.059	0.059
22	1.7	0.022	0.022	0.073	0.073

Attachment Patterns to Supports



Shallow VERCOR™

$^{9}/_{16}$" Deep Deck ■
Galvanized ■

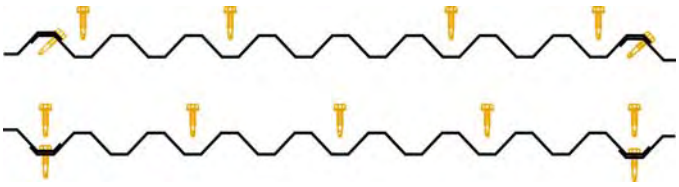
Allowable Uniform Loads (psf)

SPAN	GAGE		SPAN (ft-in.) 1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
SINGLE	26	Stress	300	300	246	157	109	80					
		L/240	♦♦♦	253	107	55	32	20					
	24	Stress	300	300	300	227	157	116	89	70			
		L/240	♦♦♦	♦♦♦	148	76	44	28	18	13			
	22	Stress	300	300	300	280	195	143	110	87	70		
		L/240	♦♦♦	♦♦♦	181	92	54	34	23	16	12		
DOUBLE	26	Stress	300	300	258	165	115	84	65	51			
		L/240	♦♦♦	♦♦♦	257	132	76	48	32	23			
	24	Stress	300	300	300	227	157	116	89	70	57	47	39
		L/240	♦♦♦	♦♦♦	♦♦♦	182	105	66	44	31	23	17	13
	22	Stress	300	300	300	280	195	143	110	87	70	58	49
		L/240	♦♦♦	♦♦♦	♦♦♦	223	129	81	54	38	28	21	16
TRIPLE	26	Stress	300	300	300	206	143	105	81	64			
		L/240	♦♦♦	♦♦♦	201	103	60	38	25	18			
	24	Stress	300	300	300	283	197	144	111	87	71	59	49
		L/240	♦♦♦	♦♦♦	278	143	82	52	35	24	18	13	10
	22	Stress	300	300	300	300	243	179	137	108	88	72	61
		L/240	♦♦♦	♦♦♦	♦♦♦	174	101	63	43	30	22	16	13

Notes:
1. Stress = Uniform load which produces maximum allowable stress in deck.
2. L/240 = Uniform load which produces L/240 deflection in deck.
3. Self-weight of the deck should be included when determining dead load.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.

Deep VERCOR™

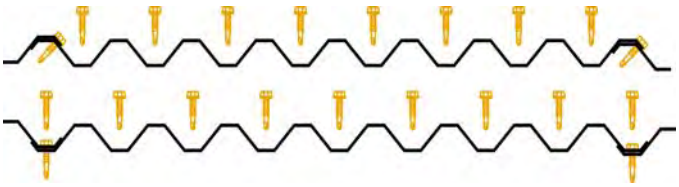
- $1\frac{5}{16}$" Deep Deck
- Inverted or Normal Position
- 36/4 (36/5) TEKS Screw Pattern at Supports
- Galvanized



Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
26	TEKS @ 24"	q	100	103	105	106	107	107	108
		F	19.4+265.9R	16.6+212.7R	14.9+177.3R	13.6+151.9R	12.7+132.9R	12.0+118.2R	11.5+106.4R
	TEKS @ 18"	q	139	141	143	144	145	146	146
		F	15.8+265.9R	13.9+212.7R	12.6+177.3R	11.7+151.9R	11.1+132.9R	10.6+118.2R	10.2+106.4R
	TEKS @ 12"	q	215	218	219	220	221	222	223
		F	12.5+265.9R	11.2+212.7R	10.4+177.3R	9.9+151.9R	9.5+132.9R	9.1+118.2R	8.9+106.4R
24	TEKS @ 24"	q	147	147	147	147	147	147	147
		F	13.9+178.9R	12.2+143.1R	11.0+119.2R	10.2+102.2R	9.6+89.4R	9.1+79.5R	8.8+71.5R
	TEKS @ 18"	q	197	196	196	196	196	196	196
		F	11.6+178.9R	10.3+143.1R	9.5+119.2R	8.9+102.2R	8.4+89.4R	8.1+79.5R	7.8+71.5R
	TEKS @ 12"	q	296	296	296	296	296	296	296
		F	9.4+178.9R	8.5+143.1R	8.0+119.2R	7.6+102.2R	7.2+89.4R	7.0+79.5R	6.8+71.5R
22	TEKS @ 24"	q	201	197	194	192	190	189	188
		F	10.6+130.1R	9.5+104.1R	8.7+86.7R	8.1+74.4R	7.7+65.1R	7.3+57.8R	7.0+52.0R
	TEKS @ 18"	q	263	258	255	253	252	251	250
		F	9.0+130.1R	8.2+104.1R	7.6+86.7R	7.1+74.4R	6.8+65.1R	6.5+57.8R	6.3+52.0R
	TEKS @ 12"	q	386	382	379	376	375	374	373
		F	7.4+130.1R	6.8+104.1R	6.4+86.7R	6.1+74.4R	5.9+65.1R	5.7+57.8R	5.5+52.0R
20	TEKS @ 24"	q	263	253	246	241	237	234	232
		F	8.5+100.1R	7.7+80.1R	7.1+66.7R	6.7+57.2R	6.4+50.1R	6.1+44.5R	5.9+40.0R
	TEKS @ 18"	q	336	326	319	314	310	308	305
		F	7.3+100.1R	6.7+80.1R	6.2+66.7R	5.9+57.2R	5.6+50.1R	5.4+44.5R	5.3+40.0R
	TEKS @ 12"	q	483	472	466	461	457	454	452
		F	6.1+100.1R	5.7+80.1R	5.3+66.7R	5.1+57.2R	4.9+50.1R	4.8+44.5R	4.6+40.0R

Notes:
1. TEKS for support attachment = ITW Buildex TEKS (or TRAXX) screw. See Table 12 on page 94 for proper selection.
2. TEKS for sidelap attachment = #12-14 x ¾" ITW Buildex TEKS 1 (or TRAXX 1) screw.



Deep VERCOR™

- 1 5/16" Deep Deck
- Inverted or Normal Position
- 36/8 (36/9) TEKS Screw Pattern at Supports
- Galvanized

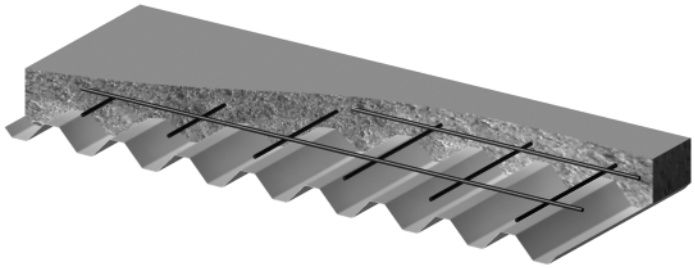
Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
26	TEKS @ 24"	q	118	117	116	115	115	115	114
		F	17.6+33.4R	15.6+26.7R	14.2+22.3R	13.2+19.1R	12.4+16.7R	11.9+14.9R	11.4+13.4R
	TEKS @ 18"	q	156	155	154	154	153	153	153
		F	14.9+33.4R	13.3+26.7R	12.3+22.3R	11.5+19.1R	10.9+16.7R	10.5+14.9R	10.1+13.4R
	TEKS @ 12"	q	233	231	231	230	230	229	229
		F	12.1+33.4R	11.0+26.7R	10.3+22.3R	9.8+19.1R	9.4+16.7R	9.1+14.9R	8.9+13.4R
24	TEKS @ 24"	q	176	169	165	162	160	158	157
		F	12.6+22.5R	11.4+18.0R	10.5+15.0R	9.9+12.8R	9.4+11.2R	9.0+10.0R	8.7+9.0R
	TEKS @ 18"	q	226	219	215	212	210	208	206
		F	10.9+22.5R	9.9+18.0R	9.2+15.0R	8.7+12.8R	8.3+11.2R	8.0+10.0R	7.8+9.0R
	TEKS @ 12"	q	325	319	314	311	309	307	306
		F	9.1+22.5R	8.3+18.0R	7.9+15.0R	7.5+12.8R	7.2+11.2R	7.0+10.0R	6.8+9.0R
22	TEKS @ 24"	q	245	231	221	215	210	206	203
		F	9.5+16.4R	8.8+13.1R	8.2+10.9R	7.8+9.3R	7.5+8.2R	7.2+7.3R	7.0+6.5R
	TEKS @ 18"	q	306	292	283	276	271	267	264
		F	8.4+16.4R	7.8+13.1R	7.3+10.9R	7.0+9.3R	6.7+8.2R	6.4+7.3R	6.3+6.5R
	TEKS @ 12"	q	429	415	406	399	394	390	387
		F	7.2+16.4R	6.7+13.1R	6.3+10.9R	6.0+9.3R	5.8+8.2R	5.7+7.3R	5.5+6.5R
20	TEKS @ 24"	q	323	299	283	272	263	257	252
		F	7.6+12.6R	7.1+10.1R	6.7+8.4R	6.4+7.2R	6.2+6.3R	6.0+5.6R	5.8+5.0R
	TEKS @ 18"	q	397	372	356	345	337	330	325
		F	6.8+12.6R	6.4+10.1R	6.0+8.4R	5.8+7.2R	5.6+6.3R	5.4+5.6R	5.3+5.0R
	TEKS @ 12"	q	543	519	503	492	483	477	472
		F	5.9+12.6R	5.5+10.1R	5.3+8.4R	5.0+7.2R	4.9+6.3R	4.8+5.6R	4.7+5.0R

Notes:
1. TEKS for support attachment = ITW Buildex TEKS (or TRAXX) screw. See Table 12 on page 94 for proper selection.
2. TEKS for sidelap attachment = #12-14 x ¾" ITW Buildex TEKS 1 (or TRAXX 1) screw.

Deep VERCOR™

- 1 5/16" Deep Deck
- Insulating Concrete Fill
- With Hexagonal Mesh
- Galvanized



Attachment Patterns

Weld Pattern 2

Weld Pattern 3

Weld Pattern 5

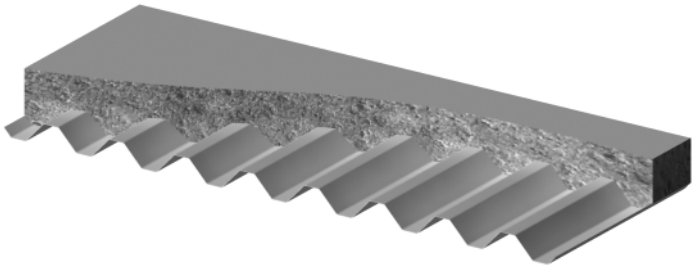
● = Weld with 14 gage standard weld washer

V = Weld with 16 gage anchor weld washer

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	WELD PATTERN		SPAN (ft.-in.) 4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-3"	6'-8"	7'-0"	7'-6"	8'-0"	8'-4"	9'-0"	10'-0"
26	2-2	q	497	480	467	456	446	442							
		F	1.75	1.82	1.88	1.93	1.97	1.99							
	3-2	q	578	555	537	522	510	504							
		F	1.69	1.76	1.82	1.88	1.93	1.95							
	5-2	q	691	661	636	616	600	592							
		F	1.69	1.76	1.82	1.88	1.93	1.95							
	5-3	q	1019	979	947	920	897	889							
		F	1.67	1.74	1.81	1.86	1.91	1.94							
24	2-2	q	552	552	552	530	512	505	493	485	473	463	458		
		F	1.45	1.45	1.45	1.51	1.57	1.60	1.64	1.67	1.71	1.75	1.77		
	3-2	q	653	653	653	625	601	591	575	564	550	536	528		
		F	1.40	1.40	1.40	1.46	1.52	1.54	1.59	1.62	1.66	1.70	1.73		
	5-2	q	804	804	804	765	733	720	698	683	663	645	635		
		F	1.40	1.40	1.40	1.46	1.52	1.54	1.59	1.62	1.66	1.70	1.73		
	5-3	q	1142	1142	1142	1093	1052	1035	1008	989	963	941	928		
		F	1.39	1.39	1.39	1.45	1.51	1.54	1.58	1.61	1.66	1.70	1.72		
22	2-2	q	604	604	604	604	604	592	573	560	543	528	518	502	
		F	1.26	1.26	1.26	1.26	1.26	1.29	1.33	1.37	1.41	1.45	1.48	1.53	
	3-2	q	718	718	718	718	718	702	678	661	639	619	607	586	
		F	1.22	1.22	1.22	1.22	1.22	1.25	1.29	1.32	1.37	1.41	1.44	1.49	
	5-2	q	900	900	900	900	900	878	845	822	791	765	748	730	
		F	1.22	1.22	1.22	1.22	1.22	1.25	1.29	1.32	1.37	1.41	1.44	1.49	
	5-3	q	1241	1241	1241	1241	1241	1215	1175	1146	1108	1075	1055	1020	
		F	1.23	1.23	1.23	1.23	1.23	1.26	1.30	1.33	1.38	1.42	1.45	1.50	
20	2-2	q	642	642	642	642	642	642	642	642	619	598	586	563	536
		F	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.20	1.25	1.27	1.32	1.39
	3-2	q	763	763	763	763	763	763	763	763	733	707	691	663	628
		F	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.17	1.22	1.24	1.29	1.37
	5-2	q	965	965	965	965	965	965	965	965	924	888	867	828	780
		F	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.17	1.22	1.24	1.29	1.37
	5-3	q	1307	1307	1307	1307	1307	1307	1307	1307	1257	1214	1188	1141	1085
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.19	1.24	1.26	1.32	1.39

Notes:
1. See page 96 for explanation of weld patterns.
2. Insulating concrete fill must have a minimum 2 inch depth over the top flute of the deck.
3. Mesh is to be placed at the approximate center of the fill.



Deep VERCOR™

- 1 5/16" Deep Deck
- Insulating Concrete Fill
- Without Hexagonal Mesh
- Galvanized

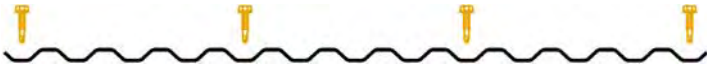
Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	WELD PATTERN		SPAN (ft.-in.)												
			4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-3"	6'-8"	7'-0"	7'-6"	8'-0"	8'-4"	9'-0"	10'-0"
26	2-2	q	397	381	368	357	348	344							
		F	1.65	1.72	1.78	1.83	1.88	1.90							
	3-2	q	452	426	411	397	385	379							
		F	1.34	1.41	1.48	1.54	1.60	1.62							
	5-2	q	562	533	507	487	470	463							
		F	1.34	1.41	1.48	1.54	1.60	1.62							
	5-3	q	866	826	794	768	746	736							
		F	1.58	1.66	1.73	1.78	1.84	1.86							
24	2-2	q	492	492	492	471	453	446	434	426	415	405	400		
		F	1.39	1.39	1.39	1.45	1.51	1.54	1.58	1.61	1.65	1.69	1.72		
	3-2	q	569	569	569	541	518	508	492	481	467	454	447		
		F	1.09	1.09	1.09	1.15	1.21	1.24	1.28	1.31	1.36	1.40	1.42		
	5-2	q	719	719	719	680	649	635	613	598	578	560	550		
		F	1. 09	1.09	1.09	1.15	1.21	1.24	1.28	1.31	1.36	1.40	1.42		
	5-3	q	1063	1063	1063	1014	973	958	929	910	885	862	849		
		F	1.35	1.35	1.35	1.41	1.47	1.50	1.54	1.57	1.62	1.66	1.69		
22	2-2	q	573	573	573	573	573	560	542	529	511	497	487	471	
		F	1.24	1.24	1.24	1.24	1.24	1.26	1.31	1.34	1.38	1.43	1.45	1.50	
	3-2	q	662	662	662	662	662	647	623	606	584	564	552	532	
		F	0.96	0.96	0.96	0.96	0.96	0.98	1.02	1.05	1.10	1.14	1.16	1.22	
	5-2	q	845	845	845	845	845	823	790	768	737	710	694	665	
		F	0.96	0.96	0.96	0.96	0.96	0.98	1.02	1.05	1.10	1.14	1.16	1.22	
	5-3	q	1208	1208	1208	1208	1208	1181	1141	1112	1075	1041	1022	986	
		F	1.22	1.22	1.22	1.22	1.22	1.24	1.29	1.32	1.37	1.41	1.44	1.49	
20	2-2	q	628	628	628	628	628	628	628	628	604	584	571	549	522
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.24	1.26	1.32	1.38
	3-2	q	724	724	724	724	724	724	724	724	694	668	652	624	589
		F	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.97	0.99	1.04	1.11
	5-2	q	926	926	926	926	926	926	926	926	885	849	826	789	742
		F	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.97	0.99	1.04	1.11
	5-3	q	1297	1297	1297	1297	1297	1297	1297	1297	1247	1203	1177	1130	1072
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.24	1.27	1.32	1.39

Notes:
1. See page 96 for explanation of weld patterns.
2. Insulating concrete fill must have a minimum 2 inch depth over the top flute of the deck.

Shallow VERCOR™

- 9/16" Deep Deck
- 36/4 Screw Pattern at Supports
  #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- Galvanized



Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"
26	(none)	q	203	167	141	126	109		
		F	-20.1+489R	-7.8+324R	-0.6+241R	4.7+191R	8.9+157R		
	Screw @ 12"	q	223	211	189	188	171	174	161
		F	-21.7+490R	-11.4+326R	-5.3+244R	-2.4+195R	0.4+162R	1.7+139R	3.4+122R
	Screw @ 6"	q	234	223	215	210	205	203	200
		F	-22.5+490R	-12.0+327R	-6.8+245R	-3.6+196R	-1.5+163R	0.1+140R	1.2+122R
	Screw @ 4"	q	241	237	229	229	224	225	221
		F	-22.9+491R	-12.8+327R	-7.5+245R	-4.5+196R	-2.3+163R	-0.9+140R	0.3+123R
24	(none)	q	272	223	188	168	145		
		F	-6.6+236R	0.2+156R	4.6+116R	8.0+91R	10.9+74R		
	Screw @ 12"	q	300	287	259	260	238	242	225
		F	-8.0+237R	-2.9+158R	0.5+118R	1.9+94R	3.5+78R	4.1+67R	5.2+59R
	Screw @ 6"	q	316	303	294	289	284	281	277
		F	-8.6+238R	-3.4+158R	-0.8+119R	0.8+95R	1.9+79R	2.7+68R	3.3+59R
	Screw @ 4"	q	325	320	312	312	307	308	303
		F	-9+238R	-4.1+159R	-1.4+119R	0+95R	1.2+79R	1.8+68R	2.5+59R
22	(none)	q	340	279	235	210	182		
		F	-1.6+135R	3+88R	6.1+65R	8.6+50R	10.9+40R		
	Screw @ 12"	q	379	365	331	333	307	312	292
		F	-2.8+135R	0.2+90R	2.4+67R	3.2+54R	4.3+44R	4.6+38R	5.4+33R
	Screw @ 6"	q	398	384	375	369	363	360	356
		F	-3.4+136R	-0.3+90R	1.3+68R	2.2+54R	2.9+45R	3.3+39R	3.7+34R
	Screw @ 4"	q	409	405	396	396	390	391	387
		F	-3.7+136R	-0.9+91R	0.7+68R	1.5+54R	2.2+45R	2.6+39R	3.0+34R

Notes:
1. Support Screw = #12 self-drilling, self-tapping screw.
2. Sidelap Screw = #10 x ¾" long self-drilling, self-tapping screw.
3. See Table 15 on page 97 for adjustment factors when attaching to supports with different strength and/or thickness.

Shallow VERCOR™

- 9/16" Deep Deck
- 36/7 Screw Pattern at Supports
- #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"
26	(none)	q	344	264	214	188	160		
		F	-2.2+175R	2.9+116R	6.1+85R	8.7+67R	10.9+55R		
	Screw @ 12"	q	383	340	286	279	244	245	220
		F	-3.1+176R	0.9+117R	3.6+87R	4.7+70R	6.1+58R	6.6+49R	7.6+43R
	Screw @ 6"	q	411	368	341	326	309	302	291
		F	-3.5+176R	0.5+117R	2.5+88R	3.8+70R	4.7+58R	5.3+50R	5.8+44R
	Screw @ 4"	q	432	410	381	377	357	358	344
		F	-3.8+176R	-0.1+117R	2.0+88R	3.1+70R	4+58R	4.5+50R	5.0+44R
24	(none)	q	459	352	286	251	213		
		F	1.5+84R	4.6+55R	6.7+40R	8.5+31R	10.2+25R		
	Screw @ 12"	q	518	467	395	389	341	344	310
		F	0.8+85R	2.9+56R	4.5+42R	5.1+33R	6.0+28R	6.2+24R	6.9+20R
	Screw @ 6"	q	559	507	473	455	435	426	413
		F	0.4+85R	2.5+57R	3.6+42R	4.3+34R	4.8+28R	5.1+24R	5.4+21R
	Screw @ 4"	q	588	563	528	525	501	503	486
		F	0.1+85R	2.0+57R	3.1+43R	3.7+34R	4.2+28R	4.4+24R	4.7+21R
22	(none)	q	575	441	357	313	267		
		F	2.7+48R	4.8+31R	6.5+22R	7.9+17R	9.2+13R		
	Screw @ 12"	q	655	597	508	503	443	449	405
		F	2.0+48R	3.3+32R	4.5+24R	4.8+19R	5.6+15R	5.7+13R	6.2+11R
	Screw @ 6"	q	709	649	611	590	567	556	541
		F	1.7+48R	3.0+32R	3.7+24R	4.1+19R	4.4+16R	4.7+14R	4.8+12R
	Screw @ 4"	q	746	719	679	677	650	652	633
		F	1.4+49R	2.5+32R	3.2+24R	3.6+19R	3.9+16R	4.0+14R	4.2+12R

Notes:
1. Support Screw = #12 self-drilling, self-tapping screw.
2. Sidelap Screw = #10 x ¾" long self-drilling, self-tapping screw.
3. See Table 15 on page 97 for adjustment factors when attaching to supports with different strength and/or thickness.

Shallow VERCOR™

- 9/16" Deep Deck
- 36/9 Screw Pattern at Supports
  #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"
26	(none)	q	479	373	305	268	229		
		F	0.3+119R	3.9+79R	6.1+58R	7.9+46R	9.4+37R		
	Screw @ 12"	q	515	448	376	360	313	309	277
		F	-0.1+119R	2.7+79R	4.7+59R	5.6+47R	6.6+39R	7+33R	7.8+29R
	Screw @ 6"	q	544	478	434	410	383	371	354
		F	-0.4+120R	2.4+80R	3.9+59R	4.9+47R	5.5+39R	6.0+34R	6.4+29R
	Screw @ 4"	q	567	524	479	469	439	437	416
		F	-0.6+120R	2.0+80R	3.5+60R	4.3+48R	5.0+40R	5.3+34R	5.7+30R
24	(none)	q	640	498	407	358	306		
		F	2.4+57R	4.5+38R	6+27R	7.3+21R	8.5+17R		
	Screw @ 12"	q	695	611	515	497	434	431	387
		F	2.1+58R	3.6+38R	4.8+28R	5.3+23R	6.0+18R	6.2+16R	6.8+14R
	Screw @ 6"	q	736	654	600	570	536	521	500
		F	1.8+58R	3.3+38R	4.2+29R	4.7+23R	5.1+19R	5.4+16R	5.6+14R
	Screw @ 4"	q	769	720	664	653	616	614	588
		F	1.6+58R	3.0+39R	3.8+29R	4.2+23R	4.6+19R	4.8+16R	5.0+14R
22	(none)	q	800	624	509	448	382		
		F	2.9+33R	4.4+21R	5.6+15R	6.6+11R	7.5+9R		
	Screw @ 12"	q	876	778	659	639	560	559	503
		F	2.6+33R	3.6+22R	4.4+16R	4.8+13R	5.4+10R	5.5+9R	6.0+7R
	Screw @ 6"	q	932	835	771	736	697	679	654
		F	2.4+33R	3.3+22R	3.9+16R	4.3+13R	4.5+11R	4.7+9R	4.9+8R
	Screw @ 4"	q	974	920	854	844	800	799	768
		F	2.2+33R	3.0+22R	3.6+16R	3.8+13R	4.1+11R	4.2+9R	4.4+8R

Notes:
1. Support Screw = #12 self-drilling, self-tapping screw.
2. Sidelap Screw = #10 x ¾" long self-drilling, self-tapping screw.
3. See Table 15 on page 97 for adjustment factors when attaching to supports with different strength and/or thickness.

Shallow VERCOR™

- 9/16" Deep Deck
- 36/13 Screw Pattern at Supports
- #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- Galvanized

Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((in./lb)x10^6)

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"
26	(none)	q	606	449	358	312	264		
		F	6.9+7R	7.9+4R	8.8+2R	9.7+1R	10.6+0R		
	Screw @ 12"	q	660	547	443	419	358	351	312
		F	6.6+7R	7.1+4R	7.8+3R	8+2R	8.5+1R	8.7+1R	9.1+1R
	Screw @ 6"	q	706	589	519	482	443	426	402
		F	6.4+7R	6.9+4R	7.2+3R	7.5+2R	7.7+2R	7.8+2R	8.0+1R
	Screw @ 4"	q	746	662	584	566	518	513	482
		F	6.2+7R	6.5+5R	6.9+3R	7.0+3R	7.2+2R	7.2+2R	7.4+2R
24	(none)	q	810	600	478	417	352		
		F	5.5+3R	6.3+1R	7.0+0R	7.8+0R	8.5-1R		
	Screw @ 12"	q	892	748	608	579	496	490	436
		F	5.2+3R	5.6+2R	6.1+1R	6.3+1R	6.8+0R	6.9+0R	7.3+0R
	Screw @ 6"	q	960	811	721	674	624	602	571
		F	5.0+3R	5.4+2R	5.7+1R	5.9+1R	6.0+1R	6.2+1R	6.3+0R
	Screw @ 4"	q	1017	917	817	796	735	730	689
		F	4.9+3R	5.1+2R	5.4+1R	5.5+1R	5.6+1R	5.6+1R	5.8+1R
22	(none)	q	1013	750	598	521	440		
		F	4.6+1R	5.3+0R	5.9+0R	6.6-1R	7.3-1R		
	Screw @ 12"	q	1126	955	779	747	641	637	566
		F	4.3+2R	4.7+1R	5.1+0R	5.3+0R	5.7+0R	5.8+0R	6.1+0R
	Screw @ 6"	q	1219	1040	933	876	816	789	751
		F	4.2+2R	4.5+1R	4.7+1R	4.9+0R	5.0+0R	5.1+0R	5.2+0R
	Screw @ 4"	q	1295	1181	1060	1038	963	960	909
		F	4.0+2R	4.2+1R	4.4+1R	4.5+1R	4.6+0R	4.7+0R	4.8+0R

Notes:
1. Support Screw = #12 self-drilling, self-tapping screw.
2. Sidelap Screw = #10 x ¾" long self-drilling, self-tapping screw.
3. See Table 15 on page 97 for adjustment factors when attaching to supports with different strength and/or thickness.

CELLULAR ROOF DECK DESIGN INFORMATION

Properties

Section properties have been computed in accordance with AISI's "S100: Specification for the Design of Cold-Formed Steel Structural Members."

Material

Cellular roof deck sections are fabricated from galvanized steel conforming to ASTM A 653 or A 1063. The fluted top and flat bottom sections are factory resistance-welded together, creating a strong structural section.

Note: Weld marks will be visible on the flat bottom.

Definitions

The **gage** "xx/yy" of cellular decks is defined as:

- First number (xx) is the gage of the fluted top section.
- Second number (yy) is the gage of the flat bottom section.

$\mathbf{I_d}$ is the effective moment of inertia for deflection of simple or multiple span conditions.

$\mathbf{S_{eff}}$ (+ or –) is the effective section modulus.

M (+ or –) is the ASD allowable moment where $M = M_n / \Omega_b$, with $\Omega_b = 1.67$ and $M_n = F_y \cdot S_{eff}$ (+ or –).

Vertical Shear (V) is the ASD allowable vertical shear strength based on the horizontal shear strength of the resistance welds connecting the top and bottom sections, where $V = V_n / \Omega$, with $\Omega = 2.35$.

"END" shear strength values are applicable adjacent to supports where deck is not continuous.

"INTERIOR" shear strength values are applicable adjacent to supports where deck is continuous.

Cellular Roof Deck Bearing

Compare end and interior reactions to the allowable reactions for fluted (non-cellular) deck of the same gage as the fluted top section of the cellular deck.

Allowable Uniform Loads and Diaphragm Values

Allowable uniform loads can be determined from the section properties on page 114. Allowable diaphragm shear values and flexibility factors shown in the PLB-36, HSB-36, PLN-24, and N-24 roof deck tables apply to cellular roof deck sections with a fluted top section of the same profile but with the gage of the flat bottom sheet. This applies with or without acoustical perforations in the flat bottom section of the cellular deck.

Refer to Verco's evaluation report for section property adjustment factors for acoustical cellular decks.

Vent Tabs

Factory vent tabs are not available in cellular roof deck.

Acoustical Cellular Roof Deck

Cellular PLB-CD, HSB-CD, PLN-CD, and N-24CD roof decks are available with acoustical perforations in the flat bottom plate. Acoustical deck can provide sound attenuation in buildings where deck is exposed to the interior. Acoustical perforations are 5⁄32 inch in diameter on 7⁄16 inch staggered centers in bands centered under the top flanges of the fluted top sections. Insulation is factory installed, as shown in

Figure 19. Sound absorption information is shown in Table 17. Noise Reduction Coefficient (NRC) values were determined by tests in accordance with ANSI/ASTM C423 conducted by Riverbank Acoustical Laboratories. Test reports furnished upon request.

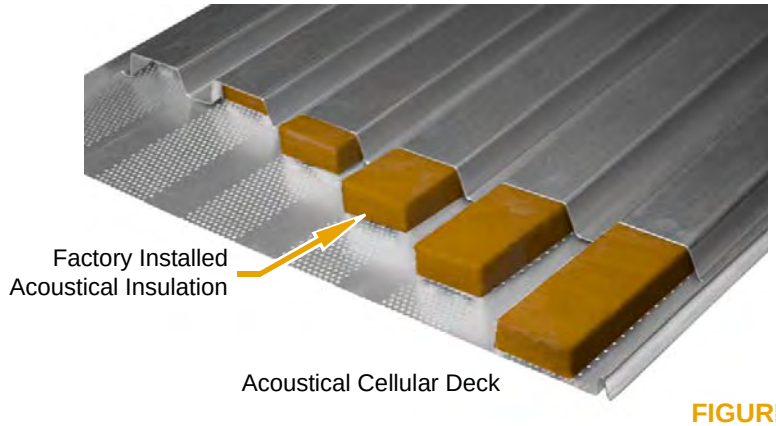


FIGURE 19

Table 17: Noise Reduction Coefficients of Acoustical Cellular Deck

Profile	Absorption Coefficients						Noise Reduction Coefficient
	125	250	500	1000	2000	4000	
PLB-CD or HSB-CD	0.60	0.55	0.80	1.01	0.89	0.66	0.80
PLN-CD or N-24CD	0.84	0.79	1.16	0.98	0.82	0.60	0.95

Factory Mutual

All Verco 1½" and 3" roof decks are Factory Mutual approved as: STEEL ROOF DECKS, Class I fire and I-60 or I-90 Windstorm Rated (minimum). See Table 18 for Factory Mutual approved spans for cellular decks and Table 3 on page 5 for approved spans for non-cellular decks. All approved spans are measured center-to-center of support members. See "Factory Mutual Approval Guide" for additional information.

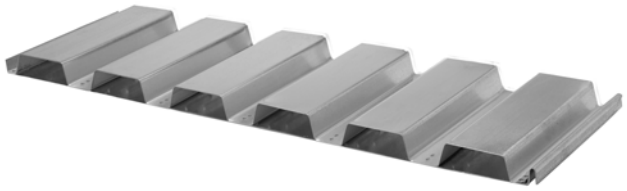
Table 18: FM Approved Spans (c-c) for 1½" and 3" Cellular Roof Decks

Deck Profile	Deck Gages		
	20/20, 20/18, 20/16	18/20, 18/18, 18/16	16/18, 16/16
PLB-CD or HSB-CD	6'-7"	7'-9"	9'-6"
PLN-CD or N-24CD	13'-7"	15'-5"	17'-3"

Note: FM approved spans apply to both the acoustic and non-acoustic versions.

Cellular Roof Deck

PLB™-CD and HSB®-CD

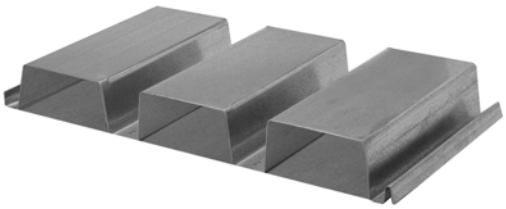


Deck Weight and Section Properties (per ft of width)

Gage	Weight	I_d for Deflections		Positive Moment		Negative Moment		Vertical Shear	
		Single Span	Multiple Spans	$+S_{eff}$	+M	$-S_{eff}$	–M	End	Interior
	(psf)	($in.^4$)	($in.^4$)	($in.^3$)	(in.-kips)	($in.^3$)	(in.-kips)	(lb)	(lb)
20/20	3.6	0.424	0.424	0.294	7.0	0.398	9.5	340	483
20/18	4.1	0.463	0.463	0.302	7.2	0.431	10.3	318	352
20/16	4.5	0.496	0.496	0.309	7.4	0.450	10.8	306	295
18/20	4.1	0.542	0.542	0.440	10.6	0.469	11.2	369	574
18/18	4.6	0.594	0.594	0.452	10.8	0.556	13.3	517	630
18/16	5.1	0.639	0.639	0.461	11.0	0.580	13.9	491	503
16/18	5.3	0.707	0.707	0.618	14.8	0.655	15.7	549	718
16/16	5.8	0.762	0.762	0.631	15.1	0.706	16.9	718	781

Note: Section properties are based on F_y = 40,000 psi.

PLN™-24CD and N-24CD



Deck Weight and Section Properties (per ft of width)

Gage	Weight	I_d for Deflections		Positive Moment		Negative Moment		Vertical Shear	
		Single Span	Multiple Spans	$+S_{eff}$	+M	$-S_{eff}$	–M	End	Interior
	(psf)	($in.^4$)	($in.^4$)	($in.^3$)	(in.-kips)	($in.^3$)	(in.-kips)	(lb)	(lb)
20/20	4.1	1.712	1.712	0.562	13.5	0.728	17.4	559	989
20/18	4.6	1.877	1.877	0.558	13.4	0.949	22.7	522	689
20/16	5.1	1.990	1.990	0.601	14.4	1.032	24.7	500	531
18/20	4.8	2.203	2.203	0.845	20.2	0.873	20.9	608	1,187
18/18	5.3	2.419	2.419	0.867	20.8	1.095	26.2	850	1,216
18/16	5.8	2.600	2.600	0.884	21.2	1.330	31.9	805	926
16/18	6.1	2.931	2.931	1.180	28.3	1.239	29.7	906	1,383
16/16	6.6	3.161	3.161	1.204	28.8	1.537	36.8	1,181	1,440

Note: Section properties are based on F_y = 40,000 psi.

Refer to page 112 for cellular roof deck design information.

Metric (SI) Conversions

	US	Multiplied by	= *Metric*
Length	in.	x 25.4	= *mm*
	in.	x 2.54	= *cm*
	ft	x 304.8	= *mm*
	ft	x 30.48	= *cm*
	ft	x 0.3048	= *m*
Area	$in.^2$	x 645.16	= mm^2
	$in.^2$	x 6.4516	= cm^2
	ft^2	x 0.09290304	= m^2
Volume	$in.^3$	x 16,387.06	= mm^3
	$in.^3$	x 16.38706	= cm^3
	ft^3	x 0.02831685	= m^3
Moment of Inertia	$in.^4$	x 416231.4	= mm^4
	$in.^4$	x 41.62314	= cm^4
	$in.^4/ft$	x 1365588	= mm^4/m
	$in.^4/ft$	x 136.5588	= cm^4/m
Section Modulus	$in.^3/ft$	x 53763	= mm^3/m
	$in.^3/ft$	x 53.763	= cm^3/m

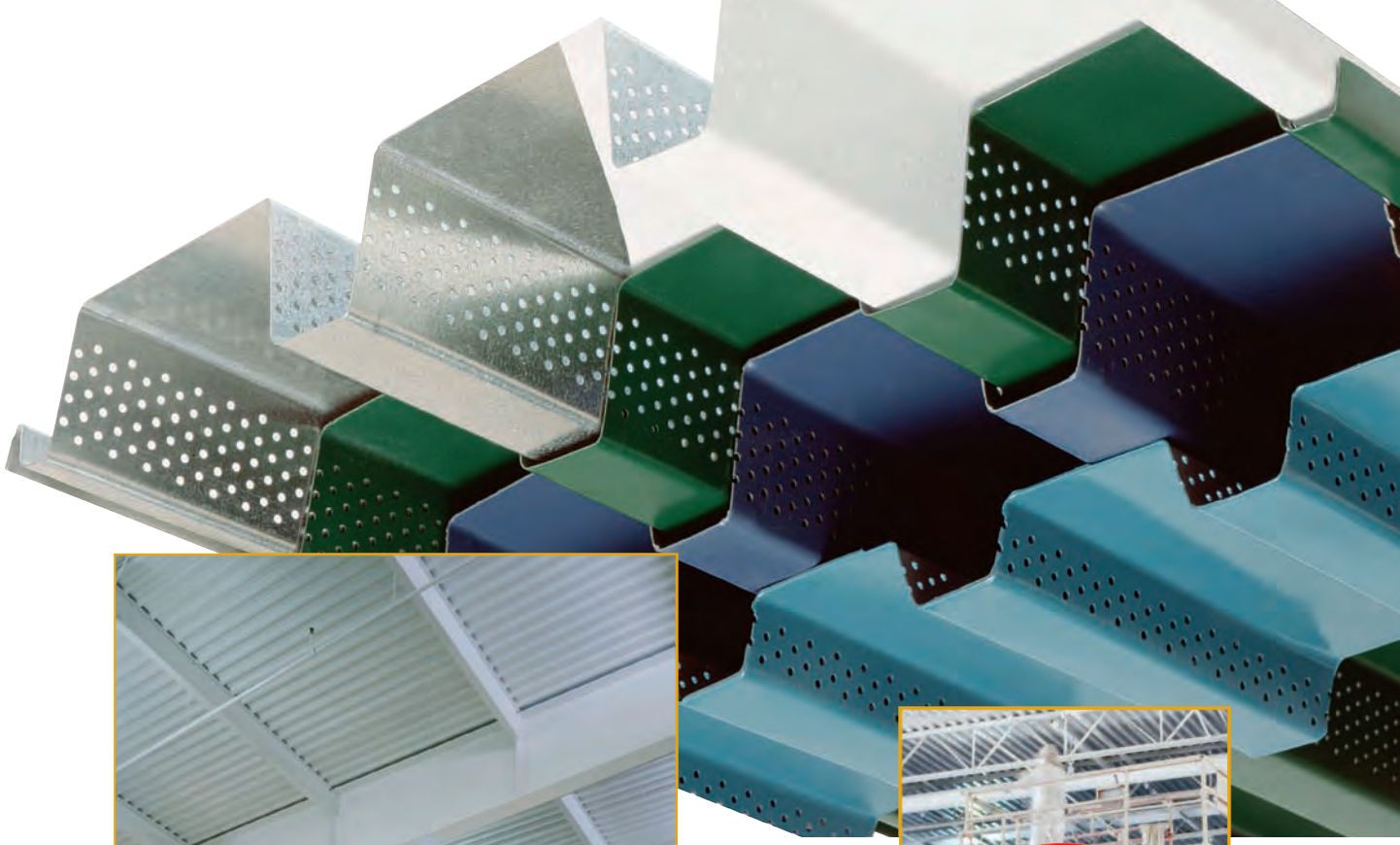
	US	Multiplied by	= *Metric*
Mass	oz	x 28.34952	= *g*
	lb	x 0.4535924	= *kg*
	plf	x 1.488164	= *kg/m*
	psf	x 4.882428	= kg/m^2
	pcf	x 16.01846	= kg/m^3
Force	lb	x 4.448222	= *N*
	plf	x 14.5939	= *N/m*
	psi	x 6.894757	= kN/m^2
	psf	x 47.88026	= N/m^2
	in.-lb (in.-kips)	x 0.1129848	= *Nm (kNm)*
	in.-lb/ft (in.-kips/ft)	x 0.3706850	= *Nm/m (kNm/m)*
Flexibility	in./lb x 10^6	x 5.71015	= *mm/N x* 10^6
Galvanizing	oz/ft^2	x 305.15169	= g/m^2
Paint	mil	x 0.0254	= *mm*

Note: "Metric" is the common term used to refer to measurements denoted by the formal term "Standard International" or "SI."

Conversion factors and notation as per IEEE/ASTM SI 10-2010 and common mathematical practices.

Metric Definitions	
m	meter
cm	centimeter
mm	millimeter
g	gram
kg	kilogram
N	Newton
Pa	Pascal

Index



Verco can supply factory applied primer paint in standard gray, white, double white, or custom colors over galvanized or cold rolled steel to meet project requirements.

Depending on the circumstances, use of Verco factory primer painted deck can:

- eliminate field painting
- eliminate touch-up painting
- provide an excellent base for field finish paint if factory primer is not left exposed

Use of the PunchLok® system complements the benefits of the factory primer painted deck and increases the cost savings.

By offering a variety of both attachment and finish options, Verco provides the flexibility to combine finish and attachment options to minimize construction time and maximize project cost savings.

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