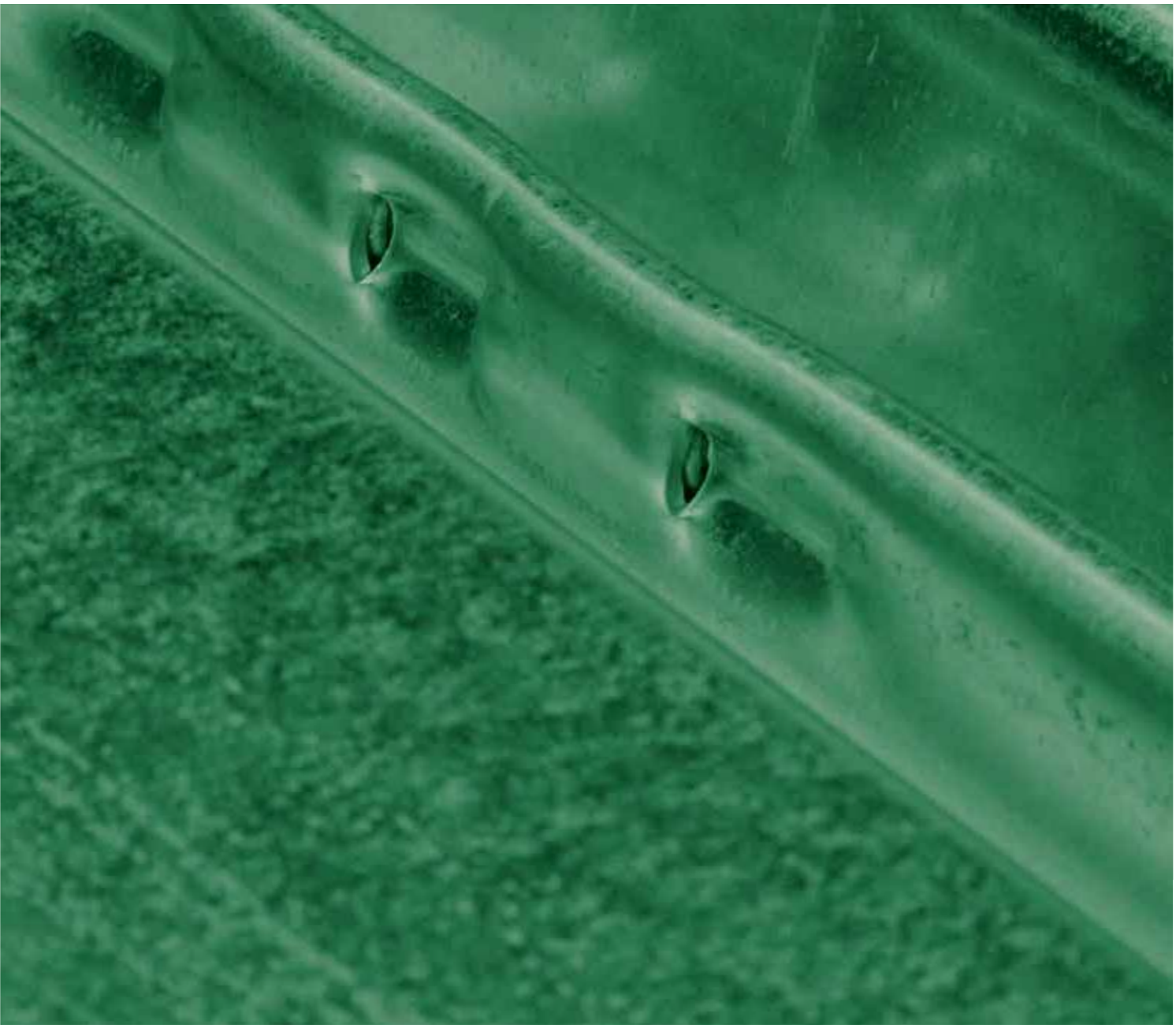
VULCRAFT

PUNCHLOK® II ROOF DECK

Weld and Screw Support Connections



DECEMBER 2016

NUCOR
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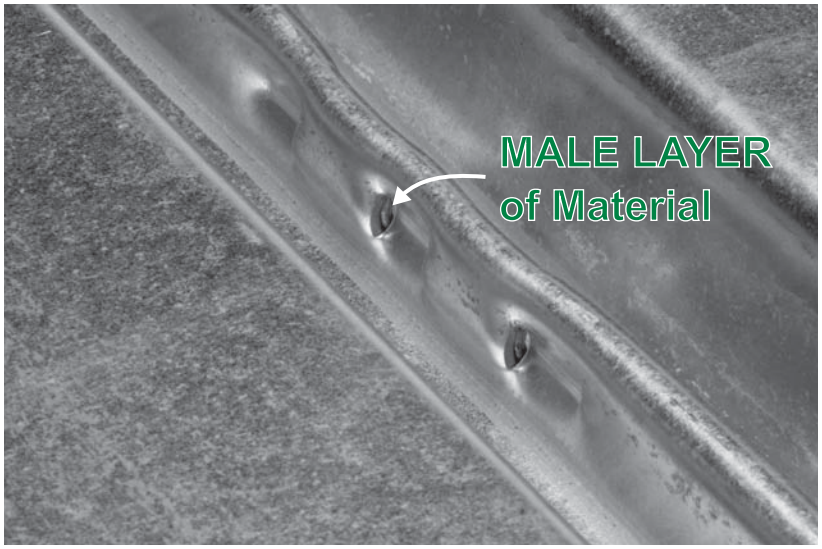
PUNCHLOK® II SYSTEM

The PunchLok II tool is a hand-held, pneumatically-operated tool that joins sidelaps of PunchLok system roof and floor deck. When used properly, the PunchLok II tool creates a positive connection between the male and female lips (edges) of the deck by first clinching the sheets together, then shearing and permanently offsetting the male and female layers of material. The connection made by the PunchLok II tool is referred to as a VSC2 (Vulcraft Sidelap Connection 2).

VULCRAFT SIDELAP CONNECTION 2 (VSC2)

An acceptable VSC2 connection has been made when the sidelap material has been sheared and offset so the sheared surface of the male leg is visible in the cut. The VSC2 connection may be made in either direction related to the sidelap.



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VULCRAFT TECHNICAL GUIDELINES

MATERIAL

PunchLok II system fluted deck panels are formed from steel conforming to ASTM A653, ASTM A1008, ASTM A1039 or ASTM A1063, GR 50 minimum.

FINISHES

PunchLok II system fluted deck panels are available in two finishes: primer coated and galvanized.

Primer coated – prior to applying an acrylic medium gray or white primer, the cold-rolled sheet is cleaned and treated. Contact Vulcraft for availability of primer over galvanized.

Due to varying job site conditions, application methods, coating manufacturers, environmental conditions and expectations, it is essential to conduct a field test to determine compatibility of the field applied top coat with the primer coat prior to full scale painting. Vulcraft is not responsible for topcoat compatibility.

Primer 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.

Minor aesthetic irregularities and/or imperfections may appear in the paint coating as a result of the manufacturing, shipping, and handling process.

Galvanized – galvanized deck panels are supplied from mill coated sheets and are offered in two zinc coated finishes.

Zinc coated steel with coating designation G60 is the standard galvanized 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. Other ASTM A 653 galvanized coatings may be available on special request – contact your Vulcraft representative regarding availability.

EXPOSED PRODUCT APPEARANCE

Steel deck is a structural product. Minor dents and scratches which do not affect the structural capacity of deck are not grounds for rejection. Note that lighter gage material is more susceptible to the appearance of oil canning and minor dents during the shipping, handling, and installation process. The appearance of oil canning does not affect the structural integrity of roof decks and is not grounds for rejection.

ATTACHMENT OF PUNCHLOK II DECK

PunchLok II system fluted deck panels are fastened to supports using one of two types of fasteners: mechanical fasteners (power actuated fasteners or self-drilling screws) or welds.

PunchLok deck may be butted or lapped at end panel conditions. A minimum end distance of 1" is required for mechanical fasteners resulting in a minimum lap distance of 2". A minimum end distance of 1-1/8" (1.5d) is required for 3/4" arc spot welds resulting in a minimum lap distance of 2-1/4". Vulcraft recommends a minimum lap distance of 2-1/2" for welds to account for placement tolerance.

Hilti Fasteners

The Hilti X-HSN 24 fastener has a dome style head, red guidance washer and a steel silver-colored top-hat washer. It may be used where substrate thickness is equal to or greater than 1/8" and less than or equal to 3/8".

Hilti X-ENP-19 L15 Fastener

The Hilti X-ENP-19 L15 fastener has a fully knurled tip and tapered shank fitted with two 0.590 inch diameter steel cupped washers. It may be used where substrate thickness is equal or greater than 1/4".

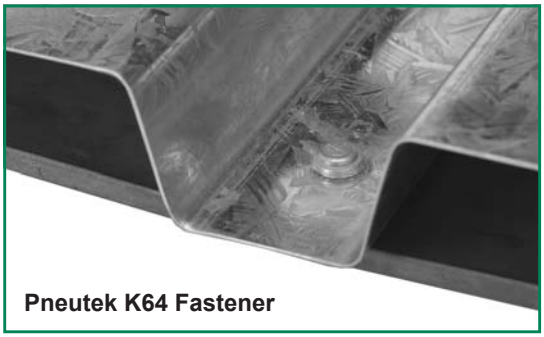
Hilti X-HSN 24 and X-ENP-19 L15 fasteners are to be installed per manufacturer guidelines. Contact Hilti for additional information.

Note that diaphragm tables for Hilti fasteners are available in the supplement to this catalog which can be found online at www.vulcraft.com/decks/punchlok-ii.

Pneutek Fasteners

Pneutek SDK61, SDK63, K64, and K66 fasteners all have ½ inch diameter heads and must be driven with the Pneutek Air/Safe fastening system to ensure tight contact between the fastener head and attached deck.

Pneutek SDK61 fasteners may be used where substrate thickness is equal to or greater than 0.113" and less than or equal to 0.155".



Pneutek K64 Fastener

Pneutek SDK63 fasteners may be used where substrate thickness is equal to or greater than 0.155" and less than or equal to 0.250".

Pneutek K64 fasteners may be used where substrate thickness is equal to or greater than 0.187" and less than or equal to 0.312".

Pneutek K66 fasteners may be used where substrate thickness is equal to or greater than 0.281".

Pneutek fasteners are to be installed per manufacturer guidelines. Contact Pneutek for additional information.

Note that diaphragm tables for Pneutek fasteners are available in the supplement to this catalog which can be found online at www.vulcraft.com/decks/punchlok-ii.

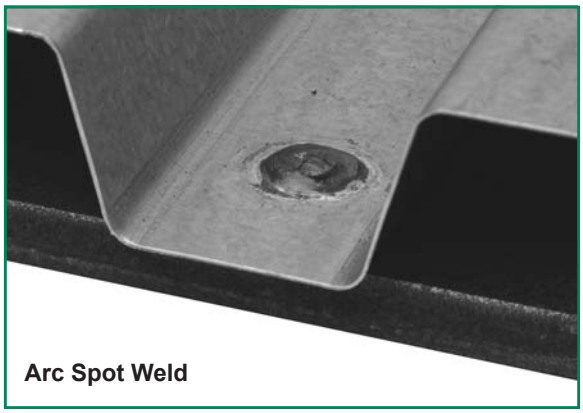
Self-Drilling Self-Tapping Screws

#12 Screw

All #12 self-drilling, self-tapping screws must be compliant with ASTM C1315. Screws must meet the listed shear and tension strength requirements in Tables 1 and 2. It is assumed that screws in this catalog are installed into supports at least 0.109" (7/64") thick which is the minimum thickness used on the top chord of Vulcraft joists. To evaluate diaphragms utilizing screws into supports less than 0.109" (7/64") thick, please contact your Vulcraft representative. In certain cases, increasing the minimum substrate thickness, or using a washer with the screw may increase shear capacity when wind uplift must be considered. To investigate these alternatives, please contact your Vulcraft representative.

Welds

When PunchLok deck is to be welded to supports, the visible weld area is to be at least 3/4" diameter for arc spot (puddle) welds. Arc seam welds are required at support locations adjacent to the sidelap due to limited available weld area. The visible width of arc seam welds is to be at least 3/8" and the visible length is to be at least 1" excluding the circular ends of the weld.


Arc Spot Weld

Arc Seam Weld

SUPPORT FASTENER STRENGTH

Table 1: Allowable Shear Strength (lbs/connection) for Deck Panel Support Connections

Deck Gage	BMT	3/4" Arc Spot Weld	3/8" x 1" Arc Seam Weld	Hilti X-HSN 24	Hilti X-ENP-19	Pneutek SDK61	Pneutek SDK63	Pneutek K64	Pneutek K66	#12 Screw
	(in.)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
22	0.0295	737	887	595	641	611	684	680	726	553
20	0.0358	1052	1065	718	773	731	789	883	900	671
19	0.0418	1346	1231	833	897	843	881	1052	1073	784
18	0.0474	1514	1382	939	1011	944	961	1194	1241	889

Table 2: Allowable Tension Strength (lbs/connection) for Deck Panel Support Connections

Deck Gage	BMT	3/4" Arc Spot Weld	Hilti X-HSN 24	Hilti X-ENP-19	Pneutek SDK61	Pneutek SDK63	Pneutek K64	Pneutek K66	#12 Screw
	(in.)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
22	0.0295	588	432	540	457	457	457	457	286
20	0.0358	707	524	655	555	555	555	555	347
19	0.0418	818	612	765	648	648	648	648	405
18	0.0474	921	694	867	735	735	735	735	459

Table 1 and 2 Notes:

1. Base metal thickness (BMT) = specified minimum uncoated base metal thickness used in design. Deck subject to thickness tolerances as described in Section A2.4 of AISI S100.
2. F_u = 62 ksi
3. Arc spot weld and arc seam weld shear strength is calculated in accordance with AISI S100 Section E2.2.2.1 and E2.3.2.1 respectively. Arc spot weld tension strength is calculated in accordance with AISI S100 Section E2.2.3. Tensile strength of electrode classification, F_{xx} = 60 ksi. The allowable tension strength of the two 3/8" x 1" Arc Seam Welds to the support adjacent to the sidelap exceeds the allowable tension strength of a 3/4" Arc Spot Weld which is used in the determination of uplift capacity.
4. Hilti, Pneutek, and screw fastener shear strength is calculated in accordance with SDI DDM03. Tension strength is based on pullover and is calculated in accordance with AISI S100. For pullout strength, refer to manufacturer literature for Hilti and Pnuetek and AISI S100 for screws.
5. The #12 screws are self-drilling self-tapping screws with a minimum washer diameter of 5/16" and a minimum washer thickness of 0.05 in. The screws must be compliant with ASTM C1513. Assumed Substrate Thickness = 0.109" (7/64") which is the minimum top chord thickness used on Vulcraft joists. Contact Vulcraft for other conditions.
6. The allowable shear and tension strength of the individual screws, as published by their manufacturer, must meet or exceed the allowable screw connection shear and tensile strengths listed above.
7. Allowable Shear Strength is the ASD allowable connection shear strength, where Ω is 3.0 for welds and 2.5 for mechanical fasteners. Nominal Shear Strength may be determined by multiplying the table values by Ω. LRFD Shear Strength may be determined by multiplying Nominal Shear Strength by Ø = 0.55 for welds and Ø = 0.65 for mechanical fasteners.
8. Allowable Shear Strength values may not be increased one-third for wind or earthquake loading.
9. Allowable Tension Strength is the ASD allowable connection tension strength, where Ω is 2.5 for welds and 3.0 for mechanical fasteners. Nominal Tension Strength may be determined by multiplying the table values by Ω. LRFD Tension Strength may be determined by multiplying Nominal Tension Strength by Ø = 0.60 for welds and Ø = 0.50 for mechanical fasteners.

PUNCHLOK® DECK GRAVITY LOADS

Allowable uniform load values are based on the allowable bending moment (stress) and limiting deflection to L/360, L/240 or L/180. Note that self-weight of the deck should be included when determining dead load. Bending moment and deflection is based on slender beam theory for the span condition. Table values are based on a minimum exterior bearing length of 1.50 inches and a minimum interior bearing length of 3.00 inches. If these minimum lengths are not provided, web crippling must be checked. The formulas used to determine the allowable uniform loads due to flexure (stress) and deflection are as follows:

Design Formulas

Span	Bending Moment	Deflection
Single	$+M = 0.125 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0013 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{dn}}$
Double	$-M = 0.125 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0054 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{dm}}$
Triple	$-M = 0.1 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0069 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{dm}}$

+M = Positive Bending Moment in ft-lb/ft
-M = Negative Bending Moment in ft-lb/ft
Δ = Deflection in inches
E = 29,500,00 psi
ω = Allowable Uniform Load in psf
L = Span Length in feet. Span lengths shown in tables are center-to-center spans
I_{dn} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Normal Position)
I_{dm} = Moment of Inertia for Deflection due to Uniform Loads for Multiple Span Conditions

Deflection Limits

Deflection limitations for structural members are listed in IBC Table 1604.3.

ALLOWABLE REACTIONS

Allowable reactions for solid fluted deck panels can be governed by web crippling or web shear capacity. In this catalog, both web crippling and shear strength of PunchLok deck profiles are provided.

The allowable reactions governed by web crippling for one-flange reactions and allowable concentrated line loads based on web crippling for two-flange loading are provided on pages 22 and 58. The allowable reactions governed by web shear are shown in the section property tables. Figure 1 on page 8 illustrates the difference between one-flange and two-flange loading for web crippling.

In most cases web-crippling and vertical shear will not govern the vertical capacity of uniformly loaded deck panels. However, web-crippling and vertical shear should be checked when minimum bearing requirements are not met or when evaluating other load types such as non-uniform and point loads.

Reactions are based on slender beam theory for the span condition. The formulas used to determine the allowable reactions loads due to bearing (web crippling) and shear are as follows:

Design Formulas

Span	Bearing	Shear
Single	$R_e = 0.5 \cdot \omega \cdot L$	$V_e = 0.5 \cdot \omega \cdot L$
Double	$R_e = 0.375 \cdot \omega \cdot L$ $R_i = 1.25 \cdot \omega \cdot L$	$V_e = 0.375 \cdot \omega \cdot L$ $V_i = 0.625 \cdot \omega \cdot L$
Triple	$R_e = 0.4 \cdot \omega \cdot L$ $R_i = 1.1 \cdot \omega \cdot L$	$V_e = 0.4 \cdot \omega \cdot L$ $V_i = 0.6 \cdot \omega \cdot L$

R_e = End Reaction in ft-lb/ft
R_i = Interior Reaction in ft-lb/ft
V_e = Vertical Shear adjacent to end support in lb/ft
V_i = Vertical Shear adjacent to interior support in lb/ft
ω = Allowable Uniform Load in psf
L = Span Length in feet. Span lengths shown in tables are center-to-center spans

BEARING

Vulcraft recommends 2 inches minimum bearing on perpendicular supports. Bearing length directly influences allowable reactions governed by web crippling. It is also important to ensure that enough bearing length is provided to meet minimum edge distance requirements for fasteners.

Sufficient bearing at parallel supports should be provided to make the specified connections.

The Gravity Load Tables on pages 21 and 57 assume a minimum exterior bearing length of 1.50 inches and a minimum interior bearing length of 3.00 inches.

Web Crippling: One vs. Two Flange Loading

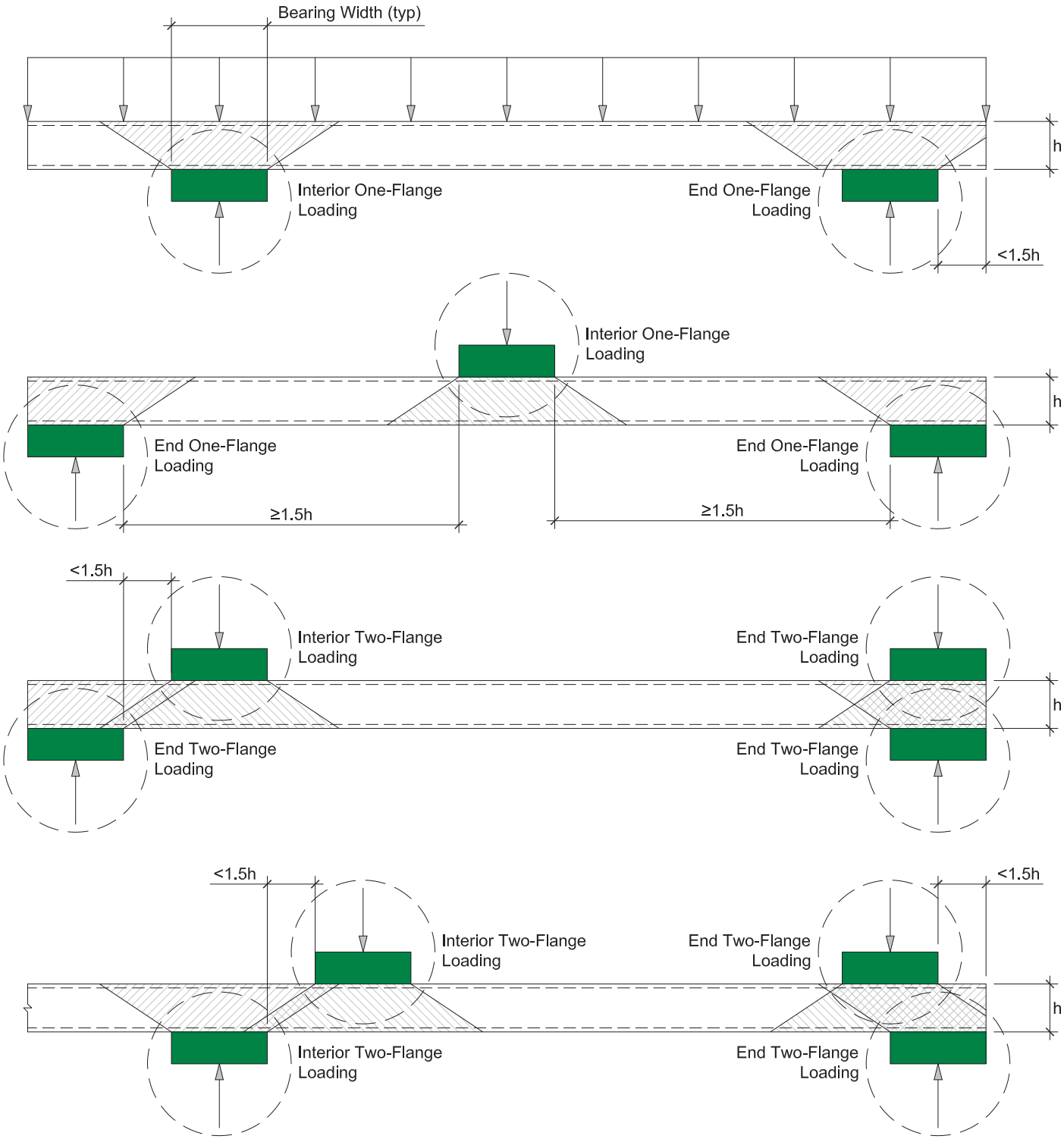


FIGURE 1

PUNCHLOK® DECK UPLIFT LOADS

Allowable uniform uplift load values are based on the allowable bending moment (stress) and limiting deflection to L/360, L/240 or L/180. Note that self-weight of the deck is not included and must be accounted for when determining resisting dead load. Bending moment and deflection is based on slender beam theory for the span condition. The formulas used to determine the allowable uniform uplift loads due to flexure (stress) and deflection are as follows:

Design Formulas

Span	Bending Moment	Deflection
Single	$-M = 0.125 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0013 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{di}}$
Double	$+M = 0.125 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0054 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{dm}}$
Triple	$+M = 0.1 \cdot \omega \cdot L^2$	$\Delta = \dfrac{0.0069 \cdot \omega \cdot L^4 \cdot 1728}{E \cdot I_{dm}}$

+M = Positive Bending Moment in ft-lb/ft
-M = Negative Bending Moment in ft-lb/ft
Δ = Deflection in inches
E = 29,500,00 psi
ω = Allowable Uniform Load in psf
L = Span Length in feet. Span lengths shown in tables are center-to-center spans
I_{di} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Inverted Position)
I_{dm} = Moment of Inertia for Deflection due to Uniform Loads for Multiple Span Conditions

DIAPHRAGM STRENGTH, FLEXIBILITY AND STIFFNESS

There are three parts in the diaphragm strength and stiffness tables: allowable diaphragm shear strength due to seismic loads, diaphragm stiffness, and allowable diaphragm shear strength due to wind loads.

Per industry standard, diaphragm strength tables are based on a rational assumption of a three span condition. For more information, or for conditions outside the range of the published values in this catalog, please contact your Vulcraft representative.

The sidelap connection strength, Q_s, and Flexibility S_s, for the PunchLok II (VSC2) connection is determined in accordance with the following equations:

$Q_s = 137.42 \cdot t - 2.01$ (kips)

$S_s = 28.84 \cdot t^2 - 3.24 \cdot t + 0.099$ (in/kip)

Where: t = Base Metal Thickness

Allowable Diaphragm Shear Strength Due to Seismic Loads

In certain parts of the country, it is unknown at the start of the design process whether seismic or wind will govern the diaphragm design. For this reason both seismic and wind tables have been published in this catalog. This saves the user from having to convert a wind table to seismic or vice versa. Allowable diaphragm shear strength is published based on span length and number of VSC2 connections per span.

Diaphragm Stiffness

Diaphragm stiffness is a property of the diaphragm that predicts how much a diaphragm will deflect in plane under load. The diaphragm stiffness tables list the diaphragm stiffness for a three span condition. As the number of spans increase, so does diaphragm stiffness. Likewise, as the numbers of spans decrease so does diaphragm stiffness.

Diaphragm stiffness can be determined for any span condition using the following equations:

$$G' = \frac{E \cdot t}{2.6 \cdot \frac{s}{d} + \rho \cdot D_n + C} \qquad D_n = \frac{D}{L} \qquad C = E \cdot \frac{t}{w} \cdot S_f \cdot \left(\frac{2}{2 \cdot \alpha_1 + n_p \cdot \alpha_2 + 2 \cdot n_s \cdot \frac{S_f}{S_s}} \right) \cdot L$$

Where:
G' = Diaphragm Stiffness (k/in)
E = Modulus of Elasticity = 29,500 ksi
t = Base Metal Thickness (in) *See Section Properties Table on pages 20 and 56.*
s = developed flute per width (in)
d = panel corrugation pitch (in)

Deck Profile	s (in)	d (in)
1.5PLB	8.342	6
3.0PLN	13.297	8

ρ = Support Factor for Warping

Spans	1	2	3	4	5	6	7
ρ	1.00	1.00	0.90	0.80	0.71	0.64	0.58

D_n = Warping Coefficient
D = Warping Constant

Warping Constant, D			
	Deck Profile and Attachment Pattern		
Deck Gage	1.5PLB 36/4	1.5PLB 36/7	3.0PLN 24/4
22	10891	1225	7807
20	8147	916	5840
19	6457	726	4629
18	5348	601	3833

L = Panel Length (in)
C = Slip Coefficient
w = Panel Width (in)
S_f = Structural Connection Flexibility (in/k)
S_s = Sidelap Connector Flexibility (in/k)

Structural Connection, S_f and Sidelap Connector Flexibility, S_s									
	S_f (in/k)								S_s (in/k)
Gage	Weld	Hilti X-HSN 24	Hilti X-ENP-19	Pneutek SDK61	Pneutek SDK63	Pneutek K64	Pneutek K66	#12 Screw	PunchLok II (VSC2)
22	0.0067	0.0073	0.0044	0.0175	0.0175	0.0175	0.0175	0.0076	0.0285
20	0.0061	0.0066	0.0040	0.0159	0.0159	0.0159	0.0159	0.0069	0.0200
19	0.0056	0.0061	0.0037	0.0147	0.0147	0.0147	0.0147	0.0064	0.0140
18	0.0053	0.0057	0.0034	0.0138	0.0138	0.0138	0.0138	0.0060	0.0102

α_1 = End Distribution Factor

α_2 = Purlin Distribution Factor

n_p = Number of Purlins excluding those at Ends of Panel = Number of Spans - 1

n_s = Number of Sidelap Connectors within the Panel Length = Number of Spans x Number of Sidelap Fasteners per Span

Deck Profile and Attachment Pattern	End Distribution Factor, α_1	Purlin Distribution Factor, α_2
1.5PLB – 36/4	1.306	1.306
1.5PLB – 36/7	1.972	1.972
3.0PLN – 24/4	1.292	1.292

Example

Calculate the stiffness for a 4 span condition for the following:

Deck Profile = 1.5PLB20
Span Length = 7'-0" (84")
Support Fastener = #12 Screws
Support Fastener Attachment Pattern = 36/7
Sidelap Fastener = VSC2
Number of Sidelap Fasteners per Span = 7

Four Span Condition:

$$C = E \cdot \frac{t}{w} \cdot S_f \cdot \left(\frac{2}{2 \cdot \alpha_1 + n_p \cdot \alpha_2 + 2 \cdot n_s \cdot \frac{S_f}{S_s}} \right) \cdot L$$

$$C = 29{,}500 \cdot \frac{0.0358}{36} \cdot 0.0069 \cdot \left(\frac{2}{2 \cdot 1.972 + \mathbf{3} \cdot 1.972 + 2 \cdot \mathbf{28} \cdot \frac{0.0069}{0.0020}} \right) \cdot \mathbf{336} = 4.66$$

$$D_n = \frac{D}{L} = \frac{916}{\mathbf{336}} = 2.73$$

$$G' = \frac{E \cdot t}{2.6 \cdot \frac{s}{d} + \rho \cdot D_n + C}$$

$$G' = \frac{29{,}500 \cdot 0.0358}{2.6 \cdot \frac{8.342}{6} + 0.90 \cdot 2.73 + 4.66} \cong 98 \text{ k/in}$$

ALLOWABLE DIAPHRAGM SHEAR STRENGTH DUE TO WIND LOADS

In high wind regions, wind uplift must be checked in conjunction with diaphragm shear due to wind loads. When support fasteners must resist a significant amount of tension load due to wind uplift, the allowable shear strength of those fasteners is reduced. For this reason, allowable diaphragm shear strength tables due to wind are published with and without net wind uplift. As net wind uplift increases, allowable diaphragm shear capacity decreases. The net wind uplift load is the resultant of the appropriate Allowable Stress Design (ASD) load combination. Tributary width, and the appropriate reaction equations were used to calculate tension loads on fasteners.

Fastener Requirements at Parallel Connectors

The number of support attachments per span at diaphragm chords, struts, ties or other collector elements that are parallel to the deck flutes is based on the shear capacity of the connections used. It is assumed that a sufficient number of attachments per span are provided to develop the full shear capacity of the diaphragm. To keep the same diaphragm rigidity, the spacing of the attachment of the panels at the perimeter parallel to the deck flutes should not be larger than that for the interior sidelap fasteners.

The number of required parallel support attachments is determined by multiplying the nominal shear value in the seismic or wind without net uplift table by the span length and then dividing by the allowable shear strength of the support fastener. Remember that table values are allowable and must be converted to nominal. Allowable shear strengths for Arc Spot Welds, Arc Seam Welds, Hilti Fasteners, Pneutek Fasteners, and #12 Screws are listed in Table 1.

SPECIFICATION SECTION 05 31 23 - STEEL ROOF DECKING

Specifications utilizing VULCRAFT roof deck formatted in accordance with MasterFormat 2012, Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC) are available for download from Vulcraft's website (www.vulcraft.com/decks/punchlok-ii).

DESIGN EXAMPLE

The focus of this design example is to illustrate how to use this catalog. This design example illustrates the basic issues involved in the design of Vulcraft PunchLok deck and is not intended to address all of the possible options.

Design Criteria

The objective is to select the deck system for the roof of a warehouse building. The roof structure is made of steel joists with a minimum top chord thickness greater than 1/8" and less than 3/16". The deck does not support a ceiling. The joist spacing is 5'-0" oc. The contractor has requested 1½" deep deck be used and that a screw support fastener be specified. Selection is based on the ASD method. The design criteria are as follows:

Deck Type =	1.5PLB
Deck Span =	5'-0"
Substrate Thickness =	≥ 1/8" and ≤ 3/16"
Roof Dead Load, ω_{DL} =	10 psf
Roof Live Load, ω_{LL} =	20 psf
Total Vertical Load, ω_{TL} =	30 psf
Net Wind Uplift Load = (Based on Appropriate ASD Load Combination)	60 psf
Deflection Criteria (Live) =	L / 180
Deflection Criteria (Wind) =	L / 180
Required Diaphragm Strength (Seismic) =	525 plf
Required Diaphragm Strength (Wind) =	575 plf
Required Diaphragm Stiffness =	60 k/in

STEP 1: Check Vertical Gravity Load Capacity and Deflection of Deck

The first step in the deck selection process is to check the vertical strength (due to gravity loads) of the deck itself based on bending stress and deflection criteria. For this example a design must be selected that meets the following criteria:

Deck Span =	5'-0"
Roof Dead Load =	10 psf
Roof Live Load =	20 psf
Total Vertical Load =	30 psf
Deflection Criteria (Live) =	L / 180

Use the Allowable Uniform Gravity Loads Based on Bending Stress and Deflection Tables for 1.5PLB on page 21. *It is suggested that the vertical load information section and all footnotes be read before using tables.* Assume for the purpose of this example that a triple span condition will be used. From the tables, the 22 gage 1.5PLB deck satisfies the design criteria as follows:

Deck Type =	1.5PLB22
Allowable Uniform Load based on Stress =	177 psf > 30 psf ∴ OK
Allowable Uniform Live Load based on L / 180 =	> 177 psf > 20 psf ∴ OK

STEP 2: Check Allowable Reactions and Shear Due to Vertical Gravity Loads

The second step is to check the allowable reactions due to web crippling and determine the minimum required bearing for the deck selected in Step 1. While it rarely will ever govern design, web shear capacity of the deck should also be checked. Both end and interior conditions must be checked for both bearing and web shear. First determine the required reaction and shear capacity. Note: applicable equations are listed on page 7. For a triple span condition:

Note:
Step 2 only needs to be performed if minimum bearing requirements are not met.

Bearing

$R_e = 0.4 \cdot \omega_{TL} \cdot L = 0.4 \cdot 30\ psf \cdot 5.00\ ft = 60\ plf$

$R_i = 1.1 \cdot \omega_{TL} \cdot L = 1.1 \cdot 30\ psf \cdot 5.00\ ft = 165\ plf$

Shear

$V_e = 0.4 \cdot \omega_{TL} \cdot L = 0.4 \cdot 30\ psf \cdot 5.00\ ft = 60\ plf$

$V_i = 0.6 \cdot \omega_{TL} \cdot L = 0.6 \cdot 30\ psf \cdot 5.00\ ft = 90\ plf$

Because the contractor has requested the specification of a mechanical support fastener, enough bearing length should also be specified to ensure that minimum edge distance requirements are met. Typically, a 1" distance to edge of sheet is recommended for mechanical support fasteners, therefore a 2" bearing length will be the starting point for design. Use the allowable reaction tables for 1.5PLB deck on page 22. Note that standard reactions used for uniform load conditions are one flange loading conditions. The web shear capacity of the deck can be found in the section properties table on page 20. Based on the previously selected 22 gage 1.5PLB deck:

Deck Type =	1.5PLB22
Allowable End Reaction (2" Bearing) =	897 plf > 60 plf ∴ OK
Allowable Interior Reaction (2" Bearing) =	1325 plf > 165 plf ∴ OK
Allowable Web Shear Strength =	2825 plf > 90 plf ∴ OK

STEP 3: Check Vertical Uplift Load Capacity and Deflection of Deck

The third step in the deck selection process is to check the vertical strength (due to wind uplift loads) of the deck itself based on bending stress and deflection criteria. *Note: Uplift capacity of connections will be considered in step 4.* For this example a design must be selected that meets the following criteria:

Deck Span =	5'-0"
Net Wind Uplift Load =	60 psf
Deflection Criteria (Wind) =	L / 180

Turn to the Allowable Uniform Uplift Loads Based on Bending Stress and Deflection Tables for 1.5PLB on page 23. *It is suggested that the uplift load information section and all footnotes be read before using tables.* Verify that the profile selected in step 1 meets the uplift strength and deflection criteria.

Deck Type =	1.5PLB22
Allowable Uniform Load base on Stress =	167 psf > 60 psf ∴ OK
Allowable Uniform Load base on L / 180 =	> 167 psf > 60 psf ∴ OK

STEP 4: Check Diaphragm Capacity and Stiffness

Note: It is recommended that the diaphragm section of this manual and table footnotes be reviewed before using the diaphragm tables. The first part of checking the diaphragm strength and stiffness involves selecting the appropriate support fastener for the project. In this case, the contractor has requested that a screw support fastener be specified. Substrate thickness is an important factor in specifying an appropriate fastener. For this project, consider:

Substrate Thickness =	≥ 1/8"and ≤ 3/16"
Selected Fastener =	#12 Screws
Fastener Substrate Range =	≥ 0.109" ∴ OK

Now that a fastener has been selected, use the diaphragm tables for 1.5PLB22 with #12 Screws fasteners on page 32. First we will check Seismic:

Deck Type =	1.5PLB22
Deck Span =	5'-0"
Selected Fastener =	#12 Screws
Required Diaphragm Strength (Seismic) =	525 plf
Support Fastener Attachment Pattern =	36/7
Number of VSC2's Required per Span =	3
Allowable Diaphragm Shear Strength =	623 plf > 525 plf ∴ OK

Now check for the wind condition. Note that when checking for wind, uplift should also be considered. In this example, the roof has a significant net wind uplift pressure; therefore shear/tension interaction must be checked (from page 33):

Deck Type =	1.5PLB22
Deck Span =	5'-0"
Selected Fastener =	#12 Screws
Support Fastener Attachment Pattern =	36/7
Net Wind Uplift Load =	60 psf
Required Diaphragm Strength (Wind) =	575 plf
Number of VSC2's Required per Span =	4
Allowable Diaphragm Shear Strength =	631 plf > 575 plf ∴ OK

Note that more VSC2 sidelap connections are required per span than for the seismic condition. Since this design will govern the design, it will be used to verify that the diaphragm meets the stiffness requirements of the project (from page 32):

Deck Type =	1.5PLB22
Deck Span =	5'-0"
Selected Fastener =	#12 Screws
Support Fastener Attachment Pattern =	36/7
Required Diaphragm Stiffness =	60 k/in
Diaphragm Stiffness, G' =	61 k/in > 60 k/in ∴ OK

STEP 5: Determine Parallel Attachment Requirements

Next the number of parallel attachments per span must be determined in order to develop the full capacity of the diaphragm. This is done by multiplying the nominal diaphragm shear strength by the span length and dividing by the nominal fastener shear strength. Nominal shear strength for both the diaphragm and the fastener must first be determined by multiplying the allowable shear strengths by the appropriate safety factors. This is due to the differing safety factors for diaphragms and individual connections. Use the wind with no uplift shear strength for the conversion and not the wind shear capacity that is impacted by wind uplift.

Deck Type =	1.5PLB22
Deck Span =	5'-0"
Support Fastener =	#12 Screws
Support Fastener Attachment Pattern =	36/7
Number of VSC2's Required per Span =	4
Allowable Diaphragm Strength (Wind-No Uplift) =	771 plf (from page 32)
Safety Factor, Ω_d =	2.35
Nominal Diaphragm Shear Capacity =	(771 plf)(2.35) = 1812 plf
Allowable Fastener Shear Strength =	553 lb.
Safety Factor, Ω =	2.5 (from page 5)
Nominal Fastener Shear Strength =	(553 plf)(2.5) = 1383 plf
Number of Fasteners Required per Span =	(1812 plf)(5'-0")/(1383 lb.) = 6.6
	∴ 7 #12 Screw support fasteners are required per span

STEP 6: Summarize Design

The following design will be used for this project:

Deck Span =	5'-0"
Deck Type =	1.5PLB22
Selected Fastener =	#12 Screws
Attachment Pattern =	36/7
Number of VSC2's Required per Span =	4
Number of #12 Screws Required per Span = (@ parallel collectors)	7

TABLE FOOTNOTES

Allowable Uniform Loads Based on Bending Stress and Deflection Table Footnotes

1. Minimum exterior bearing length required is 1.50 inches. Minimum interior bearing length required is 3.00 inches. If these minimum lengths are not provided, web crippling must be checked using the allowable reaction tables (See pages 22 and 58).
2. Stress = Allowable uniform load based on maximum allowable flexural stress in deck.
3. L/360, L240 or L/180 = Uniform load which produces selected deflection in deck.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.
5. Nominal uniform loads governed by stress may be determined by multiplying the allowable values in the table by $\Omega_b = 1.67$. LRFD loads may be determined by multiplying nominal loads by $\phi_b = 0.90$.

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection

1. This table does not account for the uplift capacity of fasteners. Allowable shear / uplift interaction must be checked separately using the allowable diaphragm strength tables (See pages 24-55 and 60-75).
2. Stress = Allowable uniform load based on maximum allowable flexural stress in deck.
3. L/360, L240 or L/180 = Uniform load which produces selected deflection in deck.
4. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.
5. Nominal uniform loads governed by stress may be determined by multiplying the allowable values in the table by $\Omega_b = 1.67$. LRFD loads may be determined by multiplying nominal loads by $\phi_b = 0.90$.

Allowable Reactions Due to Web Crippling Table Footnotes

1. Nominal reactions governed by one flange end bearing may be determined by multiplying the allowable values in the table by $\Omega_c = 1.70$. LRFD loads may be determined by multiplying nominal loads by $\phi_c = 0.90$.
2. Nominal reactions governed by one flange interior bearing may be determined by multiplying the allowable values in the table by $\Omega_c = 1.75$. LRFD loads may be determined by multiplying nominal loads by $\phi_c = 0.85$.
3. Nominal reactions governed by two flange end bearing may be determined by multiplying the allowable values in the table by $\Omega_c = 1.80$. LRFD loads may be determined by multiplying nominal loads by $\phi_c = 0.85$.
4. Nominal reactions governed by two flange interior bearing may be determined by multiplying the allowable values in the table by $\Omega_c = 1.75$. LRFD loads may be determined by multiplying nominal loads by $\phi_c = 0.85$.

Footnotes for Allowable Diaphragm Shear Strength and Stiffness Tables

1. Refer to the section entitled Fastener Requirements at Parallel Collectors on page 12 and Step 5 of the Design Example to determine the required number of fasteners at parallel collectors.
2. For general design of multi-span deck the Diaphragm Stiffness tables are based on a three span condition. To calculate diaphragm stiffness for other span conditions, refer to section entitled Diaphragm Stiffness on page 10.
3. VSC2 = Vulcraft Sidelap Connection 2. A VSC2 is the sidelap connection made by the PunchLok II Tool. Sidelap connections are not required at support locations.
4. X-ENP-19 = Hilti X-ENP-19 L15 fastener
   K66 = Pneutek K66062 fastener
   K64 = Pneutek K64062 fastener
   SDK63 = Pneutek SDK63075 fastener
   SDK61 = Pneutek SDK61075 fastener
5. For deck attached with #12 screws, select appropriate screw based on actual substrate thickness. The following table is provided as a guide, proper selection should be verified based on specific fasteners used:

Support Thickness	Fastener Designation
0.0385" to 3/16"	#3 Drill Point
1/8" to 1/4"	#4 Drill Point
1/8" to 1/2"	#5 Drill Point

6. Interpolation of diaphragm shear strength between adjacent span lengths is permissible. For interpolation of diaphragm stiffness between adjacent span lengths, use the stiffness for the closest adjacent span length.
7. The allowable diaphragm shear values in the tables are ASD values. Factors of safety are based on AISI S100 Table D5 (see below). The gray shaded values in the table indicate where panel buckling is the limit state rather than the connections. To convert from ASD to LRFD or LSD for each connection type, the published allowable diaphragm shear strength may be multiplied by the applicable conversion factor, $C = \Omega_d \cdot \phi_d$

AISI S100 Table D5: Safety Factors and Resistance Factors for Diaphragms

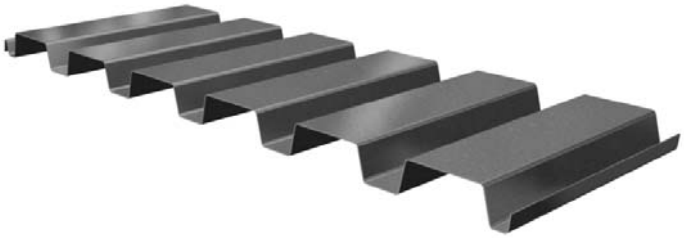
Load Type or Combinations Including	Connection Type	Limit State: Connection Related			Limit State: Panel Buckling[a]		
		Ω_d (ASD)	ϕ_d (LRFD)	ϕ_d (LSD)	Ω_d (ASD)	ϕ_d (LRFD)	ϕ_d (LSD)
Earthquake	Welds	3.00	0.55	0.50	2.00	0.80	0.75
	Screws[b,c]	2.50	0.65	0.60			
Wind	Welds Screws[b,c]	2.35	0.70	0.65			
All Others	Welds	2.65	0.60	0.55			
	Screws[b,c]	2.50	0.65	0.60			

a. Panel buckling is considered out-of-plane buckling and not local buckling at fasteners.
b. For mechanical fasteners other than screws, Ω_d shall not be less than the Table D5 values for screws.
c. For mechanical fasteners other than screws, ϕ_d shall not be greater than the Table D5 values for screws.

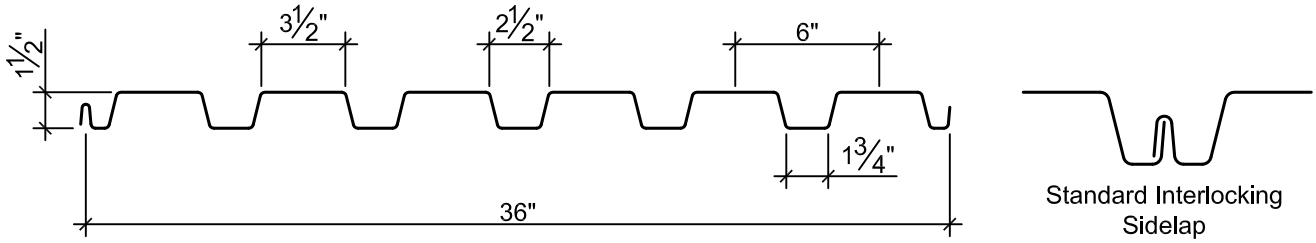
NOTES

1.5PLB™

- 1½" Deep Roof Deck
- Used with PunchLok® II System



Approximate Dimensions

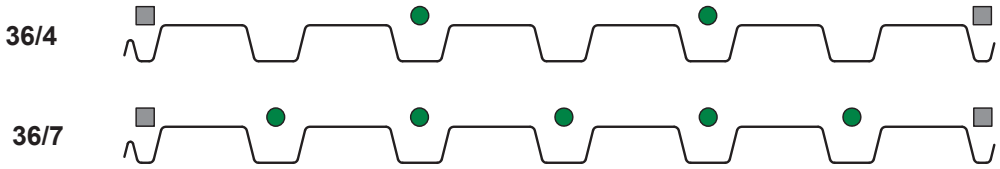


Deck Weight and Section Properties

Deck Type	Design Thickness (in.)	Weight (psf)	I_x (in^4/ft)	I_{dn} (in^4/ft)	I_{di} (in^4/ft)	I_{dm} (in^4/ft)	S_{pos} (in^3/ft)	S_{neg} (in^3/ft)	V_a (lb/ft)
1.5PLB22	0.0295	1.78	0.178	0.152	0.173	0.175	0.167	0.177	2825
1.5PLB20	0.0358	2.14	0.216	0.193	0.216	0.216	0.218	0.227	3409
1.5PLB19	0.0418	2.49	0.252	0.233	0.252	0.252	0.259	0.275	3958
1.5PLB18	0.0474	2.82	0.286	0.272	0.286	0.286	0.298	0.315	4464

Notes:
1. Section properties are based on F_y = 50,000 psi.
2. I_x = Gross Moment of Inertia
3. I_{dn} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Normal Position)
4. I_{di} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Inverted Position)
5. I_{dm} = Moment of Inertia for Deflection due to Uniform Loads for Multiple Span Conditions
6. S_{pos} = Positive Effective Section Modulus
7. S_{neg} = Negative Effective Section Modulus
8. V_a = Allowable Reaction governed by web shear.

Attachment Patterns to Supports



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

GRAVITY LOAD TABLES

1.5PLB22

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	209	165	134	110	93	79	68	59	52	46	41	37	33
	L/360	104	73	53	40	31	24	19	16	13	11	9	8	7
	L/240	156	110	80	60	46	36	29	24	19	16	14	12	10
	L/180	208	146	106	80	62	48	39	32	26	22	18	16	13
DOUBLE	Stress	221	175	142	117	98	84	72	63	55	49	44	39	35
	L/360	♦♦♦	♦♦♦	♦♦♦	111	85	67	54	44	36	30	25	21	18
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	54	45	38	32	28
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	277	219	177	146	123	105	90	79	69	61	55	49	44
	L/360	225	158	115	87	67	52	42	34	28	23	20	17	14
	L/240	♦♦♦	♦♦♦	173	130	100	79	63	51	42	35	30	25	22
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	84	68	56	47	40	34	29

1.5PLB20

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	273	215	174	144	121	103	89	78	68	60	54	48	44
	L/360	132	93	68	51	39	31	25	20	17	14	12	10	8
	L/240	198	139	102	76	59	46	37	30	25	21	17	15	13
	L/180	264	186	135	102	78	62	49	40	33	28	23	20	17
DOUBLE	Stress	284	224	182	150	126	107	93	81	71	63	56	50	45
	L/360	♦♦♦	♦♦♦	♦♦♦	137	105	83	66	54	44	37	31	27	23
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	67	56	47	40	34
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	355	280	227	188	158	134	116	101	89	79	70	63	57
	L/360	278	195	143	107	82	65	52	42	35	29	24	21	18
	L/240	♦♦♦	♦♦♦	214	161	124	97	78	63	52	44	37	31	27
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	130	104	84	70	58	49	42	36

1.5PLB19

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	324	256	207	171	144	123	106	92	81	72	64	57	52
	L/360	160	112	82	61	47	37	30	24	20	17	14	12	10
	L/240	239	168	123	92	71	56	45	36	30	25	21	18	15
	L/180	319	224	163	123	95	74	60	48	40	33	28	24	20
DOUBLE	Stress	344	272	220	182	153	130	112	98	86	76	68	61	55
	L/360	♦♦♦	♦♦♦	212	160	123	97	77	63	52	43	36	31	27
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	94	78	65	55	46	40
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	53
TRIPLE	Stress	430	340	275	227	191	163	140	122	107	95	85	76	69
	L/360	325	228	166	125	96	76	61	49	41	34	29	24	21
	L/240	♦♦♦	♦♦♦	249	187	144	114	91	74	61	51	43	36	31
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	151	121	99	81	68	57	48	42

1.5PLB18

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	373	294	238	197	166	141	122	106	93	82	74	66	60
	L/360	186	131	95	72	55	43	35	28	23	19	16	14	12
	L/240	279	196	143	107	83	65	52	42	35	29	25	21	18
	L/180	♦♦♦	262	191	143	110	87	70	57	47	39	33	28	24
DOUBLE	Stress	394	311	252	208	175	149	129	112	98	87	78	70	63
	L/360	♦♦♦	♦♦♦	241	181	140	110	88	72	59	49	41	35	30
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	107	88	74	62	53	45
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	60
TRIPLE	Stress	492	389	315	260	219	186	161	140	123	109	97	87	79
	L/360	369	259	189	142	109	86	69	56	46	38	32	28	24
	L/240	♦♦♦	389	283	213	164	129	103	84	69	58	49	41	35
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	219	172	138	112	92	77	65	55	47

See page 17 for footnotes

ALLOWABLE REACTIONS DUE TO WEB CRIPPLING

1.5PLB22

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	816	1221	852	1486
1.75	858	1275	886	1557
2.00	897	1325	917	1623
2.25	934	1372	947	1686
2.50	968	1416	975	1745
2.75	1001	1458	1002	1801
3.00	1033	1499	1028	1854
3.25	1063	1537	1052	1906
3.50	1092	1575	1076	1955
3.75	1120	1610	1099	2003
≥ 4.00	1129	1622	1106	2018

1.5PLB20

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	1165	1768	1288	2173
1.75	1223	1842	1337	2274
2.00	1277	1911	1383	2367
2.25	1327	1976	1426	2455
2.50	1375	2037	1466	2538
2.75	1420	2096	1505	2616
3.00	1464	2151	1542	2692
3.25	1505	2205	1577	2764
3.50	1545	2256	1611	2834
3.75	1584	2306	1644	2901
≥ 4.00	1592	2317	1651	2916

1.5PLB19

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	1549	2374	1785	2940
1.75	1624	2470	1851	3071
2.00	1693	2559	1911	3194
2.25	1758	2643	1969	3308
2.50	1819	2723	2022	3417
2.75	1878	2798	2074	3520
3.00	1934	2870	2123	3619
3.25	1987	2939	2170	3713
3.50	2039	3006	2215	3804
3.75	2089	3070	2259	3892
≥ 4.00	2096	3079	2265	3904

See page 17 for footnotes

1.5PLB18

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	1951	3015	2322	3753
1.75	2043	3133	2404	3916
2.00	2128	3243	2480	4067
2.25	2208	3346	2551	4210
2.50	2283	3444	2619	4344
2.75	2355	3536	2684	4472
3.00	2424	3625	2745	4595
3.25	2490	3710	2804	4712
3.50	2553	3792	2861	4825
3.75	2614	3871	2916	4934
≥ 4.00	2618	3876	2919	4940

WIND UPLIFT LOAD TABLES

1.5PLB22

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	221	175	142	117	98	84	72	63	55	49	44	39	35
	L/360	119	84	61	46	35	28	22	18	15	12	10	9	8
	L/240	179	126	92	69	53	42	33	27	22	19	16	13	11
	L/180	♦♦♦	168	122	92	71	56	45	36	30	25	21	18	15
DOUBLE	Stress	209	165	134	110	93	79	68	59	52	46	41	37	33
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	85	67	54	44	36	30	25	21	18
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	45	38	32	28
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	261	206	167	138	116	99	85	74	65	58	52	46	42
	L/360	225	158	115	87	67	52	42	34	28	23	20	17	14
	L/240	♦♦♦	♦♦♦	♦♦♦	130	100	79	63	51	42	35	30	25	22
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	84	68	56	47	40	34	29

1.5PLB20

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	284	224	182	150	126	107	93	81	71	63	56	50	45
	L/360	148	104	76	57	44	34	28	22	18	15	13	11	9
	L/240	222	156	113	85	66	52	41	34	28	23	19	17	14
	L/180	♦♦♦	208	151	114	88	69	55	45	37	31	26	22	19
DOUBLE	Stress	273	215	174	144	121	103	89	78	68	60	54	48	44
	L/360	♦♦♦	♦♦♦	♦♦♦	137	105	83	66	54	44	37	31	27	23
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	67	56	47	40	34
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	341	269	218	180	151	129	111	97	85	75	67	60	55
	L/360	278	195	143	107	82	65	52	42	35	29	24	21	18
	L/240	♦♦♦	♦♦♦	214	161	124	97	78	63	52	44	37	31	27
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	104	84	70	58	49	42	36

1.5PLB19

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	344	272	220	182	153	130	112	98	86	76	68	61	55
	L/360	172	121	88	66	51	40	32	26	22	18	15	13	11
	L/240	259	182	132	99	77	60	48	39	32	27	23	19	17
	L/180	♦♦♦	242	176	133	102	80	64	52	43	36	30	26	22
DOUBLE	Stress	324	256	207	171	144	123	106	92	81	72	64	57	52
	L/360	♦♦♦	♦♦♦	♦♦♦	160	123	97	77	63	52	43	36	31	27
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	78	65	55	46	40
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	405	320	259	214	180	153	132	115	101	90	80	72	65
	L/360	325	228	166	125	96	76	61	49	41	34	29	24	21
	L/240	♦♦♦	♦♦♦	249	187	144	114	91	74	61	51	43	36	31
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	151	121	99	81	68	57	48	42

1.5PLB18

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		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	Stress	394	311	252	208	175	149	129	112	98	87	78	70	63
	L/360	196	138	100	75	58	46	37	30	24	20	17	15	13
	L/240	294	206	150	113	87	68	55	45	37	31	26	22	19
	L/180	392	275	201	151	116	91	73	59	49	41	34	29	25
DOUBLE	Stress	373	294	238	197	166	141	122	106	93	82	74	66	60
	L/360	♦♦♦	♦♦♦	♦♦♦	181	140	110	88	72	59	49	41	35	30
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	88	74	62	53	45
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	466	368	298	246	207	176	152	132	116	103	92	83	75
	L/360	369	259	189	142	109	86	69	56	46	38	32	28	24
	L/240	♦♦♦	♦♦♦	283	213	164	129	103	84	69	58	49	41	35
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	172	138	112	92	77	65	55	47

See page 17 for footnotes

1.5PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	432	388	351	320	293	270	250								
	2	544	504	467	434	404	377	353	332	312	295	279	265	252		
	3	609	576	545	515	486	460	435	412	391	372	354	338	323	309	296
	4	647	622	596	570	545	521	498	476	455	436	417	400	384	369	355
	5	671	652	631	609	588	567	546	525	506	487	469	452	436	421	406
	6	687	672	655	637	619	600	582	564	546	529	512	495	480	465	450
	7		685	672	657	642	626	610	594	578	562	546	531	516	502	488
	8			684	672	659	645	631	617	603	588	574	560	546	533	520
	9				683	672	660	648	635	623	610	597	584	571	559	546
	10					682	672	661	650	639	627	616	604	592	581	569

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	9	10	11	12	13	14	14								
	2	9	10	11	12	13	14	15	16	16	17	17	18	18		
	3	9	10	11	12	13	14	15	16	17	17	18	19	19	19	20
	4	9	10	11	13	14	15	16	16	17	18	19	19	20	20	21
	5	9	10	11	13	14	15	16	17	18	18	19	20	20	21	21
	6	9	10	12	13	14	15	16	17	18	19	19	20	21	21	22
	7		10	12	13	14	15	16	17	18	19	20	20	21	22	22
	8			12	13	14	15	16	17	18	19	20	21	22	22	23
	9				13	14	15	16	17	18	19	20	21	22	23	23
	10					14	15	17	18	19	20	20	21	22	23	23

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	459	413	373	340	312	287	266								
	2	578	536	497	462	430	401	376	353	332	314	297	282	268		
	3	647	613	579	547	517	489	463	439	416	396	377	360	343	329	315
	4	689	662	634	607	580	554	530	506	484	463	444	426	409	393	378
	5	714	693	671	648	625	603	581	559	538	518	499	481	464	448	432
	6	731	714	696	678	658	639	619	600	581	562	544	527	510	494	479
	7		729	714	699	682	666	649	631	614	598	581	565	549	534	519
	8			728	715	701	686	671	656	641	626	611	596	581	567	553
	9				726	715	702	689	676	662	649	635	622	608	595	581
	10					725	715	703	692	680	667	655	643	630	618	606
10 psf	1	454	405	364	329	300	275	253								
	2	572	526	485	447	414	385	359	335	314	296	279	263	249		
	3	639	601	564	529	497	467	440	416	393	372	353	336	320	305	291
	4	679	647	615	584	555	527	501	477	454	433	413	395	378	362	347
	5	704	677	649	622	596	570	546	523	501	480	461	442	425	409	393
	6	721	697	673	649	625	602	579	558	537	517	498	480	463	447	431
	7		711	689	667	646	625	604	584	564	546	527	510	493	477	462
	8			701	681	662	642	623	604	586	568	551	534	518	502	487
	9				692	674	656	638	620	603	586	569	553	537	522	508
	10					683	666	649	632	616	600	584	568	553	539	524
20 psf	1	431	382	341	306	277	252	230								
	2	541	494	453	416	383	354	328	305	285	266	249	234	220		
	3	601	561	523	488	455	426	399	375	352	332	313	295	279	264	251
	4	636	600	566	534	503	475	448	424	401	379	359	341	323	307	292
	5	657	625	594	564	535	508	482	458	435	414	393	374	356	339	322
	6	671	641	613	585	557	532	507	483	460	439	418	399	380	362	345
	7		653	625	599	573	548	524	501	479	457	437	417	398	380	362
	8			635	609	585	560	537	514	492	471	451	431	412	393	375
	9				617	593	570	547	524	503	482	461	441	422	403	385
	10					600	577	554	532	511	490	469	450	430	411	392

See page 18 for footnotes

1.5PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	407	358	316	282	253	227	206								
	2	508	461	419	382	349	319	293	270	249	230	212	196	180		
	3	561	518	478	442	408	378	350	324	300	278	257	237	218	200	182
	4	591	551	514	478	445	415	386	359	333	309	286	264	242	221	199
	5	608	571	535	501	469	438	409	381	354	329	304	280	257	233	210
	6	620	584	550	516	485	454	424	396	369	342	317	291	266	241	217
	7		593	559	527	495	465	435	407	379	352	325	299	273	247	221
	8			566	534	503	473	443	414	386	358	331	304	277	251	224
	9				540	509	478	449	420	391	363	335	308	281	254	226
	10					513	483	453	424	395	367	339	311	283	256	228
40 psf	1	382	332	291	256	227	201	179								
	2	474	425	382	343	309	278	250	224	200	176	153	128	102		
	3	520	473	430	391	355	321	289	259	229	201	171	141	109		
	4	544	500	458	418	380	345	311	278	245	213	180	147	112		
	5	559	515	474	434	396	359	324	289	254	220	185	150	114		
	6	568	525	484	444	406	368	332	296	260	224	188	152	114		
	7		532	491	451	412	374	337	300	264	227	190	153	115		
	8			496	456	417	379	341	303	266	229	192	154	115		
	9				459	420	382	344	306	268	230	192	154	116		
	10					423	384	346	307	269	231	193	155	116		
50 psf	1	356	306	264	228	198	171	146								
	2	438	387	341	299	262	226	192	158	122						
	3	476	425	378	334	292	251	211	171	129						
	4	496	446	397	351	307	264	220	177	132						
	5	507	457	409	362	316	270	225	180	134						
	6	514	464	415	368	321	275	228	182	134						
	7		469	420	372	324	277	230	183	135						
	8			423	375	327	279	231	184	135						
	9				377	328	280	232	184	136						
	10					330	281	233	184	136						
60 psf	1	329	278	234	196	162	130	95								
	2	400	345	295	248	203	157	109								
	3	431	374	321	269	218	167	113								
	4	446	389	333	279	225	170	115								
	5	455	397	340	284	228	172	115								
	6	460	402	344	287	231	173	116								
	7		405	347	289	232	174	116								
	8			348	291	233	175	116								
	9				292	233	175	116								
	10					234	175	116								
70 psf	1	300	247	200	157	113										
	2	360	299	242	186	128										
	3	384	320	258	196	133										
	4	395	329	264	200	134										
	5	401	334	268	202	135										
	6	405	337	270	203	135										
	7		339	272	204	136										
	8			272	204	136										
	9				205	136										
	10					136										
80 psf	1	270	212	159	103											
	2	317	249	182	112											
	3	334	261	189	115											
	4	342	267	192	115											
	5	346	270	193	116											
	6	349	271	194	116											
	7		272	195	116											
	8			195	116											
	9				116											
	10															

See page 18 for footnotes

1.5PLB20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	553	500	454	415	382	353	327								
	2	692	647	604	564	528	496	466	439	414	392	372	354	337		
	3	766	731	697	663	630	599	570	543	517	494	471	451	432	414	398
	4	807	781	754	727	699	672	646	621	597	573	551	531	511	492	475
	5	832	812	791	769	746	724	701	679	657	635	615	595	576	557	540
	6	848	832	816	798	779	760	741	722	702	683	664	646	628	610	593
	7		846	833	818	803	787	771	754	737	720	703	686	670	654	638
	8			845	833	820	807	793	778	764	749	734	719	704	689	674
	9				844	833	822	810	797	785	772	758	745	731	718	704
	10					843	833	823	812	801	790	778	766	754	742	729

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	14	15	17	18	19	20	21								
	2	14	16	17	19	20	21	23	23	24	25	25	26	26		
	3	14	16	18	19	21	22	23	24	25	26	27	28	28	28	29
	4	14	16	18	20	21	23	24	25	26	27	28	29	29	30	30
	5	14	16	18	20	22	23	24	26	27	28	29	30	30	31	32
	6	14	16	18	20	22	23	25	26	27	29	30	31	31	32	33
	7		16	18	20	22	24	25	27	28	29	30	31	32	33	34
	8			18	20	22	24	25	27	28	30	31	32	33	34	34
	9				20	22	24	26	27	29	30	31	32	33	34	35
	10					22	24	26	27	29	30	31	33	34	35	36

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	588	532	483	442	406	375	348								
	2	736	688	642	600	562	527	496	467	441	417	396	376	358		
	3	815	778	741	705	670	637	606	577	550	525	502	480	459	440	423
	4	859	831	802	773	744	715	687	660	635	610	587	564	544	524	505
	5	885	864	842	818	794	770	746	722	699	676	654	633	612	593	574
	6	902	886	868	849	829	809	788	768	747	727	707	687	668	649	631
	7		900	886	871	854	837	820	802	784	766	748	730	713	695	679
	8			899	886	873	858	844	828	813	797	781	765	749	733	717
	9				898	886	874	862	848	835	821	807	792	778	764	749
	10					897	887	876	864	852	840	828	815	802	789	776
10 psf	1	582	522	471	428	391	359	331								
	2	728	675	626	582	542	505	473	444	417	393	372	352	334		
	3	804	761	720	680	643	608	576	546	518	492	468	447	426	407	390
	4	847	812	777	743	709	678	648	619	592	567	543	520	499	480	461
	5	872	843	813	783	754	726	698	672	646	622	599	577	556	536	517
	6	889	863	837	811	785	759	734	710	686	663	641	620	600	580	562
	7		877	853	830	806	783	760	738	716	694	673	653	634	615	597
	8			865	844	822	801	780	759	738	718	698	679	660	642	624
	9				854	834	814	794	774	755	736	717	699	681	663	646
	10					843	824	805	787	768	750	732	715	697	680	664
20 psf	1	552	492	442	399	362	330	302								
	2	687	633	584	539	500	464	432	403	377	353	332	312	294		
	3	754	708	665	624	586	550	518	488	460	435	411	389	369	350	332
	4	791	751	712	675	639	606	574	545	517	491	466	443	421	400	381
	5	812	776	741	707	673	642	611	583	555	529	504	480	458	436	415
	6	826	792	760	727	696	666	637	609	582	556	531	507	484	461	440
	7		803	772	742	712	683	654	627	600	575	550	526	502	480	458
	8			781	752	723	695	667	640	614	589	564	540	516	493	471
	9				759	731	704	677	650	624	599	574	550	526	503	481
	10					737	710	684	658	632	607	582	558	534	511	488

See page 18 for footnotes

1.5PLB20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	521	461	410	367	331	299	271								
	2	644	588	538	493	452	416	383	354	327	302	279	258	238		
	3	702	652	605	562	522	484	450	417	387	359	332	306	282	257	233
	4	733	687	643	601	562	524	489	455	423	393	363	335	307	279	251
	5	750	707	665	625	586	549	513	479	446	414	382	352	322	292	262
	6	761	720	679	640	601	564	529	494	460	427	395	363	331	300	268
	7		728	689	650	612	575	539	504	470	436	403	370	338	305	273
	8			695	657	619	583	547	511	477	442	409	375	342	309	276
	9				662	625	588	552	517	482	447	413	379	345	311	278
	10					629	592	556	520	485	451	416	382	348	313	279
40 psf	1	489	429	377	334	297	264	236								
	2	599	540	488	441	398	359	323	290	258	226	195	163	127		
	3	648	593	542	494	449	406	366	328	290	252	215	175	134		
	4	673	620	570	522	476	431	389	347	306	265	224	181	137		
	5	687	636	586	538	491	446	401	358	315	272	228	184	139		
	6	696	645	596	548	501	455	409	365	320	276	231	186	140		
	7		652	602	554	507	460	414	369	324	278	233	187	140		
	8			607	559	511	464	418	372	326	280	234	187	140		
	9				562	514	467	420	374	328	281	235	188	141		
	10					517	469	422	376	329	282	235	188	141		
50 psf	1	455	394	342	297	258	223	191								
	2	552	489	433	381	333	288	243	199	152	101					
	3	592	531	473	418	365	314	263	212	159	103					
	4	612	551	492	436	380	326	272	217	162	104					
	5	623	562	503	445	389	333	277	220	163	105					
	6	630	569	510	451	394	337	279	222	164	105					
	7		574	514	455	397	339	281	223	164	105					
	8			517	458	399	341	282	224	165	105					
	9				459	401	342	283	224	165	105					
	10					402	343	284	224	165	105					
60 psf	1	420	357	302	254	210	167	121								
	2	502	434	371	312	254	196	135								
	3	534	465	398	334	270	205	138								
	4	549	479	410	343	276	209	140								
	5	558	487	417	348	279	210	140								
	6	563	491	421	351	281	211	141								
	7		494	423	353	283	212	141								
	8			425	354	283	212	141								
	9				355	284	213	141								
	10					284	213	141								
70 psf	1	383	316	256	200	143										
	2	450	374	302	231	158										
	3	474	395	318	241	162										
	4	485	404	324	244	164										
	5	491	409	328	246	164										
	6	494	412	330	247	165										
	7		413	331	248	165										
	8			332	249	165										
	9				249	165										
	10					165										
80 psf	1	342	269	201	129											
	2	394	309	225	138											
	3	411	321	231	140											
	4	419	327	234	141											
	5	423	329	235	141											
	6	425	331	236	141											
	7		332	237	141											
	8			237	141											
	9				141											
	10															

See page 18 for footnotes

1.5PLB19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	667	605	552	505	465	430	400								
	2	829	779	731	686	644	606	571	539	510	484	459	437	417		
	3	911	874	837	799	763	728	695	664	634	606	580	556	534	512	493
	4	955	928	900	870	841	811	782	754	727	700	675	651	628	607	586
	5	981	961	939	916	892	868	843	819	795	771	748	726	704	683	663
	6	998	982	965	947	927	907	887	866	845	825	804	784	764	744	725
	7		996	983	968	952	936	919	901	883	865	847	829	811	793	775
	8			995	983	970	956	942	927	912	896	880	864	848	832	816
	9				994	983	972	960	947	934	920	906	892	878	863	849
	10					994	984	973	962	951	939	927	914	901	889	876

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	19	22	24	25	27	28	29								
	2	20	22	25	27	29	30	31	32	33	34	35	35	35		
	3	20	23	25	28	30	31	33	34	35	36	37	38	38	39	39
	4	20	23	26	28	30	32	34	35	37	38	39	40	41	41	42
	5	21	23	26	29	31	33	35	36	38	39	41	42	42	43	44
	6	21	24	26	29	31	33	35	37	39	40	42	43	44	45	46
	7		24	26	29	32	34	36	38	40	41	43	44	45	46	47
	8			27	29	32	34	36	38	40	42	43	45	46	47	48
	9				29	32	34	37	39	41	42	44	46	47	48	49
	10					32	35	37	39	41	43	45	46	48	49	50

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	709	644	587	538	495	458	425								
	2	882	829	778	730	685	645	608	574	543	514	489	465	443		
	3	969	930	890	850	812	775	739	706	675	645	618	592	568	545	524
	4	1016	988	957	926	894	863	832	802	773	745	718	693	669	645	623
	5	1044	1023	999	975	949	923	897	871	846	820	796	772	749	727	705
	6	1061	1045	1027	1007	987	965	944	922	899	877	855	834	812	792	771
	7		1060	1045	1030	1013	995	977	958	939	920	901	882	862	843	825
	8			1059	1046	1032	1017	1002	986	970	953	936	919	902	885	868
	9				1058	1046	1034	1021	1007	993	979	964	949	934	918	903
	10					1057	1047	1035	1024	1011	999	986	973	959	945	931
10 psf	1	702	632	572	521	477	439	405								
	2	872	813	757	706	660	618	579	545	513	485	459	435	413		
	3	957	910	863	819	777	737	700	666	633	603	575	549	525	503	482
	4	1002	964	926	888	852	816	782	750	719	690	662	636	611	588	566
	5	1029	997	964	932	900	868	838	808	779	752	726	700	676	653	631
	6	1046	1018	989	961	932	904	876	849	823	797	772	748	725	703	681
	7		1032	1006	981	955	929	904	879	854	830	807	784	762	741	720
	8			1018	995	971	948	924	901	878	855	833	811	790	770	750
	9				1005	983	961	939	917	896	874	853	832	812	792	773
	10					992	971	951	930	909	889	869	849	829	810	792
20 psf	1	665	596	536	485	442	404	371								
	2	822	761	705	653	607	565	528	493	462	434	408	385	363		
	3	896	844	795	749	706	665	627	592	560	530	502	475	451	428	407
	4	935	890	846	804	764	726	690	656	623	593	564	536	510	486	462
	5	957	917	877	838	801	765	730	697	665	634	605	577	551	525	500
	6	971	933	896	860	825	790	757	724	693	663	634	606	579	552	527
	7		944	909	875	841	807	775	743	713	683	654	626	598	571	545
	8			918	885	852	820	788	757	727	697	668	640	612	585	559
	9				892	860	829	798	767	737	708	679	651	623	596	569
	10					867	836	805	775	745	716	687	659	631	604	577

See page 18 for footnotes

1.5PLB19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	628	558	499	448	404	366	333								
	2	769	706	648	595	548	505	466	431	399	369	341	315	290		
	3	833	776	723	672	625	582	541	503	467	433	401	369	339	309	280
	4	865	813	762	714	669	625	584	544	506	470	434	400	366	333	299
	5	883	834	786	739	694	651	609	569	530	492	454	418	382	346	310
	6	894	847	800	754	710	667	625	584	544	505	467	429	392	354	317
	7		855	809	765	721	678	636	595	554	515	475	437	398	359	321
	8			816	772	728	685	643	602	561	521	481	442	402	363	324
	9				777	734	691	649	607	566	526	485	445	406	366	326
	10					737	695	653	611	570	529	489	448	408	368	327
40 psf	1	589	518	458	407	362	323	289								
	2	714	647	586	530	480	433	390	350	311	272	234	194	151		
	3	768	704	644	588	535	485	437	391	345	300	254	207	158	107	
	4	794	733	674	618	564	511	461	411	362	313	264	213	161	108	
	5	808	749	690	634	579	526	474	422	371	320	268	216	163	108	
	6	817	758	701	644	589	535	482	429	376	324	271	218	163	108	
	7		764	707	651	595	541	487	433	380	326	273	219	164	109	
	8			712	655	600	545	490	436	382	328	274	219	164	109	
	9				659	603	548	493	438	384	329	275	220	164	109	
	10					605	550	495	440	385	330	275	220	165	109	
50 psf	1	548	476	414	361	314	272	232								
	2	657	584	518	456	399	344	291	236	180	119					
	3	700	628	560	495	433	372	311	250	187	121					
	4	721	650	581	514	449	384	320	255	189	122					
	5	732	661	592	524	457	391	325	258	191	122					
	6	739	668	598	530	462	395	327	260	192	123					
	7		672	602	534	465	397	329	261	192	123					
	8			605	536	467	399	330	262	192	123					
	9				538	469	400	331	262	193	123					
	10					470	401	332	262	193	123					
60 psf	1	505	430	365	307	253	201	144								
	2	596	517	442	371	302	232	159								
	3	630	549	470	394	318	241	162								
	4	646	563	483	403	324	245	163								
	5	654	571	489	408	328	246	164								
	6	659	576	493	411	329	247	164								
	7		579	496	413	331	248	165								
	8			497	414	331	248	165								
	9				415	332	249	165								
	10					332	249	165								
70 psf	1	459	379	308	240	170										
	2	533	444	358	273	186										
	3	558	465	374	283	190										
	4	569	474	380	286	191										
	5	575	479	384	288	192										
	6	579	482	386	289	193										
	7		484	387	290	193										
	8			388	290	193										
	9				291	193										
	10					193										
80 psf	1	410	322	239	152											
	2	466	365	265	161											
	3	484	378	271	164											
	4	491	383	274	164											
	5	495	385	275	165											
	6	497	387	276	165											
	7		388	277	165											
	8			277	165											
	9				165											
	10															

See page 18 for footnotes

1.5PLB18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	772	703	642	589	543	503	468								
	2	956	901	848	798	751	708	668	632	599	568	540	515	491		
	3	1045	1006	965	925	885	847	810	775	742	710	681	653	627	603	580
	4	1092	1064	1034	1002	971	939	907	876	846	817	789	762	736	712	688
	5	1120	1099	1076	1051	1026	1000	974	948	921	896	870	846	822	798	776
	6	1137	1121	1103	1084	1064	1043	1021	999	976	954	932	910	888	866	845
	7		1135	1121	1106	1090	1072	1054	1036	1017	998	978	959	939	920	901
	8			1134	1122	1108	1094	1079	1063	1047	1031	1014	997	980	962	945
	9				1133	1122	1110	1098	1084	1070	1056	1041	1027	1011	996	981
	10					1133	1123	1112	1100	1088	1076	1063	1050	1037	1023	1009

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	26	29	31	33	35	36	37								
	2	27	30	33	35	38	39	41	42	43	44	45	45	45		
	3	27	31	34	37	39	41	43	45	46	48	49	49	50	50	51
	4	28	31	35	38	40	43	45	47	49	50	51	52	53	54	54
	5	28	32	35	38	41	44	46	48	50	52	53	55	56	57	57
	6	28	32	35	39	42	45	47	49	51	53	55	56	58	59	60
	7		32	36	39	42	45	48	50	52	55	56	58	59	61	62
	8			36	39	43	46	48	51	53	55	57	59	61	62	64
	9				40	43	46	49	52	54	56	58	60	62	64	65
	10					43	46	49	52	55	57	59	61	63	65	66

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	821	747	683	626	577	535	497								
	2	1017	958	902	849	799	753	711	672	637	604	575	547	522		
	3	1112	1070	1027	984	942	901	862	824	789	756	724	695	667	642	617
	4	1162	1132	1100	1066	1032	999	965	932	900	869	839	811	783	757	732
	5	1191	1169	1144	1119	1092	1064	1036	1008	980	953	926	900	874	849	825
	6	1209	1192	1173	1153	1131	1109	1086	1062	1039	1015	991	968	944	922	899
	7		1208	1193	1177	1159	1141	1122	1102	1082	1061	1041	1020	999	979	958
	8			1207	1193	1179	1164	1148	1131	1114	1096	1078	1060	1042	1024	1005
	9				1206	1194	1181	1168	1153	1139	1124	1108	1092	1076	1060	1043
	10					1205	1194	1183	1171	1158	1145	1131	1117	1103	1088	1074
10 psf	1	813	734	666	607	557	513	474								
	2	1005	939	878	821	769	721	677	638	602	569	539	512	486		
	3	1097	1046	996	947	900	856	815	776	739	705	674	644	616	591	567
	4	1146	1105	1063	1022	982	943	905	869	835	802	771	742	714	688	663
	5	1174	1139	1104	1069	1034	999	966	933	901	871	841	813	786	760	736
	6	1191	1161	1130	1099	1068	1037	1007	977	948	920	892	865	840	815	791
	7		1175	1148	1120	1092	1064	1036	1009	982	955	929	904	879	856	832
	8			1160	1135	1109	1083	1057	1032	1006	981	957	933	910	887	864
	9				1145	1121	1097	1073	1049	1025	1001	978	955	933	911	889
	10					1130	1108	1085	1062	1039	1017	994	972	951	930	909
20 psf	1	770	692	624	566	516	472	434								
	2	946	878	816	758	706	659	616	577	541	509	479	452	427		
	3	1026	970	916	864	815	770	728	688	651	617	585	555	526	500	475
	4	1067	1018	970	924	879	836	796	757	721	686	653	622	592	564	537
	5	1091	1046	1002	960	918	878	839	801	765	731	698	666	636	606	578
	6	1105	1064	1023	982	943	904	867	831	795	761	728	696	665	635	606
	7		1075	1036	998	960	922	886	851	816	782	749	717	686	656	626
	8			1045	1008	971	935	900	865	831	797	765	732	701	670	640
	9				1016	980	945	910	875	841	808	776	744	712	681	651
	10					986	951	917	883	850	817	784	752	720	689	659

See page 18 for footnotes

1.5PLB18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	727	648	580	522	471	428	390								
	2	885	814	749	690	636	587	543	502	464	430	398	367	338		
	3	953	890	830	774	721	671	625	581	540	501	463	427	392	357	323
	4	987	929	873	819	767	718	670	625	582	540	499	460	421	382	343
	5	1006	951	897	844	794	745	697	651	607	563	520	479	437	396	354
	6	1018	964	912	860	810	762	714	668	622	578	534	490	447	404	361
	7		973	922	871	821	773	725	678	632	587	542	498	454	410	365
	8			928	878	829	781	733	686	640	594	548	503	458	413	368
	9				883	835	786	738	691	645	598	553	507	461	416	370
	10					839	790	743	695	648	602	556	510	464	418	372
40 psf	1	681	601	533	474	422	378	338								
	2	821	745	676	613	555	501	452	404	359	315	270	223	173		
	3	878	806	739	675	615	557	502	449	396	344	291	237	180	121	
	4	905	836	770	706	645	585	527	470	414	357	301	243	183	122	
	5	920	853	787	723	661	600	541	482	423	364	305	246	185	123	
	6	929	863	798	734	671	610	549	489	429	369	308	247	186	123	
	7		869	804	741	678	616	554	493	432	371	310	248	186	123	
	8			809	745	682	620	558	496	434	373	311	249	186	123	
	9				748	685	622	560	498	436	374	312	249	187	123	
	10					687	625	562	500	437	375	313	250	187	123	
50 psf	1	634	552	481	419	365	316	270								
	2	754	671	596	525	459	396	334	271	205	135					
	3	800	719	641	567	495	425	355	285	213	137					
	4	821	741	662	586	512	438	365	291	215	138					
	5	833	752	674	597	520	445	369	294	217	139					
	6	840	759	680	603	526	449	372	295	218	139					
	7		764	685	606	529	451	374	296	218	139					
	8			688	609	531	453	375	297	218	139					
	9				611	532	454	376	297	219	139					
	10					533	455	376	298	219	139					
60 psf	1	583	498	423	356	293	232	166								
	2	683	592	507	426	346	265	181								
	3	719	626	537	449	362	274	184								
	4	735	642	550	459	369	278	186								
	5	744	650	557	464	372	280	186								
	6	749	654	560	467	374	281	187								
	7		657	563	469	375	281	187								
	8			565	470	376	282	187								
	9				471	377	282	187								
	10					377	282	187								
70 psf	1	530	438	355	277	195	103									
	2	610	508	409	312	212	107									
	3	636	530	426	322	216	107									
	4	648	540	433	325	217	107									
	5	654	545	436	327	218	108									
	6	657	547	438	328	218	108									
	7		549	439	329	219	108									
	8			440	330	219	108									
	9				330	219	108									
	10					219	108									
80 psf	1	472	371	275	174											
	2	532	417	302	184											
	3	551	430	309	186											
	4	559	435	311	186											
	5	562	438	313	187											
	6	565	439	313	187											
	7		440	314	187											
	8			314	187											
	9				187											
	10															

See page 18 for footnotes

1.5PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	574	506	451	406	369	336	307								
	2	746	670	605	551	505	465	431	401	375	352	329	310	292		
	3	873	799	733	674	623	579	539	504	473	445	421	398	378	360	343
	4	967	898	835	777	724	677	635	597	563	532	504	478	455	434	415
	5	1035	974	915	860	809	762	719	679	643	610	580	552	527	503	482
	6	1085	1032	979	928	880	834	791	752	715	681	649	620	593	568	545
	7		1076	1030	983	938	895	854	815	778	744	712	682	654	628	604
	8			1070	1028	986	946	907	869	834	800	768	738	710	683	658
	9				1064	1026	989	952	917	882	850	818	788	760	733	708
	10					1060	1025	991	958	925	893	863	834	806	779	709

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	48	51	52	52	52	52	51								
	2	50	53	54	55	55	55	55	54	53	52	51	50	49		
	3	51	54	56	58	58	58	58	58	57	56	55	54	53	52	51
	4	52	56	58	60	61	61	61	61	60	59	59	58	57	56	55
	5	53	57	60	61	63	63	63	63	63	62	62	61	60	59	58
	6	54	58	61	63	64	65	66	66	66	65	65	64	63	62	61
	7		59	62	64	66	67	68	68	68	68	67	66	66	65	64
	8			63	65	67	69	69	70	70	70	69	69	68	67	67
	9				66	69	70	71	71	72	72	71	71	70	70	69
	10					70	71	72	73	73	73	73	73	73	72	71

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	611	538	480	432	392	358	327								
	2	793	712	644	586	537	495	458	427	399	374	350	329	311		
	3	929	850	779	717	663	615	573	536	503	474	447	424	402	383	365
	4	1028	955	888	826	771	721	676	635	599	566	536	509	484	462	441
	5	1101	1036	974	915	861	811	765	723	684	649	617	588	561	536	513
	6	1154	1098	1042	987	936	887	842	800	761	724	691	660	631	604	580
	7		1145	1095	1046	998	952	908	867	828	792	757	726	696	668	642
	8			1138	1093	1049	1006	965	925	887	851	817	785	755	727	700
	9				1132	1092	1052	1013	975	939	904	870	839	809	780	709
	10					1127	1091	1054	1019	984	950	918	887	857	785	709
10 psf	1	611	538	480	432	392	356	324								
	2	793	712	644	586	536	492	455	422	394	368	345	323	305		
	3	929	850	779	717	662	613	569	531	497	467	440	416	394	374	356
	4	1028	955	888	826	769	717	671	629	592	558	528	500	475	452	431
	5	1101	1036	974	915	859	807	759	716	676	640	607	577	550	525	501
	6	1154	1098	1042	987	934	883	835	791	751	714	679	648	619	592	567
	7		1145	1095	1046	996	947	900	857	817	779	744	712	681	653	627
	8			1138	1093	1047	1000	956	914	874	837	802	769	738	709	682
	9				1132	1089	1045	1003	963	924	887	853	820	789	760	709
	10					1125	1083	1043	1005	967	932	898	866	835	785	709
20 psf	1	605	528	467	417	376	342	310								
	2	786	701	630	570	519	476	438	406	377	352	330	310	291		
	3	920	836	762	698	642	593	550	512	479	449	422	398	376	357	339
	4	1017	938	867	802	745	694	648	607	570	536	506	479	455	432	411
	5	1088	1016	949	887	830	778	731	689	650	614	582	553	526	501	478
	6	1140	1075	1013	954	900	849	802	759	719	683	649	618	590	563	539
	7		1120	1063	1008	956	908	862	819	780	743	709	677	647	620	594
	8			1103	1052	1003	956	912	870	831	795	760	728	698	670	644
	9				1087	1041	997	954	914	876	840	806	773	743	715	688
	10					1072	1030	990	951	914	878	845	813	783	754	709

See page 18 for footnotes

1.5PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	589	513	452	402	361	327	296								
	2	767	683	612	552	502	458	421	389	361	336	313	294	276		
	3	897	813	740	676	621	572	530	492	459	430	403	379	358	338	320
	4	990	911	840	776	719	668	623	582	546	513	483	456	432	410	389
	5	1057	985	917	855	799	748	701	659	621	586	554	525	498	474	451
	6	1106	1040	977	918	863	813	766	724	684	648	615	585	556	530	506
	7		1081	1023	967	915	866	820	778	738	702	668	636	607	580	554
	8			1059	1006	956	909	865	823	784	747	713	681	651	623	597
	9				1038	990	945	902	861	822	786	752	719	689	661	634
	10					1018	974	932	892	855	819	785	753	722	693	666
40 psf	1	574	497	436	387	346	311	282								
	2	749	664	593	534	484	441	404	372	343	318	296	277	259		
	3	874	790	717	654	599	551	508	471	438	409	382	359	337		
	4	963	884	812	749	692	641	596	556	520	487	457	431	406		
	5	1026	952	884	822	766	715	668	626	588	553	521	492	465		
	6	1071	1003	939	879	824	773	727	684	645	609	575	545	516		
	7		1041	981	924	870	821	774	732	692	655	621	589	559		
	8			1013	959	907	859	813	771	731	693	658	625	594		
	9				987	937	889	845	802	763	725	690	656	625		
	10					961	914	871	829	789	752	716	682	650		
50 psf	1	558	482	421	371	330	296	267								
	2	730	645	575	516	465	423	386	353	325	300	278				
	3	850	767	694	630	576	528	486	448	415	386	359				
	4	935	855	783	719	663	612	567	526	490	457	427				
	5	994	919	850	787	730	679	632	589	551	515	483				
	6	1036	965	900	839	783	731	684	640	600	563	528				
	7		1000	937	878	823	772	725	680	639	601	564				
	8			966	909	855	805	757	713	671	631	594				
	9				933	881	831	783	739	696	656	618				
	10					901	851	804	760	717	676	637				
60 psf	1	543	466	405	356	315	280	251								
	2	710	626	555	496	446	403	366	334	306						
	3	826	742	669	606	551	503	460	423	389						
	4	906	825	753	688	631	580	534	493	456						
	5	961	884	814	750	692	639	591	548	507						
	6	1000	927	859	796	738	685	635	590	547						
	7		958	892	831	773	719	669	623	578						
	8			918	857	800	747	696	648	603						
	9				878	821	768	717	668	622						
	10					838	785	733	684	637						
70 psf	1	527	450	389	340	299	264	235								
	2	690	606	535	476	426	383	346	313							
	3	801	716	643	580	524	475	432	394							
	4	876	794	720	655	597	545	497	454							
	5	927	848	776	710	650	596	546	499							
	6	963	886	816	750	690	634	582	533							
	7		915	845	780	719	662	609	558							
	8			867	803	742	684	629	576							
	9				820	759	701	645	591							
	10					773	714	657	602							
80 psf	1	511	434	373	324	283	248	219								
	2	670	585	515	455	405	361	323								
	3	776	690	616	551	495	445	400								
	4	845	761	686	619	559	505	455								
	5	892	810	736	668	605	548	494								
	6	925	845	771	702	638	578	521								
	7		870	796	727	662	600	541								
	8			815	746	680	617	556								
	9				760	694	630	567								
	10					704	639	576								

See page 18 for footnotes

1.5PLB20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	737	651	582	525	478	438	403								
	2	964	871	792	724	665	614	570	531	497	467	440	416	393		
	3	1123	1036	957	886	823	767	717	672	632	596	564	535	508	484	462
	4	1233	1156	1083	1015	952	895	843	795	752	712	676	643	613	586	560
	5	1310	1244	1179	1116	1057	1001	949	901	857	815	777	742	709	679	651
	6	1364	1308	1252	1195	1141	1089	1039	992	947	906	867	831	797	765	735
	7		1356	1307	1257	1208	1160	1113	1068	1025	984	946	909	875	842	812
	8			1350	1306	1262	1218	1175	1132	1092	1052	1015	979	944	912	881
	9				1345	1306	1266	1226	1187	1148	1111	1075	1040	1006	974	943
	10					1341	1305	1269	1232	1197	1161	1127	1093	1061	1030	947

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	68	69	70	69	68	67	65								
	2	71	73	75	75	74	73	72	70	69	67	65	64	62		
	3	74	77	78	79	79	79	78	76	75	73	72	70	68	67	65
	4	76	79	82	83	83	83	82	81	80	79	77	76	74	73	71
	5	77	82	84	86	87	87	86	86	85	84	82	81	79	78	76
	6	79	83	87	89	90	90	90	90	89	88	87	85	84	82	81
	7		85	88	91	92	93	93	93	92	92	90	89	88	87	85
	8			90	93	95	96	96	96	96	95	94	93	92	90	89
	9				95	97	98	98	99	98	98	97	96	95	94	93
	10					98	100	101	101	101	101	100	99	98	97	96

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	784	693	619	558	508	466	429								
	2	1026	927	842	770	707	653	606	565	529	497	468	443	418		
	3	1195	1102	1018	943	875	815	762	715	672	634	600	569	541	515	491
	4	1312	1230	1152	1080	1013	952	897	846	800	758	719	684	652	623	596
	5	1393	1323	1254	1188	1125	1065	1010	959	911	867	827	789	755	723	693
	6	1451	1392	1331	1272	1214	1158	1105	1055	1008	964	922	884	847	814	782
	7		1443	1391	1338	1285	1234	1184	1136	1090	1047	1006	967	931	896	863
	8			1436	1390	1343	1296	1250	1205	1161	1119	1079	1041	1005	970	937
	9				1431	1389	1346	1304	1262	1222	1182	1143	1106	1070	1036	947
	10					1427	1388	1350	1311	1273	1235	1199	1163	1129	1050	947
10 psf	1	784	693	619	558	507	463	425								
	2	1026	927	842	770	706	650	602	560	522	490	460	434	410		
	3	1195	1102	1018	943	874	812	757	708	665	626	590	559	530	504	480
	4	1312	1230	1152	1080	1011	948	890	838	790	747	708	673	640	610	583
	5	1393	1323	1254	1188	1122	1060	1002	949	900	855	813	775	740	707	677
	6	1451	1392	1331	1272	1211	1152	1095	1043	994	948	906	866	830	795	763
	7		1443	1391	1338	1282	1226	1173	1122	1074	1029	987	947	909	874	841
	8			1436	1390	1339	1287	1237	1189	1143	1099	1057	1017	980	944	911
	9				1431	1385	1337	1290	1245	1200	1158	1118	1079	1042	1007	947
	10					1423	1378	1335	1292	1250	1209	1170	1132	1096	1050	947
20 psf	1	776	681	604	541	488	444	407								
	2	1016	912	824	749	684	629	581	539	502	469	440	414	391		
	3	1182	1083	995	916	847	786	731	683	640	601	567	535	507	481	458
	4	1297	1207	1123	1047	978	915	858	807	760	718	679	644	612	583	556
	5	1376	1296	1220	1148	1081	1020	963	910	862	818	778	740	706	674	644
	6	1432	1362	1292	1226	1163	1104	1048	997	949	904	862	824	788	754	723
	7		1410	1347	1286	1228	1172	1118	1068	1021	977	935	896	859	825	793
	8			1390	1333	1279	1226	1175	1127	1081	1038	997	958	921	887	854
	9				1371	1320	1270	1222	1176	1132	1089	1049	1011	975	940	907
	10					1353	1306	1261	1216	1174	1133	1094	1056	1021	986	947

See page 18 for footnotes

1.5PLB20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	757	662	585	522	470	426	388								
	2	992	888	801	726	662	607	559	517	481	448	419	393	370		
	3	1152	1053	965	887	818	758	704	656	614	576	541	510	482	456	433
	4	1261	1170	1087	1011	942	880	823	773	727	685	647	612	581	552	525
	5	1335	1254	1177	1105	1038	976	920	868	821	777	737	700	666	635	605
	6	1388	1314	1243	1176	1112	1053	997	946	898	854	813	774	739	706	675
	7		1358	1293	1230	1170	1113	1059	1009	962	917	876	837	801	766	734
	8			1331	1272	1215	1161	1109	1060	1014	970	928	889	852	818	785
	9				1305	1251	1199	1149	1102	1056	1013	972	933	896	861	828
	10					1280	1230	1182	1136	1091	1049	1009	970	933	898	864
40 psf	1	738	642	566	503	451	407	369								
	2	967	864	777	702	639	584	536	495	458	426	397	371	348		
	3	1121	1022	934	857	788	728	675	627	585	547	513	482	454	428	405
	4	1224	1133	1049	973	904	842	786	735	690	648	610	576	544	515	488
	5	1294	1210	1132	1059	992	930	873	822	774	730	690	653	618	587	557
	6	1342	1265	1192	1123	1058	998	942	890	842	797	755	716	680	646	614
	7		1306	1237	1171	1109	1051	996	944	895	850	807	767	730	694	660
	8			1271	1208	1149	1092	1038	987	939	893	850	809	770	734	699
	9				1237	1179	1124	1072	1021	973	928	884	843	804	766	730
	10					1204	1150	1099	1049	1002	956	913	871	831	793	756
50 psf	1	718	623	546	483	431	388	350								
	2	942	839	752	678	615	560	513	471	435	402	373	348	324		
	3	1090	990	902	825	757	696	643	596	553	515	481	449	421		
	4	1187	1094	1009	932	863	801	744	694	647	605	567	531	498		
	5	1251	1165	1085	1010	942	879	822	769	721	676	634	595	559		
	6	1296	1215	1139	1068	1001	939	881	827	777	730	686	645	606		
	7		1252	1179	1110	1045	984	926	872	821	773	727	684	643		
	8			1209	1142	1079	1018	961	907	855	806	759	715	671		
	9				1167	1105	1045	988	934	882	832	785	739	694		
	10					1125	1066	1010	956	904	853	805	758	712		
60 psf	1	699	603	527	464	412	368	331								
	2	917	814	726	652	589	535	487	446	409	376	347	320			
	3	1057	957	868	791	722	662	608	560	517	478	442	409			
	4	1148	1053	967	889	819	756	698	646	598	554	513	474			
	5	1208	1118	1035	959	889	824	765	710	659	611	565	522			
	6	1249	1164	1084	1009	940	875	814	757	703	652	604	557			
	7		1196	1119	1046	977	912	850	792	737	684	633	583			
	8			1145	1073	1005	940	878	819	762	707	654	603			
	9				1094	1027	962	899	840	782	726	671	618			
	10					1043	979	916	856	797	740	684	629			
70 psf	1	679	583	507	444	392	348	311								
	2	890	787	700	626	562	507	459	417	379	345	314				
	3	1024	922	833	754	685	624	569	519	473	431	392				
	4	1108	1011	923	843	771	706	646	591	540	491	444				
	5	1163	1070	984	905	832	764	701	642	586	532	480				
	6	1200	1111	1027	948	874	805	740	678	618	560	504				
	7		1140	1057	979	905	835	768	704	642	581	521				
	8			1080	1002	928	857	789	723	659	596	534				
	9				1019	945	874	805	737	672	607	543				
	10					958	887	817	749	682	616	550				
80 psf	1	659	563	486	424	371	328	290								
	2	863	760	672	597	533	477	428	384	344						
	3	989	886	796	716	645	581	523	470	420						
	4	1068	967	877	794	719	650	586	526	468						
	5	1118	1021	931	847	770	697	629	563	499						
	6	1151	1057	967	884	805	729	658	588	520						
	7		1082	993	909	829	752	678	606	534						
	8			1012	928	847	769	693	618	545						
	9				942	860	781	704	628	552						
	10					871	791	712	635	558						

See page 18 for footnotes

1.5PLB19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	891	789	706	638	581	533	492								
	2	1168	1060	967	886	816	755	701	654	613	576	544	514	488		
	3	1355	1256	1165	1083	1009	943	883	829	781	738	699	663	631	601	574
	4	1479	1394	1313	1236	1164	1097	1036	980	928	881	838	798	762	728	697
	5	1563	1492	1421	1352	1285	1222	1163	1107	1055	1006	961	919	880	844	810
	6	1622	1563	1502	1441	1381	1322	1266	1213	1162	1114	1068	1026	986	948	913
	7		1614	1562	1509	1456	1403	1351	1301	1252	1206	1161	1119	1079	1041	1005
	8			1608	1562	1515	1467	1420	1373	1328	1284	1241	1200	1161	1123	1087
	9				1604	1562	1519	1476	1434	1391	1350	1310	1270	1232	1196	1160
	10					1600	1562	1523	1484	1445	1406	1369	1331	1295	1260	1195

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	87	88	88	86	84	82	80								
	2	93	96	96	95	94	92	90	88	85	83	81	78	76		
	3	98	101	102	102	102	100	99	97	95	92	90	88	86	83	81
	4	101	105	107	108	108	107	106	104	102	100	98	96	94	92	90
	5	104	109	111	113	113	113	112	111	109	107	105	103	101	99	97
	6	106	111	115	117	118	118	117	116	115	113	112	110	108	106	104
	7		114	118	120	122	122	122	121	120	119	117	115	114	112	110
	8			120	123	125	126	126	125	125	123	122	121	119	117	115
	9				126	128	129	129	129	129	128	127	125	124	122	120
	10					130	132	132	133	132	132	131	129	128	126	125

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	948	840	751	678	618	567	523								
	2	1243	1128	1028	942	868	803	746	696	652	613	578	547	519		
	3	1441	1336	1240	1152	1073	1003	939	882	831	785	743	706	671	640	611
	4	1573	1483	1397	1315	1238	1167	1102	1042	988	938	892	849	811	775	742
	5	1663	1588	1512	1438	1368	1300	1237	1177	1122	1070	1022	978	936	898	862
	6	1725	1662	1598	1533	1469	1407	1347	1290	1236	1185	1137	1091	1048	1008	971
	7		1717	1662	1605	1549	1492	1437	1384	1332	1282	1235	1190	1148	1107	1069
	8			1711	1662	1611	1561	1510	1461	1413	1366	1320	1277	1235	1195	1156
	9				1706	1662	1616	1571	1525	1480	1436	1393	1351	1311	1272	1195
	10					1702	1661	1620	1579	1537	1496	1456	1416	1378	1324	1195
10 psf	1	948	840	751	678	617	564	518								
	2	1243	1128	1028	942	866	799	741	690	644	604	569	537	508		
	3	1441	1336	1240	1152	1072	998	933	874	822	775	732	693	658	626	597
	4	1573	1483	1397	1315	1236	1162	1094	1032	976	924	877	834	795	759	725
	5	1663	1588	1512	1438	1365	1293	1227	1165	1107	1054	1005	959	917	878	842
	6	1725	1662	1598	1533	1466	1399	1335	1275	1218	1165	1115	1069	1025	985	946
	7		1717	1662	1605	1545	1483	1423	1366	1311	1259	1210	1164	1120	1079	1040
	8			1711	1662	1607	1550	1495	1441	1389	1339	1291	1245	1202	1161	1122
	9				1706	1657	1605	1553	1503	1453	1406	1360	1316	1274	1233	1194
	10					1697	1649	1601	1554	1508	1463	1419	1376	1335	1296	1195
20 psf	1	939	825	733	657	595	542	496								
	2	1231	1110	1006	917	840	773	715	664	620	580	544	513	484		
	3	1426	1313	1211	1119	1038	965	901	843	791	745	703	665	630	598	570
	4	1555	1455	1360	1273	1193	1120	1053	992	937	887	841	798	760	724	691
	5	1642	1554	1469	1389	1313	1242	1176	1115	1059	1007	959	914	873	835	800
	6	1703	1625	1549	1476	1405	1338	1275	1215	1160	1108	1059	1013	971	931	894
	7		1677	1609	1542	1476	1413	1353	1296	1242	1191	1143	1097	1055	1014	976
	8			1654	1592	1532	1473	1417	1362	1310	1260	1213	1168	1126	1085	1047
	9				1632	1576	1521	1467	1416	1366	1318	1272	1228	1186	1146	1108
	10					1611	1559	1509	1460	1412	1366	1321	1279	1238	1198	1160

See page 18 for footnotes

1.5PLB19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	916	802	710	635	572	519	474								
	2	1201	1081	977	889	812	746	689	638	594	554	519	488	459		
	3	1388	1275	1174	1083	1002	930	867	809	758	712	671	633	599	568	539
	4	1511	1409	1314	1227	1148	1075	1009	949	895	845	799	758	719	684	652
	5	1592	1502	1415	1334	1258	1187	1122	1061	1005	954	906	862	822	784	749
	6	1648	1567	1488	1413	1341	1273	1210	1150	1095	1043	994	949	907	868	831
	7		1614	1542	1472	1404	1340	1279	1221	1166	1115	1066	1021	978	937	899
	8			1582	1517	1453	1392	1333	1277	1224	1173	1125	1080	1036	996	957
	9				1551	1491	1433	1376	1322	1270	1221	1173	1128	1085	1044	1005
	10					1521	1465	1411	1359	1308	1260	1213	1168	1125	1084	1045
40 psf	1	893	779	688	612	550	497	452								
	2	1171	1051	948	860	784	718	661	611	567	527	492	461	433		
	3	1350	1237	1135	1045	964	893	830	773	722	676	635	597	563	532	503
	4	1465	1362	1267	1179	1099	1027	961	901	847	797	752	710	672	636	603
	5	1541	1448	1359	1276	1199	1128	1062	1001	945	893	845	801	759	721	685
	6	1593	1507	1425	1347	1273	1204	1139	1078	1022	969	919	873	830	789	750
	7		1550	1473	1399	1328	1261	1198	1138	1082	1028	978	931	886	843	803
	8			1509	1438	1370	1306	1244	1185	1129	1076	1025	977	931	887	845
	9				1468	1403	1340	1280	1222	1166	1113	1062	1014	967	922	879
	10					1428	1367	1308	1251	1196	1143	1092	1044	996	951	907
50 psf	1	870	756	665	590	527	474	429								
	2	1140	1020	918	830	754	689	632	582	537	498	463	431	403		
	3	1311	1197	1095	1004	924	853	789	733	682	635	594	555	520	488	457
	4	1419	1314	1217	1128	1048	975	908	848	792	742	695	652	612	574	538
	5	1489	1392	1300	1215	1136	1064	996	934	876	823	773	726	681	640	599
	6	1536	1446	1359	1278	1201	1129	1062	998	939	884	831	782	734	689	645
	7		1484	1402	1323	1248	1178	1111	1047	987	930	876	824	775	727	680
	8			1433	1357	1284	1214	1148	1085	1024	966	911	857	806	755	707
	9				1383	1311	1243	1177	1113	1053	994	937	883	830	778	727
	10					1333	1265	1199	1136	1075	1016	959	903	849	795	743
60 psf	1	846	733	641	566	504	451	406								
	2	1109	989	886	798	723	657	600	550	505	465	429	396	366		
	3	1271	1155	1053	962	881	809	745	687	635	587	543	502	464		
	4	1371	1263	1164	1074	992	917	849	787	729	675	625	578	533		
	5	1436	1334	1239	1151	1069	994	923	858	797	739	684	632	581		
	6	1479	1383	1292	1206	1125	1049	977	910	846	785	726	670	614		
	7		1417	1329	1244	1164	1089	1016	947	882	818	757	697	639		
	8			1356	1273	1194	1118	1046	976	908	843	780	718	657		
	9				1295	1216	1141	1068	997	929	862	797	733	670		
	10					1233	1158	1085	1014	945	877	811	745	680		
70 psf	1	822	709	618	542	480	427	382								
	2	1077	956	853	765	689	623	565	514	468	426	388	351			
	3	1229	1112	1008	916	834	760	694	634	579	527	478	430			
	4	1323	1211	1109	1016	931	854	782	716	654	594	537	480			
	5	1382	1275	1176	1084	998	918	843	772	704	639	575	512			
	6	1421	1318	1221	1130	1044	962	884	810	739	670	601	533			
	7		1348	1253	1163	1076	994	914	838	764	691	619	547			
	8			1276	1186	1100	1017	936	858	782	706	632	557			
	9				1204	1118	1034	952	873	795	718	641	565			
	10					1131	1047	965	884	805	727	648	570			
80 psf	1	798	685	593	518	455	402	357								
	2	1043	922	818	729	653	585	526	472	423	376	330				
	3	1187	1067	961	867	782	706	636	571	509	449	389				
	4	1273	1157	1052	955	866	784	707	633	563	493	422				
	5	1326	1214	1110	1012	921	834	752	673	596	519	441				
	6	1362	1252	1149	1051	958	869	783	700	618	536	453				
	7		1278	1176	1078	983	892	804	718	633	547	461				
	8			1195	1097	1002	910	819	731	643	555	466				
	9				1111	1015	922	831	740	650	561	470				
	10					1026	932	839	747	656	565	473				

See page 18 for footnotes

1.5PLB18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	1034	917	822	743	677	621	573								
	2	1357	1235	1129	1036	955	885	823	769	721	678	640	606	575		
	3	1568	1459	1357	1265	1181	1105	1037	975	920	869	824	783	745	710	679
	4	1705	1613	1524	1438	1358	1283	1214	1150	1091	1037	988	942	899	860	824
	5	1796	1720	1644	1568	1495	1425	1358	1296	1237	1182	1130	1082	1038	996	957
	6	1859	1796	1732	1666	1601	1537	1475	1415	1359	1305	1253	1205	1160	1117	1076
	7		1852	1797	1740	1682	1625	1569	1513	1460	1408	1359	1311	1266	1223	1182
	8			1846	1797	1746	1695	1644	1594	1544	1495	1448	1403	1359	1317	1276
	9				1841	1797	1751	1706	1660	1614	1569	1525	1481	1439	1398	1359
	10					1837	1797	1756	1714	1672	1631	1589	1549	1509	1470	1432

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	107	107	106	103	100	97	94								
	2	117	118	118	117	114	112	109	106	103	100	97	94	91		
	3	123	126	127	127	125	123	121	118	115	113	110	107	104	101	99
	4	128	132	134	135	134	133	131	128	126	123	121	118	115	112	110
	5	132	137	140	141	141	140	139	137	135	133	130	127	125	122	120
	6	135	141	144	146	147	147	146	144	143	141	138	136	133	131	128
	7		144	148	151	152	152	152	151	149	147	145	143	141	139	136
	8			151	155	156	157	157	156	155	154	152	150	148	145	143
	9				158	160	161	161	161	160	159	157	156	154	152	150
	10					163	165	165	165	165	164	162	161	159	157	155

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1100	976	874	790	720	661	610								
	2	1443	1314	1201	1102	1016	941	876	818	767	721	681	644	611		
	3	1668	1552	1444	1346	1256	1176	1103	1037	978	925	877	833	792	756	722
	4	1814	1716	1621	1530	1445	1365	1291	1224	1161	1103	1051	1002	957	915	877
	5	1911	1830	1749	1668	1590	1516	1445	1378	1316	1257	1202	1151	1104	1059	1018
	6	1978	1911	1842	1772	1703	1635	1569	1506	1445	1388	1333	1282	1234	1188	1145
	7		1970	1911	1851	1790	1729	1669	1610	1553	1498	1445	1395	1347	1301	1258
	8			1963	1911	1858	1804	1749	1695	1643	1591	1541	1492	1446	1401	1358
	9				1958	1911	1863	1814	1766	1717	1669	1622	1576	1531	1488	1446
	10					1954	1911	1868	1823	1779	1735	1691	1648	1605	1564	1447
10 psf	1	1100	976	874	790	719	657	605								
	2	1443	1314	1201	1102	1015	937	870	810	758	711	670	632	598		
	3	1668	1552	1444	1346	1254	1170	1095	1028	967	912	863	818	777	740	706
	4	1814	1716	1621	1530	1442	1358	1282	1211	1147	1088	1034	984	938	896	857
	5	1911	1830	1749	1668	1587	1507	1433	1363	1298	1238	1181	1129	1081	1036	994
	6	1978	1911	1842	1772	1699	1625	1554	1487	1424	1364	1308	1255	1205	1159	1115
	7		1970	1911	1851	1785	1718	1652	1588	1528	1470	1415	1363	1313	1266	1222
	8			1963	1911	1853	1791	1730	1671	1614	1558	1505	1454	1406	1360	1315
	9				1958	1906	1850	1794	1739	1685	1632	1582	1533	1486	1440	1397
	10					1949	1897	1845	1794	1744	1694	1646	1599	1554	1510	1447
20 psf	1	1089	959	853	766	693	632	580								
	2	1429	1292	1174	1072	984	907	840	781	729	683	641	604	571		
	3	1649	1524	1410	1306	1214	1131	1057	991	931	877	828	784	744	707	673
	4	1792	1682	1578	1481	1391	1308	1233	1164	1100	1042	989	941	896	855	817
	5	1887	1791	1698	1609	1525	1446	1372	1303	1240	1180	1126	1075	1027	983	942
	6	1951	1868	1785	1704	1627	1552	1482	1416	1353	1294	1239	1187	1139	1094	1051
	7		1923	1849	1775	1704	1635	1569	1505	1445	1388	1333	1282	1233	1188	1144
	8			1896	1830	1764	1700	1637	1577	1519	1464	1411	1361	1313	1267	1224
	9				1872	1811	1751	1692	1635	1580	1527	1476	1427	1380	1335	1292
	10					1848	1791	1736	1682	1629	1578	1529	1482	1436	1392	1349

See page 18 for footnotes

1.5PLB18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
30 psf	1	1063	933	827	740	668	607	555								
	2	1394	1258	1141	1039	952	875	809	751	699	653	612	575	542		
	3	1605	1480	1366	1263	1172	1090	1016	951	892	838	790	747	707	670	637
	4	1740	1628	1523	1426	1337	1255	1180	1111	1049	992	940	891	847	807	769
	5	1828	1729	1634	1544	1459	1380	1306	1238	1175	1116	1062	1011	964	921	880
	6	1888	1799	1713	1630	1550	1475	1404	1337	1274	1216	1161	1109	1061	1016	973
	7		1849	1770	1693	1619	1547	1479	1415	1353	1295	1241	1189	1140	1094	1050
	8			1813	1741	1671	1603	1538	1476	1416	1359	1305	1254	1205	1158	1114
	9				1778	1711	1647	1584	1524	1466	1411	1357	1306	1258	1211	1166
	10					1743	1681	1621	1563	1507	1452	1400	1350	1301	1255	1210
40 psf	1	1037	907	801	715	642	581	529								
	2	1359	1223	1106	1005	918	843	776	718	667	621	581	544	511		
	3	1561	1434	1320	1218	1127	1045	972	907	848	795	748	704	664	628	594
	4	1687	1573	1466	1368	1279	1197	1122	1054	991	934	882	834	789	748	709
	5	1769	1666	1568	1475	1389	1309	1234	1166	1102	1042	987	936	888	844	802
	6	1823	1729	1639	1552	1470	1392	1319	1251	1187	1126	1070	1017	967	920	875
	7		1775	1690	1608	1529	1454	1383	1316	1252	1192	1134	1080	1029	980	933
	8			1727	1649	1574	1502	1432	1366	1303	1242	1185	1130	1078	1027	979
	9				1681	1608	1538	1470	1405	1343	1283	1225	1170	1117	1065	1016
	10					1635	1567	1500	1436	1374	1315	1257	1201	1148	1096	1045
50 psf	1	1010	880	775	688	616	555	503								
	2	1323	1187	1070	970	883	808	742	684	632	587	546	509	475		
	3	1514	1387	1272	1170	1078	997	924	859	800	746	697	653	612	574	538
	4	1632	1515	1407	1308	1217	1134	1058	989	925	867	813	763	716	672	630
	5	1708	1600	1498	1403	1314	1232	1156	1085	1019	957	899	845	794	745	698
	6	1758	1658	1562	1470	1384	1303	1227	1155	1088	1024	964	906	852	799	748
	7		1698	1607	1519	1435	1355	1280	1208	1139	1074	1012	952	895	840	786
	8			1640	1555	1473	1394	1319	1247	1179	1113	1049	988	928	870	814
	9				1581	1501	1424	1350	1278	1209	1142	1077	1015	954	894	835
	10					1524	1447	1373	1302	1232	1165	1100	1036	974	912	852
60 psf	1	983	853	748	661	589	528	476								
	2	1286	1150	1033	933	846	770	704	646	594	547	505	467	432		
	3	1467	1338	1222	1119	1026	944	870	804	743	687	636	588	543	500	457
	4	1577	1456	1345	1243	1150	1065	987	915	849	787	728	673	620	568	516
	5	1646	1533	1427	1327	1235	1149	1069	994	923	856	793	732	672	614	555
	6	1692	1584	1482	1386	1294	1208	1127	1049	976	906	838	773	708	645	581
	7		1620	1521	1427	1337	1251	1168	1090	1014	942	871	802	734	667	599
	8			1550	1457	1368	1282	1199	1120	1043	968	895	824	753	683	612
	9				1479	1391	1305	1222	1142	1064	988	913	840	767	694	621
	10					1409	1323	1240	1159	1080	1003	927	852	777	703	629
70 psf	1	955	826	720	634	562	501	449								
	2	1248	1111	994	893	806	730	663	603	549	500	455	412	370		
	3	1418	1287	1169	1064	970	886	809	740	675	615	557	501	445		
	4	1520	1395	1280	1175	1078	989	907	830	758	689	622	555	488		
	5	1583	1464	1352	1248	1150	1059	972	891	813	737	663	589	515		
	6	1624	1509	1400	1297	1199	1106	1017	932	850	770	690	611	531		
	7		1541	1434	1331	1233	1139	1049	961	876	792	709	626	543		
	8			1458	1356	1258	1163	1071	982	894	808	722	637	550		
	9				1375	1277	1181	1088	998	908	820	732	644	556		
	10					1291	1195	1101	1009	919	829	739	650	560		
80 psf	1	927	798	692	606	533	472	419								
	2	1209	1071	953	851	763	685	615	553	495	439	385	329			
	3	1368	1234	1113	1006	909	820	739	664	592	521	450	375			
	4	1462	1332	1212	1102	1000	906	817	732	649	568	485	399			
	5	1519	1393	1274	1163	1059	960	866	774	685	595	505	412			
	6	1556	1433	1316	1204	1098	996	898	802	708	613	517	419			
	7		1460	1344	1233	1125	1021	920	821	723	625	526	424			
	8			1364	1253	1144	1039	936	835	734	633	531	428			
	9				1267	1159	1052	948	844	742	639	535	430			
	10					1169	1062	956	852	747	643	538	432			

See page 18 for footnotes

1.5PLB22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	507	447	399	360	322	291	265								
	2	643	579	525	479	439	405	375	348	321	299	279	262	247		
	3	745	683	628	579	536	498	464	434	408	384	363	342	323	306	290
	4	820	763	710	662	618	578	543	511	481	455	431	410	390	372	355
	5	874	824	775	730	687	648	611	578	548	520	494	471	449	429	411
	6	914	870	827	785	744	706	671	637	607	578	551	527	504	483	463
	7		907	868	829	792	756	721	689	658	630	603	578	554	532	512
	8			900	866	831	798	765	734	704	676	649	624	600	578	557
	9				895	864	833	802	773	744	717	690	665	642	619	598
	10					891	862	834	806	779	752	727	703	679	657	636

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Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	9	10	11	12	13	14	15								
	2	9	10	11	12	13	14	15	16	17	17	18	18	19		
	3	9	10	11	12	14	15	15	16	17	18	18	19	19	20	20
	4	9	10	11	13	14	15	16	17	17	18	19	19	20	20	21
	5	9	10	12	13	14	15	16	17	18	18	19	20	21	21	22
	6	9	10	12	13	14	15	16	17	18	19	20	20	21	22	22
	7		10	12	13	14	15	16	17	18	19	20	21	21	22	23
	8			12	13	14	15	16	17	18	19	20	21	22	22	23
	9				13	14	15	16	17	18	19	20	21	22	23	23
	10					14	15	17	18	19	20	20	21	22	23	24

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Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	647	571	510	460	412	372	338								
	2	821	740	670	611	560	517	479	444	410	381	356	334	315		
	3	951	872	801	739	684	635	592	554	521	490	463	436	412	390	371
	4	1046	974	906	845	789	738	693	652	615	581	551	523	498	475	454
	5	1116	1052	990	931	877	827	780	738	699	664	631	601	574	548	525
	6	1167	1111	1056	1002	950	902	856	814	774	738	704	673	643	616	591
	7		1157	1108	1059	1011	965	921	880	841	804	770	738	708	679	653
	8			1149	1105	1061	1018	977	937	899	863	829	796	766	737	709
	9				1143	1103	1063	1024	986	950	915	881	849	819	785	709
	10					1138	1101	1065	1029	994	961	928	897	867	785	709
20 psf	1	647	571	510	460	412	372	338								
	2	821	740	670	611	560	517	479	444	392	363	337	314	295		
	3	951	872	801	739	684	635	592	554	495	464	437	411	389	368	349
	4	1046	974	906	845	789	738	693	652	585	551	520	492	466	443	421
	5	1116	1052	990	931	877	827	780	738	664	628	595	565	537	511	487
	6	1167	1111	1056	1002	950	902	856	814	733	696	662	630	600	573	547
	7		1157	1108	1059	1011	965	921	880	793	755	720	688	657	629	602
	8			1149	1105	1061	1018	977	937	844	807	772	739	708	678	651
	9				1143	1103	1063	1024	986	888	852	817	784	753	723	695
	10					1138	1101	1065	1029	926	890	856	823	792	762	709
30 psf	1	647	571	510	428	382	341	306								
	2	821	740	670	575	523	478	439	404	374	346	320	297	277		
	3	951	872	801	697	640	590	546	506	471	439	411	385	361	339	319
	4	1046	974	906	794	736	684	637	595	556	521	489	460	433	408	385
	5	1116	1052	990	872	815	762	714	670	629	592	558	526	497	469	443
	6	1167	1111	1056	933	878	826	778	734	692	653	617	584	552	522	494
	7		1157	1108	982	929	879	831	787	745	705	668	633	600	569	539
	8			1149	1021	970	922	876	831	789	749	712	676	641	608	577
	9				1052	1004	957	912	869	827	787	749	712	677	643	610
	10					1031	986	943	900	859	819	780	743	707	672	638

See page 18 for footnotes

1.5PLB22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
40 psf	1	647	528	464	410	365	323	288								
	2	821	690	617	555	501	455	414	378	346	318	291	267	245		
	3	951	812	737	672	613	562	516	475	438	404	373	344	316		
	4	1046	902	830	764	704	650	601	556	515	477	442	408	376		
	5	1116	969	900	836	776	721	670	623	579	538	499	461	424		
	6	1167	1019	954	892	833	778	726	677	631	588	546	504	463		
	7		1057	995	936	878	824	772	722	674	628	584	539	494		
	8			1027	970	914	860	808	758	709	662	615	568	520		
	9				998	943	890	838	788	738	689	640	591	540		
	10					967	914	863	812	762	712	661	610	557		
50 psf	1	591	510	444	389	343	302	265								
	2	755	668	593	529	474	426	383	344	308	275	242				
	3	872	785	709	640	580	525	476	431	388	347	304				
	4	953	871	795	726	662	604	551	500	451	402	350				
	5	1011	933	860	791	726	666	609	554	499	444	383				
	6	1052	979	908	840	775	713	654	595	536	475	407				
	7		1013	945	878	813	750	689	627	565	498	425				
	8			973	908	843	780	716	652	587	516	438				
	9				931	867	803	738	672	604	530	448				
	10					885	821	756	688	618	541	455				
60 psf	1	572	489	421	364	315	272	234								
	2	733	643	566	499	440	388	339	292	242						
	3	844	754	674	602	536	476	418	359	292						
	4	921	834	753	678	608	541	475	406	324						
	5	974	890	810	734	661	589	517	438	344						
	6	1012	932	853	776	700	625	546	461	358						
	7		962	884	807	730	651	568	477	367						
	8			908	831	752	671	585	489	374						
	9				849	769	687	598	498	378						
	10					783	699	607	505	382						
70 psf	1	551	466	395	334	281	233	185								
	2	707	614	533	461	396	333	265	155							
	3	813	718	632	553	477	401	312	168							
	4	884	790	701	617	533	445	340	173							
	5	933	840	751	662	572	475	357	176							
	6	967	876	786	694	599	495	367	178							
	7		902	811	718	619	509	375	179							
	8			830	735	633	519	380	180							
	9				748	644	527	384	180							
	10					653	532	386	181							
80 psf	1	528	439	364	298	237	168									
	2	678	580	492	412	330	226									
	3	777	675	579	487	387	252									
	4	842	738	637	535	420	264									
	5	885	781	677	567	441	271									
	6	915	811	704	588	455	276									
	7		833	723	603	464	278									
	8			737	614	471	280									
	9				623	475	281									
	10					479	282									
90 psf	1	501	408	326	250	154										
	2	644	539	441	340	192										
	3	735	623	512	389	205										
	4	793	676	555	416	211										
	5	831	711	583	433	214										
	6	857	735	601	443	216										
	7		751	614	450	217										
	8			623	455	217										
	9				458	218										
	10					218										

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1.5PLB20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	707	628	562	508	463	422	385								
	2	887	804	732	669	616	569	529	493	462	433	404	379	357		
	3	1016	938	867	803	746	695	650	609	573	541	512	485	461	439	418
	4	1108	1038	972	910	854	802	755	712	673	638	605	576	549	524	501
	5	1173	1113	1053	996	943	892	845	802	762	724	690	659	630	603	578
	6	1221	1169	1117	1065	1015	967	922	879	839	801	766	734	703	675	648
	7		1212	1166	1119	1074	1029	986	945	906	869	834	801	770	741	714
	8			1204	1163	1122	1081	1041	1002	964	928	894	861	830	801	773
	9				1198	1161	1124	1086	1050	1014	980	947	915	884	855	827
	10					1194	1159	1125	1091	1058	1025	993	962	933	904	876

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Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	14	15	17	19	20	21	22								
	2	14	16	18	19	20	22	23	24	25	25	26	26	27		
	3	14	16	18	19	21	22	24	25	26	27	27	28	29	29	29
	4	14	16	18	20	21	23	24	25	26	27	28	29	30	30	31
	5	14	16	18	20	22	23	25	26	27	28	29	30	31	31	32
	6	14	16	18	20	22	23	25	26	28	29	30	31	32	32	33
	7		16	18	20	22	24	25	27	28	29	30	31	32	33	34
	8			18	20	22	24	25	27	28	30	31	32	33	34	35
	9				20	22	24	26	27	29	30	31	32	33	34	35
	10					22	24	26	27	29	30	32	33	34	35	36

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Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	903	801	718	649	591	539	492								
	2	1132	1026	934	855	786	727	675	630	590	553	516	484	455		
	3	1297	1197	1106	1025	952	887	829	778	732	690	653	619	589	561	533
	4	1414	1325	1241	1162	1090	1024	964	909	859	814	773	735	701	669	640
	5	1498	1421	1345	1272	1203	1139	1079	1023	972	925	881	841	804	769	737
	6	1559	1492	1425	1359	1296	1234	1177	1122	1071	1023	978	937	898	862	828
	7		1547	1488	1429	1371	1314	1259	1206	1157	1109	1065	1023	983	946	911
	8			1538	1485	1432	1380	1328	1279	1231	1185	1141	1099	1060	1022	947
	9				1530	1482	1434	1387	1340	1295	1251	1209	1168	1129	1050	947
	10					1524	1480	1436	1393	1350	1308	1268	1228	1170	1050	947
20 psf	1	903	801	718	649	591	539	492								
	2	1132	1026	934	855	786	727	675	630	590	553	495	462	433		
	3	1297	1197	1106	1025	952	887	829	778	732	690	624	590	558	530	504
	4	1414	1325	1241	1162	1090	1024	964	909	859	814	739	701	666	634	604
	5	1498	1421	1345	1272	1203	1139	1079	1023	972	925	842	801	763	729	696
	6	1559	1492	1425	1359	1296	1234	1177	1122	1071	1023	932	890	851	814	780
	7		1547	1488	1429	1371	1314	1259	1206	1157	1109	1011	968	928	890	855
	8			1538	1485	1432	1380	1328	1279	1231	1185	1079	1037	997	958	922
	9				1530	1482	1434	1387	1340	1295	1251	1139	1097	1057	1019	947
	10					1524	1480	1436	1393	1350	1308	1190	1149	1110	1050	947
30 psf	1	903	801	718	649	591	505	456								
	2	1132	1026	934	855	786	685	632	585	543	506	473	443	413	388	365
	3	1297	1197	1106	1025	952	838	779	726	679	636	597	562	530	500	473
	4	1414	1325	1241	1162	1090	965	904	847	796	750	707	668	632	599	568
	5	1498	1421	1345	1272	1203	1069	1007	950	897	848	803	762	723	687	653
	6	1559	1492	1425	1359	1296	1154	1093	1036	983	933	886	843	802	764	729
	7		1547	1488	1429	1371	1222	1163	1108	1055	1005	958	913	871	832	795
	8			1538	1485	1432	1278	1221	1167	1115	1066	1018	974	931	891	852
	9				1530	1482	1323	1269	1217	1166	1117	1070	1025	982	941	902
	10					1524	1361	1309	1258	1209	1161	1114	1070	1027	985	945

See page 18 for footnotes

1.5PLB20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
40 psf	1	903	801	668	596	535	484	436								
	2	1132	1026	877	794	723	661	606	558	515	477	442	411	382		
	3	1297	1197	1037	952	876	809	748	694	645	601	560	524	489	458	428
	4	1414	1325	1159	1076	999	930	866	809	756	707	662	621	583	546	512
	5	1498	1421	1250	1171	1096	1027	963	903	848	797	749	704	662	622	583
	6	1559	1492	1319	1244	1172	1105	1041	981	924	871	821	773	728	685	642
	7		1547	1371	1301	1232	1167	1104	1044	987	933	881	831	784	737	692
	8			1412	1345	1280	1216	1155	1096	1039	984	931	880	830	781	733
	9				1381	1318	1257	1196	1138	1081	1026	972	920	868	817	767
	10					1349	1289	1231	1173	1116	1061	1007	953	900	848	795
50 psf	1	903	736	647	574	511	458	412								
	2	1132	949	852	768	695	631	575	524	479	439	401	366	333		
	3	1297	1105	1008	920	842	773	710	653	601	553	509	466	425		
	4	1414	1216	1123	1037	958	885	819	757	700	647	596	547	498		
	5	1498	1297	1209	1125	1047	973	905	841	780	722	666	611	555		
	6	1559	1355	1272	1192	1116	1043	973	907	843	782	722	661	599		
	7		1399	1321	1244	1169	1097	1027	959	894	829	765	700	632		
	8			1358	1284	1211	1139	1070	1001	934	867	800	731	658		
	9				1315	1244	1173	1104	1035	966	898	828	756	679		
	10					1270	1201	1131	1062	993	922	850	775	695		
60 psf	1	824	714	624	548	484	428	379								
	2	1038	923	824	737	662	595	536	482	432	385	338	287			
	3	1184	1073	973	882	801	727	660	598	539	481	421	351			
	4	1283	1179	1081	990	907	829	756	687	619	552	479	392			
	5	1352	1254	1160	1071	986	906	829	754	680	604	520	419			
	6	1400	1308	1218	1131	1046	964	884	805	726	642	549	437			
	7		1348	1262	1176	1092	1009	927	844	760	670	570	449			
	8			1295	1211	1127	1043	960	874	786	691	585	458			
	9				1237	1154	1070	985	898	806	708	597	465			
	10					1176	1092	1006	917	822	721	606	470			
70 psf	1	802	690	597	519	451	392	340								
	2	1012	894	791	701	622	550	485	422	358	279					
	3	1152	1037	932	837	750	669	592	516	433	325					
	4	1246	1136	1032	935	843	755	669	580	481	351					
	5	1311	1205	1103	1005	911	818	724	625	513	366					
	6	1356	1255	1155	1057	960	863	764	657	534	376					
	7		1291	1193	1095	997	897	793	679	549	382					
	8			1222	1124	1025	922	814	696	560	386					
	9				1146	1046	942	831	709	567	389					
	10					1063	957	844	718	573	392					
80 psf	1	778	663	567	485	413	349	288								
	2	982	860	753	658	572	491	410	313	103						
	3	1117	995	884	781	684	589	488	360	106						
	4	1205	1087	974	867	761	654	536	385	107						
	5	1264	1150	1037	926	815	698	567	400	107						
	6	1306	1194	1082	968	852	729	588	409	107						
	7		1226	1114	999	879	750	602	415	107						
	8			1138	1022	899	766	612	419	107						
	9				1039	914	777	620	422	108						
	10					926	786	625	424	108						
90 psf	1	751	633	532	445	366	290	195								
	2	949	822	709	606	507	402	250								
	3	1076	948	827	712	596	465	272								
	4	1159	1030	906	782	652	501	281								
	5	1213	1086	959	829	688	523	286								
	6	1250	1125	996	860	712	536	289								
	7		1152	1022	883	729	546	291								
	8			1041	899	741	552	293								
	9				912	750	557	294								
	10					757	560	294								

See page 18 for footnotes

1.5PLB19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	894	795	714	647	590	542	498								
	2	1113	1012	924	848	781	723	673	628	589	553	522	491	462	437	414
	3	1267	1174	1089	1011	942	879	823	773	728	688	651	618	588	560	535
	4	1374	1293	1215	1142	1073	1011	953	901	853	809	769	732	698	667	638
	5	1450	1381	1311	1244	1180	1120	1063	1010	961	916	874	835	799	765	734
	6	1505	1445	1385	1325	1266	1209	1155	1104	1055	1010	967	927	890	855	822
	7		1494	1442	1388	1335	1283	1232	1183	1136	1092	1050	1010	972	936	903
	8			1486	1439	1391	1343	1296	1250	1206	1163	1122	1083	1045	1010	976
	9				1479	1436	1393	1350	1307	1265	1225	1185	1147	1110	1075	1042
	10					1474	1435	1395	1355	1316	1278	1240	1204	1168	1134	1101

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	20	22	24	26	27	29	30								
	2	20	23	25	27	29	30	32	33	34	35	35	36	36		
	3	20	23	25	28	30	32	33	35	36	37	38	38	39	40	40
	4	20	23	26	28	30	32	34	36	37	38	39	40	41	42	42
	5	21	23	26	29	31	33	35	37	38	40	41	42	43	44	44
	6	21	24	26	29	31	33	35	37	39	41	42	43	44	45	46
	7		24	27	29	32	34	36	38	40	41	43	44	45	46	47
	8			27	29	32	34	36	38	40	42	44	45	46	47	49
	9				29	32	34	37	39	41	43	44	46	47	48	50
	10					32	35	37	39	41	43	45	46	48	49	50

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1141	1015	912	825	753	692	636								
	2	1421	1292	1180	1082	997	923	859	802	751	707	667	627	590		
	3	1618	1499	1390	1291	1202	1123	1051	987	930	878	831	789	750	715	683
	4	1755	1651	1551	1457	1370	1290	1217	1150	1088	1032	981	934	891	851	815
	5	1851	1762	1674	1588	1506	1429	1357	1290	1227	1169	1115	1066	1020	977	937
	6	1921	1845	1768	1691	1616	1544	1475	1409	1347	1289	1235	1184	1136	1091	1050
	7		1908	1841	1772	1704	1638	1573	1510	1451	1394	1340	1289	1241	1195	1152
	8			1897	1837	1776	1715	1655	1596	1539	1485	1432	1382	1334	1289	1195
	9				1889	1834	1779	1723	1669	1615	1563	1513	1464	1418	1324	1195
	10					1881	1831	1781	1730	1680	1631	1583	1537	1475	1324	1195
30 psf	1	1141	1015	912	825	753	692	636								
	2	1421	1292	1180	1082	997	923	859	756	704	658	616	579	545		
	3	1618	1499	1390	1291	1202	1123	1051	934	875	822	774	730	691	654	620
	4	1755	1651	1551	1457	1370	1290	1217	1086	1024	967	914	866	822	781	743
	5	1851	1762	1674	1588	1506	1429	1357	1214	1150	1091	1036	985	938	894	853
	6	1921	1845	1768	1691	1616	1544	1475	1321	1257	1197	1141	1089	1040	993	950
	7		1908	1841	1772	1704	1638	1573	1410	1347	1288	1231	1178	1128	1081	1036
	8			1897	1837	1776	1715	1655	1483	1422	1364	1308	1255	1205	1157	1111
	9				1889	1834	1779	1723	1544	1485	1428	1374	1321	1271	1223	1176
	10					1881	1831	1781	1595	1538	1483	1429	1378	1328	1280	1195
40 psf	1	1141	1015	912	825	696	632	576								
	2	1421	1292	1180	1082	932	856	788	729	676	628	586	547	512		
	3	1618	1499	1390	1291	1125	1043	969	902	842	788	739	694	652	614	579
	4	1755	1651	1551	1457	1278	1194	1118	1048	984	925	871	821	775	732	692
	5	1851	1762	1674	1588	1398	1316	1239	1168	1102	1041	984	931	881	835	791
	6	1921	1845	1768	1691	1491	1412	1338	1267	1200	1138	1079	1024	972	922	875
	7		1908	1841	1772	1565	1490	1417	1348	1281	1219	1159	1102	1048	997	947
	8			1897	1837	1623	1551	1481	1413	1348	1286	1226	1168	1113	1059	1008
	9				1889	1670	1601	1533	1468	1403	1341	1281	1223	1167	1113	1059
	10					1707	1642	1576	1512	1449	1388	1328	1270	1213	1157	1103

See page 18 for footnotes

1.5PLB19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
50 psf	1	1141	1015	840	749	672	606	549								
	2	1421	1292	1096	994	905	826	757	696	642	592	548	507	469		
	3	1618	1499	1289	1185	1091	1007	931	863	801	744	692	644	599	557	517
	4	1755	1651	1432	1330	1237	1151	1072	999	932	871	813	759	708	659	612
	5	1851	1762	1537	1440	1349	1264	1184	1109	1040	974	912	854	798	743	689
	6	1921	1845	1615	1524	1436	1352	1273	1198	1126	1058	993	931	870	810	750
	7		1908	1674	1588	1504	1422	1344	1269	1196	1127	1059	994	929	865	799
	8			1718	1637	1556	1477	1400	1325	1253	1182	1113	1044	977	909	839
	9				1676	1598	1521	1446	1371	1298	1227	1156	1086	1016	944	870
	10					1632	1557	1482	1409	1336	1264	1192	1120	1047	973	896
60 psf	1	1141	927	816	723	645	577	518								
	2	1421	1188	1068	964	872	792	720	657	599	546	498	452	407		
	3	1618	1373	1255	1148	1051	964	885	813	747	685	627	571	514		
	4	1755	1504	1391	1285	1188	1098	1014	937	864	795	729	663	595		
	5	1851	1596	1489	1388	1291	1201	1115	1034	956	881	808	733	655		
	6	1921	1662	1562	1464	1370	1280	1193	1109	1028	948	868	786	699		
	7		1711	1616	1522	1430	1341	1253	1168	1084	1000	915	827	732		
	8			1657	1567	1477	1388	1301	1214	1128	1041	952	858	757		
	9				1602	1514	1426	1338	1250	1162	1073	980	882	776		
	10					1543	1456	1368	1280	1190	1098	1003	902	791		
70 psf	1	1039	903	790	694	613	543	481								
	2	1299	1159	1036	929	834	751	676	607	544	483	422	353			
	3	1472	1338	1215	1104	1003	912	827	748	673	598	520	426			
	4	1587	1462	1343	1232	1129	1033	942	855	769	682	586	470			
	5	1665	1548	1435	1326	1222	1123	1027	933	839	741	632	499			
	6	1720	1610	1502	1395	1292	1191	1091	992	891	784	664	517			
	7		1656	1551	1447	1344	1242	1140	1036	930	815	686	530			
	8			1588	1486	1384	1281	1177	1070	959	839	703	539			
	9				1516	1414	1311	1206	1096	981	856	715	545			
	10					1439	1335	1228	1117	999	870	725	550			
80 psf	1	1015	876	760	662	577	503	437								
	2	1270	1126	1000	889	790	701	619	541	462	369	202				
	3	1437	1298	1170	1053	946	847	752	657	557	432	215				
	4	1547	1414	1289	1171	1059	951	846	737	618	468	220				
	5	1621	1495	1373	1255	1139	1026	912	792	658	489	223				
	6	1672	1552	1433	1315	1198	1080	960	831	685	503	225				
	7		1594	1477	1359	1241	1120	994	859	704	512	226				
	8			1510	1393	1273	1150	1020	879	718	518	226				
	9				1418	1298	1173	1040	894	727	523	227				
	10					1317	1191	1055	906	735	526	227				
90 psf	1	988	847	727	625	536	457	382								
	2	1238	1089	958	842	736	638	541	435	271						
	3	1398	1253	1118	994	876	762	644	506	295						
	4	1502	1362	1227	1098	972	845	710	548	305						
	5	1572	1436	1302	1170	1038	902	752	572	311						
	6	1619	1488	1355	1221	1085	941	781	588	314						
	7		1525	1393	1258	1118	968	801	599	316						
	8			1421	1285	1142	988	815	606	317						
	9				1306	1161	1003	825	611	318						
	10					1175	1015	833	615	319						
100 psf	1	960	814	690	583	488	398	302								
	2	1202	1049	911	787	670	552	411	105							
	3	1355	1202	1058	922	787	644	463	107							
	4	1453	1302	1156	1011	862	699	491	107							
	5	1518	1369	1221	1070	912	733	506	107							
	6	1562	1416	1266	1111	945	756	516	108							
	7		1448	1298	1140	968	771	522	108							
	8			1322	1161	984	781	526	108							
	9				1176	997	789	529	108							
	10					1006	795	532	108							

See page 18 for footnotes

1.5PLB18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	1026	914	822	745	680	625	578								
	2	1281	1168	1069	982	907	841	782	731	686	645	609	577	544		
	3	1455	1353	1258	1172	1094	1023	960	903	851	804	762	724	689	657	628
	4	1573	1486	1401	1320	1244	1174	1110	1050	996	946	900	858	819	783	750
	5	1655	1581	1507	1434	1364	1298	1235	1176	1121	1070	1022	978	937	898	862
	6	1713	1651	1587	1523	1459	1398	1338	1282	1228	1177	1129	1084	1042	1002	965
	7		1703	1648	1591	1535	1479	1424	1370	1319	1270	1223	1178	1136	1096	1058
	8			1695	1645	1595	1544	1494	1444	1396	1349	1304	1260	1219	1179	1141
	9				1688	1643	1598	1552	1506	1461	1417	1374	1332	1292	1253	1216
	10					1683	1642	1600	1558	1516	1475	1435	1395	1356	1319	1282

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	26	29	32	34	36	37	38								
	2	27	30	33	36	38	40	42	43	44	45	46	46	46		
	3	27	31	34	37	39	42	44	45	47	48	49	50	51	51	51
	4	28	31	35	38	40	43	45	47	49	50	52	53	54	55	55
	5	28	32	35	38	41	44	46	49	50	52	54	55	56	57	58
	6	28	32	35	39	42	45	47	50	52	54	55	57	58	59	60
	7		32	36	39	42	45	48	50	53	55	57	58	60	61	62
	8			36	39	43	46	48	51	53	56	58	59	61	63	64
	9				40	43	46	49	52	54	56	59	60	62	64	65
	10					43	46	49	52	55	57	59	61	63	65	66

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1310	1167	1049	951	868	798	738								
	2	1635	1491	1365	1254	1158	1073	999	933	875	824	778	736	695		
	3	1857	1727	1607	1496	1396	1306	1225	1152	1086	1027	973	924	879	839	801
	4	2008	1896	1788	1685	1589	1499	1417	1341	1271	1208	1149	1095	1045	1000	957
	5	2113	2018	1924	1831	1742	1657	1577	1501	1431	1366	1305	1248	1196	1147	1101
	6	2187	2108	2026	1944	1863	1784	1709	1636	1568	1503	1442	1384	1330	1280	1232
	7		2174	2104	2032	1959	1887	1817	1749	1684	1621	1561	1504	1450	1399	1350
	8			2164	2100	2036	1971	1907	1844	1782	1722	1665	1609	1556	1505	1447
	9				2155	2098	2040	1981	1923	1865	1809	1754	1701	1649	1600	1447
	10					2148	2096	2043	1989	1936	1883	1831	1781	1731	1603	1447
30 psf	1	1310	1167	1049	951	868	798	738								
	2	1635	1491	1365	1254	1158	1073	999	933	830	777	730	687	648		
	3	1857	1727	1607	1496	1396	1306	1225	1152	1034	973	918	868	822	780	742
	4	2008	1896	1788	1685	1589	1499	1417	1341	1208	1143	1084	1029	978	932	888
	5	2113	2018	1924	1831	1742	1657	1577	1501	1356	1289	1227	1169	1116	1066	1019
	6	2187	2108	2026	1944	1863	1784	1709	1636	1479	1412	1350	1291	1235	1184	1135
	7		2174	2104	2032	1959	1887	1817	1749	1581	1516	1454	1395	1339	1286	1236
	8			2164	2100	2036	1971	1907	1844	1666	1603	1542	1484	1428	1375	1324
	9				2155	2098	2040	1981	1923	1737	1676	1616	1559	1504	1452	1401
	10					2148	2096	2043	1989	1796	1737	1680	1624	1570	1518	1447
40 psf	1	1310	1167	1049	951	868	741	678								
	2	1635	1491	1365	1254	1158	1009	932	864	804	750	702	658	618		
	3	1857	1727	1607	1496	1396	1229	1146	1070	1002	941	885	834	787	744	704
	4	2008	1896	1788	1685	1589	1406	1320	1242	1170	1104	1043	987	935	887	842
	5	2113	2018	1924	1831	1742	1545	1461	1383	1309	1241	1178	1118	1063	1011	963
	6	2187	2108	2026	1944	1863	1656	1574	1497	1424	1355	1291	1230	1172	1118	1066
	7		2174	2104	2032	1959	1742	1665	1590	1518	1450	1385	1323	1264	1208	1155
	8			2164	2100	2036	1812	1737	1665	1595	1528	1464	1402	1342	1285	1230
	9				2155	2098	1867	1796	1727	1659	1593	1529	1467	1408	1350	1294
	10					2148	1912	1844	1777	1711	1647	1584	1523	1463	1405	1349

See page 18 for footnotes

1.5PLB18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
50 psf	1	1310	1167	1049	879	792	718	653								
	2	1635	1491	1365	1170	1069	981	903	834	772	717	667	621	580		
	3	1857	1727	1607	1394	1289	1195	1110	1033	964	900	843	789	740	695	652
	4	2008	1896	1788	1561	1459	1364	1277	1196	1122	1054	990	932	877	825	776
	5	2113	2018	1924	1687	1589	1496	1409	1327	1251	1180	1113	1050	990	934	879
	6	2187	2108	2026	1781	1688	1598	1513	1432	1355	1282	1213	1147	1084	1023	964
	7		2174	2104	1852	1764	1678	1595	1515	1439	1365	1294	1226	1161	1097	1034
	8			2164	1907	1824	1741	1661	1582	1506	1433	1361	1291	1223	1157	1091
	9				1950	1871	1791	1713	1636	1561	1487	1415	1345	1275	1206	1138
	10					1908	1832	1756	1680	1606	1533	1460	1389	1318	1247	1176
60 psf	1	1310	1084	960	855	767	691	625								
	2	1635	1391	1258	1141	1039	949	869	798	734	676	624	575	530		
	3	1857	1606	1476	1358	1251	1155	1067	988	916	849	787	730	675	622	569
	4	2008	1754	1632	1518	1413	1314	1224	1140	1062	989	920	854	791	729	665
	5	2113	1857	1745	1637	1534	1437	1345	1258	1177	1099	1025	953	882	811	737
	6	2187	1931	1827	1725	1625	1530	1439	1351	1267	1186	1108	1030	953	875	792
	7		1985	1888	1791	1695	1602	1512	1424	1338	1255	1173	1091	1009	924	833
	8			1933	1841	1749	1658	1569	1481	1395	1309	1224	1139	1052	962	865
	9				1880	1791	1702	1614	1526	1439	1353	1266	1177	1087	992	890
	10					1824	1737	1650	1563	1475	1388	1299	1208	1114	1015	909
70 psf	1	1213	1061	935	828	738	660	591								
	2	1518	1364	1228	1109	1004	911	829	755	687	625	567	511	454		
	3	1717	1572	1439	1317	1207	1107	1016	932	854	781	710	640	566		
	4	1847	1714	1588	1469	1358	1255	1159	1069	983	900	818	734	643		
	5	1934	1812	1694	1579	1470	1366	1267	1172	1080	989	898	803	698		
	6	1994	1882	1770	1660	1553	1449	1348	1250	1153	1057	957	852	736		
	7		1932	1826	1720	1615	1512	1410	1310	1209	1108	1002	889	763		
	8			1868	1766	1663	1560	1458	1356	1253	1147	1036	917	783		
	9				1801	1700	1598	1496	1392	1286	1177	1062	937	798		
	10					1729	1628	1525	1420	1313	1201	1082	954	809		
80 psf	1	1191	1036	908	799	705	625	553								
	2	1490	1333	1194	1072	964	868	781	701	627	554	479	388			
	3	1683	1534	1396	1271	1156	1050	953	860	771	681	582	457			
	4	1808	1669	1537	1412	1295	1184	1079	976	874	768	649	496			
	5	1892	1762	1636	1513	1395	1281	1170	1060	948	828	692	520			
	6	1949	1827	1706	1586	1468	1352	1237	1121	1000	870	721	534			
	7		1874	1757	1640	1523	1405	1287	1166	1039	900	742	544			
	8			1795	1680	1563	1445	1325	1200	1067	922	756	551			
	9				1711	1595	1476	1353	1225	1089	939	767	556			
	10					1619	1500	1376	1245	1106	952	775	559			
90 psf	1	1166	1009	877	766	669	584	508								
	2	1460	1299	1156	1030	917	815	721	630	538	428	230				
	3	1647	1492	1349	1217	1095	981	871	762	643	496	243				
	4	1766	1620	1480	1347	1220	1097	975	849	710	534	249				
	5	1845	1707	1571	1438	1307	1178	1047	908	752	556	252				
	6	1899	1767	1634	1502	1370	1236	1097	949	780	570	253				
	7		1810	1680	1549	1415	1278	1134	978	800	579	254				
	8			1714	1583	1449	1309	1160	999	814	586	255				
	9				1610	1474	1332	1180	1014	824	590	255				
	10					1494	1350	1196	1026	831	594	255				
100 psf	1	1140	979	844	729	628	537	453								
	2	1427	1261	1114	982	862	751	641	522	354						
	3	1607	1445	1295	1155	1023	893	760	608	389						
	4	1721	1566	1416	1271	1130	987	835	657	406						
	5	1795	1646	1498	1351	1203	1050	883	687	415						
	6	1846	1701	1554	1406	1253	1092	915	705	420						
	7		1740	1595	1445	1289	1123	938	718	423						
	8			1625	1474	1315	1144	953	727	425						
	9				1496	1335	1161	965	733	427						
	10					1350	1173	974	738	428						

See page 18 for footnotes

1.5PLB22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	668	583	517	458	410	371	338								
	2	839	741	661	596	542	494	451	415	384	357	333	313	296		
	3	986	880	792	718	656	604	558	519	481	448	418	393	371	352	334
	4	1110	1002	909	830	763	704	653	609	570	535	503	473	447	423	402
	5	1213	1107	1013	932	860	798	743	694	651	613	579	548	520	494	470
	6	1299	1197	1105	1022	949	884	826	774	728	687	650	616	585	557	532
	7		1274	1185	1103	1030	963	903	849	801	757	717	681	648	618	591
	8			1254	1175	1102	1035	975	919	869	823	782	744	709	677	647
	9				1238	1167	1101	1040	984	933	886	843	803	767	733	702
	10					1225	1161	1100	1044	992	944	900	859	822	785	709

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Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	49	52	53	54	54	54	54								
	2	51	54	56	57	57	57	57	57	56	55	54	53	52		
	3	52	55	58	59	60	60	60	60	59	58	57	57	56	54	53
	4	53	57	59	61	62	63	63	62	62	61	61	60	59	58	57
	5	54	58	60	62	64	65	65	65	65	64	64	63	62	61	60
	6	55	59	62	64	65	66	67	67	67	67	66	66	65	64	63
	7		59	63	65	67	68	69	69	69	69	69	68	67	67	66
	8			64	66	68	69	70	71	71	71	71	70	70	69	68
	9				67	69	71	72	72	73	73	73	72	72	71	71
	10					70	72	73	74	74	75	74	74	74	73	73

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	853	745	660	584	523	473	431								
	2	1071	945	844	761	692	631	576	530	490	456	425	400	377		
	3	1258	1123	1011	917	838	770	713	662	614	571	534	502	474	449	427
	4	1416	1279	1161	1060	974	899	834	777	727	683	643	604	571	541	514
	5	1548	1413	1294	1189	1098	1018	948	886	831	782	739	699	664	631	601
	6	1658	1528	1410	1305	1212	1128	1055	989	930	877	829	786	747	712	679
	7		1626	1512	1408	1314	1230	1153	1084	1022	966	916	870	828	785	709
	8			1601	1500	1407	1322	1244	1174	1110	1051	998	949	875	785	709
	9				1581	1490	1406	1328	1256	1191	1131	1076	981	875	785	709
	10					1564	1482	1404	1333	1267	1206	1107	981	875	785	709
30 psf	1	853	745	660	584	523	473	431								
	2	1071	945	844	761	692	631	576	530	490	456	425	400	358	337	319
	3	1258	1123	1011	917	838	770	713	662	614	571	534	502	455	429	406
	4	1416	1279	1161	1060	974	899	834	777	727	683	643	604	551	521	493
	5	1548	1413	1294	1189	1098	1018	948	886	831	782	739	699	638	605	575
	6	1658	1528	1410	1305	1212	1128	1055	989	930	877	829	786	720	684	651
	7		1626	1512	1408	1314	1230	1153	1084	1022	966	916	870	797	759	709
	8			1601	1500	1407	1322	1244	1174	1110	1051	998	949	872	785	709
	9				1581	1490	1406	1328	1256	1191	1131	1076	981	875	785	709
	10					1564	1482	1404	1333	1267	1206	1107	981	875	785	709
40 psf	1	853	745	660	584	523	473	431								
	2	1071	945	844	761	692	631	576	530	463	428	397	370	347		
	3	1258	1123	1011	917	838	770	713	662	586	544	506	472	444		
	4	1416	1279	1161	1060	974	899	834	777	693	648	608	572	539		
	5	1548	1413	1294	1189	1098	1018	948	886	794	744	700	659	623		
	6	1658	1528	1410	1305	1212	1128	1055	989	889	835	787	743	703		
	7		1626	1512	1408	1314	1230	1153	1084	977	920	869	822	779		
	8			1601	1500	1407	1322	1244	1174	1058	1000	946	897	852		
	9				1581	1490	1406	1328	1256	1134	1073	1018	967	875		
	10					1564	1482	1404	1333	1203	1142	1085	981	875		

See page 18 for footnotes

1.5PLB22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
50 psf	1	853	745	660	584	523	439	396								
	2	1071	945	844	761	692	595	541	493	452	416	385				
	3	1258	1123	1011	917	838	730	670	618	573	532	494				
	4	1416	1279	1161	1060	974	854	788	730	679	633	592				
	5	1548	1413	1294	1189	1098	969	897	834	778	728	683				
	6	1658	1528	1410	1305	1212	1073	998	931	870	816	768				
	7		1626	1512	1408	1314	1167	1089	1019	956	899	847				
	8			1601	1500	1407	1251	1172	1101	1035	976	922				
	9				1581	1490	1327	1248	1175	1108	1047	991				
	10					1564	1395	1315	1242	1175	1112	1054				
60 psf	1	853	745	660	543	480	428	384								
	2	1071	945	844	714	643	583	529	481	439						
	3	1258	1123	1011	867	786	716	656	603	557						
	4	1416	1279	1161	1004	916	839	772	714	662						
	5	1548	1413	1294	1127	1033	952	880	816	759						
	6	1658	1528	1410	1234	1138	1053	978	910	849						
	7		1626	1512	1328	1232	1145	1066	996	932						
	8			1601	1410	1314	1226	1147	1074	1008						
	9				1482	1387	1299	1219	1145	1077						
	10					1451	1364	1283	1209	1140						
70 psf	1	853	745	607	532	468	415	371								
	2	1071	945	788	702	630	568	516	467							
	3	1258	1123	950	853	771	701	640	586							
	4	1416	1279	1093	989	899	822	754	695							
	5	1548	1413	1216	1109	1015	932	859	794							
	6	1658	1528	1323	1214	1117	1031	954	885							
	7		1626	1414	1305	1207	1119	1040	968							
	8			1491	1385	1287	1198	1116	1042							
	9				1453	1356	1267	1185	1109							
	10					1417	1328	1246	1169							
80 psf	1	853	685	595	520	455	402	357								
	2	1071	882	775	688	615	553	499								
	3	1258	1052	936	838	755	683	622								
	4	1416	1198	1076	972	881	803	734								
	5	1548	1321	1197	1089	994	910	836								
	6	1658	1425	1301	1191	1093	1005	927								
	7		1511	1389	1279	1180	1090	1009								
	8			1465	1356	1256	1165	1081								
	9				1421	1322	1230	1145								
	10					1379	1287	1201								
90 psf	1	788	673	582	507	441	387	341								
	2	1000	869	761	673	599	535	481								
	3	1179	1038	920	821	737	664	601								
	4	1325	1182	1058	952	861	781	710								
	5	1445	1302	1177	1067	970	884	808								
	6	1542	1403	1277	1166	1066	976	895								
	7		1486	1363	1250	1149	1056	972								
	8			1435	1323	1220	1126	1039								
	9				1385	1283	1187	1097								
	10					1336	1240	1148								
100 psf	1	776	660	568	492	426	370									
	2	988	855	746	657	581	516									
	3	1164	1022	903	803	717	643									
	4	1309	1163	1039	931	838	756									
	5	1426	1281	1154	1042	943	855									
	6	1521	1379	1251	1137	1034	942									
	7		1460	1333	1218	1113	1017									
	8			1402	1287	1180	1081									
	9				1345	1238	1136									
	10					1287	1184									

See page 18 for footnotes

1.5PLB20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	946	828	734	659	592	536	489								
	2	1183	1046	936	845	769	705	650	599	554	516	482	452	426		
	3	1383	1239	1117	1015	929	855	792	736	688	645	603	567	534	506	480
	4	1550	1405	1279	1170	1077	995	925	863	808	759	716	677	642	608	577
	5	1688	1547	1421	1309	1211	1125	1049	981	921	868	820	777	737	702	669
	6	1802	1667	1544	1433	1333	1244	1164	1093	1029	971	919	872	829	790	754
	7		1769	1651	1542	1442	1352	1270	1196	1129	1069	1013	963	917	875	837
	8			1743	1638	1540	1450	1368	1292	1223	1160	1103	1050	1001	957	916
	9				1722	1627	1539	1456	1381	1311	1246	1187	1132	1082	1035	947
	10					1705	1618	1537	1462	1392	1326	1266	1210	1158	1050	947

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Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	69	71	72	72	71	70	69								
	2	72	75	77	77	77	76	75	73	72	70	69	67	65		
	3	75	78	80	81	81	81	80	79	78	76	75	73	71	70	68
	4	77	81	83	84	85	85	84	84	82	81	80	78	77	75	74
	5	78	83	85	87	88	89	88	88	87	86	84	83	82	80	79
	6	79	84	88	90	91	92	92	91	91	90	89	87	86	85	83
	7		86	89	92	93	94	95	95	94	93	92	91	90	89	87
	8			91	94	96	97	97	97	97	96	96	95	93	92	91
	9				95	97	99	100	100	100	99	99	98	97	96	94
	10					99	101	102	102	102	102	101	101	100	99	98

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1208	1057	937	841	755	684	624								
	2	1510	1336	1194	1078	981	900	830	765	708	659	616	578	544		
	3	1766	1581	1427	1296	1186	1092	1010	940	878	824	770	723	681	645	613
	4	1979	1793	1633	1494	1374	1271	1180	1101	1031	969	914	864	819	776	737
	5	2155	1975	1814	1671	1546	1436	1339	1253	1176	1108	1047	991	941	896	854
	6	2300	2128	1971	1829	1702	1588	1486	1395	1313	1240	1173	1113	1059	1009	947
	7		2258	2107	1968	1841	1726	1622	1527	1442	1364	1294	1230	1170	1050	947
	8			2225	2091	1966	1851	1746	1650	1562	1481	1408	1311	1170	1050	947
	9				2198	2077	1964	1859	1762	1673	1591	1480	1311	1170	1050	947
	10					2176	2066	1963	1866	1776	1684	1480	1311	1170	1050	947
40 psf	1	1208	1057	937	841	755	684	624								
	2	1510	1336	1194	1078	981	900	830	765	708	659	584	545	511		
	3	1766	1581	1427	1296	1186	1092	1010	940	878	824	739	691	648	611	578
	4	1979	1793	1633	1494	1374	1271	1180	1101	1031	969	875	825	779	738	700
	5	2155	1975	1814	1671	1546	1436	1339	1253	1176	1108	1005	949	898	852	809
	6	2300	2128	1971	1829	1702	1588	1486	1395	1313	1240	1127	1067	1011	961	914
	7		2258	2107	1968	1841	1726	1622	1527	1442	1364	1243	1178	1119	1050	947
	8			2225	2091	1966	1851	1746	1650	1562	1481	1351	1284	1170	1050	947
	9				2198	2077	1964	1859	1762	1673	1591	1452	1311	1170	1050	947
	10					2176	2066	1963	1866	1776	1684	1480	1311	1170	1050	947
50 psf	1	1208	1057	937	841	755	684	624								
	2	1510	1336	1194	1078	981	900	830	724	666	615	571	532	497		
	3	1766	1581	1427	1296	1186	1092	1010	893	829	773	724	677	634		
	4	1979	1793	1633	1494	1374	1271	1180	1050	979	915	859	808	762		
	5	2155	1975	1814	1671	1546	1436	1339	1197	1119	1049	987	930	879		
	6	2300	2128	1971	1829	1702	1588	1486	1332	1250	1175	1108	1046	991		
	7		2258	2107	1968	1841	1726	1622	1457	1371	1292	1221	1156	1096		
	8			2225	2091	1966	1851	1746	1571	1482	1401	1326	1258	1170		
	9				2198	2077	1964	1859	1675	1584	1501	1424	1311	1170		
	10					2176	2066	1963	1769	1678	1593	1480	1311	1170		

See page 18 for footnotes

1.5PLB20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
60 psf	1	1208	1057	937	841	755	634	573								
	2	1510	1336	1194	1078	981	845	773	711	652	601	556	516			
	3	1766	1581	1427	1296	1186	1033	950	877	813	756	706	661			
	4	1979	1793	1633	1494	1374	1206	1114	1033	961	897	840	788			
	5	2155	1975	1814	1671	1546	1364	1265	1178	1099	1029	966	909			
	6	2300	2128	1971	1829	1702	1507	1404	1311	1227	1152	1084	1022			
	7		2258	2107	1968	1841	1635	1529	1433	1346	1266	1194	1129			
	8			2225	2091	1966	1749	1642	1543	1454	1372	1297	1227			
	9				2198	2077	1850	1743	1644	1553	1468	1391	1311			
	10					2176	1940	1834	1734	1642	1557	1478	1311			
70 psf	1	1208	1057	937	841	695	621	559								
	2	1510	1336	1194	1078	915	830	757	694	637	585					
	3	1766	1581	1427	1296	1114	1017	933	859	795	737					
	4	1979	1793	1633	1494	1295	1189	1095	1013	941	876					
	5	2155	1975	1814	1671	1457	1344	1244	1156	1077	1006					
	6	2300	2128	1971	1829	1600	1484	1380	1286	1202	1126					
	7		2258	2107	1968	1727	1609	1502	1405	1316	1236					
	8			2225	2091	1838	1719	1611	1512	1421	1337					
	9				2198	1935	1818	1709	1608	1515	1430					
	10					2021	1904	1796	1695	1601	1513					
80 psf	1	1208	1057	868	767	681	606	543								
	2	1510	1336	1121	1001	899	814	740	676	620						
	3	1766	1581	1346	1212	1097	999	914	840	774						
	4	1979	1793	1542	1399	1276	1169	1075	992	918						
	5	2155	1975	1710	1564	1435	1321	1221	1131	1051						
	6	2300	2128	1854	1707	1576	1458	1353	1258	1172						
	7		2258	1976	1831	1699	1579	1471	1372	1283						
	8			2080	1938	1806	1686	1576	1475	1382						
	9				2030	1900	1780	1669	1567	1472						
	10					1982	1863	1752	1649	1552						
90 psf	1	1208	1057	854	752	666	590	527								
	2	1510	1336	1106	985	883	796	721	656							
	3	1766	1581	1329	1194	1079	980	893	818							
	4	1979	1793	1523	1379	1255	1147	1051	967							
	5	2155	1975	1689	1541	1411	1296	1194	1103							
	6	2300	2128	1830	1681	1548	1429	1322	1225							
	7		2258	1949	1801	1667	1546	1435	1335							
	8			2050	1905	1771	1649	1536	1432							
	9				1993	1861	1738	1624	1519							
	10					1939	1817	1702	1595							
100 psf	1	1208	966	839	736	650	573	508								
	2	1510	1239	1091	968	864	776	700	634							
	3	1766	1473	1312	1175	1059	958	871	793							
	4	1979	1670	1502	1358	1232	1122	1025	939							
	5	2155	1834	1665	1516	1384	1268	1164	1071							
	6	2300	1970	1803	1652	1517	1396	1287	1188							
	7		2082	1919	1769	1633	1508	1395	1291							
	8			2016	1869	1732	1606	1490	1382							
	9				1953	1818	1691	1573	1462							
	10					1892	1765	1645	1532							
110 psf	1	1113	952	824	719	632	555	488								
	2	1406	1223	1073	949	845	755	678								
	3	1648	1455	1292	1155	1037	934	845								
	4	1845	1650	1480	1334	1207	1095	996								
	5	2004	1811	1640	1489	1355	1236	1129								
	6	2131	1944	1774	1621	1483	1359	1247								
	7		2053	1886	1733	1594	1466	1349								
	8			1980	1829	1688	1558	1437								
	9				1910	1769	1638	1514								
	10					1839	1706	1580								

See page 18 for footnotes

1.5PLB19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	1207	1056	937	841	763	691	631								
	2	1505	1333	1193	1078	982	901	831	772	715	666	623	585	551		
	3	1756	1575	1423	1295	1185	1092	1011	941	880	825	777	731	689	651	618
	4	1963	1783	1626	1490	1372	1270	1180	1101	1032	970	915	866	821	781	743
	5	2133	1959	1803	1664	1541	1433	1337	1252	1176	1108	1047	992	943	897	856
	6	2272	2107	1956	1818	1694	1582	1482	1393	1312	1239	1173	1114	1059	1010	964
	7		2232	2087	1953	1830	1717	1615	1523	1439	1362	1293	1229	1171	1118	1069
	8			2201	2071	1951	1839	1737	1643	1557	1478	1405	1339	1278	1221	1169
	9				2175	2058	1949	1847	1753	1666	1585	1511	1442	1379	1320	1195
	10					2154	2048	1948	1854	1767	1686	1610	1540	1475	1324	1195

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	90	91	91	90	88	86	84								
	2	95	98	99	98	97	96	94	91	89	87	84	82	80		
	3	99	103	104	105	104	103	102	100	98	96	93	91	89	87	85
	4	102	107	109	110	110	110	108	107	105	103	101	99	97	95	93
	5	105	110	113	114	115	115	114	113	111	110	108	106	104	102	100
	6	107	112	116	118	119	119	119	118	117	115	114	112	110	108	106
	7		115	119	121	123	123	123	123	122	121	119	117	116	114	112
	8			121	124	126	127	127	127	126	125	124	122	121	119	117
	9				126	129	130	131	130	130	129	128	127	125	124	122
	10					131	133	134	134	134	133	132	131	129	128	126

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1540	1348	1197	1074	973	882	806								
	2	1921	1702	1523	1376	1253	1150	1061	985	913	850	795	746	703		
	3	2241	2011	1817	1653	1513	1394	1291	1201	1123	1054	992	933	880	832	789
	4	2506	2276	2075	1902	1751	1621	1506	1406	1317	1239	1168	1105	1048	997	948
	5	2723	2501	2301	2124	1968	1829	1707	1598	1502	1415	1337	1267	1203	1146	1093
	6	2901	2690	2496	2321	2162	2020	1892	1778	1675	1582	1498	1422	1352	1289	1195
	7		2850	2665	2493	2336	2192	2062	1944	1837	1739	1650	1569	1475	1324	1195
	8			2809	2644	2491	2348	2217	2097	1987	1886	1794	1653	1475	1324	1195
	9				2776	2628	2488	2359	2238	2127	2024	1866	1653	1475	1324	1195
	10					2749	2614	2487	2367	2256	2124	1866	1653	1475	1324	1195
50 psf	1	1540	1348	1197	1074	973	882	806								
	2	1921	1702	1523	1376	1253	1150	1061	985	913	805	749	699	654		
	3	2241	2011	1817	1653	1513	1394	1291	1201	1123	1002	939	883	831	782	738
	4	2506	2276	2075	1902	1751	1621	1506	1406	1317	1184	1112	1048	989	936	888
	5	2723	2501	2301	2124	1968	1829	1707	1598	1502	1355	1276	1205	1140	1081	1027
	6	2901	2690	2496	2321	2162	2020	1892	1778	1675	1516	1431	1354	1283	1219	1160
	7		2850	2665	2493	2336	2192	2062	1944	1837	1665	1576	1494	1419	1324	1195
	8			2809	2644	2491	2348	2217	2097	1987	1804	1711	1625	1475	1324	1195
	9				2776	2628	2488	2359	2238	2127	1932	1837	1653	1475	1324	1195
	10					2749	2614	2487	2367	2256	2050	1866	1653	1475	1324	1195
60 psf	1	1540	1348	1197	1074	973	882	806								
	2	1921	1702	1523	1376	1253	1150	1061	924	856	791	734	683	638		
	3	2241	2011	1817	1653	1513	1394	1291	1137	1056	985	921	864	813		
	4	2506	2276	2075	1902	1751	1621	1506	1336	1246	1165	1093	1028	969		
	5	2723	2501	2301	2124	1968	1829	1707	1521	1423	1335	1255	1183	1118		
	6	2901	2690	2496	2321	2162	2020	1892	1692	1587	1493	1408	1330	1259		
	7		2850	2665	2493	2336	2192	2062	1847	1739	1640	1550	1467	1392		
	8			2809	2644	2491	2348	2217	1989	1878	1775	1682	1595	1475		
	9				2776	2628	2488	2359	2117	2004	1900	1804	1653	1475		
	10					2749	2614	2487	2233	2120	2014	1866	1653	1475		

See page 18 for footnotes

1.5PLB19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
70 psf	1	1540	1348	1197	1074	973	817	738								
	2	1921	1702	1523	1376	1253	1079	987	908	838	775	717	666			
	3	2241	2011	1817	1653	1513	1318	1212	1119	1038	966	902	844			
	4	2506	2276	2075	1902	1751	1537	1420	1317	1226	1145	1072	1006			
	5	2723	2501	2301	2124	1968	1735	1611	1500	1401	1312	1231	1159			
	6	2901	2690	2496	2321	2162	1914	1784	1667	1562	1467	1381	1302			
	7		2850	2665	2493	2336	2073	1940	1820	1710	1610	1519	1436			
	8			2809	2644	2491	2214	2080	1958	1845	1742	1647	1560			
	9				2776	2628	2339	2206	2082	1968	1862	1765	1653			
	10					2749	2450	2317	2194	2079	1972	1866	1653			
80 psf	1	1540	1348	1197	1074	894	802	723								
	2	1921	1702	1523	1376	1170	1062	970	890	819	757	698				
	3	2241	2011	1817	1653	1423	1300	1193	1100	1018	945	880				
	4	2506	2276	2075	1902	1651	1517	1399	1295	1203	1121	1047				
	5	2723	2501	2301	2124	1854	1713	1587	1475	1375	1286	1204				
	6	2901	2690	2496	2321	2034	1888	1757	1640	1533	1437	1350				
	7		2850	2665	2493	2191	2044	1910	1788	1678	1577	1484				
	8			2809	2644	2329	2181	2046	1922	1808	1704	1607				
	9				2776	2449	2303	2167	2042	1926	1819	1720				
	10					2553	2409	2275	2149	2033	1923	1822				
90 psf	1	1540	1348	1197	984	878	786	706								
	2	1921	1702	1523	1281	1153	1044	951	870	798	735					
	3	2241	2011	1817	1549	1404	1280	1173	1078	995	921					
	4	2506	2276	2075	1785	1630	1495	1376	1272	1178	1095					
	5	2723	2501	2301	1991	1830	1688	1561	1448	1347	1256					
	6	2901	2690	2496	2170	2006	1859	1727	1608	1501	1403					
	7		2850	2665	2324	2160	2011	1876	1753	1640	1538					
	8			2809	2456	2294	2145	2008	1882	1766	1659					
	9				2569	2410	2262	2124	1997	1878	1769					
	10					2511	2365	2227	2099	1979	1867					
100 psf	1	1540	1348	1097	968	861	769	687								
	2	1921	1702	1418	1264	1135	1025	931	848	776						
	3	2241	2011	1700	1530	1384	1259	1150	1055	970						
	4	2506	2276	1943	1763	1607	1471	1351	1245	1150						
	5	2723	2501	2150	1967	1804	1660	1532	1418	1315						
	6	2901	2690	2326	2142	1977	1828	1694	1573	1464						
	7		2850	2474	2292	2126	1975	1838	1712	1598						
	8			2598	2420	2256	2104	1965	1836	1717						
	9				2530	2368	2217	2076	1945	1823						
	10					2465	2315	2174	2042	1918						
110 psf	1	1540	1242	1081	951	843	750	668								
	2	1921	1587	1401	1246	1115	1004	908	825							
	3	2241	1882	1680	1509	1363	1236	1126	1029							
	4	2506	2130	1921	1740	1583	1445	1323	1216							
	5	2723	2334	2125	1940	1776	1630	1500	1384							
	6	2901	2503	2297	2111	1944	1793	1657	1534							
	7		2642	2442	2257	2089	1935	1795	1667							
	8			2563	2382	2214	2059	1916	1784							
	9				2488	2322	2167	2022	1886							
	10					2414	2260	2114	1977							
120 psf	1	1540	1226	1065	933	823	730	646								
	2	1921	1570	1382	1226	1095	982	885	799							
	3	2241	1863	1660	1487	1339	1211	1099	1000							
	4	2506	2108	1897	1715	1556	1416	1293	1183							
	5	2723	2309	2098	1911	1745	1597	1465	1345							
	6	2901	2475	2266	2078	1908	1755	1616	1489							
	7		2610	2407	2220	2048	1891	1747	1614							
	8			2524	2340	2168	2009	1862	1724							
	9				2442	2271	2111	1961	1819							
	10					2359	2199	2047	1902							

See page 18 for footnotes

1.5PLB18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic	1	1383	1212	1076	966	876	797	729								
	2	1737	1541	1382	1249	1139	1045	965	896	835	778	728	683	644		
	3	2029	1825	1653	1506	1380	1273	1180	1099	1027	964	908	858	811	767	727
	4	2267	2066	1889	1735	1600	1483	1380	1289	1209	1137	1073	1016	964	917	874
	5	2459	2267	2093	1937	1798	1674	1565	1467	1379	1301	1230	1166	1108	1056	1008
	6	2614	2434	2266	2113	1973	1847	1734	1631	1539	1455	1379	1310	1247	1189	1136
	7		2573	2414	2266	2129	2003	1888	1782	1687	1599	1519	1446	1379	1317	1260
	8			2540	2399	2266	2142	2027	1921	1823	1733	1650	1574	1504	1439	1378
	9				2514	2386	2266	2153	2047	1949	1857	1773	1694	1622	1554	1447
	10					2492	2376	2266	2162	2064	1972	1887	1807	1733	1603	1447

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (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"
Seismic or Wind	1	110	111	110	108	105	102	99								
	2	119	121	121	120	118	115	113	110	107	104	101	98	95		
	3	125	128	129	129	128	126	124	121	119	116	113	110	107	105	102
	4	129	134	136	137	136	135	133	131	129	126	124	121	118	115	113
	5	133	138	141	143	143	142	141	139	137	135	133	130	127	125	122
	6	136	142	146	148	149	149	148	146	145	143	140	138	136	133	131
	7		145	149	152	153	154	153	152	151	149	147	145	143	141	138
	8			152	156	157	158	158	158	157	155	154	152	150	147	145
	9				159	161	162	163	162	162	160	159	157	155	153	151
	10					164	166	166	167	166	165	164	162	161	159	157

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (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"
No Uplift	1	1766	1547	1374	1234	1119	1018	930								
	2	2217	1968	1764	1595	1454	1334	1232	1144	1066	993	929	872	822		
	3	2591	2330	2110	1922	1762	1625	1506	1402	1311	1231	1160	1096	1035	979	928
	4	2895	2637	2411	2214	2043	1893	1761	1646	1543	1452	1370	1297	1230	1170	1116
	5	3140	2894	2671	2472	2295	2137	1997	1872	1761	1661	1570	1489	1415	1348	1286
	6	3337	3107	2893	2697	2519	2358	2213	2082	1964	1857	1760	1672	1592	1518	1447
	7		3284	3082	2893	2718	2557	2410	2275	2153	2041	1939	1846	1760	1603	1447
	8			3243	3062	2893	2734	2588	2452	2327	2212	2107	2003	1787	1603	1447
	9				3209	3046	2892	2748	2613	2488	2371	2261	2003	1787	1603	1447
	10					3181	3033	2892	2759	2635	2518	2261	2003	1787	1603	1447
60 psf	1	1766	1547	1374	1234	1119	1018	930								
	2	2217	1968	1764	1595	1454	1334	1232	1144	1008	937	871	813	761		
	3	2591	2330	2110	1922	1762	1625	1506	1402	1248	1166	1093	1027	968	914	864
	4	2895	2637	2411	2214	2043	1893	1761	1646	1475	1382	1298	1223	1155	1094	1037
	5	3140	2894	2671	2472	2295	2137	1997	1872	1685	1583	1492	1409	1333	1265	1202
	6	3337	3107	2893	2697	2519	2358	2213	2082	1879	1771	1673	1583	1502	1427	1358
	7		3284	3082	2893	2718	2557	2410	2275	2057	1944	1841	1746	1660	1580	1447
	8			3243	3062	2893	2734	2588	2452	2219	2103	1996	1898	1787	1603	1447
	9				3209	3046	2892	2748	2613	2366	2248	2139	2003	1787	1603	1447
	10					3181	3033	2892	2759	2499	2381	2261	2003	1787	1603	1447
70 psf	1	1766	1547	1374	1234	1119	1018	867								
	2	2217	1968	1764	1595	1454	1334	1162	1071	992	922	856	797	744		
	3	2591	2330	2110	1922	1762	1625	1431	1325	1231	1148	1074	1008	948		
	4	2895	2637	2411	2214	2043	1893	1678	1560	1456	1362	1278	1202	1134		
	5	3140	2894	2671	2472	2295	2137	1904	1777	1663	1561	1469	1386	1310		
	6	3337	3107	2893	2697	2519	2358	2107	1975	1855	1746	1647	1557	1475		
	7		3284	3082	2893	2718	2557	2290	2153	2029	1916	1812	1717	1629		
	8			3243	3062	2893	2734	2452	2314	2188	2071	1963	1864	1773		
	9				3209	3046	2892	2596	2459	2331	2212	2102	2000	1787		
	10					3181	3033	2724	2588	2460	2340	2229	2003	1787		

See page 18 for footnotes

1.5PLB18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 36/7 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

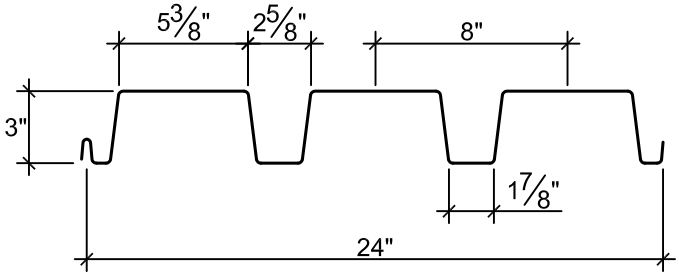
Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
80 psf	1	1766	1547	1374	1234	1119	943	852								
	2	2217	1968	1764	1595	1454	1252	1146	1054	974	903	838	779			
	3	2591	2330	2110	1922	1762	1535	1413	1306	1212	1129	1054	987			
	4	2895	2637	2411	2214	2043	1793	1659	1540	1434	1340	1256	1179			
	5	3140	2894	2671	2472	2295	2024	1881	1754	1640	1537	1444	1360			
	6	3337	3107	2893	2697	2519	2229	2082	1948	1827	1718	1618	1527			
	7		3284	3082	2893	2718	2411	2260	2123	1998	1884	1779	1683			
	8			3243	3062	2893	2570	2419	2280	2152	2034	1926	1825			
	9				3209	3046	2709	2559	2420	2291	2171	2059	1956			
	10					3181	2831	2683	2545	2415	2294	2181	2003			
90 psf	1	1766	1547	1374	1234	1029	928	836								
	2	2217	1968	1764	1595	1359	1235	1128	1036	955	883	819				
	3	2591	2330	2110	1922	1659	1517	1394	1286	1191	1107	1031				
	4	2895	2637	2411	2214	1926	1772	1637	1518	1411	1316	1230				
	5	3140	2894	2671	2472	2162	2000	1857	1728	1613	1509	1415				
	6	3337	3107	2893	2697	2367	2202	2053	1919	1797	1686	1586				
	7		3284	3082	2893	2545	2379	2228	2089	1963	1847	1741				
	8			3243	3062	2699	2534	2382	2242	2112	1993	1882				
	9				3209	2832	2670	2518	2377	2246	2124	2010				
	10					2947	2788	2638	2497	2365	2241	2125				
100 psf	1	1766	1547	1374	1134	1013	911	819								
	2	2217	1968	1764	1489	1342	1217	1109	1016	934	861					
	3	2591	2330	2110	1805	1640	1497	1373	1265	1168	1083					
	4	2895	2637	2411	2081	1904	1750	1613	1493	1385	1289					
	5	3140	2894	2671	2319	2137	1974	1829	1700	1584	1478					
	6	3337	3107	2893	2523	2338	2172	2022	1886	1763	1651					
	7		3284	3082	2696	2513	2345	2192	2052	1924	1806					
	8			3243	2843	2663	2496	2341	2199	2067	1945					
	9				2968	2792	2626	2472	2329	2195	2070					
	10					2902	2740	2587	2443	2308	2181					
110 psf	1	1766	1547	1266	1118	996	893	801								
	2	2217	1968	1647	1472	1324	1198	1089	994	911						
	3	2591	2330	1979	1785	1619	1476	1351	1241	1144						
	4	2895	2637	2262	2059	1881	1725	1588	1466	1357						
	5	3140	2894	2500	2293	2110	1946	1800	1669	1551						
	6	3337	3107	2699	2493	2307	2139	1987	1850	1724						
	7		3284	2864	2662	2477	2307	2152	2010	1879						
	8			3002	2806	2623	2453	2296	2151	2016						
	9				2927	2747	2579	2422	2274	2137						
	10					2854	2688	2531	2383	2243						
120 psf	1	1766	1432	1250	1101	978	874	782								
	2	2217	1843	1630	1453	1304	1177	1067	971	886						
	3	2591	2189	1960	1765	1598	1453	1326	1215	1116						
	4	2895	2475	2240	2035	1856	1699	1560	1436	1325						
	5	3140	2708	2474	2266	2080	1915	1767	1634	1513						
	6	3337	2897	2669	2461	2273	2103	1949	1809	1681						
	7		3051	2831	2627	2439	2266	2108	1962	1828						
	8			2965	2766	2579	2406	2246	2097	1958						
	9				2883	2700	2527	2366	2214	2071						
	10					2802	2631	2469	2316	2170						
130 psf	1	1766	1417	1233	1084	959	853	761								
	2	2217	1826	1612	1434	1284	1155	1044	946							
	3	2591	2170	1939	1743	1574	1428	1300	1187							
	4	2895	2452	2216	2009	1829	1670	1529	1403							
	5	3140	2682	2447	2236	2049	1881	1731	1595							
	6	3337	2868	2638	2427	2237	2064	1907	1763							
	7		3019	2795	2588	2397	2221	2059	1909							
	8			2926	2723	2533	2355	2190	2036							
	9				2836	2648	2470	2303	2145							
	10					2746	2569	2401	2240							

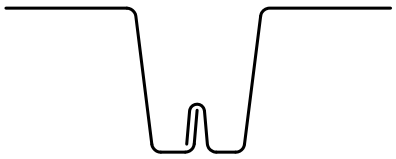
See page 18 for footnotes

3.0PLN™

- 3" Deep Roof Deck
- Used with PunchLok® II System

Approximate Dimensions





Standard Interlocking Sidelap

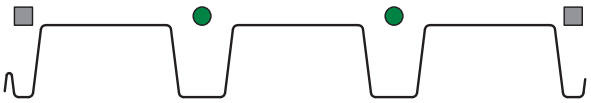
Deck Weight and Section Properties

Deck Type	Design Thickness (in.)	Weight (psf)	I_x (in^4/ft)	I_{dn} (in^4/ft)	I_{di} (in^4/ft)	I_{dm} (in^4/ft)	S_{pos} (in^3/ft)	S_{neg} (in^3/ft)	V_a (lb/ft)
3.0PLN22	0.0295	2.26	0.882	0.697	0.856	0.865	0.346	0.413	2566
3.0PLN20	0.0358	2.71	1.071	0.874	1.066	1.068	0.451	0.538	4047
3.0PLN19	0.0418	3.15	1.252	1.054	1.252	1.252	0.561	0.645	5517
3.0PLN18	0.0474	3.56	1.420	1.228	1.420	1.420	0.661	0.747	7070

Notes:
1. Section properties are based on F_y = 50,000 psi
2. I_x = Gross Moment of Inertia
3. I_{dn} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Normal Position)
4. I_{di} = Moment of Inertia for Deflection due to Uniform Loads for Simple Span Conditions (Inverted Position)
5. I_{dm} = Moment of Inertia for Deflection due to Uniform Loads for Multiple Span Conditions
6. S_{pos} = Positive Effective Section Modulus
7. S_{neg} = Negative Effective Section Modulus
8. V_a = Allowable Reaction governed by web shear

Attachment Patterns to Supports

24/4



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

GRAVITY LOAD TABLES

3.0PLN22

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	108	85	69	63	57	52	48	44	41	38	35	33	31
	L/360	60	42	31	26	23	20	18	16	14	12	11	10	9
	L/240	90	63	46	40	35	30	27	24	21	19	17	15	14
	L/180	♦♦♦	84	61	53	46	40	35	31	28	25	22	20	18
DOUBLE	Stress	116	102	83	75	68	62	57	53	49	45	42	39	37
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	60	53	47	42	37	33	30	27
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	131	117	103	94	85	78	72	66	61	57	53	49	46
	L/360	♦♦♦	98	72	62	54	47	41	37	33	29	26	23	21
	L/240	♦♦♦	♦♦♦	♦♦♦	93	81	71	62	55	49	44	39	35	32
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	52	47	42

3.0PLN20

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	141	111	90	82	75	68	63	58	53	49	46	43	40
	L/360	75	53	38	33	29	25	22	20	17	16	14	13	11
	L/240	113	79	58	50	43	38	33	29	26	23	21	19	17
	L/180	♦♦♦	105	77	66	58	51	44	39	35	31	28	25	23
DOUBLE	Stress	166	133	108	98	89	81	75	69	64	59	55	51	48
	L/360	♦♦♦	♦♦♦	♦♦♦	98	85	74	65	58	51	46	41	37	33
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	188	166	135	122	111	102	93	86	80	74	69	64	60
	L/360	173	121	88	76	66	58	51	45	40	36	32	29	26
	L/240	♦♦♦	♦♦♦	133	114	100	87	77	68	60	54	48	43	39
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	72	64	58	52

3.0PLN19

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	176	139	112	102	93	85	78	72	67	62	57	53	50
	L/360	90	63	46	40	35	30	27	24	21	19	17	15	14
	L/240	136	95	69	60	52	46	40	36	32	28	25	23	21
	L/180	♦♦♦	127	93	80	70	61	54	47	42	38	34	30	27
DOUBLE	Stress	202	159	129	117	107	98	90	83	76	71	66	61	57
	L/360	♦♦♦	♦♦♦	♦♦♦	114	99	87	77	68	60	54	48	43	39
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	251	199	161	146	133	122	112	103	95	88	82	77	72
	L/360	202	142	104	89	78	68	60	53	47	42	38	34	31
	L/240	♦♦♦	♦♦♦	155	134	117	102	90	80	71	63	57	51	46
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	94	84	75	68	61

3.0PLN18

Allowable Uniform Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	207	163	132	120	109	100	92	85	78	73	67	63	59
	L/360	105	74	54	47	40	35	31	28	25	22	20	18	16
	L/240	158	111	81	70	61	53	47	41	37	33	29	27	24
	L/180	♦♦♦	148	108	93	81	71	62	55	49	44	39	35	32
DOUBLE	Stress	233	184	149	136	123	113	104	96	88	82	76	71	66
	L/360	♦♦♦	♦♦♦	♦♦♦	130	113	99	87	77	68	61	55	49	44
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	292	231	187	169	154	141	130	120	111	102	95	89	83
	L/360	229	161	117	101	88	77	68	60	53	48	43	39	35
	L/240	♦♦♦	♦♦♦	176	152	132	116	102	90	80	72	64	58	52
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	107	95	86	77	70

See page 17 for footnotes

ALLOWABLE REACTIONS DUE TO WEB CRIPPLING

3.0PLN22

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	581	941	558	1080
2.00	638	1021	601	1180
2.50	689	1091	639	1269
3.00	735	1155	674	1348
3.50	777	1213	705	1422
4.00	816	1268	735	1490
4.50	853	1319	762	1554
5.00	888	1367	789	1615
5.50	921	1413	813	1673
6.00	952	1457	837	1728
≥ 6.50	964	1473	846	1749

3.0PLN20

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	837	1362	863	1591
2.00	917	1473	926	1732
2.50	987	1570	982	1857
3.00	1051	1658	1033	1970
3.50	1110	1739	1079	2074
4.00	1164	1814	1122	2171
4.50	1215	1885	1163	2261
5.00	1264	1952	1201	2347
5.50	1310	2015	1238	2429
6.00	1354	2076	1273	2507
6.50	1396	2134	1306	2582
7.00	1437	2190	1339	2654
7.50	1476	2244	1370	2723
≥ 8.00	1477	2246	1371	2726

3.0PLN19

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	1119	1830	1213	2162
2.00	1223	1972	1299	2348
2.50	1315	2098	1374	2512
3.00	1397	2212	1443	2660
3.50	1473	2317	1505	2797
4.00	1544	2414	1564	2924
4.50	1611	2505	1619	3043
5.00	1674	2592	1670	3156
5.50	1733	2674	1720	3263
6.00	1791	2753	1767	3366
6.50	1845	2828	1812	3464
7.00	1898	2901	1856	3559
7.50	1949	2971	1898	3650
≥ 8.00	1995	3034	1936	3733

See page 17 for footnotes

3.0PLN18

Bearing Length (in.)	Allowable Reaction (lb/ft)			
	One Flange Loading		Two Flange Loading	
	End	Interior	End	Interior
1.50	1417	2323	1594	2768
2.00	1545	2499	1703	3000
2.50	1657	2653	1798	3204
3.00	1759	2793	1885	3389
3.50	1853	2922	1964	3559
4.00	1941	3042	2038	3717
4.50	2023	3154	2108	3865
5.00	2100	3261	2174	4006
5.50	2174	3362	2236	4139
6.00	2244	3459	2296	4267
6.50	2312	3551	2353	4389
7.00	2377	3641	2409	4507
7.50	2440	3727	2462	4621
≥ 8.00	2495	3802	2509	4720

WIND UPLIFT LOAD TABLES

3.0PLN22

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	129	102	83	75	68	62	57	53	49	45	42	39	37
	L/360	74	52	38	33	29	25	22	19	17	15	14	12	11
	L/240	111	78	57	49	43	37	33	29	26	23	21	19	17
	L/180	♦♦♦	♦♦♦	76	66	57	50	44	39	35	31	28	25	23
DOUBLE	Stress	108	85	69	63	57	52	48	44	41	38	35	33	31
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	37	33	30	27
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	135	107	87	78	71	65	60	55	51	47	44	41	38
	L/360	♦♦♦	98	72	62	54	47	41	37	33	29	26	23	21
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	55	49	44	39	35	32
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦

3.0PLN20

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	168	133	108	98	89	81	75	69	64	59	55	51	48
	L/360	92	64	47	41	35	31	27	24	21	19	17	15	14
	L/240	137	96	70	61	53	46	41	36	32	29	26	23	21
	L/180	♦♦♦	129	94	81	70	62	54	48	43	38	34	31	28
DOUBLE	Stress	141	111	90	82	75	68	63	58	53	49	46	43	40
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	51	46	41	37	33
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	176	139	113	102	93	85	78	72	67	62	58	54	50
	L/360	173	121	88	76	66	58	51	45	40	36	32	29	26
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	77	68	60	54	48	43	39
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦

3.0PLN19

Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	202	159	129	117	107	98	90	83	76	71	66	61	57
	L/360	107	75	55	47	41	36	32	28	25	22	20	18	16
	L/240	161	113	82	71	62	54	48	42	38	34	30	27	24
	L/180	♦♦♦	151	110	95	83	72	64	56	50	45	40	36	33
DOUBLE	Stress	176	139	112	102	93	85	78	72	67	62	57	53	50
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	77	68	60	54	48	43	39
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	220	173	141	127	116	106	98	90	83	77	72	67	62
	L/360	202	142	104	89	78	68	60	53	47	42	38	34	31
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	102	90	80	71	63	57	51	46
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	61

3.0PLN18

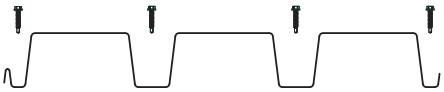
Allowable Uniform Uplift Loads Based on Bending Stress and Deflection (psf)

Number of Spans	Criteria	Span Length (ft-in.)												
		8'-0"	9'-0"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
SINGLE	Stress	233	184	149	136	123	113	104	96	88	82	76	71	66
	L/360	122	85	62	54	47	41	36	32	28	25	23	20	18
	L/240	183	128	93	81	70	61	54	48	43	38	34	31	28
	L/180	♦♦♦	171	125	108	94	82	72	64	57	51	45	41	37
DOUBLE	Stress	207	163	132	120	109	100	92	85	78	73	67	63	59
	L/360	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	99	87	77	68	61	55	49	44
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦
TRIPLE	Stress	258	204	165	150	137	125	115	106	98	91	84	79	73
	L/360	229	161	117	101	88	77	68	60	53	48	43	39	35
	L/240	♦♦♦	♦♦♦	♦♦♦	♦♦♦	132	116	102	90	80	72	64	58	52
	L/180	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦♦	77	70

See page 17 for footnotes

3.0PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	377	358	340	323	308	295	282	270	258						
	4	458	436	415	396	379	363	348	334	321	309	298	288	279	270	261
	5	531	507	484	463	444	426	409	394	379	366	353	342	330	320	310
	6	596	571	547	525	504	485	467	450	434	419	405	392	380	368	357
	7	654	628	604	581	559	539	520	502	485	470	455	440	427	414	403
	8	704	678	654	631	609	589	569	551	533	516	501	486	472	458	445
	9	748	723	699	676	654	634	614	595	577	560	544	528	514	499	486
	10	786	762	739	717	695	674	655	636	618	600	584	568	553	538	524
	11	819	796	774	752	732	711	692	673	655	638	621	605	589	575	561
	12	848	827	805	784	764	745	725	707	689	672	655	639	624	609	594

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	20	20	20	20	20	20	20	20	20						
	4	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20
	5	21	22	22	22	22	22	23	23	23	22	22	22	22	22	22
	6	22	22	23	23	23	24	24	24	24	24	24	24	23	23	23
	7	23	23	24	24	24	24	25	25	25	25	25	25	25	25	25
	8	23	24	24	25	25	25	25	26	26	26	26	26	26	26	26
	9	24	24	25	25	26	26	26	26	27	27	27	27	27	27	27
	10	24	25	25	26	26	27	27	27	27	27	28	28	28	28	28
	11	24	25	26	26	27	27	27	28	28	28	28	28	29	29	29
	12	25	25	26	27	27	28	28	28	29	29	29	29	29	29	29

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	401	380	361	344	328	314	300	287	275						
	4	488	464	442	421	403	386	370	355	342	329	318	307	296	287	278
	5	565	539	515	493	472	453	435	419	404	389	376	363	352	340	330
	6	634	607	582	558	536	516	497	479	462	446	431	417	404	392	380
	7	695	668	642	618	595	573	553	534	516	500	484	469	454	441	428
	8	749	722	696	671	648	626	605	586	567	549	533	517	502	487	474
	9	795	769	744	719	696	674	653	633	614	596	578	562	546	531	517
	10	836	811	786	762	739	718	697	676	657	639	621	604	588	573	558
	11	872	847	824	801	778	757	736	716	697	678	661	643	627	611	596
	12	902	879	857	835	813	792	772	752	733	715	697	680	663	648	632
10 psf	3	392	371	351	334	318	303	290	277	266						
	4	476	452	429	409	390	373	357	343	329	317	305	294	284	274	265
	5	551	524	500	478	457	438	420	404	389	374	361	348	337	326	315
	6	616	589	563	540	518	497	478	460	444	428	413	399	386	374	363
	7	673	646	620	595	572	551	531	512	494	477	462	447	433	420	407
	8	723	695	669	644	621	599	578	559	540	523	506	491	476	462	449
	9	766	738	712	688	664	642	621	601	582	564	547	531	516	501	487
	10	802	776	750	726	703	681	659	639	620	602	585	568	552	537	523
	11	834	808	783	760	737	715	694	674	654	636	619	602	586	570	556
	12	861	836	812	789	767	745	724	704	685	667	649	632	616	601	586
20 psf	3	373	352	333	316	300	286	272	260	249						
	4	452	428	406	386	368	351	336	321	308	296	284	273	263	253	244
	5	520	494	471	449	429	410	393	377	362	348	334	322	310	300	289
	6	578	551	526	503	482	462	443	426	409	394	380	366	353	341	330
	7	627	600	574	550	528	507	488	469	452	435	420	405	391	378	366
	8	668	641	615	591	568	547	526	507	489	472	456	440	425	411	398
	9	703	676	650	626	603	581	560	540	521	504	487	471	455	440	426
	10	732	705	680	655	632	610	589	569	550	532	514	497	481	466	451
	11	757	730	705	681	658	635	614	594	574	556	538	521	504	489	473
	12	778	752	727	702	679	657	636	616	596	577	559	541	525	508	493

See page 18 for footnotes

3.0PLB22

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

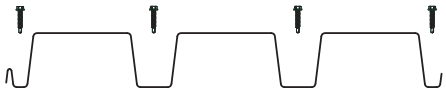
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
30 psf	3	352	331	312	295	279	265	251	239	227						
	4	423	400	378	358	340	323	307	292	278	265	253	241	230	219	209
	5	482	457	433	411	391	372	354	337	321	306	292	278	265	252	239
	6	531	504	479	455	433	413	393	375	357	340	324	309	293	279	264
	7	570	542	516	492	468	446	426	406	387	368	351	333	317	300	283
	8	602	574	547	521	497	474	452	431	411	391	372	354	335	317	299
	9	628	599	572	546	521	497	474	452	431	410	390	370	350	331	312
	10	650	621	593	566	541	516	493	470	447	426	404	383	363	342	322
	11	667	638	610	583	557	532	508	484	461	439	416	395	373	351	330
	12	682	653	624	597	571	545	520	496	472	449	426	404	381	359	337
40 psf	3	326	305	285	267	250	234	219	205	191						
	4	387	362	339	318	298	278	260	242	223	205	185				
	5	434	407	382	357	334	312	290	269	247	225	201				
	6	471	442	414	388	362	337	313	288	264	238	212				
	7	499	469	439	411	383	356	330	303	276	248	220				
	8	521	490	459	429	400	371	342	314	285	255	225				
	9	539	506	474	443	412	382	352	322	292	261	229				
	10	553	519	486	454	422	391	360	329	297	265	232				
	11	564	529	496	463	430	398	366	334	301	268	235				
	12	573	538	504	470	437	404	371	338	304	271	236				
50 psf	3	291	267	245	223	200	177	151	121							
	4	337	309	281	254	225	196	164	129							
	5	370	338	306	274	242	208	172	133							
	6	393	358	323	288	253	215	176	135							
	7	411	373	336	298	260	221	180	137							
	8	423	384	345	305	265	224	182	138							
	9	433	392	351	310	269	227	183	138							
	10	440	398	356	314	272	229	184	139							
	11	446	403	360	317	274	230	185	139							
	12	450	407	363	320	276	231	186	140							
60 psf	3	239	207	172	133											
	4	265	226	185	140											
	5	282	238	192	144											
	6	292	246	197	146											
	7	300	250	200	147											
	8	305	254	202	148											
	9	308	256	203	148											
	10	311	258	204	149											
	11	313	259	205	149											
	12	315	260	205	149											
70 psf	3	152	98													
	4	159	100													
	5	163	101													
	6	165	101													
	7	166	102													
	8	167	102													
	9	168	102													
	10	168	102													
	11	168	102													
	12	169	102													

See page 18 for footnotes

3.0PLN20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	510	484	461	439	419	401	384	369	355						
	4	619	589	563	538	515	494	474	456	439	423	409	395	382	370	358
	5	714	683	654	627	602	579	557	537	518	500	484	468	453	439	426
	6	796	764	735	707	681	657	634	612	591	572	554	537	520	505	491
	7	866	835	806	778	751	726	703	680	659	638	619	601	583	567	551
	8	926	896	868	840	814	789	765	742	720	699	679	660	642	625	608
	9	977	949	921	895	869	844	820	797	775	754	734	715	696	678	661
	10	1020	994	968	942	917	893	870	847	825	804	784	765	746	728	710
	11	1057	1032	1008	983	960	936	914	892	871	850	830	810	792	774	756
	12	1089	1066	1042	1020	997	975	953	932	911	891	871	852	834	816	798

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	28	28	28	28	28	28	27	27	27						
	4	30	30	30	30	30	30	30	30	29	29	29	29	28	28	28
	5	31	32	32	32	32	32	32	32	32	31	31	31	31	30	30
	6	33	33	33	34	34	34	34	34	34	34	33	33	33	33	32
	7	34	34	35	35	35	35	35	35	35	35	35	35	35	35	34
	8	35	35	36	36	36	37	37	37	37	37	37	37	37	36	36
	9	35	36	37	37	38	38	38	38	38	38	38	38	38	38	38
	10	36	37	38	38	39	39	39	40	40	40	40	40	40	40	40
	11	37	38	38	39	40	40	40	41	41	41	41	41	41	41	41
	12	37	38	39	40	40	41	41	42	42	42	42	42	42	42	42

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	543	515	490	467	446	427	409	393	377						
	4	658	627	599	572	548	525	505	485	467	450	435	420	406	393	381
	5	759	726	696	667	641	616	593	571	551	532	515	498	482	467	453
	6	847	813	782	752	725	699	674	651	629	609	589	571	554	537	522
	7	921	889	857	828	799	773	747	723	701	679	659	639	621	603	586
	8	985	953	923	894	866	839	813	789	766	744	722	702	683	665	647
	9	1039	1009	980	952	924	898	873	848	825	802	781	760	740	722	703
	10	1085	1057	1029	1002	976	950	925	901	878	856	834	813	794	774	756
	11	1125	1098	1072	1046	1021	996	972	949	926	904	883	862	842	823	804
	12	1158	1134	1109	1085	1061	1037	1014	991	969	948	927	907	887	868	849
10 psf	3	530	502	477	454	432	413	395	379	363						
	4	642	610	581	555	531	508	487	468	450	433	418	403	389	376	364
	5	738	705	674	645	619	594	571	550	530	511	493	477	461	446	433
	6	820	786	754	725	697	671	646	623	602	582	563	544	527	511	496
	7	889	855	824	794	765	739	713	689	667	646	625	606	588	571	555
	8	947	914	883	853	825	798	772	748	725	703	682	662	643	625	608
	9	996	964	934	904	876	850	824	800	776	754	733	713	693	675	657
	10	1037	1006	977	948	921	895	869	845	822	800	778	758	738	719	701
	11	1071	1042	1014	986	960	934	909	885	862	840	819	798	778	759	741
	12	1101	1073	1045	1019	993	968	944	920	898	876	855	834	814	795	777
20 psf	3	504	477	452	429	408	389	371	355	340						
	4	607	576	548	522	499	477	456	437	420	403	388	373	360	347	335
	5	692	660	630	602	577	553	530	509	489	471	454	437	422	407	394
	6	763	730	699	670	643	618	594	571	550	530	511	494	477	461	445
	7	820	787	756	727	699	673	648	624	602	581	561	542	524	507	491
	8	867	834	803	774	746	719	694	670	647	625	604	584	565	547	529
	9	906	873	842	813	785	758	732	708	684	662	641	620	600	581	563
	10	937	905	875	846	818	791	765	740	717	694	672	651	630	611	592
	11	963	932	902	873	845	819	793	768	744	721	698	677	656	636	616
	12	985	954	925	896	869	842	816	791	767	744	721	700	678	658	638

See page 18 for footnotes

3.0PLN20

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

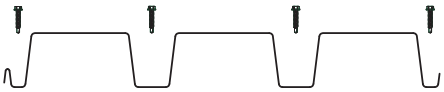
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
30 psf	3	474	447	422	399	378	359	341	325	309						
	4	565	534	506	480	456	434	413	393	375	357	341	325	309	295	280
	5	637	604	574	546	519	495	471	449	428	408	389	370	352	334	317
	6	693	660	628	598	570	543	518	494	470	448	427	406	385	365	345
	7	738	703	671	640	610	582	555	529	504	480	457	434	411	389	366
	8	773	738	705	673	642	613	585	557	531	505	480	456	431	407	383
	9	801	765	732	699	668	638	608	580	553	526	499	473	447	422	396
	10	823	788	753	720	689	658	628	598	570	542	514	487	460	433	406
	11	841	805	771	738	705	674	643	613	584	555	527	498	470	442	415
	12	856	820	786	752	719	687	656	626	596	566	537	508	479	450	421
40 psf	3	436	408	382	358	335	314	294	274	254						
	4	511	479	449	420	393	367	342	317	292	266	239	211	180	145	107
	5	566	531	498	466	435	405	376	347	317	287	256	223	188	150	109
	6	607	570	534	499	466	433	401	368	335	302	267	231	193	153	110
	7	638	599	561	524	488	453	418	383	348	312	274	236	196	154	111
	8	661	620	581	543	505	468	431	394	357	319	280	240	198	156	111
	9	679	637	597	557	518	479	441	402	363	324	284	242	200	156	112
	10	692	650	609	568	528	488	448	409	368	328	286	244	201	157	112
	11	703	661	618	577	536	495	454	413	372	331	289	246	202	157	112
	12	712	669	626	584	542	500	459	417	375	333	290	247	203	158	112
50 psf	3	385	353	322	292	261	228	192	152	106						
	4	438	400	363	326	288	248	206	160	109						
	5	474	432	390	348	305	260	213	164	110						
	6	499	453	408	362	316	268	218	166	111						
	7	516	468	420	372	323	273	221	167	112						
	8	529	479	429	379	328	276	223	168	112						
	9	538	487	435	384	331	278	224	169	112						
	10	545	493	440	387	334	280	225	169	112						
	11	551	497	444	390	336	281	226	170	112						
	12	555	501	447	392	338	282	227	170	113						
60 psf	3	309	265	218	167	108										
	4	337	285	231	173	110										
	5	353	297	238	176	111										
	6	364	304	242	178	112										
	7	371	309	245	180	112										
	8	376	312	247	180	112										
	9	379	314	248	181	112										
	10	382	316	249	181	113										
	11	383	317	250	182	113										
	12	385	318	250	182	113										
70 psf	3	190	120													
	4	196	122													
	5	200	123													
	6	202	123													
	7	203	124													
	8	204	124													
	9	204	124													
	10	205	124													
	11	205	124													
	12	205	124													

See page 18 for footnotes

3.0PLN19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	635	603	574	548	524	501	481	462	444						
	4	768	733	701	671	643	617	593	571	550	531	513	495	479	464	450
	5	883	846	812	780	750	722	696	671	648	627	606	587	569	552	535
	6	980	943	909	876	845	816	789	763	738	715	693	672	652	633	615
	7	1061	1026	992	960	929	899	871	845	819	795	772	750	729	709	690
	8	1129	1096	1063	1032	1002	973	945	918	892	868	844	822	800	779	760
	9	1186	1155	1124	1094	1065	1037	1010	983	958	933	910	887	865	844	824
	10	1234	1205	1176	1148	1120	1093	1067	1041	1016	992	968	946	924	903	882
	11	1274	1247	1221	1194	1168	1142	1117	1092	1068	1044	1021	999	978	956	936
	12	1308	1283	1259	1234	1209	1185	1161	1137	1114	1091	1069	1047	1026	1005	985

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	38	37	37	37	37	36	36	36	35						
	4	40	41	41	41	40	40	40	40	39	39	38	38	37	37	36
	5	43	43	43	43	43	43	43	43	43	42	42	41	41	41	40
	6	45	45	46	46	46	46	46	46	46	45	45	45	44	44	43
	7	46	47	48	48	48	48	48	48	48	48	48	47	47	47	46
	8	48	49	49	50	50	50	51	51	51	50	50	50	50	49	49
	9	49	50	51	51	52	52	52	53	53	53	52	52	52	52	52
	10	50	51	52	53	53	54	54	54	54	54	54	54	54	54	54
	11	51	52	53	54	55	55	56	56	56	56	56	56	56	56	56
	12	52	53	54	55	56	56	57	57	58	58	58	58	58	58	58

See page 18 for footnotes

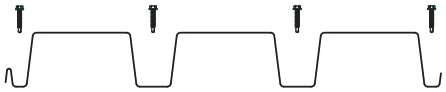
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	676	642	611	583	557	533	512	491	472						
	4	817	780	745	714	684	657	631	607	585	565	545	527	510	494	479
	5	939	900	864	830	798	768	740	714	690	667	645	624	605	587	570
	6	1042	1003	967	932	899	868	839	811	785	760	737	715	694	674	655
	7	1129	1091	1055	1021	988	957	927	899	872	846	821	798	776	754	734
	8	1201	1166	1131	1098	1066	1035	1005	977	949	923	898	874	851	829	808
	9	1262	1229	1196	1164	1133	1103	1074	1046	1019	993	968	943	920	898	876
	10	1313	1282	1251	1221	1192	1163	1135	1107	1081	1055	1030	1006	983	960	939
	11	1356	1327	1298	1270	1242	1215	1188	1162	1136	1111	1087	1063	1040	1018	996
	12	1392	1365	1339	1312	1286	1260	1235	1210	1185	1161	1137	1114	1092	1070	1048
10 psf	3	659	625	594	566	540	516	494	474	455						
	4	796	758	723	691	662	634	609	585	563	543	523	505	488	473	458
	5	911	872	835	801	769	739	712	686	661	638	617	597	578	560	543
	6	1007	967	930	895	862	832	802	775	749	725	701	680	659	639	621
	7	1086	1048	1011	976	943	911	882	853	827	801	777	754	732	711	692
	8	1152	1114	1079	1044	1011	980	950	922	895	869	844	820	798	776	756
	9	1206	1170	1135	1102	1070	1039	1010	981	954	928	903	879	856	834	813
	10	1251	1217	1183	1151	1120	1090	1061	1033	1006	980	955	931	908	886	865
	11	1288	1255	1224	1193	1163	1134	1105	1078	1052	1026	1001	977	954	932	911
	12	1319	1288	1258	1228	1199	1171	1144	1117	1091	1066	1042	1018	995	973	952
20 psf	3	627	593	563	535	510	486	464	444	426						
	4	751	714	680	649	620	593	568	545	524	503	484	467	450	434	419
	5	851	813	777	744	713	684	657	632	608	586	564	544	526	508	491
	6	932	894	857	823	791	761	732	705	680	656	633	611	591	571	552
	7	997	959	922	888	855	824	794	767	740	715	691	668	646	625	605
	8	1049	1011	975	940	908	876	846	818	791	765	740	716	693	671	650
	9	1091	1053	1018	984	951	920	889	861	833	806	781	756	732	710	688
	10	1124	1088	1053	1019	987	956	925	896	868	841	815	790	766	742	720
	11	1152	1117	1082	1049	1017	986	955	926	898	871	844	819	794	770	747
	12	1175	1140	1106	1073	1042	1011	981	952	923	896	869	843	818	794	770

See page 18 for footnotes

3.0PLN19

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



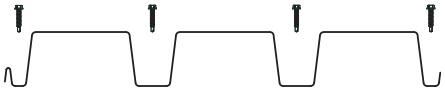
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
30 psf	3	587	554	524	496	471	447	425	405	385						
	4	695	658	625	593	564	537	511	487	464	442	421	402	382	364	345
	5	778	740	703	669	637	607	579	552	526	501	477	454	431	409	387
	6	842	802	764	728	695	662	632	602	574	546	520	494	469	443	418
	7	891	850	811	774	739	705	673	642	611	582	553	525	497	469	442
	8	929	888	848	810	774	739	705	672	640	609	579	549	519	489	460
	9	958	917	877	839	802	766	731	697	663	631	599	567	536	505	473
	10	982	940	900	861	824	787	751	716	682	648	615	582	549	517	484
	11	1000	959	919	879	841	804	767	732	696	662	628	594	560	526	492
	12	1015	974	934	894	856	818	781	744	708	673	638	603	568	534	499
40 psf	3	538	503	472	442	414	387	362	336	311						
	4	624	585	549	514	481	448	417	385	354	322	288	252	214	172	126
	5	687	644	604	565	527	491	455	418	382	345	306	265	223	177	128
	6	731	686	643	601	561	520	481	441	401	360	317	273	228	180	129
	7	764	717	672	628	585	542	499	457	414	370	325	279	231	181	130
	8	788	740	693	647	602	557	513	468	423	377	330	282	233	182	130
	9	807	758	710	662	615	569	523	476	430	382	334	285	235	183	131
	10	821	771	722	674	626	578	530	483	435	386	337	287	236	184	131
	11	832	782	732	682	633	585	536	487	438	389	339	288	237	184	131
	12	841	790	739	689	640	590	541	491	442	391	341	289	237	185	131
50 psf	3	470	431	393	354	316	275	230	181	125						
	4	530	484	438	392	345	296	245	189	128						
	5	569	518	467	415	363	309	252	192	129						
	6	595	540	485	430	374	316	257	195	130						
	7	613	556	498	440	381	321	260	196	131						
	8	626	567	507	447	386	325	261	197	131						
	9	636	574	513	452	390	327	263	198	131						
	10	643	580	518	456	392	329	264	198	131						
	11	648	585	522	458	394	330	265	198	131						
	12	652	589	525	460	396	331	265	199	132						
60 psf	3	372	318	261	198	127										
	4	402	339	274	204	129										
	5	419	351	281	207	130										
	6	430	359	285	209	131										
	7	437	363	288	210	131										
	8	442	366	289	211	131										
	9	445	368	291	212	131										
	10	448	370	292	212	132										
	11	450	371	292	212	132										
	12	451	372	293	213	132										
70 psf	3	224	141													
	4	231	143													
	5	234	144													
	6	236	144													
	7	238	145													
	8	238	145													
	9	239	145													
	10	239	145													
	11	240	145													
	12	240	145													

See page 18 for footnotes

3.0PLN18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	751	714	680	649	621	595	570	548	527						
	4	906	866	828	794	761	731	703	677	653	630	609	589	570	552	536
	5	1038	996	957	921	886	854	824	795	769	743	719	697	676	656	637
	6	1148	1107	1068	1031	996	963	931	901	873	846	821	797	774	752	731
	7	1239	1200	1162	1126	1092	1058	1026	996	967	939	913	888	863	840	818
	8	1315	1278	1242	1207	1174	1141	1110	1080	1051	1023	996	970	945	922	899
	9	1377	1343	1310	1277	1245	1213	1183	1153	1125	1097	1071	1045	1020	996	973
	10	1429	1398	1367	1336	1305	1276	1247	1218	1190	1163	1137	1112	1087	1063	1040
	11	1473	1444	1415	1386	1358	1330	1302	1275	1248	1222	1197	1172	1148	1124	1101
	12	1509	1482	1456	1429	1403	1376	1350	1324	1299	1274	1249	1225	1202	1179	1156

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	48	48	48	47	47	46	46	45	44						
	4	52	52	52	52	52	51	51	51	50	49	49	48	47	47	46
	5	56	56	56	56	56	56	56	55	55	54	54	53	53	52	51
	6	58	59	59	60	60	60	59	59	59	58	58	57	57	56	56
	7	61	61	62	62	63	63	63	63	62	62	62	61	61	60	60
	8	63	64	64	65	65	65	66	66	65	65	65	65	64	64	63
	9	64	65	66	67	67	68	68	68	68	68	68	68	67	67	67
	10	66	67	68	69	69	70	70	71	71	71	71	71	70	70	70
	11	67	68	69	70	71	72	72	73	73	73	73	73	73	73	72
	12	68	70	71	72	73	74	74	75	75	75	75	75	75	75	75

See page 18 for footnotes

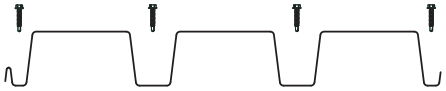
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	799	759	723	691	660	633	607	583	561						
	4	964	921	881	844	810	778	748	721	695	671	648	626	606	588	570
	5	1104	1060	1019	980	943	909	876	846	818	791	765	741	719	697	677
	6	1221	1178	1136	1097	1060	1024	991	959	929	900	873	847	823	800	778
	7	1318	1277	1237	1198	1161	1126	1092	1060	1029	999	971	944	919	894	871
	8	1399	1360	1322	1285	1249	1214	1181	1149	1118	1088	1060	1032	1006	981	956
	9	1465	1429	1393	1358	1324	1291	1258	1227	1197	1167	1139	1111	1085	1059	1035
	10	1521	1487	1454	1421	1389	1357	1326	1296	1266	1238	1210	1183	1156	1131	1106
	11	1567	1536	1505	1475	1444	1414	1385	1356	1328	1300	1273	1247	1221	1196	1171
	12	1605	1577	1549	1520	1492	1464	1436	1409	1382	1355	1329	1304	1279	1254	1230
10 psf	3	779	740	704	670	640	612	586	562	540						
	4	938	894	854	817	783	751	722	694	668	644	621	600	580	562	544
	5	1070	1025	983	944	908	873	841	811	783	756	731	708	685	664	644
	6	1178	1134	1092	1052	1014	979	946	914	884	856	829	804	780	757	735
	7	1267	1223	1182	1143	1105	1070	1036	1004	973	944	916	890	865	841	818
	8	1339	1297	1257	1219	1182	1147	1113	1081	1050	1021	992	965	940	915	891
	9	1398	1358	1320	1283	1247	1213	1179	1148	1117	1087	1059	1032	1006	981	957
	10	1446	1408	1372	1336	1302	1268	1236	1205	1175	1145	1117	1090	1064	1039	1014
	11	1486	1450	1415	1381	1348	1316	1284	1254	1224	1196	1168	1141	1115	1090	1066
	12	1519	1485	1452	1420	1388	1356	1326	1296	1267	1239	1212	1186	1160	1135	1111
20 psf	3	739	701	665	633	603	576	550	527	505						
	4	882	840	801	765	732	701	672	645	620	596	574	553	533	515	497
	5	997	953	912	874	839	805	774	744	717	691	666	643	621	600	580
	6	1087	1043	1002	963	926	891	859	828	798	770	744	719	695	672	650
	7	1158	1115	1074	1035	997	962	928	896	866	837	809	783	757	733	710
	8	1215	1172	1132	1093	1055	1020	986	953	922	892	863	836	809	784	760
	9	1260	1218	1178	1140	1103	1067	1033	1000	968	938	909	880	853	827	801
	10	1296	1255	1216	1178	1141	1106	1072	1039	1007	976	946	917	889	862	836
	11	1325	1285	1247	1209	1173	1138	1104	1071	1039	1008	978	948	920	892	866
	12	1349	1310	1272	1235	1200	1165	1131	1098	1066	1035	1004	975	946	918	890

See page 18 for footnotes

3.0PLN18

- #12 Screws @ Supports ≥ 0.109"
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
30 psf	3	692	653	618	586	556	528	502	478	456						
	4	815	772	733	697	663	631	601	572	546	520	496	472	449	427	405
	5	908	863	821	782	745	710	677	645	615	586	558	530	504	477	451
	6	978	932	889	848	808	771	735	701	668	636	605	575	545	515	485
	7	1031	984	940	898	857	818	780	744	709	674	641	608	575	543	511
	8	1071	1024	980	936	895	854	815	777	740	704	668	633	599	564	530
	9	1103	1056	1010	966	924	883	842	803	765	727	690	653	617	580	544
	10	1127	1080	1035	990	947	905	864	824	784	745	707	669	631	593	555
	11	1147	1100	1054	1009	966	923	881	840	799	760	720	681	642	603	564
	12	1162	1116	1070	1025	981	937	895	853	812	771	731	691	651	611	571
40 psf	3	631	591	554	519	486	454	424	394	364						
	4	728	683	640	599	560	522	485	448	411	373	333	291	246	197	144
	5	796	747	700	655	611	568	526	484	441	397	352	304	254	202	146
	6	845	793	743	695	647	600	554	507	461	413	364	313	260	204	147
	7	880	826	774	723	673	623	574	524	474	423	371	318	263	206	148
	8	905	850	796	743	691	639	588	536	484	431	377	322	265	207	148
	9	925	868	813	759	705	651	598	544	491	436	381	324	267	208	148
	10	940	882	826	770	715	661	606	551	496	440	384	326	268	209	149
	11	951	893	836	780	723	668	612	556	500	443	386	328	269	209	149
	12	960	902	844	787	730	673	617	560	503	445	387	329	270	210	149
50 psf	3	549	502	457	412	366	317	265	208	143						
	4	614	560	507	453	398	340	280	215	146						
	5	656	596	537	477	416	353	288	219	147						
	6	684	620	556	493	428	361	292	221	148						
	7	703	636	570	503	435	366	295	223	148						
	8	716	647	579	510	440	369	297	224	149						
	9	726	655	585	515	444	372	299	224	149						
	10	733	662	590	519	446	374	300	225	149						
	11	739	666	594	521	449	375	300	225	149						
	12	743	670	597	524	450	376	301	225	149						
60 psf	3	430	367	299	226	145										
	4	462	389	313	233	147										
	5	480	401	320	236	148										
	6	491	409	325	238	148										
	7	498	414	327	239	149										
	8	503	417	329	240	149										
	9	507	419	330	240	149										
	10	509	421	331	241	149										
	11	511	422	332	241	149										
	12	512	423	332	241	149										
70 psf	3	256	161													
	4	263	162													
	5	267	163													
	6	269	164													
	7	270	164													
	8	271	164													
	9	271	165													
	10	272	165													
	11	272	165													
	12	272	165													

See page 18 for footnotes

3.0PLN22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	360	339	320	303	288	274	262	250	240						
	4	445	419	396	375	356	339	324	310	297	285	274	264	254	245	237
	5	523	495	470	446	424	404	386	369	353	339	326	314	303	292	283
	6	593	563	535	510	487	465	446	428	410	394	379	365	352	339	328
	7	660	627	597	570	545	521	500	480	462	445	429	414	400	386	374
	8	723	689	657	627	600	575	552	531	511	493	475	459	444	430	416
	9	782	746	713	682	654	627	603	580	559	539	520	503	487	471	457
	10	838	801	766	735	705	677	652	628	605	584	564	546	528	512	497
	11	889	852	817	784	753	725	698	673	650	628	607	587	569	552	535
	12	938	900	864	831	800	770	743	717	692	670	648	628	608	590	573

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	20	20	20	20	21	20	20	20	20						
	4	21	21	21	22	22	22	22	22	22	22	22	21	21	21	21
	5	22	22	22	23	23	23	23	23	23	23	23	23	23	23	22
	6	22	23	23	23	24	24	24	24	24	24	24	24	24	24	24
	7	23	23	24	24	25	25	25	25	25	25	25	25	25	25	25
	8	23	24	24	25	25	26	26	26	26	26	26	26	26	26	26
	9	24	24	25	25	26	26	26	27	27	27	27	27	27	27	27
	10	24	25	25	26	26	27	27	27	28	28	28	28	28	28	28
	11	25	25	26	26	27	27	28	28	28	29	29	29	29	29	29
	12	25	26	26	27	27	28	28	29	29	29	29	30	30	30	30

See page 18 for footnotes

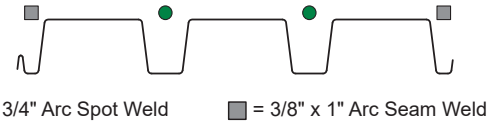
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	459	432	408	387	367	350	334	320	306						
	4	568	535	505	478	454	433	413	395	379	364	350	337	325	313	303
	5	667	632	600	570	541	516	492	471	451	433	416	401	387	373	361
	6	757	718	683	651	621	594	569	546	524	503	483	465	449	433	419
	7	843	801	762	727	695	666	638	613	590	568	548	529	511	493	477
	8	923	879	838	801	766	735	705	678	653	629	607	586	567	549	532
	9	999	953	910	871	835	801	770	741	713	688	664	642	621	602	583
	10	1070	1022	978	938	900	865	832	801	772	746	720	697	675	654	634
	11	1136	1088	1043	1001	962	925	891	859	829	801	775	750	726	704	683
	12	1197	1149	1103	1061	1021	983	948	915	884	855	827	801	777	754	732
20 psf	3	459	432	408	387	367	339	323	308	295						
	4	568	535	505	478	454	422	402	384	367	352	337	324	312	300	290
	5	667	632	600	570	541	504	481	459	440	421	404	389	374	360	348
	6	757	718	683	651	621	577	552	529	507	487	469	451	435	420	406
	7	843	801	762	727	695	646	619	594	570	548	528	509	491	474	458
	8	923	879	838	801	766	713	684	656	631	607	585	564	545	526	509
	9	999	953	910	871	835	777	745	716	689	664	640	618	597	577	559
	10	1070	1022	978	938	900	837	804	774	745	718	693	670	647	626	607
	11	1136	1088	1043	1001	962	894	860	828	799	771	744	719	696	674	653
	12	1197	1149	1103	1061	1021	948	913	880	850	820	793	767	743	719	698
30 psf	3	442	414	390	368	348	330	313	298	284						
	4	548	516	486	459	435	412	392	374	357	341	326	313	300	289	277
	5	639	604	571	541	514	490	467	446	426	408	391	376	361	347	334
	6	726	686	650	618	588	560	535	511	490	469	451	433	416	401	386
	7	806	764	725	690	658	628	600	574	550	528	507	488	469	452	436
	8	881	837	796	758	724	692	662	634	608	584	562	540	520	501	484
	9	951	904	862	822	786	752	720	691	664	638	613	591	569	549	529
	10	1015	967	923	882	844	809	776	745	716	688	663	638	616	594	573
	11	1073	1025	980	938	899	862	828	796	765	737	709	684	660	637	615
	12	1127	1079	1033	990	950	912	877	843	812	782	754	727	701	677	654

See page 18 for footnotes

3.0PLN22

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
40 psf	3	432	404	379	356	336	318	301	285	271						
	4	533	501	471	445	420	398	378	359	341	324	309				
	5	622	586	553	523	495	470	446	424	404	385	367				
	6	705	666	629	596	565	537	511	486	463	442	421				
	7	783	740	701	665	631	600	572	545	520	496	473				
	8	854	809	767	729	693	660	629	600	572	546	521				
	9	919	872	828	788	750	715	682	651	621	593	566				
	10	978	930	885	842	803	766	731	698	666	636	607				
	11	1032	983	936	893	852	813	776	742	708	676	645				
	12	1081	1031	983	939	897	856	818	782	747	713	680				
50 psf	3	420	391	366	343	322	302	283	265							
	4	514	481	450	423	397	373	351	329							
	5	600	562	528	496	467	440	414	389							
	6	679	638	600	565	532	501	471	442							
	7	751	706	665	627	591	557	524	491							
	8	816	769	725	684	645	607	571	535							
	9	875	826	779	735	694	653	613	573							
	10	928	877	828	782	737	694	651	608							
	11	976	923	872	824	777	731	685	638							
	12	1018	964	911	861	812	764	715	665							
60 psf	3	400	370	343	317	292	268									
	4	489	454	421	390	360	329									
	5	569	529	491	455	419	381									
	6	642	597	554	513	471	426									
	7	706	657	610	564	516	464									
	8	763	710	659	608	554	495									
	9	813	757	702	646	587	522									
	10	857	798	739	679	615	544									
	11	896	834	771	707	639	562									
	12	930	865	800	732	660	578									
70 psf	3	372	338	304												
	4	453	412	369												
	5	524	475	423												
	6	585	528	466												
	7	637	573	502												
	8	681	610	531												
	9	718	641	555												
	10	750	667	574												
	11	777	689	590												
	12	799	708	603												
80 psf	3	326	268	122												
	4	389	311	126												
	5	439	341	129												
	6	477	362	130												
	7	507	378	131												
	8	531	389	131												
	9	550	398	132												
	10	564	404	132												
	11	576	410	132												
	12	586	414	132												
90 psf	3	124														
	4	128														
	5	130														
	6	131														
	7	131														
	8	132														
	9	132														
	10	132														
	11	132														
	12	133														

See page 18 for footnotes

3.0PLN20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	518	487	460	436	414	394	376	360	345						
	4	635	601	568	538	511	487	465	444	426	409	393	379	365	352	341
	5	737	699	664	632	603	577	552	529	507	486	468	450	434	419	405
	6	834	792	754	719	687	658	630	605	582	560	540	521	504	486	470
	7	926	881	840	802	767	735	706	678	653	629	607	586	567	548	531
	8	1011	964	921	881	844	810	778	749	721	695	671	649	628	608	589
	9	1090	1042	997	956	917	881	848	816	787	760	734	710	687	666	646
	10	1164	1115	1069	1026	986	949	914	881	850	822	795	769	745	722	701
	11	1232	1182	1136	1092	1051	1013	977	943	911	881	853	826	801	777	755
	12	1294	1245	1198	1154	1113	1074	1037	1002	969	938	909	881	855	830	806

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	29	29	29	29	29	28	28	28	28						
	4	30	31	31	31	31	31	31	30	30	30	30	29	29	29	28
	5	32	32	32	33	33	33	33	32	32	32	32	32	31	31	31
	6	33	33	34	34	34	34	34	34	34	34	34	34	34	33	33
	7	34	34	35	35	36	36	36	36	36	36	36	36	35	35	35
	8	35	35	36	36	37	37	37	37	37	37	37	37	37	37	37
	9	36	36	37	38	38	38	39	39	39	39	39	39	39	39	39
	10	36	37	38	38	39	39	40	40	40	40	40	40	40	40	40
	11	37	38	39	39	40	40	41	41	41	41	41	42	42	42	41
	12	37	38	39	40	41	41	42	42	42	42	43	43	43	43	43

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	661	622	587	556	529	503	481	460	441						
	4	810	767	725	687	652	621	593	567	544	522	502	483	466	450	435
	5	941	892	848	807	770	736	705	675	647	621	597	575	554	535	518
	6	1065	1012	963	918	877	839	805	773	743	715	690	666	643	621	600
	7	1182	1124	1072	1024	980	939	901	866	833	803	775	748	723	700	678
	8	1290	1231	1175	1125	1077	1034	993	956	921	888	857	828	801	776	752
	9	1392	1330	1273	1220	1171	1125	1082	1042	1005	970	937	906	877	850	825
	10	1485	1423	1364	1310	1259	1211	1167	1125	1086	1049	1014	982	951	922	895
	11	1572	1509	1450	1394	1342	1293	1247	1204	1163	1125	1089	1055	1022	992	963
	12	1652	1589	1530	1474	1421	1371	1324	1279	1237	1198	1160	1125	1091	1060	1029
20 psf	3	661	622	587	556	529	503	481	460	441						
	4	810	767	725	687	652	621	593	567	544	509	488	470	452	436	420
	5	941	892	848	807	770	736	705	675	647	607	584	561	541	521	503
	6	1065	1012	963	918	877	839	805	773	743	696	670	646	623	602	582
	7	1182	1124	1072	1024	980	939	901	866	833	781	753	726	701	678	656
	8	1290	1231	1175	1125	1077	1034	993	956	921	864	833	804	777	752	728
	9	1392	1330	1273	1220	1171	1125	1082	1042	1005	943	910	879	850	823	797
	10	1485	1423	1364	1310	1259	1211	1167	1125	1086	1018	984	951	921	892	865
	11	1572	1509	1450	1394	1342	1293	1247	1204	1163	1091	1055	1021	989	958	930
	12	1652	1589	1530	1474	1421	1371	1324	1279	1237	1159	1122	1087	1054	1022	992
30 psf	3	661	602	567	535	507	481	458	436	416						
	4	810	739	699	663	630	599	570	544	520	497	477	457	440	423	407
	5	941	861	816	775	738	703	672	643	616	591	567	545	525	506	488
	6	1065	976	927	882	841	803	768	735	705	677	651	627	604	582	562
	7	1182	1084	1031	983	939	897	859	824	791	760	732	705	680	656	634
	8	1290	1184	1129	1078	1031	987	946	908	873	840	809	780	753	727	702
	9	1392	1276	1219	1166	1117	1071	1028	988	951	916	883	852	822	795	769
	10	1485	1362	1303	1249	1198	1150	1106	1064	1024	988	953	920	889	860	832
	11	1572	1440	1381	1325	1273	1224	1178	1135	1094	1056	1019	985	952	922	892
	12	1652	1512	1453	1396	1343	1293	1246	1202	1159	1120	1082	1046	1013	980	950

See page 18 for footnotes

3.0PLN20

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
40 psf	3	631	591	555	523	494	468	444	422	402						
	4	767	722	682	645	612	581	553	527	503	480	460	440	421	404	388
	5	892	842	797	756	718	683	651	621	594	568	544	521	500	480	461
	6	1009	954	905	860	818	779	744	711	680	651	624	599	575	553	531
	7	1116	1058	1006	957	912	870	832	796	762	730	701	673	647	622	598
	8	1215	1154	1099	1047	1000	955	914	875	839	805	773	743	714	687	661
	9	1305	1243	1185	1131	1081	1035	991	950	911	875	841	808	778	748	720
	10	1386	1323	1264	1209	1157	1108	1063	1020	979	941	905	870	837	805	775
	11	1461	1397	1336	1280	1226	1176	1129	1084	1042	1002	964	927	893	859	827
	12	1528	1463	1402	1345	1291	1239	1191	1144	1101	1059	1019	981	944	909	875
50 psf	3	616	577	541	509	479	453	428	405	384						
	4	748	702	661	624	590	558	529	502	476	452	430				
	5	870	819	773	731	692	656	623	592	562	535	509				
	6	982	927	876	830	787	747	710	676	643	612	582				
	7	1084	1026	972	922	876	832	792	754	718	683	650				
	8	1178	1116	1059	1006	957	911	867	826	786	749	712				
	9	1262	1198	1139	1083	1031	982	936	892	849	809	769				
	10	1338	1272	1211	1154	1099	1048	999	952	907	863	820				
	11	1406	1339	1276	1217	1161	1107	1056	1007	959	913	867				
	12	1467	1399	1335	1275	1217	1161	1108	1057	1007	957	909				
60 psf	3	596	556	520	486	456	427	401	376	351						
	4	724	677	635	596	560	526	495	464	435						
	5	841	789	741	697	656	617	581	545	510						
	6	948	891	838	790	744	700	659	618	577						
	7	1044	983	926	873	823	775	729	682	635						
	8	1130	1065	1005	948	894	842	791	740	687						
	9	1206	1139	1076	1016	958	901	846	790	731						
	10	1274	1205	1139	1075	1014	954	895	834	770						
	11	1335	1263	1195	1129	1064	1001	938	872	804						
	12	1388	1315	1244	1176	1109	1042	975	906	833						
70 psf	3	571	529	491	455	421	388	354								
	4	694	645	600	557	516	475	432								
	5	804	749	698	648	600	551	498								
	6	903	842	784	729	673	616	552								
	7	990	924	860	799	736	671	597								
	8	1066	995	927	859	790	717	633								
	9	1132	1058	985	911	836	755	663								
	10	1190	1112	1035	956	875	788	688								
	11	1241	1159	1078	995	909	815	708								
	12	1285	1200	1115	1029	938	839	725								
80 psf	3	539	494	450	406	356	281									
	4	654	600	546	491	424	320									
	5	754	691	628	560	476	345									
	6	840	769	696	616	516	362									
	7	914	835	753	661	546	374									
	8	977	891	800	697	570	383									
	9	1030	937	838	727	588	389									
	10	1075	976	870	750	602	394									
	11	1113	1009	897	770	614	397									
	12	1146	1037	920	786	623	400									
90 psf	3	495	438	370	237											
	4	595	523	431	256											
	5	677	589	475	266											
	6	744	641	506	273											
	7	797	681	529	277											
	8	841	713	547	280											
	9	876	738	560	282											
	10	905	758	570	283											
	11	929	774	578	285											
	12	948	787	584	285											

See page 18 for footnotes

3.0PLN19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	667	628	593	562	534	508	485	464	445						
	4	810	767	728	692	658	627	598	572	548	526	506	487	470	454	439
	5	939	891	847	807	770	737	706	677	651	626	602	580	559	540	522
	6	1061	1009	960	916	876	839	805	773	743	716	690	667	644	623	604
	7	1175	1119	1068	1021	977	937	900	865	833	803	775	749	724	701	679
	8	1281	1223	1169	1119	1073	1030	991	954	919	887	856	828	801	776	753
	9	1378	1319	1264	1212	1164	1119	1078	1039	1002	968	935	905	877	850	824
	10	1468	1408	1352	1299	1250	1204	1160	1120	1081	1045	1011	979	949	921	894
	11	1551	1491	1434	1381	1331	1283	1239	1197	1157	1120	1084	1051	1019	990	961
	12	1627	1567	1511	1457	1406	1358	1313	1270	1229	1191	1154	1120	1087	1056	1026

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	38	38	38	38	38	37	37	37	36						
	4	41	41	41	41	41	41	41	40	40	40	39	39	38	38	37
	5	43	44	44	44	44	44	44	44	43	43	43	42	42	41	41
	6	45	46	46	46	47	47	47	46	46	46	46	45	45	45	44
	7	47	48	48	48	49	49	49	49	49	49	48	48	48	48	47
	8	48	49	50	50	51	51	51	51	51	51	51	51	50	50	50
	9	49	50	51	52	52	53	53	53	53	53	53	53	53	52	52
	10	50	51	52	53	54	54	54	55	55	55	55	55	55	55	54
	11	51	52	53	54	55	55	56	56	56	57	57	57	57	57	56
	12	52	53	54	55	56	57	57	58	58	58	58	58	58	58	58

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	851	801	757	717	681	649	619	592	568						
	4	1034	979	929	884	840	800	764	730	700	672	646	622	600	579	560
	5	1199	1137	1081	1030	983	940	901	864	831	799	768	740	714	689	666
	6	1355	1287	1226	1170	1118	1071	1027	987	949	914	881	851	822	796	771
	7	1500	1429	1363	1303	1247	1196	1148	1104	1063	1025	989	956	924	895	867
	8	1635	1561	1492	1429	1370	1316	1265	1217	1173	1132	1093	1057	1023	991	961
	9	1759	1684	1613	1547	1486	1429	1376	1326	1279	1235	1194	1155	1119	1085	1052
	10	1874	1798	1726	1659	1596	1537	1481	1429	1380	1334	1291	1250	1212	1175	1141
	11	1980	1903	1831	1763	1699	1638	1581	1528	1477	1429	1384	1342	1301	1263	1227
	12	2077	2001	1929	1860	1795	1734	1676	1621	1569	1520	1474	1429	1388	1348	1310
30 psf	3	851	801	757	717	659	626	595	568	543						
	4	1034	979	929	884	812	774	739	706	675	646	620	596	573	551	532
	5	1199	1137	1081	1030	950	907	867	830	796	764	735	707	681	657	634
	6	1355	1287	1226	1170	1081	1033	989	948	910	875	842	811	782	755	730
	7	1500	1429	1363	1303	1205	1153	1106	1061	1020	981	945	911	880	850	822
	8	1635	1561	1492	1429	1321	1267	1216	1169	1124	1083	1044	1008	973	941	911
	9	1759	1684	1613	1547	1431	1374	1320	1270	1224	1180	1138	1100	1063	1029	996
	10	1874	1798	1726	1659	1532	1473	1418	1366	1317	1271	1228	1187	1149	1112	1078
	11	1980	1903	1831	1763	1627	1567	1510	1456	1406	1358	1313	1271	1230	1192	1156
	12	2077	2001	1929	1860	1715	1654	1596	1541	1489	1440	1394	1350	1308	1268	1230
40 psf	3	820	769	724	683	646	612	582	554	528						
	4	990	933	883	837	794	756	720	688	657	629	603	579	556	534	514
	5	1149	1086	1029	977	930	886	846	809	774	742	712	684	658	633	610
	6	1296	1229	1167	1110	1058	1010	965	924	886	850	816	785	756	728	702
	7	1432	1361	1295	1234	1178	1127	1078	1034	992	953	916	882	849	819	790
	8	1557	1482	1414	1350	1291	1236	1185	1137	1092	1050	1010	973	938	905	874
	9	1670	1594	1523	1457	1395	1338	1284	1233	1186	1142	1100	1060	1022	987	953
	10	1773	1695	1623	1555	1492	1432	1376	1324	1274	1228	1183	1142	1102	1064	1028
	11	1865	1788	1715	1646	1581	1520	1463	1408	1357	1308	1262	1218	1177	1137	1099
	12	1949	1872	1798	1729	1663	1601	1542	1486	1434	1383	1336	1290	1247	1205	1166

See page 18 for footnotes

3.0PLN19

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

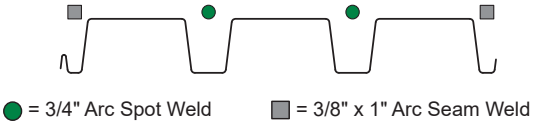
Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
50 psf	3	802	753	709	668	631	597	566	537	511						
	4	970	913	862	815	773	733	697	664	633	604	577	551	527	504	483
	5	1126	1063	1006	953	905	861	820	781	746	713	682	652	625	598	573
	6	1270	1202	1139	1082	1029	980	935	892	853	816	781	748	717	687	658
	7	1401	1329	1262	1201	1144	1091	1042	996	953	912	874	838	803	770	738
	8	1520	1445	1375	1311	1251	1195	1142	1093	1046	1002	961	921	883	847	812
	9	1628	1551	1479	1412	1349	1290	1234	1182	1133	1086	1042	999	958	918	880
	10	1725	1646	1573	1503	1438	1377	1319	1265	1213	1163	1116	1071	1027	984	942
	11	1812	1732	1658	1587	1520	1457	1397	1340	1286	1234	1185	1137	1090	1044	1000
	12	1890	1810	1735	1663	1595	1530	1469	1410	1354	1300	1248	1197	1148	1100	1052
60 psf	3	782	733	688	647	609	575	543	513	485	459	434	411			
	4	947	889	837	790	746	705	668	633	600	569	539	510			
	5	1099	1035	976	923	873	827	785	744	707	671	636	602			
	6	1237	1168	1104	1045	991	940	893	848	805	764	725	686			
	7	1362	1289	1221	1158	1099	1044	992	942	895	850	805	761			
	8	1475	1398	1327	1260	1197	1138	1082	1029	977	927	878	829			
	9	1576	1496	1422	1352	1286	1224	1164	1107	1051	997	943	888			
	10	1665	1584	1508	1435	1366	1301	1238	1177	1118	1060	1001	942			
	11	1745	1663	1584	1510	1439	1370	1304	1240	1178	1115	1053	989			
	12	1816	1733	1653	1577	1503	1433	1364	1297	1231	1165	1099	1030			
70 psf	3	759	708	662	619	580	544	509	477	445	414					
	4	919	860	807	757	711	668	627	588	549	510					
	5	1065	1000	939	883	831	781	734	688	641	593					
	6	1197	1126	1059	997	939	883	829	776	722	665					
	7	1314	1238	1167	1100	1036	974	914	854	793	726					
	8	1419	1338	1262	1191	1122	1055	989	922	853	777					
	9	1511	1427	1347	1271	1198	1126	1054	981	905	821					
	10	1591	1505	1422	1342	1265	1188	1112	1033	949	857					
	11	1663	1574	1488	1405	1324	1243	1162	1077	988	888					
	12	1725	1635	1547	1461	1376	1291	1205	1116	1020	915					
80 psf	3	731	678	629	584	541	500	458	412							
	4	885	824	767	713	662	611	558	497							
	5	1024	955	890	828	768	707	642	565							
	6	1146	1070	998	928	859	789	712	619							
	7	1253	1171	1092	1015	938	858	769	661							
	8	1347	1259	1174	1090	1005	916	816	695							
	9	1427	1335	1245	1155	1062	964	854	722							
	10	1498	1401	1306	1210	1111	1005	886	743							
	11	1558	1458	1358	1257	1152	1039	912	760							
	12	1611	1507	1404	1298	1188	1068	934	774							
90 psf	3	697	640	587	534	478	410	279								
	4	843	776	711	646	574	481	304								
	5	970	893	817	738	650	532	319								
	6	1079	993	906	815	709	570	328								
	7	1172	1077	981	877	756	597	333								
	8	1251	1148	1043	928	793	618	338								
	9	1318	1208	1094	969	823	634	340								
	10	1375	1259	1137	1003	846	646	343								
	11	1423	1301	1173	1031	865	655	344								
	12	1464	1337	1203	1054	881	663	345								
100 psf	3	652	587	517	428	220										
	4	784	703	613	492	230										
	5	894	797	688	537	235										
	6	984	873	744	568	238										
	7	1058	933	788	591	240										
	8	1118	982	821	607	241										
	9	1168	1021	847	619	242										
	10	1208	1052	868	628	243										
	11	1242	1078	885	636	243										
	12	1270	1099	898	641	244										

See page 18 for footnotes

3.0PLN18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern



Allowable Diaphragm Shear Strength due to Seismic Loads, q (plf)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic	3	788	742	701	664	631	601	573	548	525						
	4	954	904	858	816	779	744	710	679	651	625	601	578	558	538	520
	5	1107	1051	1000	953	910	871	834	801	770	741	715	689	665	642	621
	6	1250	1189	1134	1082	1035	992	952	915	880	848	818	790	764	739	716
	7	1383	1319	1259	1205	1154	1108	1064	1024	986	951	918	888	859	832	806
	8	1505	1439	1377	1320	1267	1217	1171	1128	1088	1050	1015	982	951	921	893
	9	1617	1550	1487	1428	1373	1321	1273	1228	1185	1146	1108	1073	1039	1008	978
	10	1719	1652	1588	1528	1472	1419	1369	1322	1278	1236	1197	1160	1125	1092	1060
	11	1813	1746	1682	1622	1565	1511	1460	1412	1366	1323	1282	1244	1207	1172	1140
	12	1898	1831	1768	1708	1651	1597	1545	1496	1450	1406	1364	1324	1286	1250	1216

See page 18 for footnotes

Diaphragm Stiffness, G' (k/in)

Load Type	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
Seismic or Wind	3	49	49	49	48	48	47	47	46	46						
	4	53	53	53	53	53	52	52	51	51	50	50	49	49	48	47
	5	56	57	57	57	57	57	56	56	56	55	55	54	53	53	52
	6	59	59	60	60	60	60	60	60	60	59	59	58	58	57	57
	7	61	62	62	63	63	63	63	63	63	63	62	62	62	61	61
	8	63	64	65	65	66	66	66	66	66	66	66	65	65	65	64
	9	65	66	67	67	68	68	69	69	69	69	69	68	68	68	67
	10	66	67	68	69	70	70	71	71	71	71	71	71	71	71	70
	11	67	69	70	71	72	72	73	73	73	73	73	73	73	73	73
	12	68	70	71	72	73	74	74	75	75	75	76	76	76	76	75

See page 18 for footnotes

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf)

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
No Uplift	3	1006	947	894	847	805	767	732	700	671						
	4	1218	1153	1095	1042	994	949	906	867	831	797	767	738	712	687	664
	5	1413	1341	1276	1216	1162	1111	1065	1022	983	946	912	880	849	820	792
	6	1596	1518	1447	1382	1322	1266	1215	1168	1124	1083	1044	1009	975	944	914
	7	1765	1683	1608	1538	1474	1414	1359	1307	1259	1214	1172	1133	1096	1062	1029
	8	1921	1837	1758	1685	1617	1554	1495	1440	1389	1341	1296	1253	1214	1176	1141
	9	2064	1978	1898	1823	1752	1687	1625	1567	1513	1462	1414	1369	1327	1287	1249
	10	2195	2109	2027	1951	1879	1812	1748	1688	1632	1578	1528	1481	1436	1394	1354
	11	2314	2228	2147	2070	1997	1929	1864	1802	1744	1689	1637	1588	1541	1497	1455
	12	2423	2338	2257	2181	2108	2038	1972	1910	1851	1794	1741	1690	1642	1596	1552
30 psf	3	1006	947	894	847	805	767	710	677	647						
	4	1218	1153	1095	1042	994	949	879	842	807	773	742	713	686	661	638
	5	1413	1341	1276	1216	1162	1111	1032	989	949	912	878	845	815	787	760
	6	1596	1518	1447	1382	1322	1266	1178	1130	1086	1045	1006	970	936	905	875
	7	1765	1683	1608	1538	1474	1414	1316	1265	1216	1172	1129	1090	1053	1018	985
	8	1921	1837	1758	1685	1617	1554	1447	1392	1340	1292	1247	1205	1165	1127	1091
	9	2064	1978	1898	1823	1752	1687	1569	1512	1458	1407	1359	1314	1272	1231	1193
	10	2195	2109	2027	1951	1879	1812	1684	1625	1568	1515	1465	1418	1373	1331	1291
	11	2314	2228	2147	2070	1997	1929	1791	1730	1672	1617	1566	1517	1470	1426	1384
	12	2423	2338	2257	2181	2108	2038	1891	1829	1770	1713	1660	1610	1561	1516	1472
40 psf	3	1006	916	863	815	772	733	697	664	634						
	4	1218	1110	1051	997	948	903	862	824	789	756	725	697	670	645	622
	5	1413	1292	1226	1165	1110	1059	1013	969	929	892	857	824	793	765	738
	6	1596	1460	1389	1323	1263	1207	1155	1107	1063	1021	982	946	912	879	849
	7	1765	1616	1540	1470	1406	1346	1290	1238	1190	1144	1102	1062	1024	989	956
	8	1921	1758	1679	1606	1539	1475	1416	1361	1309	1261	1215	1172	1132	1094	1057
	9	2064	1888	1807	1732	1662	1596	1534	1476	1422	1370	1322	1277	1234	1193	1154
	10	2195	2005	1924	1847	1775	1707	1644	1583	1527	1473	1423	1375	1330	1286	1246
	11	2314	2112	2030	1953	1879	1810	1745	1683	1625	1569	1517	1467	1420	1375	1332
	12	2423	2208	2126	2049	1975	1905	1839	1776	1716	1659	1605	1553	1504	1458	1413

See page 18 for footnotes

3.0PLN18

- 3/4" Arc Spot Welds with 3/8" x 1" Arc Seam Welds
- Sidelaps Fastened with the PunchLok II Tool
- 24/4 Attachment Pattern

● = 3/4" Arc Spot Weld ■ = 3/8" x 1" Arc Seam Weld

Allowable Diaphragm Shear Strength due to Wind Loads, q (plf) Continued

Net Wind Uplift Pressure	Number of VSC2's per Span	Span Length (ft-in.)														
		8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"
50 psf	3	956	899	848	802	758	718	682	649	618						
	4	1156	1091	1031	977	928	882	841	802	766	733	702	672	645	619	595
	5	1342	1269	1203	1142	1087	1035	988	944	903	865	829	796	764	735	707
	6	1512	1434	1362	1296	1235	1179	1127	1078	1033	990	950	913	878	844	813
	7	1667	1585	1509	1438	1373	1313	1256	1204	1154	1108	1064	1023	985	948	913
	8	1807	1722	1643	1569	1500	1436	1377	1320	1268	1218	1171	1127	1085	1045	1007
	9	1933	1846	1765	1688	1617	1550	1488	1429	1373	1320	1271	1223	1178	1135	1094
	10	2045	1958	1875	1797	1724	1655	1590	1529	1470	1415	1363	1313	1265	1219	1175
	11	2146	2058	1975	1896	1821	1751	1684	1620	1560	1503	1448	1396	1345	1297	1251
	12	2236	2148	2065	1985	1910	1838	1770	1705	1643	1583	1527	1472	1420	1369	1320
60 psf	3	937	880	828	781	738	699	662	629	597						
	4	1135	1068	1008	954	903	857	814	775	738	703	671	640	611	583	
	5	1316	1243	1176	1114	1058	1005	957	912	869	830	792	757	723	690	
	6	1481	1402	1330	1263	1201	1143	1090	1039	992	948	906	866	827	790	
	7	1630	1547	1470	1398	1332	1270	1212	1157	1106	1057	1010	966	923	881	
	8	1764	1677	1597	1522	1452	1386	1324	1265	1210	1157	1106	1057	1010	963	
	9	1883	1794	1711	1634	1560	1491	1426	1364	1305	1248	1194	1141	1089	1038	
	10	1989	1899	1814	1734	1658	1587	1518	1453	1391	1331	1273	1216	1161	1105	
	11	2083	1992	1906	1825	1747	1673	1602	1534	1469	1406	1345	1285	1225	1165	
	12	2166	2075	1988	1906	1826	1751	1678	1608	1540	1474	1410	1346	1283	1219	
70 psf	3	915	857	805	756	712	672	634	599	566						
	4	1109	1042	981	925	873	825	781	739	699	662	625	589			
	5	1286	1211	1143	1080	1021	967	916	868	822	778	735	692			
	6	1444	1364	1289	1220	1156	1096	1039	985	933	883	833	782			
	7	1586	1501	1422	1348	1278	1213	1150	1091	1033	977	920	862			
	8	1712	1623	1540	1461	1388	1317	1250	1185	1122	1060	996	931			
	9	1823	1731	1645	1563	1485	1411	1339	1270	1201	1133	1063	990			
	10	1920	1827	1738	1653	1572	1494	1418	1344	1271	1197	1122	1042			
	11	2006	1911	1820	1733	1649	1568	1488	1410	1332	1254	1172	1086			
	12	2082	1986	1893	1804	1717	1633	1551	1469	1387	1303	1217	1125			
80 psf	3	890	831	777	727	681	638	597	558	520						
	4	1079	1010	947	889	834	783	734	687	639	589					
	5	1249	1172	1101	1035	973	914	857	800	742	680					
	6	1399	1316	1238	1165	1096	1029	964	899	831	756					
	7	1532	1443	1359	1280	1204	1131	1058	984	906	818					
	8	1648	1555	1466	1381	1299	1219	1139	1056	968	870					
	9	1749	1652	1559	1469	1382	1296	1209	1118	1021	912					
	10	1837	1737	1640	1546	1454	1362	1269	1171	1066	947					
	11	1914	1811	1711	1613	1517	1420	1320	1216	1103	976					
	12	1980	1875	1773	1672	1571	1469	1365	1255	1135	1000					
80 psf	3	861	800	743	690	640	591	541	486	413						
	4	1043	971	904	841	780	720	657	583	480						
	5	1203	1123	1047	974	902	830	752	659	528						
	6	1343	1255	1170	1088	1007	922	830	718	561						
	7	1464	1369	1276	1186	1095	999	893	764	585						
	8	1568	1467	1368	1269	1169	1062	943	799	603						
	9	1658	1551	1445	1340	1231	1115	985	827	617						
	10	1734	1623	1512	1400	1283	1159	1018	850	627						
	11	1800	1684	1568	1451	1328	1195	1046	867	635						
	12	1856	1737	1617	1494	1365	1226	1069	882	641						
100 psf	3	826	761	699	638	575	501	380								
	4	998	920	845	770	689	589	424								
	5	1146	1057	969	879	780	654	451								
	6	1271	1172	1073	968	851	702	469								
	7	1378	1269	1158	1041	907	737	481								
	8	1467	1349	1229	1099	950	764	489								
	9	1542	1417	1287	1146	985	784	495								
	10	1605	1473	1335	1185	1013	800	500								
	11	1658	1520	1375	1217	1035	812	503								
	12	1702	1559	1408	1243	1054	822	506								

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The PunchLok II tool is the subject of U.S. Patent No. 6,12,932 and U.S. Patent No. 8,667,656.

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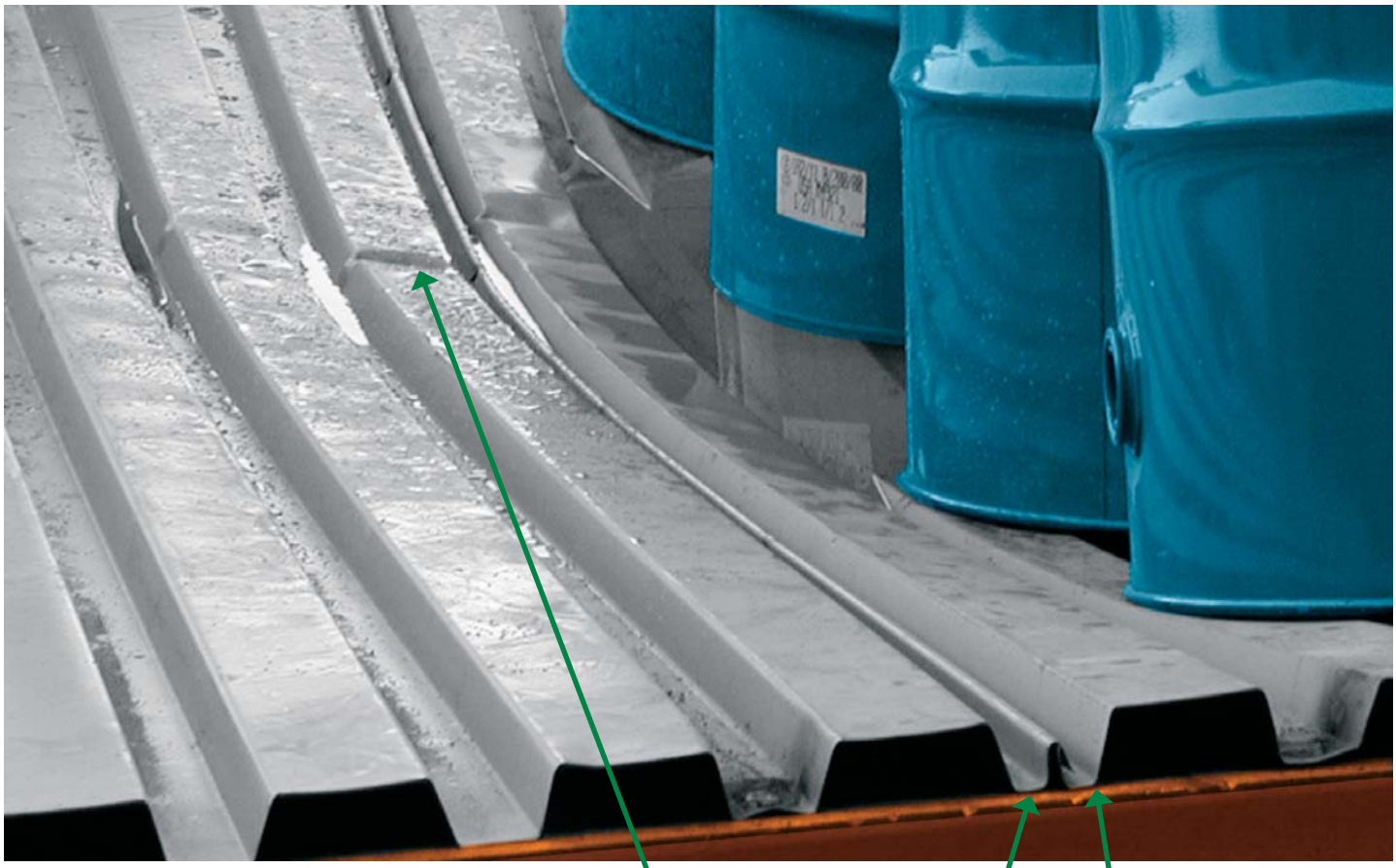
PunchLok® II SYSTEM CARRIES THE LOAD

In 2001 prior to the release of the original PunchLok system, engineers conducted a test to demonstrate the capabilities of the Sidelap Connection made by the PunchLok tool to resist the vertical loads during typical construction processes including: heavy foot traffic, staging of construction materials, and pouring of concrete.

Three 10' long panels of 20 gage PLB roof deck were secured to a structural frame with arc spot welds using a 36/4 attachment pattern. Sidelaps were secured with the PunchLok tool using four connections per span. Load equivalent to 138 psf was applied to the center panel by adding water to steel drums stacked three rows high. The two outside deck panels were not loaded. As shown in the photograph, the load from the center panel was transferred to the adjacent unloaded sheet entirely through the four sidelap connections between the panels.



Buckling at the top flange of the adjacent unloaded deck panel demonstrates the vertical load transfer capabilities of the VSC

Female Sidelap

Male Sidelap

While under load and after the test, there were no signs of disengagement or slippage of any type on the connections made with the original PunchLok tool. The top flange of the adjacent “unloaded” panel was buckled due to the load transferred entirely thru the Sidelap Connection. This demonstrates the excellent ability of the PunchLok system to transfer vertical load across the sidelaps. The new sidelap connection made by the PunchLok II tool is even stronger than the original! Expect even better results with the new PunchLok II tool and system.

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