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ICC-ES Evaluation Report

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DIVISION: 05 00 00—METALS
Section: 05 31 00—Steel Decking
Section: 05 31 13—Steel Floor Decking
Section: 05 31 23—Steel Roof Decking

REPORT HOLDER:

VERCO DECKING, INC.
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EVALUATION SUBJECT:

VERCO STEEL DECK PANELS:

- **HSB, PLB, N and PLN ROOF DECK PANELS**
- **B, BR, PLB, N, PLN, W2, PLW2, W3 and PLW3 FORMLOK DECK PANELS**
- **PLB, HSB, PLN, AND N ACOUSTICAL ROOF DECK PANELS**
- **$^{9}/_{16}$-INCH (SHALLOW) VERCOR, $1^{5}/_{16}$-INCH (DEEP) VERCOR, AND $1^{5}/_{16}$-INCH (DEEP) VERCOR VENTLOK DECK PANELS**
- **PLB-CD, HSB-CD, PLN-CD AND N-24CD CELLULAR ROOF DECK PANELS; AND PLB-CD, BCD, PLN-CD, NCD, PLW2-CD, W2CD, PLW3-CD and W3CD FORMLOK CELLULAR DECK PANELS**

1.0 EVALUATION SCOPE

Compliance with the following code:

2006 *International Building Code®* (IBC)

Properties evaluated

- Structural
- Fire resistance

2.0 USES

Verco steel deck panels are used in floor and roof systems to resist the code-required appropriate floor and roof loads.

3.0 DESCRIPTION

3.1 General:

The steel deck panels described in this report are cold-formed from steel sheets into panels with fluted sections having galvanized, phosphatized/painted, painted/painted, or mill finishes. Panel dimensions and profiles are as shown in the tables and figures that accompany this report.

The galvanized deck panels are formed from ASTM A653 steel, with a minimum G30 galvanization coating designation. The phosphatized/painted and painted/painted and mill-finished steel deck panels are formed from ASTM A1008 steel. Phosphatized/painted deck panels have a phosphatized (uncoated) top surface and primer painted bottom surface. Painted/painted deck panels have primer painted top and bottom surfaces. Mill-finished deck panels have no coating on either top or bottom surfaces.

A "PL" prefix — for example, PLB — indicates deck intended for installations where side seam (sidelap) connections are made with the Verco PunchLok tool. A suffix number indicates the deck panel cover width — for example, N-24 indicates a deck panel cover width of 24 inches (610 mm). The "SS" suffix indicates deck panels provided with extended female lips intended for installations where side seam connections are made with self-drilling, self-tapping screws. The "CD" suffix indicates cellular deck panels composed of fluted top sections, factory resistance-welded to flat bottom sections.

3.2 Roof Deck Panels:

Type PLB, HSB, PLN, and N roof deck panels are available as galvanized, painted/painted, or mill-finished. Galvanized deck panels are formed from SS Designation, Grade 40 (minimum) steel. Painted/painted and mill-finished steel decks are formed from SS Designation Grade 45 (minimum) steel. The deck panels are available in thicknesses ranging from No. 22 to No. 16 gage [design base-metal thickness from 0.0299 inch (0.759 mm) to 0.0598 inch (1.52 mm)].

3.3 FORMLOK Deck Panels:

Type PLB, B, BR, PLN, N, PLW2, W2, PLW3, and W3 FORMLOK Deck Panels are available as galvanized, phosphatized/painted, or mill-finished. The deck panels are formed from SS Designation, Grade 50 (minimum) steel. The deck panels have web embossments as shown in Figure 3. The deck panels are available in thicknesses ranging from No. 22 to No. 16 gage [design base-metal thickness from 0.0290 inch (0.737 mm) to 0.0598 inch (1.52 mm)]. FORMLOK deck panels are for use with or without concrete fill.

3.4 Acoustical Deck Panels:

PLB, HSB, PLN, and N roof deck panels are also available as acoustical deck panels. See Figure 4 for web perforation patterns. Data in Tables 19 through 28 also apply to the acoustical versions. Acoustical deck panels are limited to non-fire- resistance-rated assemblies.

3.5 Acoustical Cellular Deck Panels:

PLB-CD, HSB-CD, PLN-CD and N-24CD roof deck panels and PLB-CD, BCD, PLN-CD, NCD, PLW2-CD, W2CD, PLW3-CD and W3CD FORMLOK deck panels are available with acoustical perforations in the flat bottom plate. Perforations are $^{5}/_{32}$ inch (4mm) in diameter on $^{7}/_{16}$-inch (11.1 mm) staggered centers. The nominal center-to-center widths of the perforated bands, which are centered under the top flanges of the fluted top sections, are: PLB-CD, HSB-CD and BCD—3.5 inches (90 mm); PLN-CD, N-24CD and NCD—5.5 inches (140 mm); PLW2-CD, W2CD, PLW3-CD and W3CD—6.6 inches (167 mm).

3.6 $^{9}/_{16}$-inch (Shallow) Vercor Deck Panels:

These deck panels are available as galvanized, painted/painted, or mill-finished. The deck panels are formed from ASTM A653 SS Designation, Grade 50 Class 1 steel (minimum) or ASTM A1008 SS Designation, Grade 50 steel (minimum). The deck panels are available in thicknesses ranging from No. 22 to No. 26 gage [design base-metal thickness from 0.0299 inch (0.759 mm) to 0.0179 inch (0.455 mm)].

3.7 $1^{5}/_{16}$-inch (Deep) Vercor and $1^{5}/_{16}$-inch (Deep) Vercor Ventlok Deck Panels:

These deck panels are available as galvanized, painted/painted, or mill-finished. The deck panels are formed from SS Designation, Grade 80 steel. The deck panels are available in thicknesses ranging from No. 20 to No. 26 gage [design base-metal thickness from 0.0374 inch (0.950 mm) to 0.0195 inch (0.495 mm)]. The lightweight insulating concrete fill of the $1^{5}/_{16}$-inch (Deep) Vercor galvanized steel deck panels used for diaphragm purposes must comply with Section 3.14.

3.8 PunchLok® System:

The PunchLok system consists of PLB and PLN roof deck panels and PLB, PLN, PLW2, and PLW3 FORMLOK deck panels connected at sidelaps with the Verco Decking, Inc., proprietary connection. The proprietary connection is referred to as the "Verco Sidelap Connection" (VSC), and is an interlocking connection between the male and female lips of the deck panels. The VSC connection is made in either direction relative to the female lip. A VSC connection is made when the sidelap material has been sheared and offset so the sheared surface of the steel deck panel male leg is visible. This punched portion measures $^{5}/_{8}$ inch nominal width by $^{3}/_{8}$ inch nominal height. The PunchLok systems must be installed in accordance with Verco's instructions. The resulting VSC connection is illustrated in Figure 1.

3.9 SHEARTRANZ® System:

The ShearTranz system is a special end support connection that consists of the ShearTranz element welded at shear collecting deck panel support members, perpendicular to the corrugations of N-24, HSB-30 or HSB-36 deck panels. The ShearTranz elements are formed from steels described in Sections 3.1 and 3.2, but with a minimum yield strength of 33,000 psi (228 MPa). The elements are available in a thickness of No. 16 gage [design base-metal thickness of 0.0598 inch (1.52 mm)], and are Z- or channel-shaped. See Figure 8.

3.10 SHEARTRANZ® II System:

The ShearTranz II system consists of ShearTranz II or ShearTranz II-42 elements that are welded at shear collecting deck panel support members, perpendicular to the corrugations. The ShearTranz II and ShearTranz II-42 elements are formed from steels described in Sections 3.1 and 3.2, but with a minimum yield strength of 33,000 psi (228 MPa). The ShearTranz II elements are for use with HSB-36 deck panels, and are available in a thickness of No. 16 gage [design base-metal thickness of 0.0598 inch (1.52 mm)]; the ShearTranz II-42 elements are for use with PLB-36 deck panels, and are available in a thickness of No. 14 gage [design base-metal thickness of 0.070 inch (1.78 mm)]. See Figure 7.

3.11 System 80:

This system consists of galvanized HSB-30 or HSB-36 steel deck panels, ShearTranz elements and lightweight insulating concrete fill complying with specifications in Section 3.14 of this report. Where required, positive venting of the HSB-30 and HSB-36 deck panel must be accomplished through use of vent tabs in the interior bottom flanges of the deck panel, spaced approximately 6 inches (152 mm) on center. Allowable diaphragm shear values are in Table 30.

3.12 Hilti Fasteners:

Hilti X-EDN19-THQ12 or X-EDNK22-THQ12 power-driven fasteners are described in ICC-ES evaluation report ESR-2197, and have a dome-style head and a $^{15}/_{32}$-inch-diameter (11.8 mm) steel flat washer and a steel top-hat washer. The X-EDN19-THQ12 fastener has a brass-colored top-hat washer, and the X-EDNK22-THQ12 fastener has a silver-colored top-hat washer. The Hilti fasteners have an electroplated zinc coating conforming to ASTM B633-07, SC 1 Type III.

3.13 Pneutek Fasteners:

Pneutek SDK61075, SDK63075, K64062, K66062, or K66075 fasteners have $^{1}/_{2}$-inch-diameter (12.7 mm) heads. The fasteners have a mechanical zinc + yellow chromate coating conforming to ASTM B695, Class 5, Type II.

3.14 Lightweight Insulating Concrete Fill:

Lightweight insulating concrete fill must be a minimum of 2 inches (51 mm) in depth above the top flute, and must conform to the following specifications:

1. Aggregate must comply as a Group I aggregate in accordance with ASTM C332.
2. One-to-six mix by volume of portland cement to aggregate.
3. The lightweight insulating concrete must have an oven-dry weight of 25 to 30 pounds per cubic foot (400 to 480 kg/m^3).
4. The lightweight insulating concrete must be tested for compressive strength in accordance with ASTM C495, and must have a 3-inch-diameter-by-6-inch-high (76 mm by 152 mm) cylinder, 28-day compressive strength of at least 140 pounds per square inch (965 kPa).

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General: The accompanying set of tables and figures, dated March 1, 2011, is part of this report. Section properties and minimum design base-metal thicknesses are shown in Table 4 and deck profiles are shown in Figure 3. Allowable reactions based on web crippling are shown in Table 5, and are applicable to bare deck panels, and to concrete-filled composite deck panels during the construction phase only, prior to the concrete achieving the minimum specified compressive strength. Tables 8 through 33 describe allowable diaphragm shear values for each roof and composite deck panel type and superimposed loads for each composite deck panel type. The General Notes preceding the tables provide additional information.

Allowable tension for connections using arc spot welds must be determined in accordance with Section E2.2.2 of AISI-NAS.

Design of steel deck panels used as a diaphragm must include the following considerations:

1. Diaphragm classification (flexible or rigid) must comply with IBC Section 1602; the diaphragm deflection (Δ) must be calculated using the equations noted in the Diaphragm Flexibility Limitations Table (Table 7).
2. Diaphragm flexibility limitations must comply with Table 7.
3. Diaphragm deflection limits must comply with ASCE 7 Sections 12.10.1 and 12.12.2.
4. Horizontal shears must be distributed in accordance with ASCE 7 Section 12.8.4, 12.9.5 or 12.14.8.3.

4.1.2 Concrete Diaphragms with Shear Connector Studs: Allowable diaphragm shears for concrete diaphragms with shear connector studs and deck panel Types PLB, B, PLB-CD, BCD, BR, PLN, N, PLN-CD, NCD, W2, PLW2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, W3CD FORMLOK, and $1^5/_{16}$ (Deep) Vercor are shown in Table 14 and Figure 6.

4.1.3 PunchLok® System: Allowable diaphragm shears and flexibility factors for PLW2 and PLW3 FORMLOK deck panels without structural concrete fill and with sidelaps connected with the VSC connections are shown in Tables 15 and 17.

Allowable diaphragm shears and flexibility factors for PLB and PLN roof or FORMLOK deck panels without structural concrete fill, using sidelaps connected with the VSC connections, are shown in Tables 19 and 24. The ends of the PLB and PLN deck panels must be lapped a minimum of 2 inches (51 mm).

4.1.4 PLB™-36 Deck Panel with the PunchLok® System Fastened with Hilti Fasteners: Allowable diaphragm shears and flexibility factors for PLB-36 roof deck panels fastened to supports with the Hilti fasteners described in Section 3.12, with sidelaps connected with the VSC connections, are shown in Table 27. The appropriate Hilti fastener must be selected based on the actual substrate thickness as noted in the table headings. Allowable tension loads for the steel deck panel-to-support connections using the Hilti fasteners are shown in Table 2.

4.1.5 PLB™-36 Deck Panel with the PunchLok® System Fastened with Pneutek Fasteners: Table 28 shows allowable diaphragm shears and flexibility factors for PLB-36 roof deck panels fastened to supports with the Pneutek fasteners described in Section 3.13, with sidelaps connected with the VSC connections described in Section 3.8. The appropriate Pneutek fastener must be selected based on the actual support substrate thickness as noted in the table headings. Allowable tension loads for the steel deck panel-to-support connections using Pneutek fasteners are shown in Table 3.

4.1.6 SHEARTRANZ® System: Allowable diaphragm shears and flexibility factors for ShearTranz with HSB-30 or HSB-36 deck panels, with button-punched or top seam welded sidelaps, are shown in Table 23. Allowable diaphragm shears and flexibility factors for ShearTranz with N-24 deck panels with top seam welded sidelaps are shown in Table 26.

4.1.7 SHEARTRANZ® II System: Allowable diaphragm shears and flexibility factors for ShearTranz II-42 with PLB-36 deck panels, with sidelaps connected with the VSC connection, are shown in Table 21. Allowable diaphragm shears and flexibility factors for ShearTranz II with HSB-36 deck panels with button-punched or top seam welded sidelaps are shown in Table 22.

4.2 Installation:

4.2.1 General: Deck panels must be installed at locations in accordance with the plans and specifications approved by the code official. Arc seam or arc spot (puddle) welds for field assembly of steel decking must have an effective fusion area of at least $^3/_8$ inch by 1 inch (9.5 mm by 25 mm) or ½ inch (12.7 mm) in diameter, respectively. Where arc spot welds and shear studs coincide, the arc spot weld may be eliminated. Seam welds must be a minimum of $1^1/_2$ inches (38 mm) long. Minimum E60XX filler metal must be used. Other weld requirements must comply with AWS D1.3. Connections using the PunchLok system are described in Section 3.8.

4.2.2 PLB™-36 Deck Panel with the PunchLok® System Fastened with Hilti Fasteners: The PLB-36 deck panels must be fastened to the structural supports with the Hilti fasteners described in Section 3.12. Deck panel sidelaps must be connected with the VSC connections described in Section 3.8. The ends of the PLB-36 deck panels must be lapped a minimum of 2 inches (51 mm). Fasteners connecting the deck panels to structural steel supports must be centered not less than 1 inch (25 mm) from the ends of the deck panels. Proper penetration of the Hilti fasteners into structural supports is shown in Figure 9.

4.2.3 PLB™-36 Deck Panel with the PunchLok® System Fastened with Pneutek Fasteners: This system consists of PLB-36 deck panel fastened to the structural supports with Pneutek SDK61075, SDK63075, K64062, K66062 or K66075 fasteners described in Section 3.13. Deck panel sidelaps are connected with the VSC connections described in Section 3.8. The ends of the PLB-36 deck panel must be lapped a minimum of 2 inches (51 mm) over structural supports. Fasteners connecting the deck panel to the structural supports must be centered not less than 1 inch (25 mm) from the ends of the panels. Fasteners must be driven such that there is tight contact between the fastener head and the attached panels. See Figure 10.

4.2.4 SHEARTRANZ® System: The ShearTranz element is used only at shear collecting members perpendicular to the corrugations. All panel end laps at supports must be at least 2 inches (51 mm), with the panels fastened to supports with arc spot puddle welds, as required by design. See Tables 23 and 26, and Figure 8.

4.2.5 SHEARTRANZ® II System: The No. 14 gage ShearTranz II-42 units are used with PLB-36 deck panels, and the No. 16 gage ShearTranz II units are used with HSB-36 deck panels at shear collecting support elements perpendicular to the deck panel corrugations. No skewing of deck panel to collector supports is permitted. The conditions described below may also require the ShearTranz II-42 or ShearTranz II elements.

The first condition occurs with deck panels cantilevered over deck panel supports. In this condition, the ShearTranz II-42 or ShearTranz II element must be installed as shown in Figure 7.

The second condition occurs when the deck panel ends abut at interior supports. In this condition, the top flanges of ShearTranz II-42 or ShearTranz II elements must be centered over the butt joints. Installation details are shown in Figure 7.

4.2.6 Concrete-filled Composite Deck Panels: These deck panels are of the same material and finish as described above, but with various depths of concrete as set forth in the accompanying tables, and with web and flange embossments designated as FORMLOK. Concrete must consist of normal-weight rock or expanded shale aggregates and must have a minimum 28-day

compressive strength of 3,000 psi (20.7 MPa). The minimum concrete fill thickness is 2 inches (51 mm) above the top of the steel deck panel. The deck panel types used with concrete fill must be as follows:

1. Type PLB, B, PLB-CD, BCD, and BR FORMLOK deck panels.
2. Type PLN, N, PLN-CD, and NCD FORMLOK deck panels.
3. Type PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, and W3CD FORMLOK deck panels.

4.3 Fire-resistance-rated Assemblies:

4.3.1 Restrained Fire-resistance-rated Assemblies:

4.3.1.1 Conditions of Restraint: Interior spans of continuous composite slabs may be considered thermally restrained. Perimeter spans are considered unrestrained unless restraint is substantiated by the registered design professional and approved by the code official. Appendix X3 of ASTM E119 or ACI 216.1 may be referenced as guidance on other possible restraint conditions at both exterior spans and discontinuities within fire-resistance-rated construction, subject to the approval of the code official.

4.3.1.2 Two-hour Fire-resistance-rated Roof Assembly: The PLB, B, PLN, N, PLW2, W2, $1^5/_{16}$-inch (Deep) Vercor and $1^5/_{16}$-inch (Deep) Vercor Ventlok deck panels used for a two-hour fire-resistance-rated roof assembly, with exposed soffit, are subject to the following conditions:

1. The fill type, thickness and construction must be as set forth in IBC Table 720.1(3).
2. The maximum clear span for No. 26 gage deck panels must be limited to 6 feet, 8 inches (2032 mm), and for heavier gage deck panels to 8 feet, 6 inches (2590 mm).
3. The deck panels must be attached to supporting structural elements as set forth in the tables accompanying this report.

4.3.1.3 Two-hour Fire-resistance-rated Roof or Floor Assembly: The PLB, B, PLB-CD, BCD, BR, PLN, N, PLN-CD, NCD, PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD and W3CD FORMLOK deck panels, when used with a structural concrete fill, have a two-hour fire-resistance rating with exposed underside when used as either a roof or floor, provided:

1. The maximum clear spans for concrete-filled PLB, B, PLB-CD, BCD and BR FORMLOK panels are limited to 12 feet (3658 mm), while the maximum spans for PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, W3CD, PLN, N, PLN-CD, and NCD, FORMLOK panels are limited to 13 feet, 2 inches (4013 mm).
2. The minimum steel panel gage must be No. 22 as shown in Table 4 for the corresponding deck panel.
3. No electrical raceways are placed in the concrete fill.
4. The minimum deck panel attachments are as follows:
   a. All welds at each support must be $^1/_2$-inch (12.7 mm) effective diameter arc spot (puddle) welds as required for diaphragm shears, but there must be at least four welds for 30- and 36-inch-wide (762 and 914 mm) PLB, B, PLB-CD, BCD, and BR FORMLOK panels; three welds for 24-inch-wide (610 mm) deck panels; and one in each valley for PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, and W3CD FORMLOK deck panels. Where arc spot welds and shear studs coincide, the arc spot weld may be eliminated.
   b. Attachment to chords or struts must be welds as required for diaphragm shear with concrete fill.
   c. Sidelaps (seams) must be button punched or welded at 3 feet (914 mm) on center, maximum. Sidelaps of PLB, PLN, PLW2, PLW3, PLB-CD, PLN-CD, PLW2-CD, and PLW3-CD FORMLOK deck panels are permitted to be connected with the VSC connections described in Section 3.8 at 3 feet (914 mm) on center, maximum. For BR FORMLOK deck panels, a $1^1/_2$-inch (38 mm) seam weld is used at 3 feet (914 mm) on center, maximum.
5. The concrete fill thickness above the deck panel top flange must be either $3^1/_4$ inches (82 mm) for structural sand-lightweight concrete having a unit weight of 110 pounds per cubic foot (1762 kg/m^3) and a 28-day compressive strength of 3,000 psi (20.7 MPa); or $4^1/_2$ inches (114 mm) for normal-weight concrete having a unit weight of 150 pounds per cubic foot (2403 kg/m^3) and a 28-day compressive strength, $f'c$, of 3,500 psi (24.1 MPa).
6. The concrete fill must be reinforced with minimum 6-by-6, W1.4-by-W1.4 welded-wire fabric, placed near the center of the concrete fill.

4.3.2 Additional Fire-resistance-rated Assemblies: The following are additional restrained fire-resistance-rated assemblies for Types PLB, B, PLB-CD, BCD, BR, PLN, N, PLN-CD, NCD, PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD and W3CD FORMLOK deck panels:

a. One-hour rating with $2^1/_2$ inches (63.5 mm) of 3,000 psi (20.7 MPa) structural sand-lightweight [110 pcf (1762 kg/m^3)] concrete, or $3^1/_2$ inches (89 mm) of 3,500 psi (24.1 MPa) normal-weight [150 pcf (2403 kg/m^3)] concrete over top flange of the deck panel.

b. Three-hour rating with $4^1/_4$ inches (108 mm) of 3,000 psi (20.7 MPa) structural sand-lightweight [110 pcf (1762 kg/m^3)] concrete over top flange of the deck panel.

4.3.3 Unrestrained Fire-resistance-rated Assemblies:

4.3.3.1 Assemblies with PLB, B, PLB-CD, BCD, BR, PLN, N, PLN-CD, NCD, PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, and W3CD FORMLOK Deck Panels: The roof and floor assemblies with these structural concrete filled deck panels have a fire-resistive rating with the panel exposed on the underside, provided:

1. The minimum steel panel gage must be No. 22 as shown in Table 4 for the corresponding deck panel.
2. Deck panels must be attached as follows:
   a. All welds at supports must be $^1/_2$-inch (12.7 mm) effective diameter arc spot (puddle) welds as required for diaphragm shears, but there must be at least four welds for 30- and 36-inch-wide (762 and 914 mm) PLB, B, PLB-CD, BCD and BR FORMLOK deck panels; three welds for 24-inch-wide (610 mm) decks; and one in each valley for PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD and W3CD FORMLOK deck panels.
   b. Attachment to chords or struts must be welds as required for deck panels with concrete fill to resist the diaphragm shear.
   c. Sidelaps (seams) must be button punched or welded at 3 feet (914 mm) on center, maximum. Sidelaps of PLB, PLN, PLW2, PLW3, PLB-CD, PLN-CD, PLW2-CD, and PLW3-CD FORMLOK deck panels must be connected with the VSC connections described in Section 3.8 at 3 feet (914 mm) on center, maximum. For BR FORMLOK deck panels, $1^1/_2$-inch (38 mm) seam welds at 3 feet (914 mm) on center, maximum, must be used.

3. The concrete fill must be structural sand-lightweight concrete with expanded shale or slate aggregate and 4 to 7 percent entrained air. The unit weight of the concrete must be 110 pounds per cubic foot (1,762 kg/m^3), with a minimum 28-day compressive strength, $f'c$, of 3,000 psi (20.7 MPa). The thickness above the top flange of the deck panel must be $3^1/_4$ inches (82 mm).
4. The unrestrained assembly is assigned the same fire resistive rating as the fire-resistive rating of the supporting steel beams, or a lesser rating.

4.3.3.2 Assemblies with Fireproofing Spray-applied to Deck: Fire-resistance-rated assemblies with fireproofing material spray-applied to the underside of galvanized deck panels are described in current ICC-ES evaluation reports ESR-1649 and ESR-1186. Fire-resistance-rated assemblies with fireproofing material spray-applied to the underside of phosphatized/painted or painted/painted B, BR, PLB, N, PLN, W2, PLW2, W3 and PLW3 deck panels are described for MK-6 (ICC-ES evaluation report ESR-1186) and DC/F or CAFCO 300 (ICC-ES evaluation report ESR-1649) fireproofing materials.

4.4 Special Inspection:

4.4.1 Concrete: Continuous special inspection for concrete and concrete reinforcement must be in accordance with IBC Section 1704.4. The inspector's duties include sampling and testing, and verification of concrete mixes, reinforcement types and placement, and concrete placement.

4.4.2 Jobsite Welding: Continuous special inspection for welding must be in accordance IBC Section 1704.3. Prior to proceeding, the welder must demonstrate his ability to produce the prescribed weld to the special inspector's satisfaction. The inspector's other duties include verification of materials, weld preparation, welding procedures and welding processes.

4.4.3 Periodic Special Inspections: Periodic special inspections in accordance with IBC Section 1707.4 are required where the steel deck panel systems are used as part of a seismic-force-resisting system in structures assigned to Seismic Design Category C, D, E, or F. Periodic special inspections apply to connections such as screws, power actuated fasteners, Verco PunchLok system side seam connections, and button punches. Periodic special inspections also apply where noted in IBC Tables 1704.3 and 1704.4.

4.4.4 Continuous Special Inspections: Continuous special inspections must be provided where noted in IBC Tables 1704.3 and 1704.4.

4.4.5 Statement of Special Inspections: A statement of special inspections must be prepared by the registered design professional in charge and submitted to the code official as set forth in IBC Section 1705. The statement must include the inspector's duties noted in this section (Section 4.4).

5.0 CONDITIONS OF USE

The Verco steel deck panels described in this report comply with, or are suitable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

5.1 The decks panels are manufactured, identified and installed in accordance with this report, the accompanying tables and figures dated March 1, 2011, and Verco's published installation instructions. If there is a conflict between Verco's published installation instructions and this report with its accompanying tables and figures, this report governs.

5.2 Vertical load design of deck panels, without concrete fill, must be based on section properties shown in Tables 4 and 6 and reaction loads shown in Table 5.

5.3 Where the panels are used as diaphragms:

5.3.1 The one-third stress increase permitted for Allowable Stress Design, for load combinations in IBC Section 1605.3.2 including wind or seismic forces, shall not be used for shear values in the diaphragm tables.

5.3.2 Allowable shear values are as set forth in the tables accompanying this report for the type of deck panel involved.

5.3.3 Diaphragm deflections shall not exceed the permitted relative deflections of walls between the diaphragm level and the floor below. Section 4.1 and the flexibility limitations shown in Table 7 may be used as a guide in lieu of rational analysis of the anticipated deflections.

5.3.4 Diaphragms may be zoned by varying deck gage and/or connections across a diaphragm to meet varying shear and stiffness (flexibility) demands.

5.4 Concrete-filled composite sections must not be used to support loads that are predominantly vibratory.

5.5 Fire-resistance-rated assemblies are as described in Section 4.3 of this report or as set forth in IBC Table 720.1(3), provided the fill type, thickness, metal gage, and construction are as specified therein.

5.6 When the steel deck panels are used as roof decks, the panels must be covered with an approved code-complying roof covering.

5.7 Special inspection must be provided in accordance with Section 4.4.

5.8 Calculations and details demonstrating that the loads applied to the deck panels comply with this report must be submitted to the code official for approval. Calculations and drawings must be prepared, signed and sealed by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.9 The cellular deck panels are manufactured in Antioch, California, under a quality program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Steel Deck Roof and Floor Systems (AC43), dated February 2008 (editorially revised April 2008).

7.0 IDENTIFICATION

Each bundle of deck panels is marked with the Verco Decking, Inc., name, the deck panel type, the minimum base-metal thickness (uncoated), the minimum specified yield strength, and the evaluation report number (ICC-ES ESR-1735P). The cellular deck panel labeling also includes the manufacturing location (Antioch, California). SHEARTRANZ® pieces are stamped with the product name (SHEARTRANZ®, SHEARTRANZ® II or SHEARTRANZ® II-42). All bundles of SHEARTRANZ® pieces also are labeled with the Verco Decking, Inc., name and the evaluation report number (ICC-ES ESR-1735P). Hilti fasteners are identified as described in accordance with ESR-2197.

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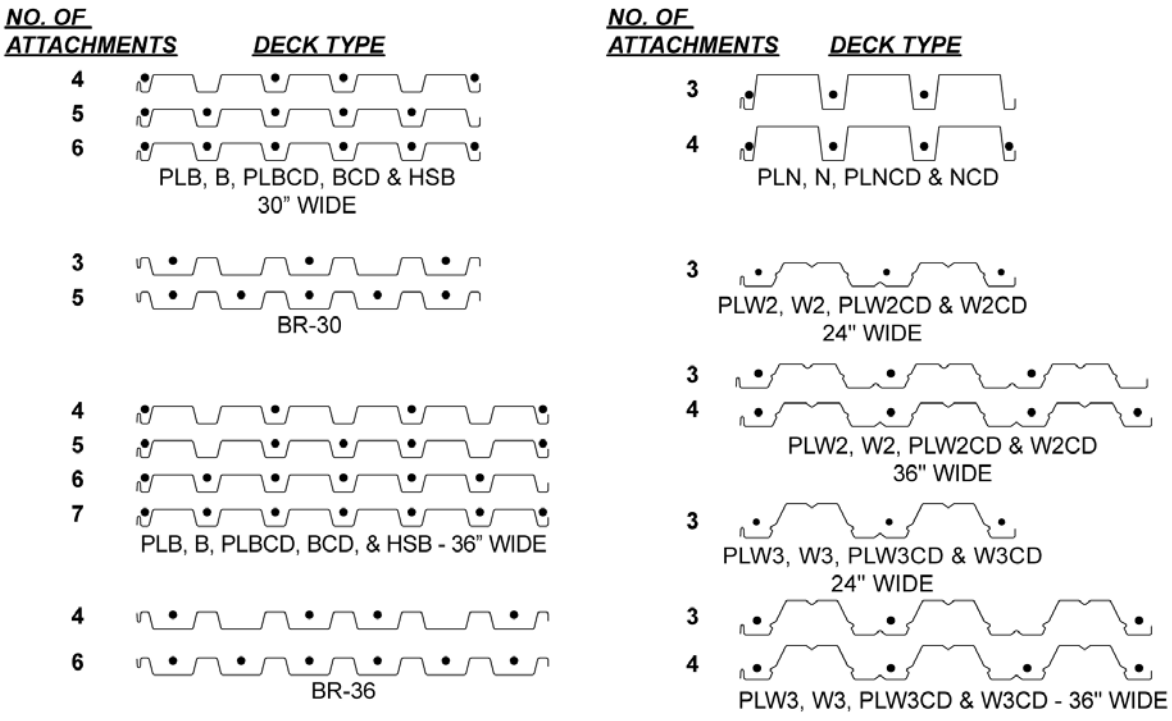
General Notes

The following notes apply to all tables in this report unless otherwise noted:

1. The allowable values for composite decks shown in the tables are applicable to either phosphatized/painted or galvanized decks, and the allowable values shown for roof decks are applicable to either painted, mill-finished, or galvanized decks unless specifically noted.
2. The allowable diaphragm shears listed in the tables are in pounds per linear foot.
3. The base-metal thickness for all decks is indicated in Tables 4 and 6. Thickness tolerances for all decks and SHEARTRANZ elements shall comply with Section A2.4 of the AISI NASPEC.
4. Deck panel side seams (sidelaps) may be connected with the Verco PunchLok® VSC connections, welds, or button punches, as indicated in the evaluation report. The length of seam welds shall be a minimum of 1½ inches (38 mm). The side seam, where required, shall be fastened at 3 feet (914 mm) on center, maximum. Deck panel side seams may be fastened with self-tapping, self-drilling steel screws in place of button punches without affecting the shear and flexibility factors, under the following conditions:
   a. The screw size is minimum No. 10, with a minimum ¾-inch (19.1 mm) length.
   b. The screw spacing is identical to the tabulated button punch spacing.
   c. The deck material thickness is at least No. 22 gage (0.0276 inch base-metal thickness).
5. Arc seam or arc spot (puddle) welds shall have an effective fusion area to supporting members at least equivalent to ½ inch (12.7 mm) in diameter or ⅜ inch (9.5 mm) wide by 1 inch (25 mm) long.
6. Perpendicular support attachment patterns for the Types PLB, B, PLB-CD, BCD, BR, HSB, PLN, N, PLN-CD, NCD, PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, and W3CD are shown in Figure 1. See Tables 31 and 32 for 1-5/16-inch (Deep) Vercor and 1-5/16-inch (Deep) Vercor Ventlok deck end welds. See Figure 7 for SHEARTRANZ II-42 and SHEARTRANZ II, Figure 8 for SHEARTRANZ and System 80, and Figure 11 for 1-5/16-inch (Deep) Vercor fastened with screws.

FIGURE 1– ATTACHMENT PATTERNS



7. Spacing of attachments to collector elements parallel to flutes:
   a. Arc spot puddle welds to members such as chords and to collector elements such as struts or ties shall have a spacing in feet (mm) equal to 35,000(t) ÷ v [For **SI:** 6,130(t) ÷ v],

   where:
   t = Uncoated steel thickness of fluted deck, in inches (mm).
   v = Actual diaphragm shear at boundary supports or actual shear transferred to collector (at struts or ties),

in pounds per foot (N/mm). Allowable diaphragm shear values in pounds per foot are set forth in Table 1.

b. Fillet welds are permitted to be used to attach the diaphragm to parallel members such as diaphragm chords, struts, ties, or other collector elements. Allowable capacity of fillet welds is determined in accordance with Section 2.2.2 of AWS D1.3. Spacing of the welds shall be based on the actual shear to be transferred.

c. The spacing of Hilti fasteners at collectors parallel to deck flutes shall be the same as the spacing of the sidelap connections provided the collector steel member parallel to deck flutes has the thickness as noted in the table for the panel supports. If the required shear transfer between the deck and an interior collector element parallel to the deck flutes exceeds the shear strength of the diaphragm, two Hilti fasteners shall be spaced the same as the side seam fasteners.

d. The spacing of Pneutek fasteners at collectors parallel to deck flutes shall be the same as the spacing of the sidelap connections provided the collector steel member parallel to deck flutes has the thickness as noted in the table for the panel supports. If the required shear transfer between the deck and an interior collector element parallel to the deck flutes exceeds the shear strength of the diaphragm, two Pneutek fasteners shall be spaced the same as the side seam fasteners.

e. The attachment spacing is 3 feet (914 mm), maximum.

8. For attachments at interior lines of shear transfer perpendicular to deck corrugations: The shear transfer from a diaphragm to interior tie or strut lines perpendicular to deck corrugations shall not exceed the shear values indicated in the tables. Two lines of connections of the type appropriate to the table (welds, pins, SHEARTRANZ II-42, SHEARTRANZ II, or SHEARTRANZ) may be used to develop the actual shear transfer to these collector elements.

9. Where individual panels are cut, the partial panel shall be fastened in a manner to fully transfer the shears at the point of the diaphragm to the adjacent full panels for the values specified in the tables.

10. The minimum 28-day compressive strength for structural concrete shall be 3,000 psi (20.7 MPa), and unit weight shall be as indicated in the tables. The minimum depth of concrete shall be 2 inches (51 mm) over the top flange, and it is reinforced with a minimum 6-by-6, W1.4-by-W1.4 welded-wire fabric. The reinforcement shall be placed near the center of the fill over the top flange. Where concrete fill depth exceeds 3¼ inches (82 mm), welded-wire fabric with an area equal to 0.00075 times the area of concrete fill over the metal deck, is required.

11. All decks with structural concrete fill may be considered rigid diaphragms (F<1). Table 7 describes flexibility categories.

12. For decks with structural concrete fill, the diaphragm shear values and flexibility factors apply to deck sections with or without embossments.

13. For decks with structural concrete fill, the diaphragm shear values and flexibility factors apply whether or not the sidelaps are attached.

14. For **SI** dimensions, the following conversions apply:
1 inch = 25.4 mm; 1 lbf/ft = 14.6 N/m = 0.0146 N/mm; 1 in^2 = 645.16 mm^2; 1 in^3 = 16,387.06 mm^3; 1 in^4 = 416,231.4 mm^4; 1 psi = 6.89 kPa; 1 ft = 304.8 mm; 1 pcf = 16.018 kg/m^3; 1 psf = 0.0479 kN/m^2; 1 lbf = 4.45 N.

FIGURE 2–VERCO SIDELAP CONNECTION (VERCO PUNCHLOK® SYSTEM)

① Sheared surface of male leg.
② Sheared surface of female leg.
③ Male leg / sheet.
④ Female leg / sheet.
⑤ PunchLok® system connection - as shown, deformation of male & female sheets projects towards female sheet, but VSC may be made in either direction.

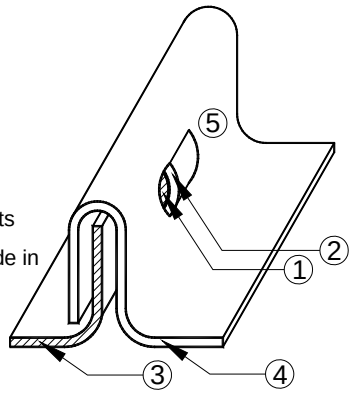


TABLE 1–ALLOWABLE DIAPHRAGM SHEAR VALUES (plf) FOR ARC SPOT OR ARC SEAM WELDS PARALLEL TO DECK FLUTES FOR ALL DECKS EXCEPT VERCOR [1,2,3,4,5]

GAGE	PROFILE	BASE METAL THICKNESS (in.)	PUDDLE WELD SPACING (in.)			
			6	9	12	18
22	PLW3 & W3 FORMLOK	0.029	2030	1353	1015	677
	B & N	0.0299	2093	1395	1047	698
	PLW2 & W2 FORMLOK	0.03	2100	1400	1050	700
21	PLW2, W2 , PLW3, & W3 FORMLOK	0.033	2310	1540	1155	770
20	PLW3 & W3 FORMLOK	0.035	2450	1633	1225	817
	B & N	0.0359	2513	1675	1257	838
	PLW2 & W2 FORMLOK	0.036	2520	1680	1260	840
19	PLW2, W2 , PLW3, & W3 FORMLOK	0.042	2940	1960	1470	980
18	PLW2, W2 , PLW3, & W3 FORMLOK	0.047	3290	2193	1645	1097
	B & N	0.0478	3346	2231	1673	1115
16	PLW2, W2 , PLW3, & W3 FORMLOK	0.059	4130	2753	2065	1377
	B & N	0.0598	4186	2791	2093	1395

1 "B" - PLB, HSB, PLB & HSB Acoustical, and PLB & B Formlok
"N" - PLN, N, PLN & N Acoustical, and PLN & N-Formlok
2 See General Note No. 7.a to determine shear values for other weld spacings.
3 The minimum arc spot weld effective fusion diameter, d_e, is 1/2 inch. The minimum arc seam weld effective fusion width, d_e, is 3/8 inch. The minimum arc seam weld length is 1 inch excluding circular ends. See AWS D 1.3 for details.
4 Details, workmanship technique and qualification of welds must comply with AWS D 1.3.
5 Allowable values may not be increased one-third for wind or earthquake loading.

TABLE 2–ALLOWABLE TENSION LOADS (lb) FOR HILTI FASTENERS SUBJECT TO WIND UPLIFT FORCES FOR B AND N DECK [1,2]

SUBSTRATE THICKNESS (in.)	HILTI FASTENER DESIGNATION	ALLOWABLE TENSION LOADS (lb)			
		DECK GAGE & THICKNESS (in.)			
		22 0.0299	20 0.0359	18 0.0478	16 0.0598
0.313 to 3/8	X-EDN19-THQ12	382	459	519	519
0.250 to 0.313	X-EDN19-THQ12	382	426	426	426
0.188 to 0.250	X-EDNK22-THQ12	382	459	502	502
1/8 to 0.188	X-EDNK22-THQ12	382	396	396	396

1 "B" - PLB, HSB, PLB & HSB Acoustical, and PLB & B Formlok
"N" - PLN, N, PLN & N Acoustical, and PLN & N–Formlok
2 Allowable tension loads are the lesser value of the allowable pullover or pullout loads for the deck gage, fastener, and substrate thickness combination.

TABLE 3-ALLOWABLE TENSION LOADS (lb) FOR PNEUTEK FASTENERS SUBJECT TO WIND UPLIFT FORCES FOR B AND N DECK [1,2]

SUBSTRATE THICKNESS (in.)	PNEUTEK FASTENER DESIGNATION	ALLOWABLE TENSION LOADS (lb)			
		DECK GAGE & THICKNESS (in.)			
		22 0.0299	20 0.0359	18 0.0478	16 0.0598
0.281 and thicker	K66062 or K66075	411	494	657	818
0.187 to 0.312	K64062	411	494	657	671
0.155 to 0.250	SDK63075	411	470	470	470
0.113 to 0.155	SDK61075	373	373	373	373

1 B" - PLB, HSB, PLB & HSB Acoustical, and PLB & B Formlok
"N" - PLN, N, PLN & N Acoustical, and PLN & N-Formlok
2 Allowable tension loads are the lesser value of the allowable pullover or pullout loads for the deck gage, fastener, and substrate thickness combination.

TABLE 4–SECTION PROPERTIES AND ALLOWABLE MOMENTS (Per Foot of Width)

DECK TYPE	GAGE	BASE METAL THICKNESS (in.)	I_d FOR DEFLECTION[1] ($in.^4$/ft)	POSITIVE MOMENT[2]		NEGATIVE MOMENT[2]	
				+S ($in.^3$/ft)	+M (in.-kips/ft)	-S ($in.^3$/ft)	-M (in.-kips/ft)
9/16" (SHALLOW) VERCOR[3]	26	0.0179	0.013	0.042	1.3	0.044	1.3
	24	0.0239	0.017	0.059	1.8	0.059	1.8
	22	0.0299	0.023	0.074	2.2	0.074	2.2
1-5/16" (DEEP) VERCOR[4]	26	0.0195	0.073	0.099	3.6	0.103	3.7
	24	0.0254	0.098	0.138	5.0	0.140	5.0
	22	0.0314	0.123	0.175	6.3	0.174	6.3
	20	0.0374	0.143	0.207	7.4	0.206	7.4
PLB, HSB, PLB & B FORMLOK, PLB & HSB ACOUSTICAL[5,6]	22	0.0299	0.175	0.187	4.3	0.198	4.5
	20	0.0359	0.216	0.235	5.3	0.248	5.6
	18	0.0478	0.302	0.322	7.3	0.335	7.6
	16	0.0598	0.377	0.411	9.4	0.417	9.5
PLN, N & N FORMLOK, and PLN & N ACOUSTICAL[5,7]	22	0.0299	0.737	0.361	8.2	0.446	10.1
	20	0.0359	0.917	0.466	10.6	0.548	12.5
	18	0.0478	1.283	0.664	15.1	0.737	16.8
	16	0.0598	1.655	0.851	19.4	0.914	20.8
PLW2 & W2 FORMLOK [5]	22	0.030	0.340	0.283	6.4	0.287	6.5
	21	0.033	0.382	0.321	7.3	0.328	7.5
	20	0.036	0.423	0.361	8.2	0.370	8.4
	19	0.042	0.508	0.442	10.1	0.453	10.3
	18	0.047	0.555	0.510	11.6	0.511	11.6
	16	0.059	0.694	0.639	14.5	0.639	14.5
PLW3 & W3 FORMLOK [5]	22	0.029	0.718	0.418	9.5	0.444	10.1
	21	0.033	0.837	0.495	11.3	0.531	12.1
	20	0.035	0.896	0.534	12.2	0.564	12.8
	19	0.042	1.075	0.674	15.3	0.683	15.5
	18	0.047	1.203	0.767	17.5	0.767	17.5
	16	0.059	1.509	0.960	21.8	0.960	21.8

[1] Value based on lesser value of I_d's for normal position and inverted position.

[2] S (+ or -) is the effective section modulus. M (+ or -) is the ASD allowable moment, $M=M_n/\Omega_b$, where $\Omega_b=1.67$ and M_n is nominal flexural strength.

[3] Values based on yield strength of 50,000 psi.

[4] Values based on yield strength of 60,000 psi (specified strength of 80,000 psi).

[5] Values based on yield strength of 38,000 psi.

[6] Multiply tabulated section properties by a factor of 0.97 to obtain acoustical deck section properties.

[7] Multiply tabulated section properties by a factor of 0.93 to obtain acoustical deck section properties.

FIGURE 3–DECK PROFILES

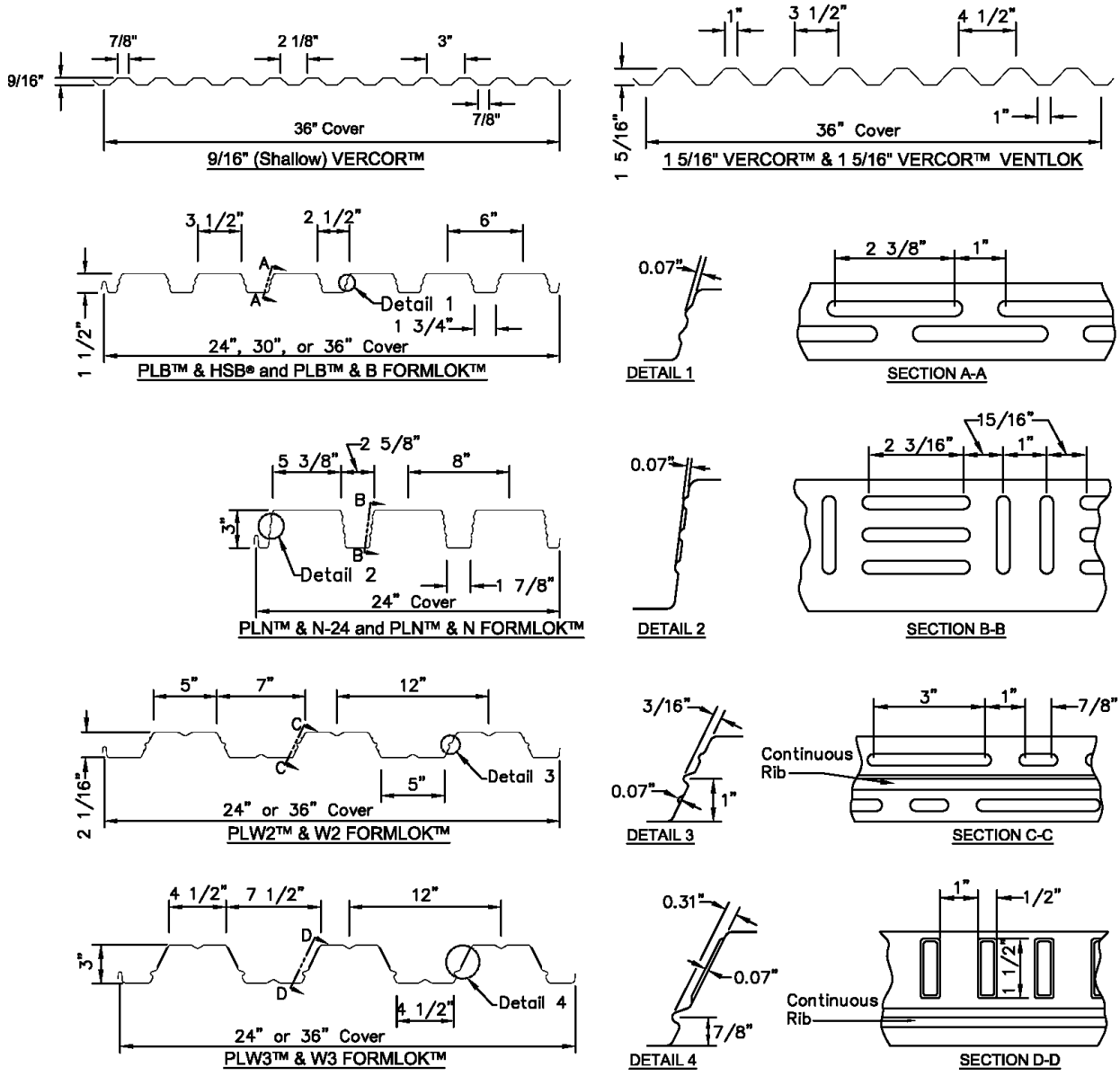


FIGURE 4–ACOUSTICAL DECK

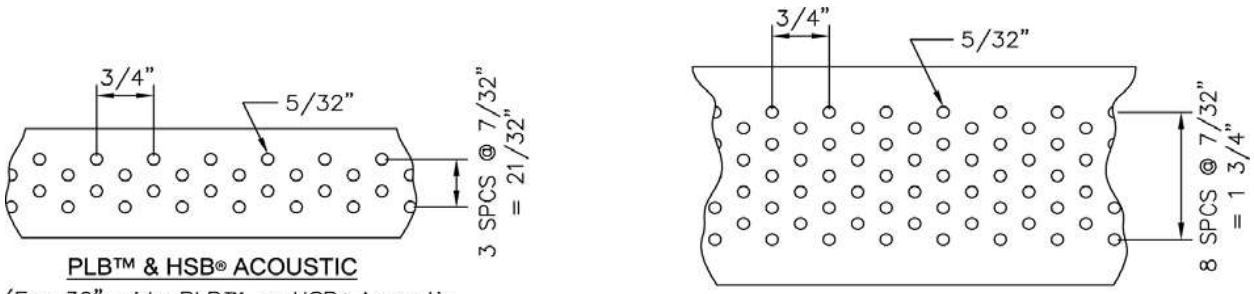


TABLE 5–ALLOWABLE REACTIONS BASED ON WEB CRIPPLING (Pounds Per Foot of Deck Width) [2,3,4]

		END REACTION			INTERIOR REACTION				END REACTION			INTERIOR REACTION	
		LENGTH OF BEARING							LENGTH OF BEARING				
	GAGE	1½"	2"		1½"	2"		GAGE	2"	3"	4"	3"	4"
9/16" (SHALLOW) VERCOR	26	488	541		661	723	B[1]	22	710	818	884	1185	1270
	24	824	909		1155	1258		20	990	1135	1223	1665	1779
	22	1236	1358		1773	1922		18	1662	1893	2028	2829	3004
		2"	**3"**	**4"**	**3"**	**4"**		16	2492	2824	3010	4278	4519
1-5/16" (DEEP) VERCOR	26	499	579	647	838	926			**2"**	**3"**	**4"**	**4"**	**5"**
	24	813	939	1045	1382	1521	N[1]	22	497	572	636	988	1065
	22	1200	1380	1532	2055	2254		20	700	802	889	1385	1490
	20	1653	1893	2095	2845	3111		18	1190	1355	1495	2345	2513
		2"	**3"**	**4"**	**4"**	**5"**		16	1799	2038	2239	3533	3775
W2[1]	22	313	361	400	602	650	W3[1]	22	275	316	352	558	602
	21	374	429	476	718	774		21	351	403	447	709	764
	20	438	503	557	843	907		20	392	449	498	791	851
	19	582	664	734	1119	1201		19	551	629	695	1106	1188
	18	715	814	898	1374	1473		18	679	773	853	1360	1458
	16	1082	1226	1348	2081	2224		16	1034	1172	1288	2061	2203

[1] "B"- PLB, HSB, PLB & HSB Acoustical, and PLB & B Formlok;
"N" - PLN, N, PLN & N Acoustical, and PLN & N Formlok;
"W2" - PLW2 & W2 Formlok
W3" - PLW3 & W3 Formlok

[2] Allowable reactions based on web crippling = P_n x number of webs per foot/Ω_w, where P_n is the normal web crippling strength and Ω_w = 1.70 for end reactions and 1.75 for interior reactions (one flange loading; fastened to supports).

[3] The allowable values are reactions (or concentrated loads) applied to bare deck and to composite decks during the construction phase only, prior to the concrete achieving the minimum specified compressive strength.

[4] Reactions for cellular deck shall be compared to allowable reactions based on the fluted top section. The allowable reactions may be multiplied by 1.05 for W3CD-FORMLOK with a 20 gage fluted top section.

FIGURE 5–CELLULAR DECK RESISTANCE WELD LOCATIONS

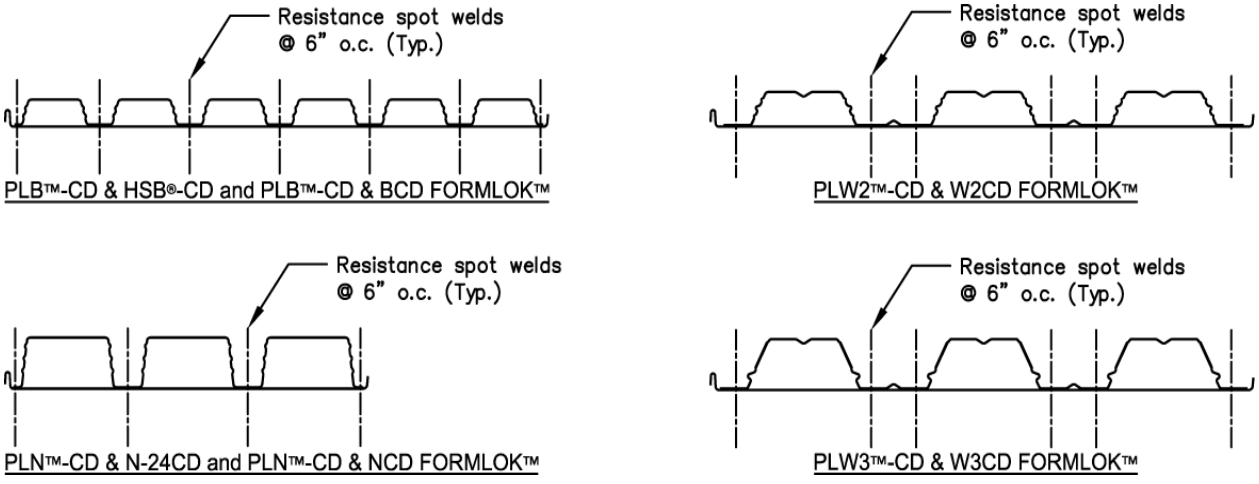


TABLE 6–CELLULAR DECK SECTION PROPERTIES, ALLOWABLE MOMENTS, AND ALLOWABLE SHEARS [6,7,8,9,10,11]

DECK TYPE	GAGE[3]	BASE METAL THICKNESS[3] (in.)	I_d FOR DEFLECTIONS[10]		POSITIVE MOMENT[4,10]		NEGATIVE MOMENT[4,10]		ALLOWABLE VERTICAL SHEAR[5,10]	
			SIMPLE SPAN (in.^{4}/ft)	MULTIPLE SPAN (in.^{4}/ft)	+S (in.^{3}/ft)	+M (in.-kips/ft)	-S (in.^{3}/ft)	-M (in.-kips/ft)	END V (lb/ft)	INTERIOR V (lb/ft)
BCD[1,2]	20/20	0.0359/0.0359	0.392	0.392	0.284	6.5	0.393	8.9	339	521
	20/18	0.0359/0.0478	0.428	0.430	0.292	6.6	0.413	9.4	318	395
	20/16	0.0359/0.0598	0.458	0.477	0.298	6.8	0.431	9.8	305	338
	18/20	0.0478/0.0359	0.510	0.510	0.430	9.8	0.472	10.7	368	607
	18/18	0.0478/0.0478	0.559	0.559	0.441	10.0	0.539	12.3	516	692
	18/16	0.0478/0.0598	0.600	0.600	0.450	10.3	0.562	12.8	489	571
	16/18	0.0598/0.0478	0.677	0.677	0.610	13.9	0.665	15.1	548	781
	16/16	0.0598/0.0598	0.729	0.729	0.622	14.2	0.693	15.8	716	874
NCD[1,2]	20/20	0.0359/0.0359	1.694	1.694	0.565	12.9	0.801	18.2	559	894
	20/18	0.0359/0.0478	1.855	1.912	0.562	12.8	0.985	22.4	521	704
	20/16	0.0359/0.0598	1.967	2.159	0.597	13.6	1.027	23.4	499	594
	18/20	0.0478/0.0359	2.209	2.209	0.847	19.3	0.969	22.1	608	1054
	18/18	0.0478/0.0478	2.421	2.421	0.868	19.8	1.183	26.9	850	1225
	18/16	0.0478/0.0598	2.599	2.626	0.885	20.1	1.335	30.4	805	1024
	16/18	0.0598/0.0478	2.965	2.965	1.194	27.2	1.345	30.6	906	1374
	16/16	0.0598/0.0598	3.193	3.193	1.218	27.6	1.606	36.5	1180	1578
W2CD[1,2]	20/20	0.036/0.0359	0.673	0.673	0.406	9.2	0.430	9.9	403	592
	20/18	0.036/0.0478	0.722	0.722	0.414	9.4	0.446	10.2	376	463
	20/16	0.036/0.0598	0.762	0.762	0.420	9.6	0.460	10.5	358	404
	18/20	0.047/0.0359	0.843	0.843	0.571	13.0	0.555	12.6	439	698
	18/18	0.047/0.0478	0.906	0.906	0.582	13.3	0.574	13.1	595	779
	18/16	0.047/0.0598	0.958	0.958	0.592	13.5	0.592	13.5	561	658
	16/18	0.059/0.0478	1.093	1.093	0.744	16.9	0.713	16.2	653	905
	16/16	0.059/0.0598	1.158	1.158	0.756	17.2	0.735	16.7	830	1013
W3CD[1,2]	20/20	0.036/0.0359	1.460	1.460	0.632	14.4	0.626	14.3	571	849
	20/18	0.036/0.0478	1.548	1.548	0.643	14.6	0.651	14.8	530	660
	20/16	0.036/0.0598	1.620	1.620	0.644	14.7	0.671	15.3	503	572
	18/20	0.047/0.0359	1.793	1.793	0.863	19.6	0.810	18.4	624	1007
	18/18	0.047/0.0478	1.920	1.920	0.880	20.0	0.836	19.0	843	1117
	18/16	0.047/0.0598	2.027	2.027	0.894	20.4	0.863	19.6	792	938
	16/18	0.059/0.0478	2.310	2.310	1.091	24.8	1.038	23.6	929	1305
	16/16	0.059/0.0598	2.440	2.440	1.109	25.2	1.070	24.4	1177	1452

[1] "BCD" refers to PLB-CD & HSB-CD roof decks and PLB-CD & BCD FORMLOK composite decks.
"NCD" refers to PLN-CD & N24-CD roof decks and PLN-CD & NCD FORMLOK composite decks.
"W2CD" refers to PLW2-CD & W2-CD FORMLOK composite decks.
W3CD" refers to PLW3-CD & W3-CD FORMLOK composite decks.

[2] "AC" suffix indicates acoustical version.

[3] Gage "xx/yy shall be defined as: First Number (xx) is the gage (or thickness) of fluted top section. Second Number (yy) is the gage (or thickness) of the flat bottom section.

[4] S (+ or -) is the effective section modulus. M (+ or -) is the ASD allowable moment where $M=M_n/\Omega_b$, where $\Omega_b = 1.67$ and M_n is the nominal flexural strength.

[5] Vertical Shear is the ASD allowable vertical shear strength based on horizontal shear strength of the resistance welds, where $V = V_n/\Omega$, with $\Omega=2.35$.
"END" shear strength values are applicable adjacent to supports where deck is not continuous.
"INTERIOR" shear strength values are applicable adjacent to supports where deck is continuous.

[6] Reactions shall be compared to the allowable reactions due to web crippling as shown in Table 5, based on the gage of the fluted top section of the cellular deck.

[7] Superimposed load and diaphragm capacities for FORMLOK composite decks shown in Tables 8 and 11-13 for a given concrete type and thickness may be applied to composite cellular sections with a fluted top section of the same profile and gage, with or without acoustical perforations in the flat bottom section of the cellular deck.

[8] Diaphragm capacities and flexibility factors for roof decks shown in Tables 19-28 may be applied to cellular sections with a fluted top section of the same profile but with the gage of the flat bottom sheet, with or without acoustical perforations in the flat bottom section of the cellular deck.

[9] Cellular deck resistance weld locations are illustrated in Figure 5.

[10] Multiply tabulated section properties by the following factors to obtain cellular acoustical deck section properties:

DECK TYPE	I_d	POSITIVE MOMENT	NEGATIVE MOMENT	VERTICAL SHEAR	
				END	INTERIOR
BCD AC & NCD AC	0.92	0.99	0.86	1.03	1.19
W2CD AC & W3CD AC	0.95	0.95	0.95	1.03	1.17

[11] Values based on yield strength of 38,000 psi.

TABLE 7–DIAPHRAGM FLEXIBILITY LIMITATION [1,2,3,4,5,6]

		SPAN-DEPTH LIMITATION			
		ROTATION NOT CONSIDERED IN DIAPHRAGM		ROTATION CONSIDERED IN DIAPHRAGM	
F	MAXIMUM SPAN FOR MASONRY OR CONCRETE WALLS (in feet)	MASONRY OR CONCRETE WALLS	FLEXIBLE WALLS[3]	MASONRY OR CONCRETE WALLS	FLEXIBLE WALLS[3]
>150	Not used	Not used	2:1	Not used	1½:1
70-150	200	2:1 or as required for deflection	3:1	Not used	2:1
10-70	400	2½:1 or as required for deflection	4:1	As required for deflection	2½:1
1-10	No limitation	3:1 or as required for deflection	5:1	As required for deflection	3:1
<1	No Limitation	As required for deflection	No limitation	As required for deflection	3½:1

[1] Diaphragms must be investigated regarding their flexibility and recommended span-depth limitations.

[2] Diaphragms supporting masonry or concrete walls must have their deflections limited to the following amount:

$$\Delta_{wall} = \frac{H^2 f_c}{0.01 E t}$$

where:

H = Unsupported height of wall in feet.
t = Thickness of wall in inches.
E = Modulus of elasticity of wall material for deflection determination in pounds per square inch.
f_c = Allowable compression strength of wall material in flexure in pounds per square inch. For concrete, $f_c = 0.45\, f'_c$. For masonry, $f_c = F_b = 0.33\, f'_m$.

[3] The total deflection Δ of the diaphragm may be computed from the equation: $\Delta = \Delta_f + \Delta_w$

where:

Δ_f = Flexural deflection of the diaphragm determined in the same manner as the deflection of beams
Δ_w = The web deflection may be determined by the equation:

$$\Delta_w = \frac{q_{ave} L F}{10^6}$$

where:

L = Distance in feet between vertical resisting element (such as shear wall) and the point to which the deflection is to be determined.
q_{ave} = Average shear in diaphragm in pounds per foot over length L.
F = Flexibility factor: The average micro inches (μm) a diaphragm web will deflect in a span of 1 foot (m) under a shear of 1 pound per foot (N/m).

[4] When applying these limitations to cantilevered diaphragms, the allowable span-depth ratio will be half that shown.

[5] Diaphragm classification (flexible or rigid) and deflection limits must comply with the diaphragm design considerations described in Section 4.1.1 of this evaluation report.

[6] The flexibility limitation may be used as a guide in lieu of rational analysis of the anticipated deflections.

TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
3½" Normal Weight (145 pcf)	22	1	232	199	173	151	132	117	104	92	82	74	66
		2	261	228	202	151	132	117	104	92	82	74	66
		3	261	228	202	151	132	117	104	92	82	74	66
		q4	1825	1785	1755	1725	1700	1680	1660	1640	1625	1610	1600
		F4	0.45	0.46	0.47	0.48	0.48	0.49	0.50	0.50	0.51	0.51	0.52
		q7	2035	1980	1935	1895	1855	1825	1800	1775	1750	1730	1715
		F7	0.40	0.42	0.43	0.44	0.44	0.45	0.46	0.46	0.47	0.48	0.48
	20	1	275	240	183	160	141	124	110	98	88	79	71
		2	275	240	212	189	170	124	110	98	88	79	71
		3	275	240	212	189	170	124	110	98	88	79	71
		q4	1890	1845	1805	1775	1745	1715	1695	1670	1655	1635	1620
		F4	0.40	0.41	0.42	0.42	0.43	0.44	0.44	0.45	0.45	0.46	0.46
		q7	2145	2080	2020	1975	1930	1895	1860	1830	1805	1780	1760
		F7	0.35	0.36	0.37	0.38	0.39	0.40	0.40	0.41	0.42	0.42	0.43
	18	1	298	261	230	205	184	137	122	108	97	87	78
		2	298	261	230	205	184	167	152	108	97	87	78
		3	298	261	230	205	184	167	152	138	127	87	78
		q4	2045	1985	1930	1885	1845	1810	1780	1750	1725	1705	1685
		F4	0.32	0.33	0.34	0.35	0.35	0.36	0.37	0.37	0.38	0.38	0.39
		q7	2380	2295	2220	2155	2095	2050	2005	1965	1930	1895	1865
		F7	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.34	0.35
	16	1	298	260	230	205	184	166	151	108	96	86	78
		2	298	260	230	205	184	166	151	138	127	86	78
		3	298	260	230	205	184	166	151	138	127	117	108
		q4	2215	2140	2070	2015	1965	1920	1880	1845	1815	1785	1760
		F4	0.26	0.27	0.28	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.33
		q7	2635	2525	2430	2350	2280	2215	2160	2110	2065	2025	1990
		F7	0.22	0.23	0.24	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.29
4" Normal Weight (145 pcf)	22	1	269	231	200	175	153	135	120	107	95	85	76
		2	300	266	200	175	153	135	120	107	95	85	76
		3	300	266	200	175	153	135	120	107	95	85	76
		q4	2065	2025	1995	1965	1940	1915	1900	1880	1865	1850	1835
		F4	0.4	0.41	0.41	0.42	0.42	0.43	0.43	0.44	0.44	0.45	0.45
		q7	2275	2220	2170	2130	2095	2065	2035	2015	1990	1970	1950
		F7	0.36	0.37	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.42	0.42
	20	1	300	244	212	185	163	144	127	113	101	91	81
		2	300	279	247	220	163	144	127	113	101	91	81
		3	300	279	247	220	163	144	127	113	101	91	81
		q4	2130	2085	2045	2010	1980	1955	1930	1910	1890	1875	1860
		F4	0.35	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.40	0.40	0.40
		q7	2385	2315	2260	2215	2170	2135	2100	2070	2045	2020	1995
		F7	0.32	0.32	0.33	0.34	0.35	0.35	0.36	0.36	0.37	0.37	0.38

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(continued)

TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
4" Normal Weight (145 pcf)	18	1	300	300	266	237	178	157	140	125	112	100	90
		2	300	300	266	237	213	193	140	125	112	100	90
		3	300	300	266	237	213	193	175	160	112	100	90
		q4	2285	2225	2170	2125	2085	2050	2020	1990	1965	1945	1925
		F4	0.29	0.29	0.30	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.34
		q7	2620	2530	2460	2395	2335	2285	2240	2205	2165	2135	2105
		F7	0.25	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.31
	16	1	300	300	265	236	212	192	138	123	110	99	89
		2	300	300	265	236	212	192	174	159	110	99	89
		3	300	300	265	236	212	192	174	159	146	135	89
		q4	2455	2375	2310	2255	2205	2160	2120	2085	2055	2025	2000
		F4	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29
		q7	2870	2765	2670	2590	2520	2455	2400	2350	2305	2265	2230
		F7	0.20	0.21	0.22	0.22	0.23	0.24	0.24	0.25	0.25	0.26	0.26
4½" Normal Weight (145 pcf)	22	1	300	265	229	200	175	155	137	122	109	97	87
		2	300	300	229	200	175	155	137	122	109	97	87
		3	300	265	229	200	175	155	137	122	109	97	87
		q4	2305	2265	2230	2205	2180	2155	2135	2120	2105	2090	2075
		F4	0.36	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.39	0.40
		q7	2510	2460	2410	2370	2335	2305	2275	2250	2230	2210	2190
		F7	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37	0.37	0.38
	20	1	300	279	242	211	186	164	146	129	116	103	93
		2	300	300	282	211	186	164	146	129	116	103	93
		3	300	300	282	252	186	164	146	129	116	103	93
		q4	2370	2325	2285	2250	2220	2195	2170	2150	2130	2115	2100
		F4	0.32	0.32	0.33	0.33	0.34	0.34	0.35	0.35	0.35	0.36	0.36
		q7	2620	2555	2500	2450	2410	2370	2340	2310	2280	2260	2235
		F7	0.29	0.29	0.30	0.31	0.31	0.32	0.32	0.33	0.33	0.33	0.34
	18	1	300	300	300	231	203	180	159	142	127	114	103
		2	300	300	300	272	244	220	159	142	127	114	103
		3	300	300	300	272	244	220	200	142	127	114	103
		q4	2525	2460	2410	2365	2325	2290	2260	2230	2205	2180	2160
		F4	0.26	0.26	0.27	0.28	0.28	0.28	0.29	0.29	0.30	0.30	0.30
		q7	2860	2770	2695	2630	2575	2525	2480	2440	2405	2375	2345
		F7	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.27	0.28
	16	1	300	300	300	270	242	177	158	140	126	112	101
		2	300	300	300	270	242	219	199	140	126	112	101
		3	300	300	300	270	242	219	199	182	167	112	101
		q4	2695	2615	2550	2495	2445	2400	2360	2325	2295	2265	2240
		F4	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.25	0.26	0.26
		q7	3110	3000	2910	2830	2760	2695	2640	2590	2545	2505	2470
		F7	0.19	0.19	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24

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(continued)

TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
5" Normal Weight (145 pcf)	22	1	300	299	259	226	198	175	155	138	123	109	98
		2	300	299	259	226	198	175	155	138	123	109	98
		3	300	299	259	226	198	175	155	138	123	109	98
		q4	2540	2505	2470	2440	2415	2395	2375	2360	2345	2330	2315
		F4	0.32	0.33	0.33	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.36
		q7	2750	2695	2650	2610	2575	2545	2515	2490	2470	2450	2430
		F7	0.30	0.31	0.31	0.32	0.32	0.32	0.33	0.33	0.33	0.34	0.34
	20	1	300	300	274	239	210	185	164	146	131	117	105
		2	300	300	300	239	210	185	164	146	131	117	105
		3	300	300	300	239	210	185	164	146	131	117	105
		q4	2610	2565	2525	2490	2460	2435	2410	2390	2370	2355	2340
		F4	0.29	0.29	0.30	0.30	0.31	0.31	0.31	0.31	0.32	0.32	0.32
		q7	2860	2795	2740	2690	2650	2610	2580	2550	2520	2495	2475
		F7	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.30	0.30
	18	1	300	300	300	260	229	203	180	161	144	129	116
		2	300	300	300	300	275	203	180	161	144	129	116
		3	300	300	300	300	275	249	180	161	144	129	116
		q4	2765	2700	2650	2605	2565	2530	2495	2470	2445	2420	2400
		F4	0.24	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.27	0.27	0.27
		q7	3095	3010	2935	2870	2815	2765	2720	2680	2645	2615	2585
		F7	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25
	16	1	300	300	300	300	273	200	178	158	142	127	114
		2	300	300	300	300	273	247	225	158	142	127	114
		3	300	300	300	300	273	247	225	205	142	127	114
		q4	2930	2855	2790	2730	2685	2640	2600	2565	2535	2505	2480
		F4	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.23
		q7	3350	3240	3150	3065	2995	2935	2880	2830	2785	2745	2705
		F7	0.17	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.22
6" Normal Weight (145 pcf)	22	1	300	300	300	280	245	216	192	170	152	135	121
		2	300	300	300	280	245	216	192	170	152	135	121
		3	300	300	300	280	245	216	192	170	152	135	121
		q4	3020	2980	2950	2920	2895	2875	2855	2835	2820	2805	2795
		F4	0.27	0.28	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29
		q7	3230	3175	3130	3080	3055	3020	2995	2970	2945	2925	2910
		F7	0.26	0.26	0.26	0.27	0.27	0.27	0.28	0.28	0.28	0.28	0.28
	20	1	300	300	300	296	260	229	203	181	162	144	129
		2	300	300	300	296	260	229	203	181	162	144	129
		3	300	300	300	296	260	229	203	181	162	144	129
		q4	3090	3040	3000	2970	2940	2910	2890	2865	2850	2830	2815
		F4	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.26	0.27	0.27
		q7	3340	3275	3220	3170	3125	3090	3055	3025	3000	2975	2955
		F7	0.23	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25

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TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
6" Normal Weight (145 pcf)	18	1	300	300	300	300	283	251	223	199	178	159	143
		2	300	300	300	300	283	251	223	199	178	159	143
		3	300	300	300	300	300	251	223	199	178	159	143
		q4	3240	3180	3125	3080	3040	3005	2975	2950	2920	2900	2880
		F4	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.23
		q7	3575	3490	3415	3350	3295	3245	3200	3160	3125	3090	3060
		F7	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.21
	16	1	300	300	300	300	280	247	220	196	175	157	141
		2	300	300	300	300	300	247	220	196	175	157	141
		3	300	300	300	300	300	300	278	196	175	157	141
		q4	3410	3335	3265	3210	3160	3115	3080	3045	3010	2985	2955
		F4	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20
		q7	3830	3720	3625	3545	3475	3410	3355	3305	3260	3220	3185
		F7	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.18
3½" Structural Light Weight (110 pcf)	22	1	261	206	179	157	139	124	110	99	89	—	—
		2	261	228	202	180	139	124	110	99	89	—	—
		3	261	228	202	180	139	124	110	99	89	—	—
		q4	1500	1460	1430	1400	1375	1355	1335	1315	1300	—	—
		F4	0.55	0.56	0.58	0.59	0.6	0.61	0.62	0.63	0.63	—	—
		q7	1710	1655	1610	1570	1555	1500	1475	1450	1425	—	—
		F7	0.48	0.50	0.51	0.53	0.54	0.55	0.56	0.57	0.58	—	—
	20	1	275	240	212	167	147	131	117	105	94	85	77
		2	275	240	212	189	170	154	117	105	94	85	77
		3	275	240	212	189	170	154	117	105	94	85	77
		q4	1570	1520	1480	1450	1420	1390	1370	1350	1330	1310	1295
		F4	0.48	0.49	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.57	0.58
		q7	1820	1755	1700	1650	1605	1570	1535	1505	1480	1455	1435
		F7	0.41	0.43	0.44	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.52
	18	1	298	261	230	205	184	167	128	115	104	94	85
		2	298	261	230	205	184	167	152	136	116	94	85
		3	298	261	230	205	184	167	152	136	116	100	85
		q4	1720	1660	1605	1560	1520	1485	1455	1430	1400	1380	1360
		F4	0.38	0.39	0.41	0.42	0.43	0.44	0.45	0.46	0.46	0.47	0.48
		q7	2055	1970	1895	1830	1775	1725	1680	1640	1605	1570	1540
		F7	0.32	0.33	0.34	0.36	0.37	0.38	0.39	0.40	0.41	0.41	0.42
	16	1	298	260	230	205	184	166	151	138	127	93	84
		2	298	260	230	205	184	166	151	138	127	112	97
		3	298	260	230	205	184	166	151	138	127	112	97
		q4	1890	1815	1750	1690	1640	1595	1560	1525	1490	1465	1435
		F4	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41
		q7	2310	2200	2105	2025	1955	1890	1835	1785	1745	1700	1665
		F7	0.25	0.26	0.28	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.35

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TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
4" Structural Light Weight (110 pcf)	22	1	277	239	208	183	161	143	128	115	103	93	84
		2	300	266	235	209	161	143	128	115	103	93	84
		3	300	266	235	183	161	143	128	115	103	93	84
		q4	1660	1620	1585	1560	1535	1510	1490	1475	1460	1445	1430
		F4	0.50	0.51	0.52	0.53	0.54	0.54	0.55	0.56	0.56	0.57	0.58
		q7	1870	1815	1765	1725	1690	1660	1630	1605	1585	1565	1545
		F7	0.44	0.45	0.47	0.48	0.49	0.50	0.50	0.51	0.52	0.53	0.53
	20	1	300	279	220	193	171	152	135	121	109	99	89
		2	300	279	247	220	197	152	135	121	109	99	89
		3	300	279	247	220	197	178	135	121	109	99	89
		q4	1725	1680	1640	1605	1575	1550	1525	1505	1485	1470	1455
		F4	0.44	0.45	0.46	0.47	0.48	0.48	0.49	0.50	0.51	0.51	0.52
		q7	1975	1910	1855	1805	1765	1725	1695	1665	1635	1615	1590
		F7	0.38	0.39	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.47
	18	1	300	300	266	237	213	165	148	133	120	108	98
		2	300	300	266	237	213	193	175	160	120	108	98
		3	300	300	266	237	213	193	175	160	147	108	98
		q4	1880	1820	1765	1720	1680	1645	1615	1585	1560	1540	1515
		F4	0.35	0.36	0.37	0.38	0.39	0.40	0.40	0.41	0.42	0.42	0.43
		q7	2215	2125	2050	1985	1930	1880	1835	1795	1760	1730	1700
		F7	0.29	0.31	0.32	0.33	0.34	0.35	0.35	0.36	0.37	0.38	0.38
	16	1	300	300	265	236	212	192	174	159	118	107	97
		2	300	300	265	236	212	192	174	159	146	135	97
		3	300	300	265	236	212	192	174	159	146	135	125
		q4	2050	1970	1905	1850	1800	1755	1715	1680	1650	1620	1595
		F4	0.28	0.30	0.31	0.32	0.32	0.33	0.34	0.35	0.35	0.36	0.37
		q7	2465	2360	2265	2185	2115	2050	1995	1945	1900	1860	1825
		F7	0.24	0.25	0.26	0.27	0.28	0.28	0.29	0.30	0.31	0.31	0.32
4¾" Structural Light Weight (110 pcf)	22	1	300	292	254	223	197	175	156	140	125	113	102
		2	300	300	287	223	197	175	156	140	125	113	102
		3	300	300	254	223	197	175	156	140	125	113	102
		q4	1895	1855	1825	1795	1770	1750	1730	1710	1695	1680	1670
		F4	0.43	0.44	0.45	0.46	0.47	0.47	0.48	0.48	0.49	0.49	0.49
		q7	2105	2050	2005	1965	1930	1895	1870	1845	1820	1800	1785
		F7	0.39	0.40	0.41	0.42	0.43	0.43	0.44	0.45	0.45	0.46	0.46
	20	1	300	300	268	235	208	185	165	148	133	120	109
		2	300	300	300	268	208	185	165	148	133	120	109
		3	300	300	300	268	241	185	165	148	133	120	109
		q4	1965	1915	1875	1840	1810	1785	1760	1740	1725	1705	1690
		F4	0.38	0.39	0.40	0.41	0.41	0.42	0.43	0.43	0.44	0.44	0.44
		q7	2215	2150	2095	2045	2000	1965	1930	1900	1875	1850	1830
		F7	0.34	0.35	0.36	0.37	0.38	0.38	0.39	0.40	0.40	0.41	0.41

See Page 15 for footnotes

(continued)

TABLE 8–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 & B-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"
4¾" Structural Light Weight (110 pcf)	18	1	300	300	300	289	226	201	180	161	145	131	119
		2	300	300	300	289	260	235	213	161	145	131	119
		3	300	300	300	289	260	235	213	195	145	131	119
		q4	2115	2055	2000	1955	1915	1880	1850	1825	1795	1775	1755
		F4	0.31	0.32	0.33	0.33	0.34	0.35	0.35	0.36	0.36	0.37	0.37
		q7	2450	2365	2290	2225	2170	2120	2075	2035	2000	1965	1935
		F7	0.27	0.28	0.28	0.29	0.30	0.31	0.31	0.32	0.33	0.33	0.34
	16	1	300	300	300	287	258	233	212	159	143	130	117
		2	300	300	300	287	258	233	212	194	178	130	117
		3	300	300	300	287	258	233	212	194	178	164	152
		q4	2285	2210	2145	2085	2035	1990	1955	1920	1885	1860	1830
		F4	0.25	0.26	0.27	0.28	0.29	0.29	0.30	0.30	0.31	0.31	0.32
		q7	2705	2595	2500	2420	2350	2285	2230	2180	2140	2095	2060
		F7	0.22	0.22	0.23	0.24	0.25	0.25	0.26	0.27	0.27	0.28	0.28
5¾" Structural Light Weight (110 pcf)	22	1	300	300	300	279	246	219	195	175	157	141	128
		2	300	300	300	279	246	219	195	175	157	141	128
		3	300	300	300	279	246	219	195	175	157	141	128
		q4	2210	2175	2140	2110	2085	2065	2045	2030	2010	2000	1985
		F4	0.37	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.41	0.41
		q7	2420	2365	2320	2280	2245	2210	2185	2160	2140	2115	2100
		F7	0.34	0.35	0.36	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.39
	20	1	300	300	300	294	260	231	206	185	166	150	136
		2	300	300	300	294	260	231	206	185	166	150	136
		3	300	300	300	294	260	231	206	185	166	150	136
		q4	2280	2235	2195	2160	2130	2105	2080	2060	2040	2020	2005
		F4	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37	0.37	0.37
		q7	2530	2465	2410	2360	2320	2280	2250	2215	2190	2165	2145
		F7	0.30	0.30	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.35	0.35
	18	1	300	300	300	300	282	251	224	201	182	164	149
		2	300	300	300	300	300	251	224	201	182	164	149
		3	300	300	300	300	300	293	266	201	182	164	149
		q4	2430	2370	2320	2275	2230	2200	2165	2140	2110	2090	2070
		F4	0.27	0.27	0.28	0.29	0.29	0.30	0.30	0.3	0.31	0.31	0.31
		q7	2765	2680	2605	2540	2485	2435	2390	2350	2315	2280	2255
		F7	0.24	0.24	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29
	16	1	300	300	300	300	300	248	222	199	179	162	147
		2	300	300	300	300	300	291	264	199	179	162	147
		3	300	300	300	300	300	291	264	241	222	162	147
		q4	2600	2525	2460	2400	2350	2310	2270	2235	2200	2175	2150
		F4	0.22	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.26	0.27	0.27
		q7	3020	2910	2815	2735	2665	2605	2550	2500	2455	2415	2375
		F7	0.19	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.25

[1] Shoring calculations based on deck supporting dead load of concrete plus either 20 psf uniform construction live load or 150 lb concentrated live load for flexure. Dead load deflection limited to L/180 of span length, but not to exceed ¾ inch.
[2] Shoring is required at midspan for superimposed load values in the shaded area to the right of the heavy line.
[3] Steel for deck to have a minimum yield strength of 38,000 psi and a minimum tensile strength of 55,000 psi.
[4] Total slab depth is nominal depth from top of concrete to bottom of steel deck.
[5] Concrete fill to have a minimum compressive strength f'_c = 3000 psi.
[6] The number after the letter q or F indicates the number of puddle welds per panel and at interior supports.
[7] Support reactions for unshored spans due to dead loads and uniform construction live loads shall not exceed values set forth in Table 5.

TABLE 9–ALLOWABLE SUPERIMPOSED LOADS (psf) FOR TYPE BR-24, BR-30, AND BR-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	SPAN (ft-in.)												
		6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
4" Normal Weight (145 pcf)	22	290	268	221	204	189	177	165	155					
	20	288	266	247	230	187	175	164	154	145				
	18	286	264	245	229	214	202	191	152	143	135	127	120	114
	16	285	263	244	228	214	201	190	180	171	133	126	119	113
4½" Normal Weight (145 pcf)	22	330	272	250	232	215	200	188	176	166				
	20	328	303	281	230	213	199	186	174	164	155			
	18	324	300	278	260	243	229	183	172	162	153	144	136	129
	16	323	298	277	258	242	228	215	204	160	151	142	135	128
5" Normal Weight (145 pcf)	22	371	306	282	260	242	225	211						
	20	369	340	279	258	240	223	209	196	184				
	18	364	336	312	291	273	220	205	193	181	170	161	153	145
	16	362	334	310	290	271	255	241	190	179	169	159	151	143
4" Structural Light Weight (110 pcf)	22	213	197	183	149	138	129	120						
	20	212	196	182	170	159	128	120	112	105				
	18	210	194	180	168	157	148	140	132	104	98	93	87	83
	16	210	194	180	168	157	148	140	132	125	119	92	87	82
4½" Structural Light Weight (110 pcf)	22	242	224	183	169	157	146							
	20	240	222	206	192	155	145	135	127					
	18	238	220	203	190	178	167	158	125	117	111	104		
	16	236	218	203	189	178	167	158	150	142	135	103	98	93
4¾" Structural Light Weight (110 pcf)	22	257	237	194	180	166	154	145						
	20	255	236	219	204	165	153	143	134					
	18	252	233	216	202	189	178	168	132	124	117	110		
	16	251	231	215	200	188	177	167	158	150	116	109	103	98
5" Structural Light Weight (110 pcf)	22	272	251	205	189	176	163	153						
	20	270	249	231	216	174	162	151	142	134				
	18	267	246	228	213	200	188	178	140	131	123	117	110	105
	16	265	244	227	212	199	187	177	167	159	122	115	109	103

1 One row of shoring is required for spans in the shaded area to the right of the heavy line, based on three continuous span conditions.
2 Reinforcement in slab for temperature change and shrinkage control shall be not less than 6 x 6-W1.4 x W1.4 W.W.F.
3 Total slab depth is nominal depth from top of concrete to bottom of steel deck.
4 Concrete fill to have a minimum compressive strength f'_c = 3000 psi.
5 Embossments are not required in either flange for Type BR decks
6 Shoring calculations based on deck supporting dead load of concrete plus either 20 psf uniform construction live load or 150 lb concentrated live load for flexure. Dead load deflection limited to L/180 of span length, but not to exceed ¾ inch.

TABLE 10–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), FOR TYPE BR-36 AND BR-36 FORMLOK™ DECKS WITH CONCRETE FILL [1, 2]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	WELDS PER SHEET TO SUPPORT	SPAN (ft-in.)					
			5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
3½" Normal Weight (145 pcf)	22	q4	1835	1755	1695	1655	1620	1595
		q6	2000	1890	1815	1760	1715	1675
	20	q4	1895	1800	1730	1680	1640	1610
		q6	2090	1965	1870	1805	1750	1705
	18	q4	2035	1910	1815	1750	1695	1655
		q6	2300	2130	2005	1915	1845	1785
	16	q4	2195	2035	1920	1835	1770	1715
		q6	2525	2310	2155	2040	1950	1880
4" Normal Weight (145 pcf)	22	q4	2070	1995	1935	1895	1860	1835
		q6	2235	2130	2055	1995	1950	1915
	20	q4	2135	2040	1970	1920	1880	1845
		q6	2330	2205	2110	2040	1990	1945
	18	q4	2275	2145	2055	1990	1935	1895
		q6	2540	2365	2245	2153	2080	2025
	16	q4	2430	2275	2160	2075	2010	1955
		q6	2760	2550	2395	2280	2190	2120
5" Normal Weight (145 pcf)	22	q4	2550	2470	2415	2370	2340	2312
		q6	2715	2610	2530	2475	2430	2395
	20	q4	2610	2515	2450	2395	2355	2325
		q6	2810	2680	2590	2520	2465	2425
	18	q4	2750	2625	2535	2465	2415	2370
		q6	3015	2845	2725	2630	2560	2505
	16	q4	2910	2750	2640	2550	2485	2435
		q6	3240	3025	2875	2760	2670	2600
6" Normal Weight (145 pcf)	22	q4	3030	2950	2895	2850	2815	2790
		q6	3195	3085	3010	2955	2910	2875
	20	q4	3090	2995	2925	2875	2835	2805
		q6	3290	3160	3065	3000	2945	2900
	18	q4	3230	3105	3015	2945	2890	2850
		q6	3495	3325	3200	3110	3040	2980
	16	q4	3390	3230	3115	3030	2965	2910
		q6	3720	3505	3350	3235	3150	3075

See Page 18 for footnotes. *(continued)*

TABLE 10–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), FOR TYPE BR-36 and BR-36 FORMLOK™ DECKS WITH CONCRETE FILL [1, 2] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	WELDS PER SHEET TO SUPPORT	SPAN (ft-in.)					
			5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
3½" Structural Light Weight (110 pcf)	22	q4	1510	1430	1373	1330	1295	1270
		q6	1675	1565	1490	1435	1390	1355
	20	q4	1570	1475	1405	1355	1315	1285
		q6	1770	1640	1550	1480	1425	1380
	18	q4	1710	1585	1495	1425	1370	1330
		q6	1975	1805	1680	1590	1520	1460
	16	q4	1870	1710	1595	1510	1445	1390
		q6	2200	1985	1830	1715	1630	1555
4" Structural Light Weight (110 pcf)	22	q4	1665	1585	1530	1490	1455	1430
		q6	1830	1725	1650	1590	1545	1510
	20	q4	1730	1630	1565	1515	1475	1440
		q6	1925	1795	1705	1635	1585	1540
	18	q4	1870	1740	1650	1585	1530	1485
		q6	2130	1960	1840	1750	1675	1620
	16	q4	2025	1865	1755	1670	1600	1550
		q6	2355	2140	1990	1875	1785	1715
4¾" Structural Light Weight (110 pcf)	22	q4	1905	1825	1770	1725	1690	1665
		q6	2070	1960	1885	1830	1785	1750
	20	q4	1965	1870	1800	1750	1710	1680
		q6	2165	2035	1940	1875	1820	1775
	18	q4	2105	1980	1890	1820	1765	1725
		q6	2370	2200	2075	1985	1915	1855
	16	q4	2265	2105	1990	1905	1840	1785
		q6	2595	2400	2225	2110	2025	1950
5¾" Structural Light Weight (110 pcf)	22	q4	2220	2140	2085	2040	2010	1980
		q6	2385	2280	2200	2145	2100	2065
	20	q4	2280	2185	2115	2065	2025	1995
		q6	2480	2350	2260	2190	2135	2095
	18	q4	2420	2295	2205	2135	2085	2040
		q6	2685	2515	2390	2300	2230	2170
	16	q4	2580	2420	2305	2220	2155	2100
		q6	2910	2695	2545	2430	2340	2265

[1] Total slab depth is nominal depth from top of concrete to bottom of steel deck.
[2] Concrete fill to have a minimum compressive strength f'_c = 3000 psi.

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1,2,3,4,5,6,7,8]

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
4" Normal Weight (145 pcf)	22	1	255	190	167	148	131	116	104	93	83	75	67
		2	255	227	204	148	131	116	104	93	83	75	67
		3	255	227	204	185	131	116	104	93	83	75	67
		q3	1665	1650	1635	1620	1610	1595	1590	1580	1570	1565	1555
		q4	1780	1750	1720	1700	1680	1660	1640	1620	1610	1600	1590
	21	1	286	255	192	170	151	135	121	108	97	88	79
		2	286	255	229	207	151	135	121	108	97	88	79
		3	286	255	229	207	188	135	121	108	97	88	79
		q3	1670	1655	1635	1620	1610	1595	1585	1575	1565	1560	1550
		q4	1810	1770	1740	1720	1700	1680	1660	1640	1620	1610	1600
	20	1	317	282	252	192	171	153	138	124	112	101	92
		2	317	282	254	229	208	153	138	124	112	101	92
		3	317	282	254	229	208	187	166	124	112	101	92
		q3	1680	1660	1640	1625	1610	1595	1585	1575	1565	1555	1550
		q4	1840	1800	1770	1740	1720	1690	1670	1650	1640	1620	1610
	19	1	380	339	305	259	214	191	173	156	142	129	118
		2	380	339	305	275	249	220	195	156	142	129	118
		3	380	339	305	275	249	220	195	174	152	129	118
		q3	1700	1680	1655	1635	1620	1605	1590	1580	1570	1560	1550
		q4	1900	1860	1820	1790	1760	1730	1710	1690	1670	1650	1640
	18	1	400	388	348	303	253	211	203	184	167	147	129
		2	400	388	348	315	278	246	218	193	167	147	129
		3	400	388	348	315	278	246	218	193	168	147	129
		q3	1725	1700	1675	1655	1635	1615	1600	1590	1575	1565	1555
		q4	1960	1910	1870	1830	1800	1770	1750	1720	1700	1680	1660
	16	1	400	388	348	315	277	245	217	194	166	152	139
		2	400	388	348	315	277	245	217	194	173	155	140
		3	400	388	348	315	277	245	217	194	173	155	140
		q3	1790	1760	1730	1700	1675	1655	1635	1620	1605	1590	1575
		q4	2110	2050	1990	1950	1910	1870	1840	1810	1780	1760	1740
4½" Normal Weight (145 pcf)	22	1	246	214	188	166	147	131	117	104	93	84	75
		2	288	257	188	166	147	131	117	104	93	84	75
		3	288	257	231	166	147	131	117	104	93	84	75
		q3	1905	1890	1875	1860	1845	1835	1825	1820	1810	1805	1795
		q4	2020	1990	1960	1940	1920	1900	1880	1860	1850	1840	1830
	21	1	322	245	216	191	170	151	135	122	109	98	89
		2	322	287	258	191	170	151	135	122	109	98	89
		3	322	287	258	233	170	151	135	122	109	98	89
		q3	1910	1890	1875	1860	1845	1835	1825	1815	1805	1800	1790
		q4	2040	2010	1980	1950	1930	1910	1900	1880	1860	1850	1840
	20	1	357	318	243	216	192	172	154	139	126	114	103
		2	357	318	286	258	192	172	154	139	126	114	103
		3	357	318	286	258	235	215	154	139	126	114	103
		q3	1920	1900	1880	1865	1850	1835	1825	1815	1805	1795	1790
		q4	2070	2040	2010	1980	1950	1930	1910	1890	1880	1860	1850

See Page 24 for footnotes.

(continued)

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
4½" Normal Weight (145 pcf)	19	1	400	382	343	289	239	214	193	175	159	144	131
		2	400	382	343	310	282	257	193	175	159	144	131
		3	400	382	343	310	282	257	231	198	159	144	131
		q3	1940	1915	1895	1875	1860	1845	1830	1820	1810	1795	1790
		q4	2140	2100	2060	2030	2000	1970	1950	1930	1910	1890	1880
	18	1	400	400	391	342	282	251	227	206	187	171	156
		2	400	400	391	354	322	293	260	206	187	171	156
		3	400	400	391	354	322	293	260	232	201	172	156
		q3	1965	1935	1915	1890	1875	1855	1840	1825	1815	1805	1795
		q4	2200	2150	2110	2070	2040	2010	1990	1960	1940	1920	1900
	16	1	400	400	390	352	320	293	269	204	185	169	155
		2	400	400	390	352	320	293	269	248	229	213	155
		3	400	400	390	352	320	293	269	248	229	213	198
		q3	2030	1995	1965	1940	1915	1895	1875	1860	1845	1830	1815
		q4	2350	2290	2240	2190	2150	2110	2080	2050	2020	2000	1980
5" Normal Weight (145 pcf)	22	1	275	240	211	186	165	146	130	117	104	93	84
		2	323	288	211	186	165	146	130	117	104	93	84
		3	323	288	211	186	165	146	130	117	104	93	84
		q3	2145	2125	2110	2100	2085	2075	2065	2055	2050	2040	2035
		q4	2250	2220	2190	2170	2150	2130	2120	2100	2090	2070	2060
	21	1	313	274	241	213	190	169	151	136	122	110	99
		2	361	322	289	213	190	169	151	136	122	110	99
		3	361	322	289	261	190	169	151	136	122	110	99
		q3	2150	2130	2115	2100	2085	2075	2065	2055	2045	2035	2030
		q4	2280	2250	2220	2190	2170	2150	2130	2110	2100	2080	2070
	20	1	400	308	272	241	215	192	173	155	140	127	115
		2	400	356	320	241	215	192	173	155	140	127	115
		3	400	356	320	289	263	192	173	155	140	127	115
		q3	2160	2135	2120	2105	2090	2075	2065	2055	2045	2035	2025
		q4	2310	2270	2240	2210	2190	2170	2150	2130	2110	2090	2080
	19	1	400	400	383	298	267	240	216	195	177	161	147
		2	400	400	383	347	315	240	216	195	177	161	147
		3	400	400	383	347	315	288	257	195	177	161	147
		q3	2180	2155	2135	2115	2100	2085	2070	2060	2045	2035	2025
		q4	2370	2330	2290	2260	2230	2200	2180	2160	2140	2120	2110
	18	1	400	400	400	375	304	280	253	229	209	190	174
		2	400	400	400	395	359	328	301	229	209	190	174
		3	400	400	400	395	359	328	301	258	220	190	174
		q3	2205	2175	2150	2130	2110	2095	2080	2065	2055	2040	2030
		q4	2430	2380	2340	2300	2270	2240	2220	2190	2170	2150	2140
	16	1	400	400	400	393	357	326	250	227	206	188	172
		2	400	400	400	393	357	326	300	276	256	188	172
		3	400	400	400	393	357	326	300	276	256	237	172
		q3	2270	2235	2205	2180	2155	2135	2115	2100	2080	2070	2055
		q4	2570	2510	2460	2420	2380	2340	2310	2280	2250	2230	2210

See Page 24 for footnotes.

(continued)

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
5½" Normal Weight (145 pcf)	22	1	306	267	234	207	183	163	145	130	116	104	93
		2	359	267	234	207	183	163	145	130	116	104	93
		3	359	320	234	207	183	163	145	130	116	104	93
		q3	2385	2365	2350	2335	2325	2315	2305	2295	2290	2280	2275
		q4	2490	2460	2440	2410	2390	2370	2360	2340	2330	2320	2310
	21	1	348	304	268	237	211	188	168	151	136	122	110
		2	400	358	268	237	211	188	168	151	136	122	110
		3	400	358	321	237	211	188	168	151	136	122	110
		q3	2390	2370	2355	2340	2325	2315	2300	2295	2285	2275	2270
		q4	2520	2490	2460	2430	2410	2390	2370	2350	2340	2330	2320
	20	1	400	343	302	268	239	214	192	173	156	141	127
		2	400	396	356	268	239	214	192	173	156	141	127
		3	400	396	356	321	239	214	192	173	156	141	127
		q3	2395	2375	2360	2340	2325	2315	2305	2290	2285	2275	2265
		q4	2550	2510	2480	2450	2430	2410	2390	2370	2360	2340	2330
	19	1	400	400	400	331	296	266	240	217	197	179	163
		2	400	400	400	385	350	266	240	217	197	179	163
		3	400	400	400	385	350	320	240	217	197	179	163
		q3	2420	2395	2375	2355	2340	2325	2310	2295	2285	2275	2265
		q4	2620	2580	2540	2510	2480	2450	2430	2410	2390	2370	2350
	18	1	400	400	400	400	345	311	281	255	232	211	193
		2	400	400	400	400	399	365	281	255	232	211	193
		3	400	400	400	400	399	365	330	279	232	211	193
		q3	2445	2415	2390	2370	2350	2335	2320	2305	2295	2280	2270
		q4	2680	2630	2590	2550	2520	2490	2460	2440	2420	2400	2380
	16	1	400	400	400	400	396	362	277	252	229	208	190
		2	400	400	400	400	396	362	332	306	229	208	190
		3	400	400	400	400	396	362	332	306	283	263	190
		q3	2510	2475	2445	2420	2395	2375	2355	2335	2320	2305	2295
		q4	2820	2760	2710	2670	2630	2590	2560	2530	2500	2470	2450
6½" Normal Weight (145 pcf)	22	1	370	323	283	250	221	197	175	157	140	126	113
		2	370	323	283	250	221	197	175	157	140	126	113
		3	400	323	283	250	221	197	175	157	140	126	113
		q3	2860	2845	2830	2815	2805	2795	2785	2775	2765	2760	2750
		q4	2970	2940	2920	2890	2870	2850	2840	2820	2810	2790	2780
	21	1	400	368	324	286	255	227	203	182	164	148	133
		2	400	368	324	286	255	227	203	182	164	148	133
		3	400	400	324	286	255	227	203	182	164	148	133
		q3	2865	2850	2830	2815	2805	2790	2780	2770	2760	2755	2745
		q4	3000	2970	2940	2910	2890	2870	2850	2830	2820	2800	2790
	20	1	400	400	365	324	288	258	232	208	188	170	154
		2	400	400	365	324	288	258	232	208	188	170	154
		3	400	400	400	324	288	258	232	208	188	170	154
		q3	2875	2855	2835	2820	2805	2790	2780	2770	2760	2750	2745
		q4	3030	2990	2960	2930	2910	2890	2870	2850	2830	2820	2810

See Page 24 for footnotes.

(continued)

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
6½" Normal Weight (145 pcf)	19	1	400	400	400	400	357	321	289	262	237	216	197
		2	400	400	400	400	357	321	289	262	237	216	197
		3	400	400	400	400	400	321	289	262	237	216	197
		q3	2900	2875	2850	2835	2815	2800	2785	2775	2765	2755	2745
		q4	3100	3060	3020	2990	2960	2930	2910	2890	2870	2850	2830
	18	1	400	400	400	400	400	375	339	307	279	255	233
		2	400	400	400	400	400	375	339	307	279	255	233
		3	400	400	400	400	400	400	374	307	279	255	233
		q3	2920	2895	2870	2850	2830	2810	2795	2785	2770	2760	2750
		q4	3150	3110	3070	3030	3000	2970	2940	2920	2900	2880	2860
	16	1	400	400	400	400	400	370	334	303	276	251	230
		2	400	400	400	400	400	400	400	303	276	251	230
		3	400	400	400	400	400	400	400	369	341	251	230
		q3	2990	2955	2925	2895	2875	2850	2835	2815	2800	2785	2770
		q4	3300	3240	3190	3150	3110	3070	3040	3010	2980	2950	2930
4" Structural Light Weight (110 pcf)	22	1	255	227	176	156	140	125	113	102	92	83	76
		2	255	227	204	185	140	125	113	102	92	83	76
		3	255	227	204	185	168	125	113	102	92	83	76
		q3	1340	1325	1310	1295	1285	1275	1265	1255	1245	1240	1230
		q4	1450	1420	1400	1370	1350	1330	1320	1300	1290	1280	1270
	21	1	286	255	229	178	160	143	129	117	106	97	87
		2	286	255	229	207	188	172	129	117	106	97	87
		3	286	255	229	207	188	172	151	117	106	97	87
		q3	1345	1330	1310	1295	1285	1270	1260	1250	1240	1235	1225
		q4	1480	1450	1420	1390	1370	1350	1330	1310	1300	1280	1270
	20	1	317	282	254	229	180	162	146	133	117	103	90
		2	317	282	254	229	208	182	156	133	117	103	90
		3	317	282	254	229	208	182	156	135	117	103	90
		q3	1355	1335	1315	1300	1285	1275	1260	1250	1240	1230	1225
		q4	1510	1470	1440	1410	1390	1370	1350	1330	1310	1300	1290
	19	1	380	339	305	272	229	195	167	144	125	110	97
		2	380	339	305	272	229	195	167	144	125	110	97
		3	380	339	305	272	229	195	167	144	125	110	97
		q3	1380	1355	1330	1315	1295	1280	1265	1255	1245	1235	1225
		q4	1580	1540	1500	1470	1440	1410	1390	1370	1350	1330	1310
	18	1	400	388	343	286	241	205	175	152	132	115	102
		2	400	388	343	286	241	205	175	152	132	115	102
		3	400	388	343	286	241	205	175	152	132	115	102
		q3	1400	1375	1350	1330	1310	1295	1275	1265	1250	1240	1230
		q4	1630	1590	1550	1510	1480	1450	1420	1400	1380	1360	1340
	16	1	400	388	348	308	267	227	195	168	146	128	113
		2	400	388	348	308	267	227	195	168	146	128	113
		3	400	388	348	308	267	227	195	168	146	128	113
		q3	1470	1435	1405	1375	1355	1330	1315	1295	1280	1265	1250
		q4	1780	1720	1670	1630	1590	1550	1520	1490	1460	1430	1410

See Page 24 for footnotes.

(continued)

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
4½" Structural Light Weight (110 pcf)	22	1	288	225	198	176	157	141	127	114	103	94	85
		2	288	257	231	208	157	141	127	114	103	94	85
		3	288	257	231	208	190	141	127	114	103	94	85
		q3	1500	1480	1465	1455	1440	1430	1420	1410	1405	1395	1390
		q4	1610	1580	1550	1530	1510	1490	1480	1460	1450	1430	1420
	21	1	322	287	226	201	180	161	146	132	119	109	99
		2	322	287	258	233	212	161	146	132	119	109	99
		3	322	287	258	233	212	194	146	132	119	109	99
		q3	1505	1485	1470	1455	1440	1430	1420	1410	1400	1390	1385
		q4	1640	1610	1580	1550	1530	1510	1490	1470	1460	1440	1430
	20	1	357	318	286	258	202	182	165	149	136	124	113
		2	357	318	286	258	235	215	165	149	136	124	113
		3	357	318	286	258	235	215	197	180	136	124	113
		q3	1515	1495	1475	1460	1445	1430	1420	1410	1400	1390	1380
		q4	1670	1630	1600	1570	1550	1530	1510	1490	1470	1450	1440
	19	1	400	382	343	310	282	236	204	185	169	152	134
		2	400	382	343	310	282	257	231	200	169	152	134
		3	400	382	343	310	282	257	231	200	174	152	134
		q3	1535	1510	1490	1470	1455	1440	1425	1415	1400	1390	1385
		q4	1730	1690	1650	1620	1590	1560	1540	1520	1500	1480	1470
	18	1	400	400	391	354	322	279	235	210	182	160	141
		2	400	400	391	354	322	283	243	210	182	160	141
		3	400	400	391	354	322	283	243	210	182	160	141
		q3	1560	1530	1510	1485	1465	1450	1435	1420	1410	1400	1385
		q4	1790	1740	1700	1660	1630	1600	1580	1560	1540	1520	1500
	16	1	400	400	390	352	320	293	269	232	202	177	156
		2	400	400	390	352	320	293	269	232	202	177	156
		3	400	400	390	352	320	293	269	232	202	177	156
		q3	1625	1590	1560	1535	1510	1490	1470	1455	1440	1425	1410
		q4	1940	1880	1830	1780	1740	1700	1670	1640	1620	1590	1570
5¼" Structural Light Weight (110 pcf)	22	1	303	266	235	208	186	167	150	135	122	111	100
		2	341	304	273	208	186	167	150	135	122	111	100
		3	341	304	273	247	186	167	150	135	122	111	100
		q3	1735	1720	1705	1690	1680	1670	1660	1650	1640	1635	1625
		q4	1850	1820	1790	1770	1750	1730	1710	1690	1680	1670	1660
	21	1	381	340	267	237	212	191	172	155	141	128	117
		2	381	340	305	276	212	191	172	155	141	128	117
		3	381	340	305	276	251	191	172	155	141	128	117
		q3	1740	1725	1705	1690	1680	1665	1655	1645	1635	1630	1620
		q4	1880	1840	1810	1790	1770	1750	1730	1710	1700	1680	1670
	20	1	400	376	338	267	239	215	194	176	160	146	133
		2	400	376	338	305	278	215	194	176	160	146	133
		3	400	376	338	305	278	254	233	176	160	146	133
		q3	1750	1730	1710	1695	1680	1670	1655	1645	1635	1625	1620
		q4	1910	1870	1840	1810	1790	1760	1740	1720	1710	1690	1680

See Page 24 for footnotes.

(continued)

TABLE 11–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 & W2-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH AND CONCRETE TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (ft.-in.)										
			7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"
5¼" Structural Light Weight (110 pcf)	19	1	400	400	400	366	324	265	240	218	199	182	167
		2	400	400	400	366	332	304	279	218	199	182	167
		3	400	400	400	366	332	304	279	257	231	182	167
		q3	1775	1750	1725	1710	1690	1675	1660	1650	1640	1630	1620
		q4	1970	1930	1890	1860	1830	1800	1780	1760	1740	1720	1710
	18	1	400	400	400	400	379	320	279	254	232	213	195
		2	400	400	400	400	379	346	318	293	232	213	195
		3	400	400	400	400	379	346	318	293	264	236	195
		q3	1795	1770	1745	1725	1705	1690	1670	1660	1645	1635	1625
		q4	2030	1980	1940	1900	1870	1840	1820	1790	1770	1750	1730
	16	1	400	400	400	400	376	344	316	291	230	210	193
		2	400	400	400	400	376	344	316	291	269	250	233
		3	400	400	400	400	376	344	316	291	269	250	233
		q3	1865	1830	1800	1770	1750	1725	1710	1690	1675	1660	1645
		q4	2180	2120	2070	2020	1980	1940	1910	1880	1850	1830	1810
6¼" Structural Light Weight (110 pcf)	22	1	368	323	285	254	226	203	182	164	149	135	122
		2	400	370	285	254	226	203	182	164	149	135	122
		3	400	370	332	254	226	203	182	164	149	135	122
		q3	2055	2035	2020	2005	1995	1985	1975	1965	1955	1950	1945
		q4	2160	2130	2110	2080	2060	2040	2030	2010	2000	1990	1980
	21	1	400	366	324	289	258	232	209	189	171	156	142
		2	400	400	371	289	258	232	209	189	171	156	142
		3	400	400	371	335	258	232	209	189	171	156	142
		q3	2060	2040	2020	2005	1995	1980	1970	1960	1955	1945	1940
		q4	2190	2160	2130	2100	2080	2060	2040	2020	2010	1990	1980
	20	1	400	400	364	324	291	261	236	214	195	177	162
		2	400	400	400	371	291	261	236	214	195	177	162
		3	400	400	400	371	337	261	236	214	195	177	162
		q3	2065	2045	2025	2010	1995	1985	1970	1960	1950	1945	1935
		q4	2220	2180	2150	2120	2100	2080	2060	2040	2020	2010	2000
	19	1	400	400	400	397	357	322	292	265	242	221	203
		2	400	400	400	400	400	322	292	265	242	221	203
		3	400	400	400	400	400	369	339	265	242	221	203
		q3	2090	2065	2045	2025	2005	1990	1980	1965	1955	1945	1935
		q4	2290	2250	2210	2180	2150	2120	2100	2080	2060	2040	2020
	18	1	400	400	400	400	400	373	339	308	282	258	237
		2	400	400	400	400	400	400	386	308	282	258	237
		3	400	400	400	400	400	400	386	356	317	258	237
		q3	2110	2085	2060	2040	2020	2005	1990	1975	1960	1950	1940
		q4	2340	2300	2260	2220	2190	2160	2130	2110	2090	2070	2050
	16	1	400	400	400	400	400	400	383	305	278	255	234
		2	400	400	400	400	400	400	383	353	326	255	234
		3	400	400	400	400	400	400	383	353	326	303	282
		q3	2180	2145	2115	2085	2065	2045	2025	2005	1990	1975	1965
		q4	2490	2430	2380	2340	2300	2260	2230	2200	2170	2140	2120

[1] Shoring calculations based on deck supporting dead load of concrete plus either 20 psf uniform construction live load or 150 lb concentrated live load for flexure. Dead load deflection limited to L/180 of span length, but not to exceed ¾ inch.
[2] Shoring is required at midspan for superimposed load values in the shaded area to the right of the heavy line.
[3] Steel for deck to have a minimum yield strength of 38,000 psi and a minimum tensile strength of 55,000 psi.
[4] Total slab depth is nominal depth from top of concrete too bottom of steel deck.
[5] Concrete fill to have a minimum compressive strength f'_c = 3000 psi.
[6] Support reactions for unshored spans due to dead loads and uniform construction live loads shall not exceed values set forth in Table 5.
[7] The number after the letter q indicates the number of puddle welds per panel end and at interior supports.
[8] PLW2-36 and W2-36 FORMLOK decks with structural concrete fill may be considered rigid diaphragm, with F<1.

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8]

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
5" Normal Weight (145 pcf)	22	1	246	223	163	145	130	117	105	95	86	77	70	63	57	52	47
		2	246	223	202	185	130	117	105	95	86	77	70	63	57	52	47
		3	246	223	202	185	170	155	105	95	86	77	70	63	57	52	47
		q3	1635	1620	1610	1600	1590	1580	1575	1565	1560	1555	1550	1545	1540	1535	1530
		q4	1710	1690	1670	1655	1640	1625	1610	1600	1590	1580	1570	1560	1550	1545	1540
	21	1	273	247	224	190	148	134	121	109	99	90	82	74	68	62	56
		2	273	247	224	205	188	174	121	109	99	90	82	74	68	62	56
		3	273	247	224	205	188	174	161	140	99	90	82	74	68	62	56
		q3	1635	1620	1610	1595	1585	1575	1565	1560	1550	1545	1540	1535	1525	1520	1520
		q4	1740	1715	1690	1675	1660	1640	1620	1610	1600	1590	1580	1570	1560	1550	1540
	20	1	286	259	235	209	174	142	128	116	106	96	87	80	73	66	60
		2	286	259	235	215	197	182	168	116	106	96	87	80	73	66	60
		3	286	259	235	215	197	182	168	153	133	96	87	80	73	66	60
		q3	1640	1625	1610	1595	1585	1575	1565	1555	1550	1540	1535	1530	1525	1520	1515
		q4	1760	1735	1710	1690	1670	1650	1630	1620	1610	1595	1580	1570	1560	1550	1540
	19	1	331	299	272	249	228	197	166	141	128	117	107	98	90	83	76
		2	331	299	272	249	228	211	195	181	169	117	107	98	90	83	76
		3	331	299	272	249	228	211	195	181	169	153	134	98	90	83	76
		q3	1655	1635	1620	1605	1590	1580	1570	1560	1550	1540	1530	1525	1520	1510	1505
		q4	1820	1790	1760	1735	1710	1690	1670	1655	1640	1625	1610	1595	1580	1570	1560
	18	1	363	328	298	273	250	231	199	169	142	132	121	111	102	94	87
		2	363	328	298	273	250	231	213	198	185	173	121	111	102	94	87
		3	363	328	298	273	250	231	213	198	185	173	157	140	123	94	87
		q3	1675	1655	1635	1615	1600	1590	1575	1565	1555	1545	1535	1525	1520	1510	1505
		q4	1870	1835	1800	1775	1750	1725	1700	1680	1660	1645	1630	1620	1610	1595	1580
	16	1	400	395	359	320	285	255	228	206	186	168	152	138	126	115	105
		2	400	395	359	320	285	255	228	206	186	168	152	138	126	115	105
		3	400	395	359	320	285	255	228	206	186	168	152	138	126	115	105
		q3	1730	1700	1675	1655	1635	1620	1605	1590	1575	1565	1555	1545	1535	1525	1515
		q4	2000	1955	1910	1875	1840	1810	1780	1760	1740	1720	1700	1680	1660	1645	1630
5½" Normal Weight (145 pcf)	22	1	270	199	177	158	141	127	114	102	92	83	75	68	61	55	50
		2	270	244	222	203	141	127	114	102	92	83	75	68	61	55	50
		3	270	244	222	203	186	127	114	102	92	83	75	68	61	55	50
		q3	1875	1860	1850	1840	1830	1820	1810	1805	1800	1795	1785	1780	1775	1775	1770
		q4	1950	1930	1910	1895	1880	1865	1850	1840	1830	1820	1810	1800	1790	1785	1780
	21	1	299	270	245	179	161	145	131	118	107	97	88	80	72	66	60
		2	299	270	246	225	206	145	131	118	107	97	88	80	72	66	60
		3	299	270	246	225	206	190	175	118	107	97	88	80	72	66	60
		q3	1875	1860	1845	1835	1825	1815	1805	1800	1790	1785	1780	1770	1765	1760	1755
		q4	1980	1955	1930	1915	1900	1880	1860	1850	1840	1830	1820	1810	1800	1790	1780
	20	1	313	283	257	222	170	154	139	126	114	103	94	85	78	71	64
		2	313	283	257	235	216	199	139	126	114	103	94	85	78	71	64
		3	313	283	257	235	216	199	184	166	114	103	94	85	78	71	64
		q3	1880	1860	1850	1835	1825	1815	1805	1795	1790	1780	1775	1770	1765	1760	1755
		q4	2000	1975	1950	1930	1910	1890	1870	1855	1840	1830	1820	1810	1800	1790	1780
	19	1	362	327	297	272	249	208	167	152	138	126	115	105	97	88	81
		2	362	327	297	272	249	230	213	197	138	126	115	105	97	88	81
		3	362	327	297	272	249	230	213	197	184	166	115	105	97	88	81
		q3	1895	1875	1860	1845	1830	1820	1810	1795	1790	1780	1770	1765	1755	1750	1745
		q4	2060	2030	2000	1975	1950	1930	1910	1895	1880	1865	1850	1835	1820	1810	1800

See Page 30 for footnotes.

(continued)

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
5½" Normal Weight (145 pcf)	18	1	395	357	325	297	273	251	211	176	155	142	130	119	110	101	93
		2	395	357	325	297	273	251	233	216	201	142	130	119	110	101	93
		3	395	357	325	297	273	251	233	216	201	188	172	151	110	101	93
		q3	1915	1890	1875	1855	1840	1825	1815	1805	1795	1785	1775	1765	1760	1750	1745
		q4	2110	2075	2040	2015	1990	1965	1940	1920	1900	1885	1870	1855	1840	1830	1820
	16	1	400	400	389	356	327	301	279	259	222	188	164	152	140	129	120
		2	400	400	389	356	327	301	279	259	241	225	211	198	140	129	120
		3	400	400	389	356	327	301	279	259	241	225	211	198	186	166	120
		q3	1965	1940	1915	1895	1875	1860	1845	1830	1815	1805	1795	1780	1775	1765	1755
		q4	2240	2195	2150	2115	2080	2050	2020	2000	1980	1960	1940	1920	1900	1885	1870
6" Normal Weight (145 pcf)	22	1	296	217	192	171	153	137	123	111	100	90	81	73	–	–	–
		2	296	267	243	171	153	137	123	111	100	90	81	73	–	–	–
		3	296	267	243	222	204	137	123	111	100	90	81	73	–	–	–
		q3	2110	2100	2085	2075	2065	2060	2050	2045	2040	2030	2025	2020	–	–	–
		q4	2190	2170	2150	2130	2115	2100	2085	2075	2065	2055	2045	2035	–	–	–
	21	1	327	295	218	195	175	157	141	128	116	105	95	86	–	–	–
		2	327	295	269	245	175	157	141	128	116	105	95	86	–	–	–
		3	327	295	269	245	225	208	141	128	116	105	95	86	–	–	–
		q3	2115	2100	2085	2075	2065	2055	2045	2035	2030	2025	2015	2010	–	–	–
		q4	2220	2195	2170	2150	2130	2115	2100	2085	2075	2065	2050	2045	–	–	–
	20	1	342	309	281	206	185	167	150	136	123	112	101	92	84	76	69
		2	342	309	281	257	236	167	150	136	123	112	101	92	84	76	69
		3	342	309	281	257	236	217	201	136	123	112	101	92	84	76	69
		q3	2115	2100	2085	2075	2065	2055	2045	2035	2025	2020	2015	2010	2000	1995	1990
		q4	2235	2210	2185	2160	2145	2125	2110	2095	2080	2070	2060	2050	2040	2030	2020
	19	1	394	357	324	296	264	216	181	164	149	136	124	114	104	95	87
		2	394	357	324	296	272	251	232	164	149	136	124	114	104	95	87
		3	394	357	324	296	272	251	232	215	201	136	124	114	104	95	87
		q3	2135	2115	2100	2085	2070	2060	2045	2035	2025	2020	2010	2005	1995	1990	1985
		q4	2295	2265	2235	2210	2185	2165	2145	2130	2115	2100	2085	2070	2060	2050	2040
	18	1	400	390	354	324	297	266	219	184	168	153	140	129	118	108	100
		2	400	390	354	324	297	274	253	235	168	153	140	129	118	108	100
		3	400	390	354	324	297	274	253	235	219	205	183	129	118	108	100
		q3	2150	2130	2110	2095	2080	2065	2055	2040	2030	2020	2015	2005	2000	1990	1985
		q4	2345	2310	2275	2250	2220	2200	2175	2155	2140	2125	2110	2095	2080	2070	2055
	16	1	400	400	400	387	355	327	303	275	232	193	177	163	151	139	129
		2	400	400	400	387	355	327	303	281	262	245	229	163	151	139	129
		3	400	400	400	387	355	327	303	281	262	245	229	215	201	139	129
		q3	2205	2180	2155	2135	2115	2100	2080	2070	2055	2045	2030	2020	2010	2005	1995
		q4	2470	2425	2385	2345	2315	2285	2260	2235	2210	2190	2175	2155	2140	2125	2110
6½" Normal Weight (145 pcf)	22	1	266	235	209	186	166	149	134	120	108	97	87	79	71	64	57
		2	322	291	209	186	166	149	134	120	108	97	87	79	71	64	57
		3	322	291	265	242	166	149	134	120	108	97	87	79	71	64	57
		q3	2350	2340	2325	2315	2305	2300	2290	2285	2275	2270	2265	2260	2255	2250	2245
		q4	2430	2410	2390	2375	2360	2345	2330	2315	2300	2290	2280	2270	2265	2260	2250
	21	1	356	322	236	211	189	170	153	138	125	113	102	93	84	76	69
		2	356	322	293	267	189	170	153	138	125	113	102	93	84	76	69
		3	356	322	293	267	246	226	153	138	125	113	102	93	84	76	69
		q3	2355	2340	2325	2315	2300	2295	2285	2275	2270	2260	2255	2250	2245	2240	2235
		q4	2460	2435	2410	2390	2370	2355	2340	2330	2320	2305	2290	2280	2270	2265	2260

See Page 30 for footnotes.

(continued)

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
6½" Normal Weight (145 pcf)	20	1	373	337	250	224	201	181	163	147	133	121	110	100	90	82	74
		2	373	337	306	280	201	181	163	147	133	121	110	100	90	82	74
		3	373	337	306	280	257	237	163	147	133	121	110	100	90	82	74
		q3	2355	2340	2325	2315	2300	2290	2285	2275	2265	2260	2255	2245	2240	2235	2230
		q4	2480	2455	2430	2405	2380	2365	2350	2335	2320	2310	2300	2290	2280	2270	2260
	19	1	400	388	353	322	272	216	196	178	162	147	134	123	112	103	94
		2	400	388	353	322	296	273	196	178	162	147	134	123	112	103	94
		3	400	388	353	322	296	273	252	234	162	147	134	123	112	103	94
		q3	2375	2355	2340	2325	2310	2295	2285	2275	2265	2260	2250	2240	2235	2230	2225
		q4	2540	2510	2480	2455	2430	2410	2390	2370	2350	2340	2330	2315	2300	2290	2280
	18	1	400	400	385	352	323	275	219	199	181	166	152	139	127	117	107
		2	400	400	385	352	323	298	276	199	181	166	152	139	127	117	107
		3	400	400	385	352	323	298	276	256	238	223	152	139	127	117	107
		q3	2390	2370	2350	2335	2320	2305	2295	2280	2270	2260	2255	2245	2235	2230	2225
		q4	2590	2555	2520	2490	2460	2440	2420	2400	2380	2365	2350	2335	2320	2310	2300
	16	1	400	400	400	400	385	355	329	286	227	208	191	176	162	150	139
		2	400	400	400	400	385	355	329	305	284	266	191	176	162	150	139
		3	400	400	400	400	385	355	329	305	284	266	249	234	213	150	139
		q3	2445	2420	2395	2375	2355	2335	2320	2305	2295	2280	2270	2260	2250	2240	2235
		q4	2710	2670	2630	2595	2560	2530	2500	2475	2450	2430	2410	2395	2380	2365	2350
7½" Normal Weight (145 pcf)	22	1	311	275	244	217	194	173	155	140	125	113	101	91	82	73	66
		2	378	275	244	217	194	173	155	140	125	113	101	91	82	73	66
		3	378	342	311	217	194	173	155	140	125	113	101	91	82	73	66
		q3	2830	2815	2805	2795	2785	2775	2770	2760	2755	2750	2745	2740	2735	2730	2725
		q4	2910	2890	2870	2850	2830	2820	2810	2795	2780	2770	2760	2755	2750	2740	2730
	21	1	350	310	276	246	221	198	178	161	145	131	119	107	97	88	79
		2	400	377	276	246	221	198	178	161	145	131	119	107	97	88	79
		3	400	377	343	313	221	198	178	161	145	131	119	107	97	88	79
		q3	2830	2815	2805	2790	2780	2770	2760	2755	2745	2740	2735	2730	2725	2720	2715
		q4	2940	2915	2890	2870	2850	2835	2820	2805	2790	2780	2770	2760	2750	2745	2740
	20	1	400	328	292	261	234	210	190	171	155	140	127	115	105	95	86
		2	400	395	359	261	234	210	190	171	155	140	127	115	105	95	86
		3	400	395	359	328	301	210	190	171	155	140	127	115	105	95	86
		q3	2835	2820	2805	2790	2780	2770	2760	2750	2745	2740	2730	2725	2720	2715	2710
		q4	2950	2925	2900	2880	2860	2845	2830	2815	2800	2790	2780	2770	2760	2750	2740
	19	1	400	400	400	310	279	252	228	207	188	171	156	142	130	119	109
		2	400	400	400	377	346	252	228	207	188	171	156	142	130	119	109
		3	400	400	400	377	346	319	295	207	188	171	156	142	130	119	109
		q3	2850	2835	2815	2800	2785	2775	2765	2755	2745	2735	2730	2720	2715	2705	2700
		q4	3020	2990	2960	2935	2910	2890	2870	2850	2830	2815	2800	2790	2780	2770	2760
	18	1	400	400	400	400	352	280	254	231	211	193	176	161	148	135	124
		2	400	400	400	400	378	348	254	231	211	193	176	161	148	135	124
		3	400	400	400	400	378	348	322	299	211	193	176	161	148	135	124
		q3	2870	2850	2830	2810	2795	2785	2770	2760	2750	2740	2730	2725	2715	2710	2700
		q4	3070	3035	3000	2970	2940	2920	2900	2880	2860	2845	2830	2815	2800	2790	2780

See Page 30 for footnotes.

(continued)

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
7½" Normal Weight (145 pcf)	16	1	400	400	400	400	400	400	363	288	263	242	222	204	188	174	160
		2	400	400	400	400	400	400	384	356	263	242	222	204	188	174	160
		3	400	400	400	400	400	400	384	356	332	310	290	204	188	174	160
		q3	2925	2895	2875	2850	2835	2815	2800	2785	2770	2760	2750	2740	2730	2720	2710
		q4	3190	3150	3110	3075	3040	3010	2980	2955	2930	2910	2890	2875	2860	2845	2830
5" Structural Light Weight (110 pcf)	22	1	246	223	202	185	139	126	114	104	95	87	79	73	66	61	56
		2	246	223	202	185	170	157	114	104	95	87	79	73	66	61	56
		3	246	223	202	185	170	157	145	131	95	87	79	73	66	61	56
		q3	1310	1295	1285	1275	1265	1255	1250	1240	1235	1230	1225	1220	1215	1210	1205
		q4	1390	1370	1350	1330	1310	1300	1290	1275	1260	1250	1240	1235	1230	1220	1210
	21	1	273	247	224	205	188	161	130	119	108	99	91	84	77	71	65
		2	273	247	224	205	188	174	161	149	108	99	91	84	77	71	65
		3	273	247	224	205	188	174	161	149	136	123	91	84	77	71	65
		q3	1310	1295	1285	1270	1260	1250	1240	1235	1225	1220	1215	1210	1205	1200	1195
		q4	1420	1395	1370	1350	1330	1315	1300	1285	1270	1260	1250	1240	1230	1225	1220
	20	1	286	259	235	215	197	177	150	126	115	105	97	89	82	75	70
		2	286	259	235	215	197	182	168	156	146	105	97	89	82	75	70
		3	286	259	235	215	197	182	168	156	146	132	120	89	82	75	70
		q3	1315	1300	1285	1270	1260	1250	1240	1235	1225	1220	1210	1205	1200	1195	1190
		q4	1430	1405	1380	1360	1340	1325	1310	1295	1280	1270	1260	1250	1240	1230	1220
	19	1	331	299	272	249	228	211	195	172	148	126	116	107	99	92	85
		2	331	299	272	249	228	211	195	181	169	152	135	107	99	92	85
		3	331	299	272	249	228	211	195	181	169	152	135	120	108	97	85
		q3	1330	1315	1295	1280	1265	1255	1245	1235	1225	1215	1210	1200	1195	1190	1180
		q4	1500	1470	1440	1415	1390	1370	1350	1330	1310	1295	1280	1270	1260	1250	1240
	18	1	363	328	298	273	250	231	213	198	176	152	131	120	111	102	92
		2	363	328	298	273	250	231	213	198	180	159	141	126	113	102	92
		3	363	328	298	273	250	231	213	198	180	159	141	126	113	102	92
		q3	1350	1330	1310	1295	1275	1265	1250	1240	1230	1220	1210	1205	1195	1190	1180
		q4	1550	1515	1480	1450	1420	1400	1380	1360	1340	1325	1310	1295	1280	1270	1260
	16	1	400	395	353	314	280	251	226	204	185	168	153	140	125	113	102
		2	400	395	353	314	280	251	226	204	185	168	153	140	125	113	102
		3	400	395	353	314	280	251	226	204	185	168	153	140	125	113	102
		q3	1405	1375	1355	1330	1315	1295	1280	1265	1250	1240	1230	1220	1210	1200	1190
		q4	1670	1630	1590	1555	1520	1490	1460	1435	1410	1390	1370	1355	1340	1325	1310
5½" Structural Light Weight (110 pcf)	22	1	270	244	222	168	152	137	124	113	103	94	86	78	72	66	60
		2	270	244	222	203	186	137	124	113	103	94	86	78	72	66	60
		3	270	244	222	203	186	172	159	113	103	94	86	78	72	66	60
		q3	1465	1455	1440	1430	1425	1415	1405	1400	1395	1385	1380	1375	1370	1365	1365
		q4	1550	1530	1510	1490	1470	1455	1440	1430	1420	1410	1400	1390	1380	1375	1370
	21	1	299	270	246	225	205	155	141	129	117	107	98	90	83	76	70
		2	299	270	246	225	206	190	176	129	117	107	98	90	83	76	70
		3	299	270	246	226	206	190	176	163	152	107	98	90	83	76	70
		q3	1470	1455	1440	1430	1420	1410	1400	1390	1385	1380	1370	1365	1360	1355	1350
		q4	1580	1555	1530	1510	1490	1475	1460	1445	1430	1420	1410	1400	1390	1380	1370

See Page 30 for footnotes.

(continued)

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
5½" Structural Light Weight (110 pcf)	20	1	313	283	257	235	216	190	149	136	124	114	105	96	88	81	75
		2	313	283	257	235	216	199	184	171	124	114	105	96	88	81	75
		3	313	283	257	235	216	199	184	171	159	148	105	96	88	81	75
		q3	1470	1455	1440	1430	1420	1410	1400	1390	1385	1375	1370	1365	1355	1350	1345
		q4	1590	1565	1540	1520	1500	1485	1470	1455	1440	1430	1420	1410	1400	1390	1380
	19	1	362	327	297	272	249	230	213	184	156	137	126	116	107	99	92
		2	362	327	297	272	249	230	213	197	184	172	126	116	107	99	92
		3	362	327	297	272	249	230	213	197	184	172	161	151	134	99	92
		q3	1490	1470	1455	1440	1425	1415	1400	1390	1385	1375	1365	1360	1350	1345	1340
		q4	1650	1620	1590	1565	1540	1520	1500	1485	1470	1455	1440	1430	1420	1410	1400
	18	1	395	357	325	297	273	251	233	216	189	162	141	130	120	111	103
		2	395	357	325	297	273	251	233	216	201	188	176	164	120	111	103
		3	395	357	325	297	273	251	233	216	201	188	176	164	147	132	103
		q3	1510	1485	1465	1450	1435	1420	1410	1400	1385	1380	1370	1360	1355	1345	1340
		q4	1700	1665	1630	1605	1580	1560	1540	1520	1500	1485	1470	1455	1440	1430	1420
	16	1	400	400	389	356	327	301	279	259	241	225	203	162	150	140	130
		2	400	400	389	356	327	301	279	259	241	225	203	181	162	146	130
		3	400	400	389	356	327	301	279	259	241	225	203	181	162	146	132
		q3	1560	1535	1510	1490	1470	1455	1440	1425	1410	1400	1385	1375	1365	1360	1350
		q4	1830	1785	1740	1705	1670	1645	1620	1595	1570	1550	1530	1515	1500	1485	1470
6¼" Structural Light Weight (110 pcf)	22	1	309	279	213	191	172	155	141	128	116	106	97	88	81	74	68
		2	309	279	254	232	172	155	141	128	116	106	97	88	81	74	68
		3	309	279	254	232	213	196	141	128	116	106	97	88	81	74	68
		q3	1705	1690	1680	1670	1660	1650	1645	1635	1630	1625	1620	1615	1610	1605	1600
		q4	1780	1760	1740	1725	1710	1695	1680	1670	1660	1650	1640	1630	1620	1615	1610
	21	1	341	309	281	256	194	176	160	145	133	121	111	102	93	86	79
		2	341	309	281	256	235	217	160	145	133	121	111	102	93	86	79
		3	341	309	281	256	235	217	201	186	133	121	111	102	93	86	79
		q3	1705	1690	1680	1665	1655	1645	1635	1630	1620	1615	1610	1605	1600	1595	1590
		q4	1810	1790	1770	1750	1730	1715	1700	1685	1670	1660	1650	1640	1630	1620	1610
	20	1	357	323	294	268	246	186	169	154	141	129	118	108	100	92	84
		2	357	323	294	268	246	227	210	154	141	129	118	108	100	92	84
		3	357	323	294	268	246	227	210	195	182	129	118	108	100	92	84
		q3	1710	1695	1680	1665	1655	1645	1635	1630	1620	1615	1605	1600	1595	1590	1585
		q4	1830	1805	1780	1760	1740	1720	1700	1690	1680	1665	1650	1640	1630	1620	1610
	19	1	400	372	338	309	284	262	235	183	168	154	142	131	121	111	103
		2	400	372	338	309	284	262	242	225	209	154	142	131	121	111	103
		3	400	372	338	309	284	262	242	225	209	196	183	131	121	111	103
		q3	1725	1710	1690	1675	1660	1650	1640	1630	1620	1610	1605	1595	1590	1580	1575
		q4	1890	1860	1830	1805	1780	1760	1740	1725	1710	1695	1680	1670	1660	1645	1630
	18	1	400	400	369	338	310	286	264	241	203	172	158	146	135	125	116
		2	400	400	369	338	310	286	264	246	229	214	158	146	135	125	116
		3	400	400	369	338	310	286	264	246	229	214	200	188	176	125	116
		q3	1745	1725	1705	1690	1670	1660	1645	1635	1625	1615	1605	1600	1590	1585	1575
		q4	1940	1905	1870	1845	1820	1795	1770	1750	1730	1715	1700	1690	1680	1665	1650

See Page 30 for footnotes.

(continued)

TABLE 12–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW3™-36 & W3-36 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7, 8] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
6¼" Structural Light Weight (110 pcf)	16	1	400	400	400	400	370	341	316	293	273	255	197	182	169	157	146
		2	400	400	400	400	370	341	316	293	273	255	239	224	211	157	146
		3	400	400	400	400	370	341	316	293	273	255	239	224	211	199	188
		q3	1800	1770	1750	1725	1710	1690	1675	1660	1645	1635	1625	1615	1605	1595	1585
		q4	2070	2025	1980	1945	1910	1880	1850	1830	1810	1790	1770	1750	1730	1715	1700
7¼" Structural Light Weight (110 pcf)	22	1	364	280	250	224	202	182	165	150	136	124	113	103	94	86	79
		2	364	329	299	224	202	182	165	150	136	124	113	103	94	86	79
		3	364	329	299	273	251	182	165	150	136	124	113	103	94	86	79
		q3	2020	2005	1995	1985	1975	1965	1960	1950	1945	1940	1935	1930	1925	1920	1915
		q4	2100	2080	2060	2040	2020	2010	2000	1985	1970	1960	1950	1945	1940	1930	1920
	21	1	400	363	281	253	228	206	187	170	155	142	130	119	109	100	92
		2	400	363	330	302	277	206	187	170	155	142	130	119	109	100	92
		3	400	363	330	302	277	255	236	170	155	142	130	119	109	100	92
		q3	2020	2005	1995	1980	1970	1960	1955	1945	1940	1930	1925	1920	1915	1910	1905
		q4	2130	2125	2080	2060	2040	2025	2010	1995	1980	1970	1960	1950	1940	1935	1930
	20	1	400	380	345	266	240	218	198	180	165	150	138	126	116	107	98
		2	400	380	345	316	290	218	198	180	165	150	138	126	116	107	98
		3	400	380	345	316	290	267	247	230	165	150	138	126	116	107	98
		q3	2025	2010	1995	1985	1970	1960	1950	1945	1935	1930	1920	1915	1910	1905	1900
		q4	2150	2120	2090	2070	2050	2035	2020	2005	1990	1980	1970	1960	1950	1940	1930
	19	1	400	400	397	363	333	304	235	214	196	180	166	153	141	130	120
		2	400	400	397	363	333	307	285	214	196	180	166	153	141	130	120
		3	400	400	397	363	333	307	285	264	246	230	166	153	141	130	120
		q3	2045	2025	2005	1990	1980	1965	1955	1945	1935	1925	1920	1910	1905	1900	1890
		q4	2210	2180	2150	2125	2100	2080	2060	2040	2020	2010	2000	1985	1970	1960	1950
	18	1	400	400	400	396	364	335	310	238	218	201	185	171	158	146	135
		2	400	400	400	396	364	335	310	288	268	201	185	171	158	146	135
		3	400	400	400	396	364	335	310	288	268	251	235	171	158	146	135
		q3	2060	2040	2020	2005	1990	1975	1960	1950	1940	1930	1920	1915	1905	1900	1890
		q4	2260	2225	2190	2160	2130	2110	2090	2070	2050	2035	2020	2005	1990	1980	1970
	16	1	400	400	400	400	400	399	370	343	320	248	229	212	197	183	170
		2	400	400	400	400	400	399	370	343	320	299	280	212	197	183	170
		3	400	400	400	400	400	399	370	343	320	299	280	263	247	233	170
		q3	2115	2085	2065	2045	2025	2005	1990	1975	1965	1950	1940	1930	1920	1910	1905
		q4	2380	2340	2300	2265	2230	2200	2170	2145	2120	2100	2080	2065	2050	2035	2020

1 Shoring calculations based on deck supporting dead load of concrete plus either 20 psf uniform construction live load or 150-pound concentrated live load for flexure. Dead load deflection limited to L/180 of span length, but not to exceed 3/4 inch.
2 Shoring is required at midspan for superimposed load values to the right of the heavy line.
3 Steel for deck to have a minimum yield strength of 38,000 psi and a minimum tensile strength of 55,000 psi.
4 Total slab depth is nominal depth from top of concrete to bottom of steel deck.
5 Concrete fill to have minimum compressive strength f'_c = 3000 psi.
6 Support reactions for unshored spans due to dead loads and uniform construction live loads may not exceed values set forth in Table 5.
7 The number after the letter q indicates the number of puddle welds per panel end and at interior supports.
8 PLW3-36 and W3-36 FORMLOK decks with structural concrete fill may be considered rigid diaphragm, with F<1.

TABLE 13–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLN™-24 & N-24 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7]

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
5" Normal Weight (145 pcf)	22	1	241	211	165	148	133	120	109	99	90	82	74	68	62	–	–
		2	241	218	198	181	166	145	109	99	90	82	74	68	62	–	–
		3	241	218	198	181	166	145	109	99	90	82	74	68	62	–	–
		q4	1700	1675	1660	1640	1625	1610	1600	1585	1575	1565	1555	1550	1540	–	–
		F4	1.10	1.11	1.13	1.14	1.15	1.16	1.17	1.18	1.18	1.19	1.20	1.21	1.21	–	–
	20	1	255	230	209	191	142	129	117	106	96	88	80	73	67	61	56
		2	255	230	209	191	176	162	150	139	96	88	80	73	67	61	56
		3	255	230	209	191	176	162	150	139	122	88	80	73	67	61	56
		q4	1740	1715	1690	1670	1650	1635	1620	1605	1590	1580	1570	1560	1550	1540	1535
		F4	0.98	0.99	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.08	1.09	1.10	1.10	1.11
	18	1	257	232	211	193	177	163	151	140	128	88	80	73	67	61	56
		2	257	232	211	193	177	163	151	140	131	122	114	73	67	61	56
		3	257	232	211	193	177	163	151	140	131	122	114	107	101	95	56
		q4	1840	1805	1775	1750	1725	1700	1680	1660	1645	1630	1615	1600	1590	1575	1565
		F4	0.80	0.82	0.83	0.84	0.86	0.87	0.88	0.89	0.90	0.91	0.91	0.92	0.93	0.94	0.94
	16	1	259	234	213	194	178	165	152	141	132	123	115	108	67	61	56
		2	259	234	213	194	178	165	152	141	132	123	115	108	102	96	56
		3	259	234	213	194	178	165	152	141	132	123	115	108	102	96	91
		q4	1960	1915	1875	1840	1810	1785	1760	1735	1715	1695	1675	1660	1640	1630	1615
		F4	0.67	0.69	0.70	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.80	0.80	0.81	0.82
5½" Normal Weight (145 pcf)	22	1	263	200	178	160	143	129	117	106	96	87	79	72	65	–	–
		2	263	238	217	198	182	129	117	106	96	87	79	72	65	–	–
		3	263	238	217	198	182	129	117	106	96	87	79	72	65	–	–
		q4	1940	1915	1895	1880	1865	1850	1835	1825	1815	1805	1795	1785	1780	–	–
		F4	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.02	1.03	1.03	1.04	1.04	1.05	–	–
	20	1	278	251	229	170	153	138	125	113	103	94	85	78	71	65	59
		2	278	251	229	209	192	177	164	113	103	94	85	78	71	65	59
		3	278	251	229	209	192	177	164	152	103	94	85	78	71	65	59
		q4	1980	1955	1930	1910	1890	1870	1860	1845	1830	1820	1810	1800	1790	1780	1770
		F4	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96
	18	1	278	252	229	209	192	177	164	152	102	93	85	77	70	64	58
		2	278	252	229	209	192	177	164	152	142	132	85	77	70	64	58
		3	278	252	229	209	192	177	164	152	142	132	124	116	110	64	58
		q4	2080	2045	2015	1990	1965	1940	1920	1900	1885	1870	1855	1840	1830	1815	1805
		F4	0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.78	0.79	0.80	0.80	0.81	0.81	0.82
	16	1	279	252	229	210	192	177	164	152	142	133	124	77	70	63	58
		2	279	252	229	210	192	177	164	152	142	133	124	117	110	63	58
		3	279	252	229	210	192	177	164	152	142	133	124	117	110	104	98
		q4	2200	2155	2115	2080	2050	2020	1995	1975	1950	1930	1915	1895	1880	1865	1855
		F4	0.60	0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.68	0.69	0.70	0.70	0.71	0.71
6" Normal Weight (145 pcf)	22	1	245	217	194	173	155	140	126	114	103	94	85	77	–	–	–
		2	289	261	237	217	155	140	126	114	103	94	85	77	–	–	–
		3	289	261	237	217	155	140	126	114	103	94	85	77	–	–	–
		q4	2175	2155	2135	2120	2105	2090	2075	2065	2055	2045	2035	2025	–	–	–
		F4	0.86	0.87	0.87	0.88	0.89	0.89	0.90	0.90	0.91	0.91	0.92	0.92	–	–	–
	20	1	300	275	250	184	166	149	135	122	111	101	91	83	76	69	63
		2	300	275	250	229	210	193	135	122	111	101	91	83	76	69	63
		3	300	275	250	229	210	193	179	122	111	101	91	83	76	69	63
		q4	2220	2190	2170	2150	2130	2115	2095	2085	2070	2060	2050	2040	2030	2020	2010
		F4	0.77	0.78	0.79	0.79	0.80	0.81	0.81	0.82	0.82	0.83	0.83	0.84	0.84	0.84	0.85

See Page 34 for footnotes.

(continued)

TABLE 13–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLN™-24 & N-24 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
6" Normal Weight (145 pcf)	18	1	300	274	249	228	209	193	134	121	110	99	90	82	75	68	62
		2	300	274	249	228	209	193	178	166	154	99	90	82	75	68	62
		3	300	274	249	228	209	193	178	166	154	144	135	127	75	68	62
		q4	2320	2285	2255	2230	2200	2180	2160	2140	2125	2105	2095	2080	2065	2055	2045
		F4	0.64	0.65	0.65	0.66	0.67	0.68	0.68	0.69	0.70	0.70	0.71	0.71	0.71	0.72	0.72
	16	1	300	274	249	228	209	193	178	165	154	144	89	81	74	67	61
		2	300	274	249	228	209	193	178	165	154	144	135	127	74	67	61
		3	300	274	249	228	209	193	178	165	154	144	135	127	119	112	61
		q4	2435	2395	2355	2320	2290	2260	2235	2210	2190	2170	2155	2135	2120	2105	2090
		F4	0.54	0.55	0.56	0.57	0.58	0.58	0.59	0.60	0.60	0.61	0.61	0.62	0.62	0.63	0.63
6½" Normal Weight (145 pcf)	22	1	267	236	210	188	169	152	137	123	112	101	91	83	–	–	–
		2	300	286	260	188	169	152	137	123	112	101	91	83	–	–	–
		3	300	286	260	188	169	152	137	123	112	101	91	83	–	–	–
		q4	2415	2395	2375	2360	2340	2330	2315	2305	2295	2285	2275	2265	–	–	–
		F4	0.77	0.78	0.79	0.79	0.80	0.80	0.81	0.81	0.81	0.82	0.82	0.82	–	–	–
	20	1	300	300	224	200	180	162	146	132	120	108	98	89	81	74	67
		2	300	300	273	250	229	162	146	132	120	108	98	89	81	74	67
		3	300	300	273	250	229	211	146	132	120	108	98	89	81	74	67
		q4	2460	2430	2410	2390	2370	2350	2335	2325	2310	2300	2285	2275	2265	2260	2250
		F4	0.69	0.70	0.71	0.71	0.72	0.72	0.73	0.73	0.74	0.74	0.74	0.75	0.75	0.75	0.76
	18	1	300	299	272	248	228	210	144	130	118	107	97	88	80	72	66
		2	300	299	272	248	228	210	194	181	118	107	97	88	80	72	66
		3	300	299	272	248	228	210	194	181	168	157	97	88	80	72	66
		q4	2560	2525	2495	2465	2440	2420	2400	2380	2360	2345	2330	2320	2305	2295	2285
		F4	0.58	0.58	0.59	0.60	0.60	0.61	0.62	0.62	0.62	0.63	0.63	0.64	0.64	0.64	0.65
	16	1	300	298	271	247	227	209	194	180	167	105	96	87	79	71	64
		2	300	298	271	247	227	209	194	180	167	156	96	87	79	71	64
		3	300	298	271	247	227	209	194	180	167	156	147	138	130	71	64
		q4	2675	2635	2595	2560	2530	2500	2475	2450	2430	2410	2390	2375	2360	2345	2330
		F4	0.49	0.50	0.51	0.52	0.52	0.53	0.53	0.54	0.54	0.55	0.55	0.56	0.56	0.56	0.57
7½" Normal Weight (145 pcf)	22	1	300	277	247	220	197	177	159	144	130	117	106	96	87	–	–
		2	300	300	247	220	197	177	159	144	130	117	106	96	87	–	–
		3	300	300	247	220	197	177	159	144	130	117	106	96	87	–	–
		q4	2895	2870	2855	2835	2820	2805	2795	2780	2770	2760	2750	2745	2735	–	–
		F4	0.64	0.65	0.65	0.66	0.66	0.67	0.67	0.67	0.67	0.68	0.68	0.68	0.68	–	–
	20	1	300	294	262	234	210	189	170	154	139	126	114	103	94	85	77
		2	300	300	300	295	210	189	170	154	139	126	114	103	94	85	77
		3	300	300	300	295	270	189	170	154	139	126	114	103	94	85	77
		q4	2935	2910	2885	2865	2845	2830	2815	2800	2790	2775	2765	2755	2745	2735	2730
		F4	0.58	0.59	0.59	0.59	0.60	0.60	0.61	0.61	0.61	0.61	0.62	0.62	0.62	0.62	0.62
	18	1	300	300	300	292	207	186	168	151	137	124	112	101	92	83	75
		2	300	300	300	292	268	247	168	151	137	124	112	101	92	83	75
		3	300	300	300	292	268	247	229	212	198	124	112	101	92	83	75
		q4	3035	3005	2970	2945	2920	2895	2875	2860	2840	2825	2810	2795	2785	2775	2760
		F4	0.49	0.49	0.50	0.50	0.51	0.51	0.51	0.52	0.52	0.52	0.53	0.53	0.53	0.53	0.53
	16	1	300	300	300	290	266	245	227	149	135	122	110	100	90	81	74
		2	300	300	300	290	266	245	227	211	196	122	110	100	90	81	74
		3	300	300	300	290	266	245	227	211	196	184	172	100	90	81	74
		q4	3155	3110	3070	3040	3005	2980	2955	2930	2910	2890	2870	2855	2840	2825	2810
		F4	0.42	0.42	0.43	0.43	0.44	0.44	0.45	0.45	0.45	0.46	0.46	0.46	0.47	0.47	0.47

See Page 34 for footnotes.

(continued)

TABLE 13–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLN™-24 & N-24 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
5" Structural Light Weight (110 pcf)	22	1	241	218	198	155	141	128	116	106	97	89	82	75	69	64	59
		2	241	218	198	181	166	153	142	125	97	89	82	75	69	64	59
		3	241	218	198	181	166	153	142	125	97	89	82	75	69	64	59
		q4	1375	1355	1335	1315	1300	1285	1275	1260	1250	1240	1230	1225	1215	1210	1200
		F4	1.36	1.38	1.40	1.42	1.43	1.45	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	1.55
	20	1	255	230	209	191	176	162	124	113	104	95	88	81	75	69	64
		2	255	230	209	191	176	162	150	139	130	119	88	81	75	69	64
		3	255	230	209	191	176	162	150	139	130	119	105	94	75	69	64
		q4	1415	1390	1365	1345	1325	1310	1295	1280	1270	1255	1245	1235	1225	1215	1210
		F4	1.20	1.23	1.25	1.27	1.28	1.30	1.32	1.33	1.34	1.36	1.37	1.38	1.39	1.40	1.41
	18	1	257	232	211	193	177	163	151	140	131	122	114	81	75	69	64
		2	257	232	211	193	177	163	151	140	131	122	114	107	97	87	64
		3	257	232	211	193	177	163	151	140	131	122	114	107	97	87	78
		q4	1520	1485	1450	1425	1400	1375	1355	1340	1320	1305	1290	1275	1265	1255	1240
		F4	0.97	1.00	1.02	1.04	1.05	1.07	1.09	1.10	1.12	1.13	1.14	1.16	1.17	1.18	1.19
	16	1	259	234	213	194	178	165	152	141	132	123	115	108	102	96	64
		2	259	234	213	194	178	165	152	141	132	123	115	108	102	96	87
		3	259	234	213	194	178	165	152	141	132	123	115	108	102	96	87
		q4	1635	1590	1555	1520	1485	1460	1435	1410	1390	1370	1350	1335	1320	1305	1290
		F4	0.81	0.83	0.85	0.87	0.89	0.90	0.92	0.94	0.95	0.96	0.98	0.99	1.00	1.01	1.02
5½" Structural Light Weight (110 pcf)	22	1	263	238	187	168	152	138	125	114	105	96	88	81	74	68	63
		2	263	238	217	198	182	167	155	114	105	96	88	81	74	68	63
		3	263	238	217	198	182	167	155	114	105	96	88	81	74	68	63
		q4	1530	1510	1490	1475	1460	1445	1430	1420	1410	1400	1390	1380	1375	1365	1360
		F4	1.22	1.24	1.25	1.27	1.28	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.36	1.37	1.37
	20	1	278	251	229	209	192	147	134	122	112	102	94	86	80	73	68
		2	278	251	229	209	192	177	164	152	142	102	94	86	80	73	68
		3	278	251	229	209	192	177	164	152	142	132	94	86	80	73	68
		q4	1575	1550	1525	1505	1485	1470	1455	1440	1425	1415	1405	1395	1385	1375	1365
		F4	1.08	1.10	1.12	1.13	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25
	18	1	278	252	229	209	192	177	164	152	142	132	93	86	79	73	67
		2	278	252	229	209	192	177	164	152	142	132	124	116	79	73	67
		3	278	252	229	209	192	177	164	152	142	132	124	116	110	103	98
		q4	1675	1640	1610	1580	1555	1535	1515	1495	1480	1465	1450	1435	1420	1410	1400
		F4	0.88	0.90	0.92	0.93	0.95	0.96	0.97	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.05
	16	1	279	252	229	210	192	177	164	152	142	133	124	117	110	72	67
		2	279	252	229	210	192	177	164	152	142	133	124	117	110	104	98
		3	279	252	229	210	192	177	164	152	142	133	124	117	110	104	98
		q4	1795	1750	1710	1675	1645	1615	1590	1570	1545	1525	1510	1490	1475	1460	1450
		F4	0.74	0.75	0.77	0.79	0.80	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91
6¼" Structural Light Weight (110 pcf)	22	1	300	238	213	191	173	156	142	129	118	108	99	91	83	76	70
		2	300	273	248	227	208	156	142	129	118	108	99	91	83	76	70
		3	300	273	248	227	208	156	142	129	118	108	99	91	83	76	70
		q4	1770	1750	1730	1710	1695	1680	1670	1655	1645	1635	1625	1620	1610	1605	1595
		F4	1.05	1.07	1.08	1.09	1.10	1.11	1.12	1.13	1.13	1.14	1.15	1.15	1.16	1.16	1.17
	20	1	300	288	261	239	183	166	151	138	126	115	106	97	89	82	76
		2	300	288	261	239	219	202	187	138	126	115	106	97	89	82	76
		3	300	288	261	239	219	202	187	174	162	115	106	97	89	82	76
		q4	1810	1785	1760	1740	1720	1705	1690	1675	1665	1650	1640	1630	1620	1610	1605
		F4	0.94	0.95	0.97	0.98	0.99	1.00	1.01	1.02	1.02	1.03	1.04	1.04	1.05	1.06	1.06

See Page 34 for footnotes.

(continued)

TABLE 13–ALLOWABLE SUPERIMPOSED LOADS (psf), DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLN™-24 & N-24 FORMLOK™ DECK WITH CONCRETE FILL [1, 2, 3, 4, 5, 6, 7] – Continued

TOTAL SLAB DEPTH & CONC. TYPE	DECK GAGE	NO. OF DECK SPANS	SPAN (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"
6¼" Structural Light Weight (110 pcf)	18	1	300	286	260	238	218	201	186	173	124	114	104	96	88	81	74
		2	300	286	260	238	218	201	186	173	161	151	141	96	88	81	74
		3	300	286	260	238	218	201	186	173	161	151	141	132	125	118	74
		q4	1915	1880	1845	1820	1795	1770	1750	1735	1715	1700	1685	1670	1660	1650	1635
		F4	0.77	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.88	0.89	0.90	0.90
	16	1	300	285	260	237	218	201	186	172	161	150	141	95	87	80	73
		2	300	285	260	237	218	201	186	172	161	150	141	132	124	80	73
		3	300	286	260	237	218	201	186	172	161	150	141	132	124	117	111
		q4	2030	1985	1945	1915	1880	1855	1830	1805	1785	1765	1745	1730	1715	1700	1685
		F4	0.65	0.66	0.68	0.69	0.70	0.71	0.72	0.73	0.74	0.75	0.76	0.76	0.77	0.78	0.78
7¼" Structural Light Weight (110 pcf)	22	1	300	280	251	225	203	184	167	152	139	127	116	106	97	89	82
		2	300	300	295	269	203	184	167	152	139	127	116	106	97	89	82
		3	300	300	295	269	203	184	167	152	139	127	116	106	97	89	82
		q4	2085	2065	2045	2025	2010	1995	1985	1975	1960	1950	1945	1935	1930	1920	1915
		F4	0.89	0.90	0.91	0.92	0.93	0.93	0.94	0.95	0.95	0.96	0.96	0.96	0.97	0.97	0.98
	20	1	300	300	300	239	215	195	177	161	147	135	123	113	104	96	88
		2	300	300	300	283	260	240	177	161	147	135	123	113	104	96	88
		3	300	300	300	283	260	240	222	161	147	135	123	113	104	96	88
		q4	2125	2100	2075	2055	2040	2020	2005	1990	1980	1965	1955	1945	1935	1930	1920
		F4	0.80	0.81	0.82	0.83	0.84	0.84	0.85	0.86	0.86	0.87	0.87	0.88	0.88	0.88	0.89
	18	1	300	300	300	281	258	238	220	159	145	133	121	111	102	94	86
		2	300	300	300	281	258	238	220	204	190	133	121	111	102	94	86
		3	300	300	300	281	258	238	220	204	190	178	166	156	102	94	86
		q4	2230	2195	2165	2135	2110	2090	2065	2050	2030	2015	2000	1990	1975	1965	1955
		F4	0.66	0.67	0.68	0.69	0.70	0.71	0.71	0.72	0.73	0.73	0.74	0.74	0.75	0.75	0.76
	16	1	300	300	300	279	256	236	219	203	189	177	120	110	100	92	85
		2	300	300	300	279	256	236	219	203	189	177	165	155	100	92	85
		3	300	300	300	279	256	236	219	203	189	177	165	155	146	138	85
		q4	2345	2300	2265	2230	2200	2170	2145	2120	2100	2080	2060	2045	2030	2015	2000
		F4	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.62	0.63	0.63	0.64	0.65	0.65	0.66	0.66

[1] Shoring calculations based on deck supporting dead load of concrete plus either 20 psf uniform construction live load or 150-pound concentrated live load for flexure. Dead load deflection limited to L/180 of span length, but not to exceed 3/4 inch.
[2] Shoring is required at midspan for superimposed load values in the shaded areas to the right of the heavy line.
[3] Steel for deck to have a minimum yield strength of 38,000 psi and a minimum tensile strength of 55,000 psi.
[4] Total slab depth is nominal depth from top of concrete to bottom of steel deck.
[5] Concrete fill to have minimum compressive strength f'_c = 3,000 psi.
[6] The number after the letter q or F indicates the number of puddle welds per panel end and at interior supports.
[7] Support reactions for unshored spans due to dead loads and uniform construction live loads shall not exceed the values set forth in Table 5.

TABLE 14–ALLOWABLE DIAPHRAGM SHEAR VALUES (plf) FOR DECKS WITH CONCRETE FILL AND 3/4" DIAMETER STUD SHEAR CONNECTORS [1-8, 16]

CONCRETE TYPE[9]	CONCRETE THICKNESS[10]	SPACING OF STUD SHEAR CONNECTORS [11, 14]							
		12"	16"	18"	24"	30"	32"	36"	F[12]
MINIMUM CONCRETE REINFORCEMENT OF 0.0025 TIMES THE AREA OF FILL ABOVE THE DECK									
NW	2"	3110	3110	3110	3110	3110	3110	2870	0.40
	2½"	3890	3890	3890	3890	3440	3230	2870	0.32
	3"	4670	4670	4670	4300	3440	3230	2870	0.26
	3½"	5450	5450	5450	4300	3440	3230	2870	0.23
	4½"	7000	6460	5740	4300	3440	3230	2870	0.18
	6"	8610	6460	5740	4300	3440	3230	2870	0.13
LW	2"	2910	2910	2910	2910	2910	2910	2850	0.56
	2½"	3640	3640	3640	3640	3420	3200	2850	0.45
	3¼"	4740	4740	4740	4270	3420	3200	2850	0.35
	4¼"	6190	6190	5700	4270	3420	3200	2850	0.26
	6"	8550	6410	5700	4270	3420	3200	2850	0.19
MINIMUM CONCRETE REINFORCEMENT OF 0.00075 TIMES THE AREA OF FILL ABOVE THE DECK[13]									
NW	2"	1310	1310	1310	1310	1310	1310	1310	0.40
	2½"	1640	1640	1640	1640	1640	1640	1640	0.32
	3"	1970	1970	1970	1970	1970	1970	1970	0.26
	3½"	2300	2300	2300	2300	2300	2300	2300	0.23
	4½"	2950	2950	2950	2950	2950	2950	2870	0.18
	6"	3940	3940	3940	3940	3440	3230	2870	0.13
LW	2"	1110	1110	1110	1110	1110	1110	1110	0.56
	2½"	1390	1390	1390	1390	1390	1390	1390	0.45
	3¼"	1810	1810	1810	1810	1810	1810	1810	0.35
	4¼"	2370	2370	2370	2370	2370	2370	2370	0.26
	6"	3350	3350	3350	3350	3350	3200	2850	0.19

[1] The allowable diaphragm shear values are based on concrete slab reinforcement with a minimum area as stated in the table below. Reinforcement shall have an equivalent area and spacing in both directions. Welded wire fabric of the sizes listed below meet this requirement. The fabric is placed approximately one inch below the top of the concrete.

Minimum Reinforcement for Tabulated Shear Values

Concrete Thickness[10]	Reinforcement = 0.0025 times area of fill above deck		Reinforcement =0.00075 times area of fill above deck	
	Area of Steel (in^2/ft)	Suggested Fabric[15]	Area of Steel (in^2/ft)	Suggested Fabric[15]
2"	0.060	4 x 4 - W2.0 x W2.0	0.028	6 x 6 - W1.4 x W1.4
2½"	0.075	4 x 4 - W2.5 x W2.5	0.028	6 x 6 - W1.4 x W1.4
3"	0.090	6 x 6 - W4.5 x W4.5	0.028	6 x 6 - W1.4 x W1.4
3¼"	0.098	6 x 6 - W5.0 x W5.0	0.029	6 x 6 - W2.0 x W2.0
3½"	0.105	4 x 4 - W3.5 x W3.5	0.032	6 x 6 - W2.0 x W2.0
4¼"	0.128	6 x 6 - W6.5 x W6.5	0.038	6 x 6 - W2.0 x W2.0
4½"	0.135	4 x 4 - W4.5 x W4.5	0.041	4 x 4 - W1.4 x W1.4
6"	0.180	4 x 4 - W6.0 x W6.0	0.054	6 x 6 - W2.9 x W2.9

[2] Stud shear connector diameter must be less than or equal to 2.5 times the steel support thickness unless connector is located directly over support web.

[3] See Figure 6 for details.

[4] Allowable diaphragm shear strengths assume "weak stud position" as described in AISC Steel Construction Manual (13th Ed.) Figure C-I3.4, with a single stud shear connector per rib at the spacings shown in the tables. The allowable values may be used when deck is either perpendicular or parallel to supports.

[5] For local shear transfer within the field of the diaphragm, 3/4" diameter studs having an allowable shear value of 8.60 kips per stud for normal weight concrete fills and 8.55 kips per stud for structural light weight concrete. However, when using 1-5/16" (Deep) Vercor,½" diameter studs having an allowable shear value of 3.83 kips per stud for normal weight concrete and 3.80 kips for light weight concrete must be used.

[6] Sidelap connections must be spaced at 36" on center maximum with either button-punch, No. 10 screw, 1½" long top-seam weld (standing seams), or 1½" long fillet weld (nested seams). Sidelaps of PLB, PLW2, PLW3, and PLN must be connected with Verco sidelap connections (VSC) at 36" on center maximum.

[7] To obtain factored (LRFD) diaphragm strengths, the values may be multiplied by a factor of 1.5 for all load combinations.

[8] See ACI 318, Section 9.3.4 for possible reductions of the diaphragm shear capacity dependent on the vertical components of the primary lateral-force-resisting system. Tabulated values may be multiplied by ϕ / 0.75, where ϕ is modified in accordance with ACI 318-05, Section 9.3.4.

[9] Design compressive strength f'_c = 3000 psi minimum.
NW = Normal Weight concrete (145 pcf)
LW = Structural Light Weight concrete (110 pcf)

[10] Concrete thickness (t_f) is measured above the top flute of the steel deck.

[11] Formlok deck types PLB, B, BR, PLB-CD, BCD, PLW2, W2, PLW2-CD, W2CD, PLW3, W3, PLW3-CD, W3CD, PLN, N, PLN-CD, and NCD must use minimum ¾" diameter studs to achieve the allowable values. 1-5/16" (Deep) Vercor must use minimum ½" diameter studs. The tabulated shear values must be multiplied by a factor of 0.44 for 1-5/16" (Deep) Vercor.

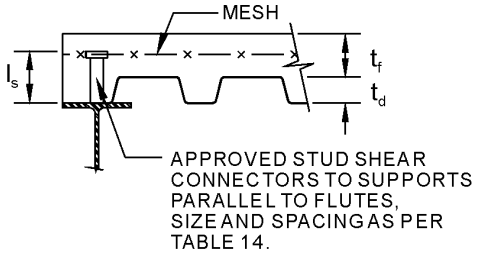
[12] Flexibility factor (F) indicates deflection in micro inches of 1 foot element under a shear of 1 pound per foot.

[13] Also compare to allowable diaphragm capacity of composite decks in Tables 8 and 10 through 13.

[14] The maximum center-to-center spacing of stud shear connectors must not exceed eight times the total slab thickness nor 36".

[5] Minimum lap of welded wire fabric must be 12".

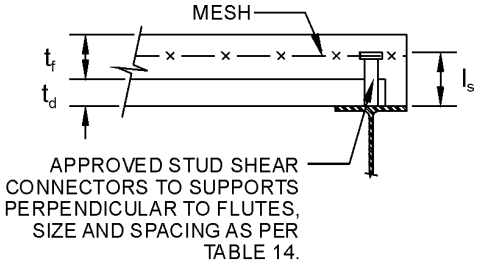
[16] Steel decks must be fastened to intermediate deck supports with arc spot welds or mechanical fasteners.



STUD SHEAR CONNECTORS AT SUPPORTS PARALLEL TO FLUTES

DECK HEIGHT (t_d)	STUD LENGTH (l_s)
1-5/16"	3"
1½"	3"
2"	3½"
3"	4½"

(Minimum Finished Length)



STUD SHEAR CONNECTORS AT SUPPORTS PERPENDICULAR TO FLUTES

FIGURE 6–STUD SHEAR CONNECTOR DETAILS

TABLE 15–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLW2™-36 FORMLOK™ DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	443	429	386	380	351	348	327	326	309
		F	11.6+54R	10.9+46R	13.3+41R	12.6+36R	14.8+32R	14.1+29R	16.1+27R	15.4+25R	17.4+23R
	VSC @ 12"	q	554	519	492	470	453	438	426	415	393
		F	6.3+54R	6.6+46R	6.9+41R	7.2+36R	7.4+32R	7.7+29R	7.9+27R	8.1+25R	8.3+23R
	VSC @ 8"	q	640	613	573	547	506	471	441	415	393
		F	4.8+54R	4.8+46R	5.1+41R	5.2+36R	5.4+32R	5.4+29R	5.7+27R	5.7+25R	5.9+23R
	VSC @ 4"	q	742	661	598	547	506	471	441	415	393
		F	3.6+54R	3.6+46R	3.7+41R	3.7+36R	3.8+32R	3.8+29R	3.9+27R	3.9+25R	3.9+23R
21	VSC @ 24"	q	542	523	471	463	427	424	397	397	376
		F	9.5+44R	9.0+37R	10.9+33R	10.3+29R	12.1+26R	11.6+24R	13.3+22R	12.7+20R	14.3+19R
	VSC @ 12"	q	674	630	597	570	549	531	516	503	476
		F	5.3+44R	5.6+37R	5.8+33R	6.0+29R	6.3+26R	6.5+24R	6.7+22R	6.8+20R	7.0+19R
	VSC @ 8"	q	776	742	694	662	612	570	534	503	476
		F	4.1+44R	4.2+37R	4.4+33R	4.4+29R	4.7+26R	4.7+24R	4.9+22R	4.9+20R	5.1+19R
	VSC @ 4"	q	898	800	724	662	612	570	534	503	476
		F	3.1+44R	3.2+37R	3.2+33R	3.3+29R	3.3+26R	3.4+24R	3.4+22R	3.4+20R	3.5+19R
20	VSC @ 24"	q	646	622	560	550	508	503	472	471	447
		F	7.9+36R	7.5+31R	9.1+27R	8.7+24R	10.1+22R	9.7+20R	11.1+18R	10.6+17R	11.9+15R
	VSC @ 12"	q	801	748	708	676	650	629	611	596	566
		F	4.6+36R	4.8+31R	5.0+27R	5.2+24R	5.4+22R	5.5+20R	5.7+18R	5.9+17R	6.0+15R
	VSC @ 8"	q	919	878	821	788	728	678	635	598	566
		F	3.6+36R	3.7+31R	3.9+27R	3.9+24R	4.1+22R	4.1+20R	4.2+18R	4.2+17R	4.4+15R
	VSC @ 4"	q	1068	952	861	788	728	678	635	598	566
		F	2.8+36R	2.9+31R	2.9+27R	2.9+24R	3.0+22R	3.0+20R	3.0+18R	3.1+17R	3.1+15R
19	VSC @ 24"	q	863	829	746	732	675	669	628	626	594
		F	5.8+25R	5.5+22R	6.6+19R	6.3+17R	7.3+15R	7.0+14R	8.0+13R	7.7+12R	8.7+11R
	VSC @ 12"	q	1063	992	937	895	861	833	809	789	770
		F	3.5+25R	3.7+22R	3.8+19R	4.0+17R	4.1+15R	4.2+14R	4.3+13R	4.4+12R	4.5+11R
	VSC @ 8"	q	1216	1160	1084	1054	991	923	865	814	770
		F	2.9+25R	2.9+22R	3.0+19R	3.1+17R	3.2+15R	3.2+14R	3.3+13R	3.3+12R	3.4+11R
	VSC @ 4"	q	1454	1295	1172	1073	991	923	865	814	770
		F	2.3+25R	2.4+22R	2.4+19R	2.4+17R	2.4+15R	2.5+14R	2.5+13R	2.5+12R	2.5+11R
18	VSC @ 24"	q	984	1003	888	885	817	809	760	757	719
		F	4.6+20R	4.4+17R	5.2+15R	5.0+13R	5.8+12R	5.6+11R	6.3+10R	6.1+9R	6.8+8R
	VSC @ 12"	q	1283	1196	1131	1080	1038	1005	977	953	933
		F	2.9+20R	3.0+17R	3.1+15R	3.3+13R	3.4+12R	3.5+11R	3.5+10R	3.6+9R	3.7+8R
	VSC @ 8"	q	1465	1397	1306	1269	1208	1156	1083	1020	965
		F	2.4+20R	2.5+17R	2.6+15R	2.6+13R	2.7+12R	2.7+11R	2.8+10R	2.8+9R	2.9+8R
	VSC @ 4"	q	1821	1622	1468	1344	1241	1156	1083	1020	965
		F	2.0+20R	2.1+17R	2.1+15R	2.1+13R	2.1+12R	2.1+11R	2.2+10R	2.2+9R	2.2+8R
16	VSC @ 24"	q	1261	1320	1132	1184	1050	1096	993	1033	950
		F	2.9+12R	2.8+10R	3.3+9R	3.2+8R	3.6+7R	3.5+6R	3.9+6R	3.8+5R	4.2+5R
	VSC @ 12"	q	1792	1672	1582	1512	1455	1410	1372	1340	1313
		F	2.0+12R	2.1+10R	2.2+9R	2.2+8R	2.3+7R	2.3+6R	2.4+6R	2.5+5R	2.5+5R
	VSC @ 8"	q	2043	1949	1823	1774	1691	1663	1604	1587	1520
		F	1.8+12R	1.8+10R	1.8+9R	1.9+8R	1.9+7R	1.9+6R	2.0+6R	2.0+5R	2.0+5R
	VSC @ 4"	q	2608	2472	2313	2117	1956	1821	1706	1607	1520
		F	1.6+12R	1.6+10R	1.6+9R	1.6+8R	1.6+7R	1.6+6R	1.6+6R	1.6+5R	1.6+5R

[1] VSC = Verco sidelap connection described in Section 3.8.

[2] The dimension from the first and last sidelap connection within each span is to be no more than one-half of the specified spacing.

[3] R is the vertical span (L_v) of deck units divided by the length (L_s) of the deck sheet: $R = L_v/L_s$.

[4] The flexibility limitations shown in Table 7 may be used as a guide in lieu of rational analysis of the anticipated deflections.

[5] Interpolation of diaphragm strength between adjacent spans is permissible. For interpolated lengths, use diaphragm flexibility factor for the closest span length.

[6] Diaphragm shear values for side seam fasteners placed at spacings other than those in the table should be determined based on the number of fasteners in each span.

TABLE 16–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR W2-36 FORMLOK™ DECK WITH BUTTON PUNCHES (BP) OR 1½ INCH TOP SEAM WELDS (TSW) AT SIDELAPS [1]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	195	181	159	152	138	134	124	122	114
		F	15.1+255R	16.4+218R	18.6+191R	19.6+170R	21.7+153R	22.5+139R	24.7+127R	25.3+118R	27.4+109R
	BP @ 12"	q	242	222	207	195	186	179	173	168	164
		F	12.8+255R	13.9+218R	14.9+191R	15.9+170R	16.8+153R	17.6+139R	18.4+127R	19.2+118R	19.9+109R
	TSW @ 24"	q	221	220	192	194	174	177	162	166	154
		F	11+255R	9.9+218R	10.0+191R	9.2+170R	9.3+153R	8.6+139R	8.7+127R	8.2+118R	8.2+109R
	TSW @ 12"	q	331	314	301	291	283	277	272	267	263
		F	8.3+255R	7.8+218R	7.4+191R	7.1+170R	6.8+153R	6.5+139R	6.3+127R	6.1+118R	6.0+109R
21	BP @ 24"	q	245	225	197	188	169	164	151	148	138
		F	13.3+191R	14.5+164R	16.4+143R	17.5+128R	19.4+115R	20.3+104R	22.2+96R	23.0+88R	24.9+82R
	BP @ 12"	q	296	269	249	234	223	213	205	199	194
		F	11.4+191R	12.5+164R	13.5+143R	14.5+128R	15.4+115R	16.2+104R	17.0+96R	17.8+88R	18.5+82R
	TSW @ 24"	q	286	281	245	246	221	224	204	208	193
		F	9.8+191R	8.9+164R	9.0+143R	8.4+128R	8.4+115R	7.9+104R	8.0+96R	7.5+88R	7.5+82R
	TSW @ 12"	q	418	395	377	364	353	344	337	331	325
		F	7.5+191R	7.1+164R	6.8+143R	6.5+128R	6.2+115R	6.0+104R	5.8+96R	5.7+88R	5.5+82R
20	BP @ 24"	q	300	273	240	226	204	197	181	177	165
		F	11.7+147R	12.9+126R	14.6+111R	15.7+98R	17.4+88R	18.3+80R	20.1+74R	20.9+68R	22.7+63R
	BP @ 12"	q	355	321	296	277	262	250	240	232	225
		F	10.3+147R	11.3+126R	12.3+111R	13.2+98R	14.1+88R	14.9+80R	15.7+74R	16.5+68R	17.2+63R
	TSW @ 24"	q	362	353	307	306	274	277	253	257	238
		F	8.8+147R	8.1+126R	8.2+111R	7.6+98R	7.7+88R	7.2+80R	7.3+74R	6.9+68R	7.0+63R
	TSW @ 12"	q	519	488	464	446	432	420	410	402	395
		F	6.9+147R	6.5+126R	6.2+111R	6.0+98R	5.7+88R	5.6+80R	5.4+74R	5.2+68R	5.1+63R
19	BP @ 24"	q	424	382	335	313	283	270	248	240	224
		F	9.4+93R	10.4+80R	11.8+70R	12.8+62R	14.3+56R	15.2+51R	16.7+46R	17.5+43R	19.0+40R
	BP @ 12"	q	486	437	400	371	349	331	316	304	293
		F	8.4+93R	9.4+80R	10.3+70R	11.1+62R	11.9+56R	12.7+51R	13.5+46R	14.3+43R	15.0+40R
	TSW @ 24"	q	548	527	458	452	404	405	369	372	344
		F	7.3+93R	6.8+80R	6.9+70R	6.4+62R	6.5+56R	6.1+51R	6.2+46R	5.9+43R	6.0+40R
	TSW @ 12"	q	762	711	672	642	619	599	583	570	558
		F	5.8+93R	5.5+80R	5.3+70R	5.1+62R	4.9+56R	4.8+51R	4.7+46R	4.5+43R	4.4+40R
18	BP @ 24"	q	536	480	421	391	353	335	308	297	276
		F	7.9+66R	8.9+57R	10.1+50R	11.0+44R	12.3+40R	13.1+36R	14.4+33R	15.2+31R	16.6+28R
	BP @ 12"	q	604	539	491	454	425	402	382	366	352
		F	7.2+66R	8.1+57R	8.9+50R	9.7+44R	10.5+40R	11.2+36R	12.0+33R	12.7+31R	13.4+28R
	TSW @ 24"	q	734	705	612	599	536	533	485	487	450
		F	6.3+66R	5.9+57R	6.0+50R	5.6+44R	5.7+40R	5.4+36R	5.5+33R	5.2+31R	5.3+28R
	TSW @ 12"	q	1001	935	880	838	804	777	754	735	718
		F	5.1+66R	4.9+57R	4.7+50R	4.5+44R	4.4+40R	4.3+36R	4.2+33R	4.1+31R	4.0+28R
16	BP @ 24"	q	812	720	631	581	524	493	453	433	403
		F	5.7+33R	6.4+29R	7.3+25R	8.0+22R	8.9+20R	9.7+18R	10.6+17R	11.4+15R	12.4+14R
	BP @ 12"	q	890	788	712	654	607	570	539	513	492
		F	5.3+33R	5.9+29R	6.6+25R	7.2+22R	7.9+20R	8.5+18R	9.2+17R	9.8+15R	10.4+14R
	TSW @ 24"	q	1075	1026	904	888	805	805	743	750	702
		F	4.6+33R	4.4+29R	4.5+25R	4.3+22R	4.3+20R	4.2+18R	4.2+17R	4.1+15R	4.1+14R
	TSW @ 12"	q	1417	1324	1257	1208	1170	1142	1119	1102	1089
		F	3.8+33R	3.7+29R	3.6+25R	3.5+22R	3.4+20R	3.4+18R	3.3+17R	3.2+15R	3.2+14R

[1] Footnotes 2–6 of Table 15 apply to this table.

TABLE 17–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLW3™-36 FORMLOK DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	389	377	339	335	309	307	288	272	261
		F	12.0+85R	11.2+73R	13.7+64R	12.9+57R	15.2+51R	14.4+46R	16.5+42R	17.8+36R	18.9+32R
	VSC @ 12"	q	489	458	434	415	400	387	376	359	346
		F	6.5+85R	6.8+73R	7.1+64R	7.4+57R	7.6+51R	7.9+46R	8.1+42R	8.5+36R	8.9+32R
	VSC @ 8"	q	566	542	507	494	470	462	444	413	374
		F	5.0+85R	5.0+73R	5.3+64R	5.3+57R	5.6+51R	5.6+46R	5.8+42R	6.1+36R	6.3+32R
	VSC @ 4"	q	739	695	629	576	532	495	464	413	374
		F	3.7+85R	3.7+73R	3.8+64R	3.8+57R	3.9+51R	3.9+46R	4.0+42R	4.0+36R	4.1+32R
21	VSC @ 24"	q	514	497	447	440	406	403	377	357	342
		F	9.2+63R	8.7+54R	10.5+48R	10.0+42R	11.7+38R	11.1+35R	12.7+32R	13.7+27R	14.6+24R
	VSC @ 12"	q	642	600	568	543	522	505	491	468	451
		F	5.2+63R	5.4+54R	5.7+48R	5.9+42R	6.1+38R	6.3+35R	6.4+32R	6.8+27R	7.1+24R
	VSC @ 8"	q	739	707	661	643	611	600	578	535	484
		F	4.1+63R	4.1+54R	4.3+48R	4.3+42R	4.5+38R	4.6+35R	4.7+32R	4.9+27R	5.1+24R
	VSC @ 4"	q	960	900	814	745	689	641	601	535	484
		F	3.1+63R	3.2+54R	3.2+48R	3.2+42R	3.3+38R	3.3+35R	3.4+32R	3.4+27R	3.5+24R
20	VSC @ 24"	q	582	561	505	496	457	454	425	402	385
		F	8.1+56R	7.7+48R	9.3+42R	8.9+37R	10.3+33R	9.9+30R	11.3+28R	12.1+24R	13.0+21R
	VSC @ 12"	q	723	676	639	611	587	568	552	526	507
		F	4.7+56R	4.9+48R	5.1+42R	5.3+37R	5.5+33R	5.6+30R	5.8+28R	6.1+24R	6.4+21R
	VSC @ 8"	q	832	795	743	722	687	674	649	602	545
		F	3.7+56R	3.7+48R	3.9+42R	4.0+37R	4.1+33R	4.2+30R	4.3+28R	4.5+24R	4.6+21R
	VSC @ 4"	q	1077	1012	916	838	775	721	676	602	545
		F	2.9+56R	2.9+48R	3.0+42R	3.0+37R	3.0+33R	3.1+30R	3.1+28R	3.2+24R	3.2+21R
19	VSC @ 24"	q	831	798	718	704	650	643	603	570	545
		F	5.6+37R	5.4+32R	6.4+28R	6.1+25R	7.1+22R	6.8+20R	7.7+18R	8.3+16R	8.9+14R
	VSC @ 12"	q	1025	955	903	862	828	801	778	742	715
		F	3.5+37R	3.6+32R	3.7+28R	3.9+25R	4.0+22R	4.1+20R	4.2+18R	4.4+16R	4.6+14R
	VSC @ 8"	q	1173	1119	1045	1015	965	947	912	867	784
		F	2.8+37R	2.9+32R	3.0+28R	3.0+25R	3.1+22R	3.1+20R	3.3+18R	3.4+16R	3.5+14R
	VSC @ 4"	q	1508	1427	1319	1207	1115	1039	973	867	784
		F	2.3+37R	2.3+32R	2.4+28R	2.4+25R	2.4+22R	2.4+20R	2.5+18R	2.5+16R	2.5+14R
18	VSC @ 24"	q	982	973	875	857	791	783	735	694	664
		F	4.5+29R	4.3+25R	5.1+21R	4.9+19R	5.6+17R	5.4+16R	6.1+14R	6.6+12R	7.0+11R
	VSC @ 12"	q	1245	1160	1096	1046	1006	972	945	901	869
		F	2.9+29R	3.0+25R	3.1+21R	3.2+19R	3.3+17R	3.4+16R	3.5+14R	3.6+12R	3.8+11R
	VSC @ 8"	q	1422	1356	1266	1229	1170	1148	1106	1060	982
		F	2.4+29R	2.4+25R	2.5+21R	2.6+19R	2.6+17R	2.7+16R	2.7+14R	2.8+12R	2.9+11R
	VSC @ 4"	q	1823	1724	1649	1512	1397	1301	1218	1085	982
		F	2.0+29R	2.0+25R	2.1+21R	2.1+19R	2.1+17R	2.1+16R	2.1+14R	2.2+12R	2.2+11R
16	VSC @ 24"	q	1265	1325	1136	1189	1054	1100	997	955	922
		F	2.9+17R	2.8+15R	3.2+13R	3.5+11R	3.5+10R	3.4+9R	3.8+9R	4.1+7R	4.4+6R
	VSC @ 12"	q	1761	1641	1551	1481	1425	1379	1341	1281	1238
		F	2.0+17R	2.1+15R	2.1+13R	2.2+11R	2.3+10R	2.3+9R	2.4+9R	2.5+7R	2.6+6R
	VSC @ 8"	q	2006	1912	1787	1737	1655	1625	1567	1505	1460
		F	1.8+17R	1.8+15R	1.8+13R	1.8+11R	1.9+10R	1.9+9R	2.0+9R	2.0+7R	2.1+6R
	VSC @ 4"	q	2561	2424	2320	2239	2174	2049	1920	1710	1547
		F	1.6+17R	1.6+15R	1.6+13R	1.6+11R	1.6+10R	1.6+9R	1.6+9R	1.6+7R	1.7+6R

[1] VSC = Verco sidelap connection described in Section 3.8.

[2] The dimension from the first and last sidelap connection within each span is to be no more than one-half of the specified spacing.

[3] R is the vertical span (L_v) of deck units divided by the length (L_s) of the deck sheet: $R = L_v/L_s$.

[4] The flexibility limitations shown in Table 7 may be used in lieu of a rational analysis of the anticipated deflections.

[5] Interpolation of diaphragm strength between adjacent spans is permissible. For interpolated lengths, use diaphragm flexibility factor for the closest span length.

[6] Diaphragm shear values for side seam fasteners placed at spacings other than those in the table should be determined based on the number of fasteners in each span.

TABLE 18–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR W3-36 FORMLOK™ DECK WITH BUTTON PUNCHES (BP) OR 1½" TOP SEAM WELDS (TSW) AT SIDELAPS [1]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	155	145	127	123	111	109	100	93	87
		F	15.4+410R	16.5+351R	18.7+308R	19.6+273R	21.7+246R	22.3+224R	24.4+205R	26.9+176R	29.2+154R
	BP @ 12"	q	196	180	169	160	153	148	143	137	132
		F	12.8+410R	13.8+351R	14.8+308R	15.7+273R	16.5+246R	17.2+224R	17.9+205R	19.2+176R	20.3+154R
	TSW @ 24"	q	194	195	170	173	156	160	146	139	134
		F	11.0+410R	9.9+351R	9.9+308R	9.1+273R	9.2+246R	8.5+224R	8.6+205R	8.1+176R	7.7+154R
	TSW @ 12"	q	296	283	272	264	258	252	248	241	236
		F	8.2+410R	7.7+351R	7.3+308R	7.0+273R	6.7+246R	6.4+224R	6.2+205R	5.9+176R	5.6+154R
21	BP @ 24"	q	211	195	171	163	147	143	131	121	113
		F	13.0+278R	14.1+239R	15.9+209R	16.9+186R	18.7+167R	19.5+152R	21.3+139R	23.7+119R	26.0+104R
	BP @ 12"	q	257	235	218	206	195	187	181	171	164
		F	11.1+278R	12.1+239R	13.0+209R	13.9+186R	14.7+167R	15.4+152R	16.2+139R	17.5+119R	18.7+104R
	TSW @ 24"	q	275	272	237	239	214	218	199	189	181
		F	9.5+278R	8.6+239R	8.7+209R	8.0+186R	8.1+167R	7.5+152R	7.6+139R	7.2+119R	6.9+104R
	TSW @ 12"	q	407	385	369	357	347	339	332	321	313
		F	7.2+278R	6.8+239R	6.5+209R	6.2+186R	6.0+167R	5.8+152R	5.6+139R	5.3+119R	5.0+104R
20	BP @ 24"	q	243	223	195	185	167	162	149	136	127
		F	11.9+233R	13.0+200R	14.8+175R	15.7+155R	17.4+140R	18.2+127R	19.9+117R	22.3+100R	24.6+87R
	BP @ 12"	q	292	265	246	231	219	209	201	190	181
		F	10.3+233R	11.3+200R	12.2+175R	13.1+155R	13.9+140R	14.7+127R	15.4+117R	16.7+100R	17.9+87R
	TSW @ 24"	q	322	317	276	277	248	252	230	217	208
		F	8.8+233R	8.1+200R	8.1+175R	7.5+155R	7.6+140R	7.1+127R	7.2+117R	6.8+100R	6.5+87R
	TSW @ 12"	q	471	444	425	410	397	387	379	366	357
		F	6.8+233R	6.4+200R	6.1+175R	5.9+155R	5.6+140R	5.5+127R	5.3+117R	5.0+100R	4.8+87R
19	BP @ 24"	q	372	336	295	276	249	239	219	198	183
		F	9.2+135R	10.2+116R	11.5+101R	12.4+90R	13.8+81R	14.6+74R	16.1+67R	18.2+58R	20.3+51R
	BP @ 12"	q	430	387	355	330	310	295	282	262	248
		F	8.2+135R	9.1+116R	9.9+101R	10.7+90R	11.5+81R	12.2+74R	12.9+67R	14.3+58R	15.5+51R
	TSW @ 24"	q	528	510	444	440	394	395	361	337	320
		F	7.1+135R	6.5+116R	6.6+101R	6.2+90R	6.3+81R	5.9+74R	6.0+67R	5.7+58R	5.5+51R
	TSW @ 12"	q	742	694	658	630	608	590	575	551	534
		F	5.6+135R	5.3+116R	5.1+101R	4.9+90R	4.8+81R	4.6+74R	4.5+67R	4.3+58R	4.1+51R
18	BP @ 24"	q	478	429	376	350	316	300	276	248	227
		F	7.8+96R	8.7+83R	9.8+72R	10.7+64R	11.9+58R	12.7+53R	13.9+48R	15.9+41R	17.9+36R
	BP @ 12"	q	542	484	442	409	383	362	345	318	299
		F	7.1+96R	7.9+83R	8.7+72R	9.4+64R	10.1+58R	10.8+53R	11.5+48R	12.8+41R	14.0+36R
	TSW @ 24"	q	663	643	566	564	511	515	476	442	417
		F	6.1+96R	5.7+83R	5.8+72R	5.5+64R	5.5+58R	5.2+53R	5.3+48R	5.1+41R	4.9+36R
	TSW @ 12"	q	912	859	822	794	773	756	744	710	685
		F	4.9+96R	4.7+83R	4.5+72R	4.4+64R	4.3+58R	4.1+53R	4.0+48R	3.8+41R	3.7+36R
16	BP @ 24"	q	752	667	585	538	486	457	420	374	340
		F	5.6+49R	6.2+42R	7.1+37R	7.8+32R	8.7+29R	9.4+27R	10.3+24R	11.9+21R	13.6+18R
	BP @ 12"	q	826	732	662	608	565	530	502	458	426
		F	5.2+49R	5.8+42R	6.4+37R	7.0+32R	7.7+29R	8.3+27R	8.9+24R	10.0+21R	11.2+18R
	TSW @ 24"	q	1003	958	844	830	752	752	694	656	629
		F	4.5+49R	4.3+42R	4.4+37R	4.2+32R	4.2+29R	4.0+27R	4.1+24R	4.0+21R	3.9+18R
	TSW @ 12"	q	1327	1241	1179	1133	1098	1071	1050	1021	1003
		F	3.8+49R	3.6+42R	3.5+37R	3.4+32R	3.3+29R	3.3+27R	3.2+24R	3.1+21R	3.0+18R

[1] Footnotes 2–6 of Table 17 apply to this table.

TABLE 19–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	545	497	434	417	380	374	349	–	–
		F	13.7+161R	16.4+115R	20.2+87R	22.7+69R	26.6+57R	29.0+48R	32.9+41R	–	–
	VSC @ 18"	q	590	531	465	443	426	395	387	–	–
		F	12.8+161R	15.5+115R	19.0+87R	21.6+69R	24.0+57R	27.6+48R	29.9+41R	–	–
	VSC @ 12"	q	627	561	518	487	465	449	436	–	–
		F	12.2+161R	14.8+115R	17.4+87R	19.9+69R	22.3+57R	24.6+48R	26.9+41R	–	–
	VSC @ 8"	q	691	636	582	561	531	522	503	–	–
		F	11.4+161R	13.4+115R	15.8+87R	17.6+69R	19.9+57R	21.6+48R	23.7+41R	–	–
	VSC @ 6"	q	744	679	636	607	586	571	559	–	–
		F	10.8+161R	12.8+115R	14.7+87R	16.5+69R	18.2+57R	19.9+48R	21.6+41R	–	–
	VSC @ 4"	q	833	769	727	699	679	665	654	–	–
		F	9.9+161R	11.6+115R	13.2+87R	14.7+69R	16.1+57R	17.5+48R	18.9+41R	–	–
20	VSC @ 24"	q	802	722	628	598	544	532	496	492	466
		F	10.4+111R	12.6+80R	15.6+61R	17.8+48R	20.9+39R	22.9+33R	26.1+28R	28.0+24R	31.2+21R
	VSC @ 18"	q	861	767	670	633	606	560	547	537	510
		F	9.9+111R	12.0+80R	14.8+61R	16.9+48R	19.0+39R	21.9+33R	23.8+28R	25.8+24R	28.7+21R
	VSC @ 12"	q	910	807	739	692	658	632	612	596	584
		F	9.5+111R	11.6+80R	13.6+61R	15.7+48R	17.7+39R	19.6+33R	21.6+28R	23.5+24R	25.3+21R
	VSC @ 8"	q	994	906	824	789	745	729	701	694	675
		F	8.9+111R	10.6+80R	12.5+61R	14.0+48R	15.9+39R	17.3+33R	19.1+28R	20.5+24R	22.2+21R
	VSC @ 6"	q	1064	962	896	851	818	794	776	762	688
		F	8.4+111R	10.1+80R	11.7+61R	13.2+48R	14.7+39R	16.1+33R	17.5+28R	18.9+24R	20.2+21R
	VSC @ 4"	q	1181	1081	1016	972	941	918	902	818	688
		F	7.8+111R	9.2+80R	10.5+61R	11.8+48R	13.0+39R	14.2+33R	15.4+28R	16.5+24R	17.6+21R
18	VSC @ 24"	q	1336	1187	1029	971	881	855	796	785	743
		F	6.8+63R	8.3+45R	10.2+34R	11.7+27R	13.8+22R	15.3+19R	17.5+16R	19.0+14R	21.2+12R
	VSC @ 18"	q	1421	1253	1089	1021	971	896	872	853	808
		F	6.5+63R	7.9+45R	9.8+34R	11.2+27R	12.7+22R	14.7+19R	16.2+16R	17.6+14R	19.7+12R
	VSC @ 12"	q	1493	1310	1191	1108	1047	1002	967	940	919
		F	6.2+63R	7.6+45R	9.1+34R	10.5+27R	11.9+22R	13.3+19R	14.7+16R	16.1+14R	17.5+12R
	VSC @ 8"	q	1614	1455	1315	1250	1175	1145	1099	1084	1053
		F	5.9+63R	7.1+45R	8.4+34R	9.5+27R	10.8+22R	11.9+19R	13.2+16R	14.2+14R	15.5+12R
	VSC @ 6"	q	1716	1536	1420	1340	1283	1241	1210	1185	1057
		F	5.7+63R	6.8+45R	7.9+34R	9.0+27R	10.0+22R	11.1+19R	12.1+16R	13.2+14R	14.2+12R
	VSC @ 4"	q	1887	1710	1596	1519	1464	1425	1395	1257	1057
		F	5.3+63R	6.3+45R	7.2+34R	8.1+27R	9.0+22R	9.9+19R	10.8+16R	11.6+14R	12.4+12R
16	VSC @ 24"	q	1831	1618	1400	1316	1193	1155	1075	1058	1001
		F	4.8+40R	5.9+29R	7.2+22R	8.4+17R	9.9+14R	11.0+12R	12.6+10R	13.7+9R	15.4+8R
	VSC @ 18"	q	1940	1701	1478	1380	1309	1208	1173	1146	1086
		F	4.6+40R	5.6+29R	6.9+22R	8.0+17R	9.1+14R	10.6+12R	11.7+10R	12.8+9R	14.3+8R
	VSC @ 12"	q	2032	1775	1608	1492	1408	1345	1297	1259	1230
		F	4.5+40R	5.5+29R	6.5+22R	7.5+17R	8.6+14R	9.6+12R	10.7+10R	11.7+9R	12.8+8R
	VSC @ 8"	q	2186	1960	1768	1675	1573	1529	1467	1446	1405
		F	4.2+40R	5.1+29R	6.0+22R	6.9+17R	7.8+14R	8.6+12R	9.6+10R	10.4+9R	11.4+8R
	VSC @ 6"	q	2316	2064	1902	1791	1712	1654	1611	1578	1478
		F	4.1+40R	4.9+29R	5.7+22R	6.5+17R	7.3+14R	8.1+12R	8.9+10R	9.7+9R	10.4+8R
	VSC @ 4"	q	2533	2286	2128	2021	1945	1891	1851	1759	1478
		F	3.9+40R	4.6+29R	5.2+22R	5.9+17R	6.6+14R	7.3+12R	7.9+10R	8.5+9R	9.2+8R

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(continued)

TABLE 19–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]– Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/5 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	676	604	524	497	451	439	409	–	–
		F	9.9+78R	11.9+56R	14.5+42R	16.5+34R	19.3+28R	21.2+23R	24.2+20R	–	–
	VSC @ 18"	q	722	639	557	523	499	461	449	–	–
		F	9.4+78R	11.4+56R	13.8+42R	15.8+34R	17.7+28R	20.4+23R	22.2+20R	–	–
	VSC @ 12"	q	761	670	611	570	540	517	500	–	–
		F	9.1+78R	11.0+56R	12.9+42R	14.7+34R	16.6+28R	18.4+23R	20.3+20R	–	–
	VSC @ 8"	q	826	748	678	646	608	593	570	–	–
		F	8.6+78R	10.1+56R	11.9+42R	13.3+34R	15.1+28R	16.4+23R	18.1+20R	–	–
	VSC @ 6"	q	881	792	734	694	666	644	628	–	–
		F	8.2+78R	9.7+56R	11.2+42R	12.6+34R	14.0+28R	15.3+23R	16.7+20R	–	–
	VSC @ 4"	q	973	885	828	790	762	742	727	–	–
		F	7.7+78R	9.0+56R	10.2+42R	11.4+34R	12.6+28R	13.7+23R	14.8+20R	–	–
20	VSC @ 24"	q	1000	884	764	718	650	629	585	575	544
		F	7.6+54R	9.2+39R	11.2+29R	12.9+23R	15.1+19R	16.7+16R	19.1+14R	20.6+12R	23.1+10R
	VSC @ 18"	q	1060	930	807	754	715	658	639	623	590
		F	7.3+54R	8.8+39R	10.8+29R	12.4+23R	14.0+19R	16.1+16R	17.7+14R	19.2+12R	21.4+10R
	VSC @ 12"	q	1111	971	879	815	769	733	706	685	668
		F	7.0+54R	8.5+39R	10.1+29R	11.6+23R	13.1+19R	14.7+16R	16.2+14R	17.7+12R	19.2+10R
	VSC @ 8"	q	1197	1073	967	916	859	835	800	787	688
		F	6.7+54R	7.9+39R	19.4+29R	10.6+23R	12.0+19R	13.2+16R	14.6+14R	15.7+12R	17.1+10R
	VSC @ 6"	q	1269	1131	1042	980	936	903	878	818	688
		F	6.5+54R	7.7+39R	8.9+29R	10.0+23R	11.2+19R	12.4+16R	13.5+14R	14.6+12R	15.7+10R
	VSC @ 4"	q	1390	1254	1166	1107	1064	1033	990	818	688
		F	6.1+54R	7.1+39R	8.2+29R	9.2+23R	10.1+19R	11.1+16R	12.0+14R	12.9+12R	13.9+10R
18	VSC @ 24"	q	1667	1457	1256	1171	1058	1017	944	924	873
		F	5.0+31R	6.0+22R	7.4+17R	8.5+13R	10.1+11R	11.2+9R	12.9+8R	14.0+7R	15.7+6R
	VSC @ 18"	q	1755	1525	1319	1223	1152	1060	1024	995	942
		F	4.8+31R	5.8+22R	7.1+17R	8.2+13R	9.4+11R	10.8+9R	12.0+8R	13.1+7R	14.7+6R
	VSC @ 12"	q	1829	1584	1424	1313	1232	1171	1124	1087	1057
		F	4.7+31R	5.7+22R	6.7+17R	7.8+13R	8.9+11R	10.0+9R	11.1+8R	12.2+7R	13.3+6R
	VSC @ 8"	q	1953	1733	1553	1461	1365	1320	1262	1238	1057
		F	4.5+31R	5.3+22R	6.3+17R	7.2+13R	8.2+11R	9.0+9R	10.1+8R	10.9+7R	11.9+6R
	VSC @ 6"	q	2057	1817	1662	1555	1478	1421	1378	1257	1057
		F	4.4+31R	5.2+22R	6.0+17R	6.9+13R	7.7+11R	8.5+9R	9.4+8R	10.2+7R	11.0+6R
	VSC @ 4"	q	2233	1996	1844	1740	1666	1612	1521	1257	1057
		F	4.2+31R	4.9+22R	5.6+17R	6.3+13R	7.0+11R	7.7+9R	8.4+8R	9.1+7R	9.8+6R
16	VSC @ 24"	q	2284	1987	1711	1589	1435	1377	1278	1249	1179
		F	3.6+20R	4.3+14R	5.3+11R	6.1+8R	7.2+7R	8.1+6R	9.3+5R	10.2+4R	11.5+4R
	VSC @ 18"	q	2396	2073	1792	1656	1557	1432	1381	1341	1269
		F	3.5+20R	4.2+14R	5.1+11R	5.9+8R	6.8+7R	7.9+6R	8.7+5R	9.6+4R	10.8+4R
	VSC @ 12"	q	2490	2149	1927	1772	1660	1576	1511	1461	1421
		F	3.4+20R	4.1+14R	4.9+11R	5.6+8R	6.4+7R	7.3+6R	8.1+5R	8.9+4R	9.8+4R
	VSC @ 8"	q	2648	2340	2092	1963	1832	1769	1690	1658	1478
		F	3.3+20R	3.9+14R	4.6+11R	5.2+8R	6.0+7R	6.6+6R	7.4+5R	8.0+4R	8.8+4R
	VSC @ 6"	q	2781	2447	2232	2084	1978	1900	1841	1759	1478
		F	3.2+20R	3.8+14R	4.4+11R	5.0+8R	5.6+7R	6.3+6R	6.9+5R	7.5+4R	8.1+4R
	VSC @ 4"	q	3005	2676	2466	2322	2221	2148	2094	1759	1478
		F	3.1+20R	3.6+14R	4.1+11R	4.6+8R	5.2+7R	5.7+6R	6.2+5R	6.7+4R	7.3+4R

See Page 43 for footnotes

(continued)

TABLE 19–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLB™-36 DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]– Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	792	707	620	592	544	535	505	–	–
		F	8.1+22R	7.8+17R	9.2+15R	8.8+12R	10.0+11R	9.5+10R	10.5+9R	–	–
	VSC @ 18"	q	836	743	655	621	599	561	554	–	–
		F	6.5+22R	6.6+17R	7.7+15R	7.6+12R	7.6+11R	8.4+10R	8.2+9R	–	–
	VSC @ 12"	q	873	774	713	673	646	628	616	–	–
		F	5.6+22R	5.9+17R	6.1+15R	6.3+12R	6.4+11R	6.5+10R	6.5+9R	–	–
	VSC @ 8"	q	936	853	784	757	724	718	701	–	–
		F	4.7+22R	4.8+17R	5.0+15R	5.0+12R	5.1+11R	5.1+10R	5.2+9R	–	–
	VSC @ 6"	q	988	898	844	811	790	778	753	–	–
		F	4.3+22R	4.4+17R	4.5+15R	4.5+12R	4.5+11R	4.5+10R	4.6+9R	–	–
	VSC @ 4"	q	1077	992	944	917	901	894	753	–	–
		F	3.8+22R	3.9+17R	3.9+15R	3.9+12R	3.9+11R	3.9+10R	3.9+9R	–	–
20	VSC @ 24"	q	1156	1025	897	852	782	766	722	721	688
		F	6.3+15R	6.2+12R	7.3+10R	7.0+9R	8.0+8R	7.6+7R	8.4+6R	8.1+6R	8.8+5R
	VSC @ 18"	q	1216	1074	944	892	857	802	789	782	688
		F	5.1+15R	5.3+12R	6.1+10R	6.1+9R	6.1+8R	6.7+7R	6.7+6R	6.6+6R	7.1+5R
	VSC @ 12"	q	1266	1117	1023	962	921	893	874	818	688
		F	4.5+15R	4.7+12R	4.9+10R	5.1+9R	5.2+8R	5.3+7R	5.3+6R	5.4+6R	5.4+5R
	VSC @ 8"	q	1351	1224	1120	1078	1028	1016	990	818	688
		F	3.8+15R	3.9+12R	4.1+10R	4.1+9R	4.2+8R	4.2+7R	4.3+6R	4.2+6R	4.3+5R
	VSC @ 6"	q	1422	1284	1202	1150	1119	1099	990	818	688
		F	3.5+15R	3.6+12R	3.6+10R	3.7+9R	3.7+8R	3.7+7R	3.8+6R	3.8+6R	3.8+5R
	VSC @ 4"	q	1542	1413	1338	1295	1270	1223	990	818	688
		F	3.1+15R	3.2+12R	3.2+10R	3.2+9R	3.2+8R	3.2+7R	3.2+6R	3.2+6R	3.2+5R
18	VSC @ 24"	q	1871	1651	1443	1364	1252	1224	1154	1150	1057
		F	4.3+9R	4.3+7R	5.0+6R	4.9+5R	5.5+4R	5.3+4R	5.9+3R	5.7+3R	6.2+3R
	VSC @ 18"	q	1961	1724	1515	1427	1368	1279	1258	1245	1057
		F	3.6+9R	3.7+7R	4.3+6R	4.3+5R	4.3+4R	4.7+4R	4.7+3R	4.7+3R	5.0+3R
	VSC @ 12"	q	2038	1789	1635	1534	1466	1420	1389	1257	1057
		F	3.2+9R	3.3+7R	3.5+6R	3.6+5R	3.7+4R	3.7+4R	3.8+3R	3.8+3R	3.9+3R
	VSC @ 8"	q	2166	1952	1783	1711	1631	1610	1521	1257	1057
		F	2.7+9R	2.8+7R	2.9+6R	2.9+5R	3.0+4R	3.0+4R	3.1+3R	3.1+3R	3.1+3R
	VSC @ 6"	q	2274	2044	1907	1822	1770	1738	1521	1257	1057
		F	2.5+9R	2.6+7R	2.6+6R	2.7+5R	2.7+4R	2.7+4R	2.7+3R	2.7+3R	2.8+3R
	VSC @ 4"	q	2455	2240	2116	2044	2002	1878	1521	1257	1057
		F	2.3+9R	2.3+7R	2.3+6R	2.3+5R	2.4+4R	2.4+4R	2.4+3R	2.4+3R	2.4+3R
16	VSC @ 24"	q	2524	2227	1948	1843	1692	1657	1564	1561	1478
		F	3.2+5R	3.2+4R	3.7+4R	3.7+3R	4.1+3R	4.0+2R	4.4+2R	4.3+2R	4.7+2R
	VSC @ 18"	q	2645	2325	2044	1926	1849	1731	1704	1690	1478
		F	2.7+5R	2.8+4R	3.2+4R	3.2+3R	3.2+3R	3.6+2R	3.6+2R	3.6+2R	3.8+2R
	VSC @ 12"	q	2746	2412	2205	2071	1982	1922	1882	1759	1478
		F	2.4+5R	2.5+4R	2.6+4R	2.7+3R	2.8+3R	2.8+2R	2.9+2R	2.9+2R	3.0+2R
	VSC @ 8"	q	2917	2630	2403	2308	2203	2178	2126	1759	1478
		F	2.1+5R	2.1+4R	2.2+4R	2.2+3R	2.3+3R	2.3+2R	2.4+2R	2.4+2R	2.4+2R
	VSC @ 6"	q	3060	2752	2570	2458	2391	2351	2129	1759	1478
		F	1.9+5R	2.0+4R	2.0+4R	2.1+3R	2.1+3R	2.1+2R	2.1+2R	2.1+2R	2.1+2R
	VSC @ 4"	q	3301	3013	2849	2755	2704	2628	2129	1759	1478
		F	1.8+5R	1.8+4R	1.8+4R	1.8+3R	1.8+3R	1.9+2R	1.9+2R	1.9+2R	1.9+2R

[1] VSC = Verco sidelap connection described in Section 3.8.

[2] The dimension from the first and last sidelap connection within each span is to be no more than one-half of the specified spacing.

[3] R is the vertical span (L_v) of deck units divided by the length (L_s) of the deck sheet: $R = L_v/L_s$.

[4] The flexibility limitations shown in Table 7 may be used as a guide in lieu of rational analysis of the anticipated deflections.

[5] Interpolation of diaphragm strength between adjacent spans is permissible. For interpolated lengths, use diaphragm flexibility factor for the closest span length.

[6] Diaphragm shear values for side seam fasteners placed at spacings other than those in the table should be determined based on the number of fasteners in each span.

TABLE 20–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE HSB®-36 DECK WITH BUTTON PUNCHES (BP) OR 1½" TOP SEAM WELDS (TSW) AT SIDELAPS [1]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/4 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	303	308	289	291	277	262	232	–	–
		F	4.7+281R	5.7+224R	7.2+187R	8.8+160R	11.0+140R	13.2+125R	16.2+112R	–	–
	BP @ 12"	q	363	356	349	343	336	312	284	–	–
		F	4.4+281R	5.3+224R	6.5+187R	7.9+160R	9.6+140R	11.5+125R	13.8+112R	–	–
	TSW @ 24"	q	567	519	434	417	366	359	325	–	–
		F	38.7+159R	32.6+127R	42.6+106R	37.1+91R	45.3+80R	40.3+71R	47.3+64R	–	–
	TSW @ 18"	q	646	577	484	456	435	389	378	–	–
		F	23.8+159R	22.9+127R	29.6+106R	27.8+91R	26.7+80R	31.6+71R	30.1+64R	–	–
	TSW @ 12"	q	718	632	573	531	498	472	451	–	–
		F	17.0+159R	17.5+127R	17.9+106R	18.2+91R	18.4+80R	18.6+71R	18.8+64R	–	–
	TSW @ 6"	q	971	874	807	757	719	689	665	–	–
		F	8.0+159R	8.1+127R	8.2+106R	8.2+91R	8.2+80R	8.2+71R	8.2+64R	–	–
20	BP @ 24"	q	457	459	434	418	359	327	290	269	244
		F	4.3+162R	5.4+130R	7.0+108R	8.7+93R	11.0+81R	13.4+72R	16.5+65R	19.6+59R	23.7+54R
	BP @ 12"	q	528	517	506	478	421	378	343	314	290
		F	4.0+162R	5.0+130R	6.3+108R	7.9+93R	9.7+81R	11.9+72R	14.4+65R	17.2+59R	20.3+54R
	TSW @ 24"	q	794	710	595	561	493	477	432	424	390
		F	30.5+88R	26.4+70R	34.5+59R	30.6+50R	37.5+44R	33.8+39R	39.8+35R	36.4+32R	41.8+29R
	TSW @ 18"	q	884	777	651	607	573	512	494	478	441
		F	19.2+88R	18.8+70R	24.4+59R	23.2+50R	22.5+44R	26.8+39R	25.7+35R	25.0+32R	28.5+29R
	TSW @ 12"	q	967	840	755	693	646	609	579	554	534
		F	13.9+88R	14.5+70R	15.0+59R	15.4+50R	15.8+44R	16.1+39R	16.3+35R	16.5+32R	16.7+29R
	TSW @ 6"	q	1258	1119	1024	954	902	860	826	798	688
		F	6.8+88R	6.9+70R	7.0+59R	7.1+50R	7.1+44R	7.2+39R	7.2+35R	7.3+32R	7.3+29R
18	BP @ 24"	q	883	820	671	586	506	458	408	376	342
		F	3.8+69R	5.0+55R	6.7+46R	8.6+39R	11.0+34R	13.6+31R	16.9+27R	20.3+25R	24.6+23R
	BP @ 12"	q	978	891	747	644	567	507	459	420	387
		F	3.6+69R	4.8+55R	6.2+46R	7.9+39R	10.0+34R	12.4+31R	15.2+27R	18.4+25R	21.9+23R
	TSW @ 24"	q	1253	1092	914	845	743	707	639	619	571
		F	20.2+35R	18.0+28R	23.6+23R	21.5+20R	26.4+17R	24.3+15R	28.8+14R	26.8+13R	30.8+12R
	TSW @ 18"	q	1359	1170	980	899	837	748	713	684	631
		F	13.1+35R	13.1+28R	17.0+23R	16.6+20R	16.3+17R	19.5+15R	19.0+14R	18.7+13R	21.5+12R
	TSW @ 12"	q	1455	1244	1102	1000	923	863	815	775	742
		F	9.7+35R	10.3+28R	10.8+23R	11.3+20R	11.7+17R	12.0+15R	12.3+14R	12.6+13R	12.9+12R
	TSW @ 6"	q	1796	1571	1419	1310	1227	1162	1110	1067	1031
		F	5.0+35R	5.1+28R	5.3+23R	5.4+20R	5.5+17R	5.6+15R	5.6+14R	5.7+13R	5.8+12R
16	BP @ 24"	q	1296	1056	868	755	654	589	526	483	440
		F	3.6+35R	4.8+28R	6.5+23R	8.5+20R	11.0+18R	13.7+16R	17.1+14R	20.7+13R	25.1+12R
	BP @ 12"	q	1399	1124	941	810	712	636	575	525	483
		F	3.4+35R	4.6+28R	6.1+23R	8.0+20R	10.2+18R	12.8+16R	15.8+14R	19.2+13R	23.0+12R
	TSW @ 24"	q	1667	1431	1198	1094	962	907	820	788	726
		F	14.2+17R	13.0+13R	17.1+11R	15.8+10R	19.5+8R	18.2+7R	21.6+7R	20.3+6R	23.5+6R
	TSW @ 18"	q	1781	1516	1270	1153	1065	952	901	860	793
		F	9.4+17R	9.6+13R	12.5+11R	12.3+10R	12.3+8R	14.7+7R	14.5+7R	14.4+6R	16.6+6R
	TSW @ 12"	q	1885	1596	1402	1263	1159	1077	1012	959	915
		F	7.1+17R	7.6+13R	8.1+11R	8.5+10R	8.9+8R	9.3+7R	9.6+7R	9.9+6R	10.2+6R
	TSW @ 6"	q	2252	1950	1746	1600	1490	1404	1335	1279	1233
		F	3.8+17R	3.9+13R	4.1+11R	4.2+10R	4.3+8R	4.4+7R	4.5+7R	4.6+6R	4.6+6R

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(continued)

TABLE 20–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE HSB®-36 DECK WITH BUTTON PUNCHES (BP) OR 1½" TOP SEAM WELDS (TSW) AT SIDELAPS[1]– Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/5 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	451	445	416	407	351	319	284		
		F	4.5+157R	5.4+126R	6.9+105R	8.4+90R	10.6+79R	12.8+70R	15.8+63R	–	–
	BP @ 12"	q	511	492	476	458	405	364	331	–	–
		F	4.3+157R	5.2+126R	6.3+105R	7.8+90R	9.5+79R	11.6+70R	13.9+63R	–	–
	TSW @ 24"	q	699	627	525	496	437	423	383	–	–
		F	26.3+77R	22.8+62R	29.6+51R	26.4+44R	32.1+39R	29.1+34R	34.1+31R	–	–
	TSW @ 18"	q	780	687	576	538	508	454	439	–	–
		F	16.8+77R	16.5+62R	21.2+51R	20.2+44R	19.6+39R	23.2+34R	22.3+31R	–	–
	TSW @ 12"	q	854	744	669	615	574	541	516	–	–
		F	12.4+77R	12.9+62R	13.3+51R	13.7+44R	14.0+39R	14.2+34R	14.4+31R	–	–
	TSW @ 6"	q	1115	993	910	850	804	768	738	–	–
		F	6.5+77R	6.6+62R	6.7+51R	6.7+44R	6.8+39R	6.8+34R	6.9+31R	–	–
20	BP @ 24"	q	690	675	590	516	447	405	361	334	304
		F	4.0+91R	5.1+73R	6.5+61R	8.2+52R	10.4+45R	12.8+40R	15.9+36R	19.0+33R	23.1+30R
	BP @ 12"	q	762	733	656	568	501	450	408	374	346
		F	3.9+91R	4.9+73R	6.1+61R	7.7+52R	9.5+45R	11.7+40R	14.3+36R	17.2+33R	20.6+30R
	TSW @ 24"	q	991	872	730	679	598	572	518	504	465
		F	20.5+43R	18.2+34R	23.7+28R	21.5+24R	26.2+21R	24.1+19R	28.3+17R	26.3+16R	30.2+14R
	TSW @ 18"	q	1084	941	788	727	680	608	583	561	518
		F	13.4+43R	13.4+34R	17.2+28R	16.6+24R	16.3+21R	19.4+19R	18.8+17R	18.5+16R	21.1+14R
	TSW @ 12"	q	1169	1006	895	816	756	709	672	641	615
		F	10.0+43R	10.6+34R	11.0+28R	11.4+24R	11.8+21R	12.1+19R	12.4+17R	12.6+16R	12.8+14R
	TSW @ 6"	q	1469	1293	1174	1088	1023	972	931	818	688
		F	5.4+43R	5.5+34R	5.6+28R	5.7+24R	5.8+21R	5.9+19R	5.9+17R	6.0+16R	6.0+14R
18	BP @ 24"	q	1264	1030	849	738	641	577	516	475	433
		F	3.5+39R	4.6+31R	6.1+26R	7.9+22R	10.2+19R	12.7+17R	15.9+15R	19.4+14R	23.6+13R
	BP @ 12"	q	1353	1089	914	788	694	621	562	514	475
		F	3.4+39R	4.5+31R	5.8+26R	7.5+22R	9.5+19R	12.0+17R	14.8+15R	18.0+14R	21.7+13R
	TSW @ 24"	q	1582	1359	1138	1040	914	862	780	750	691
		F	13.4+17R	12.3+13R	16.0+11R	14.9+10R	18.3+8R	17.1+7R	20.2+7R	19.1+6R	22.0+6R
	TSW @ 18"	q	1690	1440	1206	1096	1012	905	858	818	755
		F	9.0+17R	9.2+13R	11.9+11R	11.7+10R	11.7+8R	13.9+7R	13.8+7R	13.7+6R	15.7+6R
	TSW @ 12"	q	1790	1516	1333	1201	1102	1025	964	914	872
		F	6.9+17R	7.4+13R	7.8+11R	8.2+10R	8.6+8R	8.9+7R	9.2+7R	9.5+6R	9.8+6R
	TSW @ 6"	q	2140	1853	1661	1523	1419	1338	1273	1220	1057
		F	3.9+17R	4.1+13R	4.2+11R	4.3+10R	4.4+8R	4.5+7R	4.6+7R	4.7+6R	4.7+6R
16	BP @ 24"	q	1656	1343	1110	962	837	751	673	617	563
		F	3.2+20R	4.3+16R	5.9+13R	7.7+11R	10.0+10R	12.7+9R	16.0+8R	19.5+7R	23.9+7R
	BP @ 12"	q	1741	1400	1172	1010	888	793	717	655	603
		F	3.1+20R	4.2+16R	5.6+13R	7.4+11R	9.5+10R	12.1+9R	15.1+8R	18.5+7R	22.4+7R
	TSW @ 24"	q	2115	1794	1502	1358	1194	1117	1011	964	888
		F	9.5+8R	8.9+6R	11.6+5R	10.9+5R	13.5+4R	12.8+4R	15.2+3R	14.5+3R	16.7+3R
	TSW @ 18"	q	2232	1882	1576	1420	1302	1164	1096	1039	959
		F	6.5+8R	6.7+6R	8.7+5R	8.7+5R	8.8+4R	10.5+4R	10.5+3R	10.5+3R	12.1+3R
	TSW @ 12"	q	2339	1964	1713	1534	1400	1296	1212	1145	1088
		F	5.1+8R	5.5+6R	5.9+5R	6.2+5R	6.5+4R	6.8+4R	7.1+3R	7.4+3R	7.7+3R
	TSW @ 6"	q	2716	2329	2070	1884	1745	1638	1552	1482	1424
		F	3.0+8R	3.1+6R	3.2+5R	3.4+5R	3.5+4R	3.6+4R	3.6+3R	3.7+3R	3.8+3R

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(continued)

TABLE 20–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE HSB®-36 DECK WITH BUTTON PUNCHES (BP) OR 1½" TOP SEAM WELDS (TSW) AT SIDELAPS[1]– Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	623	598	522	458	397	360	322	–	–
		F	4.1+70R	4.9+56R	6.1+47R	7.5+40R	9.3+35R	11.3+31R	13.9+28R	–	–
	BP @ 12"	q	683	646	579	502	445	400	364	–	–
		F	4.0+70R	4.8+56R	5.8+47R	7.0+40R	8.6+35R	10.5+31R	12.7+28R	–	–
	TSW @ 24"	q	731	720	595	600	521	529	474	–	–
		F	12.2+6R	11.8+5R	16.0+4R	15.3+4R	19.4+3R	18.5+3R	22.6+3R	–	–
	TSW @ 18"	q	907	851	704	689	667	597	578	–	–
		F	8.4+6R	8.9+5R	11.8+4R	12.0+4R	12.3+3R	15.0+3R	15.1+3R	–	–
	TSW @ 12"	q	1072	972	877	808	756	715	682	–	–
		F	6.6+6R	7.3+5R	7.9+4R	8.5+4R	9.1+3R	9.6+3R	10.1+3R	–	–
	TSW @ 6"	q	1464	1310	1204	1127	1068	929	753	–	–
		F	4.2+6R	4.5+5R	4.7+4R	4.8+4R	5.0+3R	5.2+3R	5.3+3R	–	–
20	BP @ 24"	q	962	804	663	578	502	454	406	375	342
		F	3.7+41R	4.5+32R	5.7+27R	7.1+23R	9.0+20R	11.1+18R	13.8+16R	16.7+15R	20.4+14R
	BP @ 12"	q	1034	854	719	622	549	493	448	411	380
		F	3.6+41R	4.4+32R	5.4+27R	6.8+23R	8.5+20R	10.4+18R	12.8+16R	15.5+15R	18.6+14R
	TSW @ 24"	q	999	969	800	796	691	695	621	629	573
		F	9.8+4R	9.5+3R	13.0+3R	12.5+2R	16.0+2R	15.4+2R	18.8+2R	18.2+2R	21.5+1R
	TSW @ 18"	q	1224	1134	937	908	882	779	769	757	688
		F	6.8+4R	7.3+3R	9.6+3R	9.9+2R	10.2+2R	12.5+2R	12.7+2R	12.9+2R	15.1+1R
	TSW @ 12"	q	1431	1292	1189	1091	1016	958	912	818	688
		F	5.4+4R	6.0+3R	6.6+3R	7.1+2R	7.6+2R	8.1+2R	8.5+2R	9.0+2R	9.4+1R
	TSW @ 6"	q	1965	1745	1596	1488	1406	1223	990	818	688
		F	3.5+4R	3.7+3R	3.9+3R	4.1+2R	4.2+2R	4.4+2R	4.5+2R	4.6+2R	4.8+1R
18	BP @ 24"	q	1405	1140	943	818	712	640	574	527	482
		F	3.1+17R	4.0+14R	5.2+11R	6.7+10R	8.7+9R	10.9+8R	13.7+7R	16.8+6R	20.6+6R
	BP @ 12"	q	1475	1188	996	860	757	678	614	562	518
		F	3.0+17R	3.9+14R	5.0+11R	6.5+10R	8.3+9R	10.4+8R	12.9+7R	15.9+6R	19.2+6R
	TSW @ 24"	q	1571	1495	1229	1206	1044	1039	926	928	844
		F	6.8+2R	6.7+2R	9.1+1R	9.0+1R	11.4+1R	11.2+1R	13.7+1R	13.4+1R	15.9+1R
	TSW @ 18"	q	1895	1730	1424	1363	1312	1155	1131	1110	1010
		F	4.8+2R	5.2+2R	6.9+1R	7.1+1R	7.4+1R	9.1+1R	9.4+1R	9.6+1R	11.3+1R
	TSW @ 12"	q	2191	1952	1767	1612	1495	1405	1332	1257	1057
		F	3.9+2R	4.3+2R	4.8+1R	5.2+1R	5.6+1R	6.0+1R	6.4+1R	6.7+1R	7.1+1R
	TSW @ 6"	q	2878	2535	2304	2139	2014	1878	1521	1257	1057
		F	2.6+2R	2.8+2R	2.9+1R	3.0+1R	3.2+1R	3.3+1R	3.4+1R	3.5+1R	3.6+1R
16	BP @ 24"	q	1825	1475	1223	1058	922	826	741	679	621
		F	2.8+9R	3.7+7R	4.9+6R	6.5+5R	8.5+4R	10.8+4R	13.6+4R	16.8+3R	20.6+3R
	BP @ 12"	q	1891	1521	1273	1097	964	862	779	712	656
		F	2.7+9R	3.6+7R	4.8+6R	6.3+5R	8.1+4R	10.4+4R	13.0+4R	16.1+3R	19.6+3R
	TSW @ 24"	q	2171	2043	1675	1630	1406	1390	1236	1233	1119
		F	5.0+1R	5.1+1R	6.9+1R	6.8+1R	8.7+1R	8.6+1R	10.6+1R	10.4	12.4
	TSW @ 18"	q	2599	2350	1929	1833	1734	1540	1487	1431	1324
		F	3.6+1R	4.0+1R	5.2+1R	5.5+1R	5.7+1R	7.1+1R	7.3+1R	7.5	8.9
	TSW @ 12"	q	2985	2556	2270	2065	1912	1793	1699	1622	1478
		F	3.0+1R	3.3+1R	3.7+1R	4.0+1R	4.3+1R	4.7+1R	5.0+1R	5.3	5.6
	TSW @ 6"	q	3664	3215	2914	2698	2538	2413	2129	1759	1478
		F	2.0+1R	2.2+1R	2.3+1R	2.4+1R	2.5+1R	2.6+1R	2.7+1R	2.8	2.9

[1] Footnotes 2–6 of Table 19 apply to this table.

TABLE 21–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR VERCO SHEARTRANZ® II-42 AND PLB™-36 DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2]

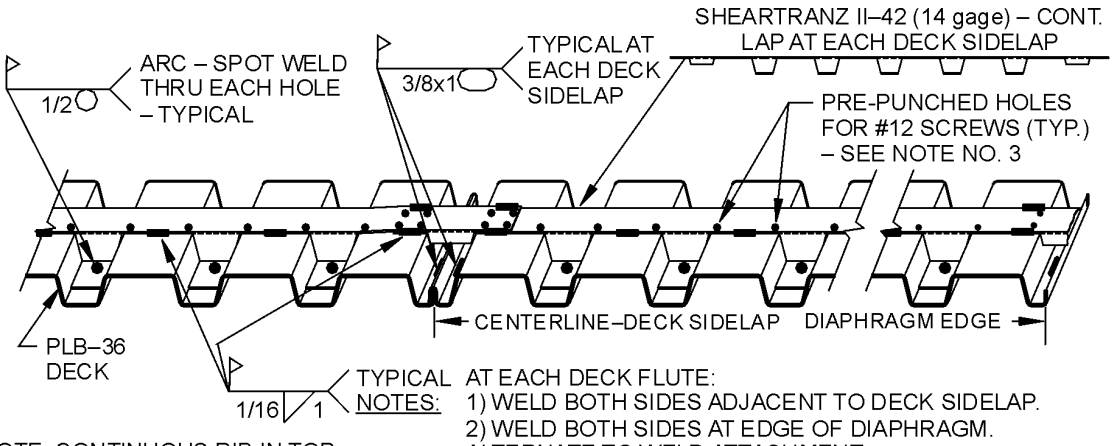
GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	1167	986	844	766	689	650	602	–	–
		F	5.5+4R	5.6+4R	6.7+5R	6.8+6R	7.8+7R	7.8+8R	8.8+9R	–	–
	VSC @ 18"	q	1199	1012	869	788	729	668	637	–	–
		F	4.7+4R	5.0+4R	5.8+5R	6.1+6R	6.3+7R	7.1+8R	7.2+9R	–	–
	VSC @ 12"	q	1225	1034	910	825	762	716	681	–	–
		F	4.3+4R	4.6+4R	4.9+5R	5.2+6R	5.5+7R	5.7+8R	6.0+9R	–	–
	VSC @ 8"	q	1270	1091	961	885	819	780	741	–	–
		F	3.9+4R	4.0+4R	4.3+5R	4.4+6R	4.6+7R	4.7+8R	4.9+9R	–	–
	VSC @ 6"	q	1308	1123	1004	923	866	824	753	–	–
		F	3.6+4R	3.8+4R	3.9+5R	4.1+6R	4.2+7R	4.3+8R	4.4+9R	–	–
	VSC @ 4"	q	1371	1190	1076	999	945	906	753	–	–
		F	3.4+4R	3.5+4R	3.6+5R	3.7+6R	3.7+7R	3.8+8R	3.9+9R	–	–
20	VSC @ 24"	q	1513	1287	1105	1009	911	864	802	778	688
		F	4.6+3R	4.7+3R	5.6+4R	5.7+5R	6.5+6R	6.5+6R	7.4+7R	7.3+8R	8.1+8R
	VSC @ 18"	q	1558	1323	1140	1040	968	891	853	818	688
		F	3.9+3R	4.2+3R	4.9+4R	5.1+5R	5.2+6R	5.9+6R	6.0+7R	6.1+8R	6.7+8R
	VSC @ 12"	q	1597	1356	1200	1093	1017	960	917	818	688
		F	3.6+3R	3.9+3R	4.1+4R	4.3+5R	4.6+6R	4.8+6R	4.9+7R	5.1+8R	5.3+8R
	VSC @ 8"	q	1661	1437	1274	1181	1098	1053	990	818	688
		F	3.2+3R	3.3+3R	3.6+4R	3.7+5R	3.9+6R	3.9+6R	4.1+7R	4.1+8R	4.3+8R
	VSC @ 6"	q	1715	1483	1335	1236	1166	1116	990	818	688
		F	3.0+3R	3.2+3R	3.3+4R	3.4+5R	3.5+6R	3.6+6R	3.6+7R	3.7+8R	3.8+8R
	VSC @ 4"	q	1806	1580	1439	1345	1281	1223	990	818	688
		F	2.8+3R	2.9+3R	3.0+4R	3.0+5R	3.1+6R	3.2+6R	3.2+7R	3.2+8R	3.3+8R
18	VSC @ 24"	q	2171	1870	1616	1496	1359	1304	1218	1195	1057
		F	3.4+2R	3.5+2R	4.2+3R	4.3+3R	4.9+4R	4.9+4R	5.5+5R	5.5+5R	6.1+6R
	VSC @ 18"	q	2250	1934	1678	1549	1459	1351	1308	1257	1057
		F	3.0+2R	3.1+2R	3.7+3R	3.8+3R	3.9+4R	4.4+4R	4.5+5R	4.6+5R	5.0+6R
	VSC @ 12"	q	2315	1990	1782	1642	1544	1473	1421	1257	1057
		F	2.7+2R	2.9+2R	3.1+3R	3.2+3R	3.4+4R	3.5+4R	3.7+5R	3.8+5R	3.9+6R
	VSC @ 8"	q	2426	2130	1910	1794	1686	1637	1521	1257	1057
		F	2.4+2R	2.5+2R	2.7+3R	2.7+3R	2.9+4R	2.9+4R	3.0+5R	3.1+5R	3.2+6R
	VSC @ 6"	q	2519	2210	2017	1891	1805	1747	1521	1257	1057
		F	2.3+2R	2.4+2R	2.4+3R	2.5+3R	2.6+4R	2.6+4R	2.7+5R	2.7+5R	2.8+6R
	VSC @ 4"	q	2676	2378	2197	2082	2006	1878	1521	1257	1057
		F	2.1+2R	2.2+2R	2.2+3R	2.3+3R	2.3+4R	2.3+4R	2.4+5R	2.4+5R	2.4+6R
16	VSC @ 24"	q	2839	2476	2154	2018	1844	1790	1682	1667	1478
		F	2.8+1R	2.8+2R	3.4+2R	3.4+3R	3.9+3R	3.9+3R	4.4+4R	4.3+4R	4.8+4R
	VSC @ 18"	q	2958	2573	2249	2100	1999	1863	1821	1759	1478
		F	2.4+1R	2.5+2R	2.9+2R	3.0+3R	3.1+3R	3.5+3R	3.6+4R	3.6+4R	3.9+4R
	VSC @ 12"	q	3058	2659	2408	2243	2130	2051	1996	1759	1478
		F	2.2+1R	2.3+2R	2.5+2R	2.6+3R	2.7+3R	2.8+3R	2.9+4R	3.0+4R	3.1+4R
	VSC @ 8"	q	3226	2873	2604	2477	2349	2304	2129	1759	1478
		F	1.9+1R	2.0+2R	2.1+2R	2.2+3R	2.3+3R	2.3+3R	2.4+4R	2.4+4R	2.5+4R
	VSC @ 6"	q	3368	2994	2768	2625	2533	2475	2129	1759	1478
		F	1.8+1R	1.9+2R	1.9+2R	2.0+3R	2.0+3R	2.1+3R	2.1+4R	2.2+4R	2.2+4R
	VSC @ 4"	q	3606	3252	3044	2918	2843	2628	2129	1759	1478
		F	1.7+1R	1.7+2R	1.8+2R	1.8+3R	1.8+3R	1.8+3R	1.9+4R	1.9+4R	1.9+4R

[1] Notes 1-6 of Table 19 apply to this table.

[2] See Figure 7 for SHEARTRANZ II-42 details.

FIGURE 7–DETAILS FOR SHEARTRANZ® II-42 FOR PLB™-36 & SHEARTRANZ® II FOR HSB®-36 DECK

SECTION 1:

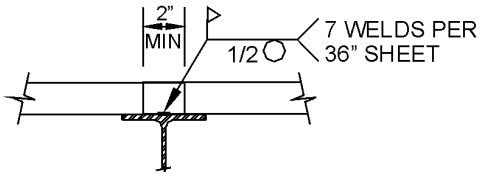


NOTE: CONTINUOUS RIB IN TOP FLANGE OF SHEARTRANZ II-42 **NOT** SHOWN FOR CLARITY.

NOTES: AT EACH DECK FLUTE:
1) WELD BOTH SIDES ADJACENT TO DECK SIDELAP.
2) WELD BOTH SIDES AT EDGE OF DIAPHRAGM.
ALTERNATE TO WELD ATTACHMENT:
3) #12 SCREWS THRU PRE-PUNCHED HOLES AT LOCATIONS SHOWN ARE PERMITTED TO REPLACE WELD.

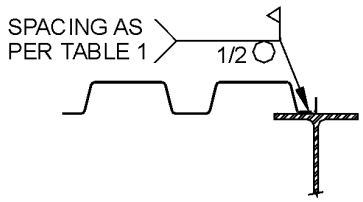
SHEARTRANZ® II–42 FOR PLB™–36 DECK WITH PUNCHLOK® SYSTEM
with VSC SIDELAP CONNECTIONS (VSC)

TYPICAL DETAILS
(Apply to either system.)

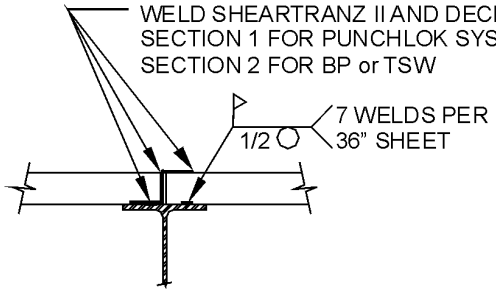


NOTE: LAP DECK MIN. 2" AT END LAPS.

TYPICAL INTERIOR SUPPORT

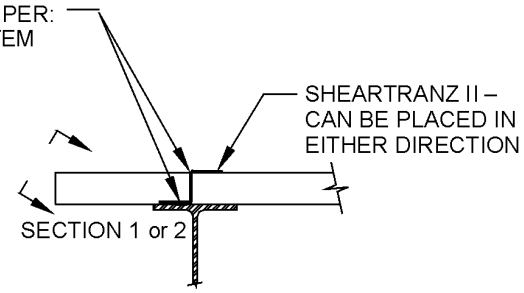


ATTACHMENT AT PARALLEL SUPPORTS



TYPICAL BUTT JOINT

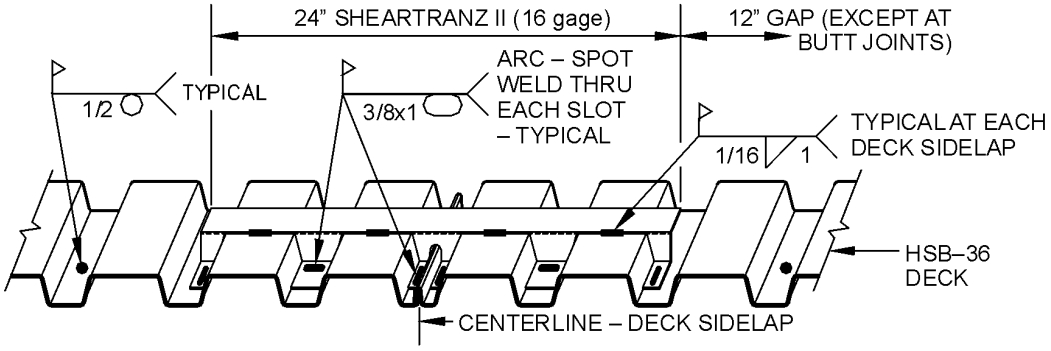
SHEARTRANZ II CONTINUOUS AT BUTT JOINTS. WELD TOP FLANGE OF SHEARTRANZ II TO BOTH PIECES OF DECK AT BUTT JOINTS.



DETAIL AT DIAPHRAGM PERIMETER

DECK MAY BE CANTILEVERED OR STOP AT BEAM

SECTION 2:



SHEARTRANZ® II FOR HSB®–36 DECK
with BUTTON PUNCHED (BP) OR TOP SEAM WELD (TSW) SIDELAPS

TABLE 22–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR VERCO SHEARTRANZ® II AND HSB®-36 WITH BUTTON PUNCHES (BP) or 1½ INCH TOP SEAM WELDS (TSW) AT SIDELAPS[1,2]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)										
			5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
36/7 WELD PATTERN AT SUPPORTS													
22	BP @ 24"	q	953	880	819	767	724	686	653	624	598	576	555
		F	7.8	8.4	8.9	9.5	10.0	10.5	11.1	11.6	12.2	12.7	13.3
	BP @ 18"	q	997	924	863	813	769	732	699	671	646	623	603
		F	7.6	8.1	8.6	9.1	9.6	10.1	10.5	11.0	11.5	12.0	12.4
	BP @ 12"	q	1084	1012	953	903	860	824	792	765	740	719	700
		F	7.2	7.6	8.1	8.5	8.9	9.2	9.6	10.0	10.4	10.7	11.1
	TSW @ 24"	q	865	808	759	719	684	654	628	605	585	567	551
		F	5.1	5.3	5.5	5.7	5.9	6.1	6.2	6.4	6.5	6.7	6.8
	TSW @ 18"	q	961	904	855	815	780	750	724	701	681	663	647
		F	4.9	5.1	5.2	5.4	5.5	5.6	5.8	5.9	6.0	6.1	6.2
	TSW @ 12"	q	1153	1095	1047	1007	972	942	916	893	873	855	839
		F	4.6	4.7	4.8	4.9	5.0	5.1	5.1	5.2	5.3	5.4	5.5
20	BP @ 24"	q	1120	1032	959	898	845	799	760	725	694	667	643
		F	6.1	6.5	6.9	7.3	7.7	8.2	8.6	9.1	9.5	9.9	10.4
	BP @ 18"	q	1165	1078	1005	944	892	847	808	773	743	716	692
		F	5.9	6.3	6.7	7.1	7.5	7.8	8.2	8.6	9.0	9.4	9.8
	BP @ 12"	q	1255	1168	1097	1037	985	942	903	870	841	815	792
		F	5.7	6.0	6.3	6.6	7.0	7.3	7.6	7.9	8.2	8.6	8.9
	TSW @ 24"	q	1309	1218	1143	1079	1025	978	938	902	870	842	817
		F	4.1	4.2	4.4	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.4
	TSW @ 18"	q	1447	1356	1281	1218	1163	1117	1076	1040	1008	980	955
		F	3.9	4.0	4.1	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
	TSW @ 12"	q	1724	1633	1558	1494	1440	1393	1352	1317	1285	1209	1091
		F	3.6	3.7	3.8	3.9	4.0	4.0	4.1	4.2	4.3	4.3	4.4
18	BP @ 24"	q	1453	1335	1238	1156	1085	1025	972	926	885	848	815
		F	4.1	4.4	4.6	4.9	5.2	5.5	5.8	6.2	6.5	6.8	7.1
	BP @ 18"	q	1499	1382	1286	1204	1135	1075	1022	977	936	900	868
		F	4.0	4.3	4.5	4.8	5.1	5.4	5.6	5.9	6.2	6.5	6.8
	BP @ 12"	q	1592	1477	1381	1301	1233	1174	1123	1079	1040	1005	974
		F	3.9	4.1	4.3	4.6	4.8	5.1	5.3	5.5	5.8	6.0	6.2
	TSW @ 24"	q	1862	1751	1659	1583	1518	1463	1416	1375	1339	1308	1281
		F	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
	TSW @ 18"	q	2045	1936	1847	1773	1711	1659	1614	1576	1543	1514	1453
		F	2.7	2.8	2.9	3.0	3.1	3.1	3.2	3.3	3.4	3.4	3.5
	TSW @ 12"	q	2411	2307	2224	2155	2098	2051	2011	1978	1794	1610	1453
		F	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1
16	BP @ 24"	q	1787	1640	1518	1415	1328	1252	1185	1127	1076	1030	989
		F	3.0	3.2	3.4	3.7	3.9	4.1	4.4	4.6	4.8	5.1	5.3
	BP @ 18"	q	1835	1689	1568	1466	1379	1304	1238	1181	1130	1085	1045
		F	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.7	4.9	5.1
	BP @ 12"	q	1932	1787	1668	1567	1482	1408	1344	1288	1239	1195	1156
		F	2.9	3.1	3.3	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
	TSW @ 24"	q	2279	2140	2026	1932	1852	1784	1725	1675	1631	1592	1559
		F	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.8	2.9
	TSW @ 18"	q	2491	2356	2246	2154	2078	2013	1958	1911	1870	1835	1803
		F	2.1	2.2	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.7
	TSW @ 12"	q	2915	2787	2684	2600	2530	2472	2424	2383	2226	1998	1803
		F	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4

[1] See Figure 7 for SHEARTRANZ II details.
[2] The flexibility limitations shown in Table 7 may be used in lieu of a rational analysis of the anticipated deflections.

TABLE 23–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR VERCO SHEARTRANZ® AND HSB®-30 OR HSB®-36 DECK WITH BUTTON PUNCHES (BP) OR 1½ INCH TOP SEAM WELDS (TSW) AT SIDELAPS [1,2,3]

DECK GAGE	SIDELAP ATTACHMENT		SPAN (ft-in.)											
			5'-0"		6'-0"		7'-0"		8'-0"		9'-0"		10'-0"	
			Number of Puddle Welds per Panel End and at Supports											
			6	7	6	7	6	7	6	7	6	7	6	7
22	BP @ 24"	q	340	450	270	400	270	380	260	370	260	350	—	—
		F	4.8+ 34.6R	5.1+ 28.1R	6.4+ 28.9R	6.1+ 23.4R	7.8+ 24.7R	7.5+ 20R	9.5+ 21.6R	9.3+ 17.5R	11.5+ 19.2R	11.4+ 15.6R	—	—
	BP @ 12"	q	390	510	330	460	330	440	320	430	320	410	—	—
		F	4.6+ 34.6R	4.9+ 28.1R	5.7+ 28.9R	5.7+ 23.4R	6.9+ 24.7R	6.9+ 20R	8.2+ 21.6R	8.4+ 17.5R	9.8+ 19.2R	10.1+ 15.6R	—	—
	TSW @ 24"	q	740	940	600	780	550	730	510	680	480	620	460	580
		F	12.7	9.3	15.1	11.1	16.2	12.3	17.2	13.5	18.1	14.6	18.8	15.5
	TSW @ 12"	q	1000	1160	920	1090	870	1050	840	1010	810	950	790	900
		F	10.1	8.1	10.7	8.8	11.2	9.5	11.5	10.0	11.9	10.5	12.1	10.9
20	BP @ 24"	q	530	710	420	620	410	590	400	560	390	520	—	—
		F	4.4+ 20.0R	4.7+ 16.2R	6.0+ 16.7R	5.7+ 13.5R	7.5+ 14.3R	7.2+ 11.6R	9.3+ 12.5R	9.0+ 10.1R	11.4+ 11.1R	11.2+ 9.0R	—	—
	BP @ 12"	q	580	770	490	690	480	660	470	640	460	580	—	—
		F	4.2+ 20.0R	4.5+ 16.2R	5.5+ 16.7R	5.4+ 13.5R	6.7+ 14.3R	6.7+ 11.6R	8.2+ 12.5R	8.3+ 10.1R	10.0+ 11.1R	10.1+ 9.0R	—	—
	TSW @ 24"	q	930	1100	780	930	710	860	650	810	610	780	580	720
		F	9.8	7.3	11.9	8.7	12.9	9.8	13.6	10.7	14.3	11.7	15.0	12.5
	TSW @ 12"	q	1230	1340	1180	1250	1100	1200	1050	1180	1010	1170	970	1120
		F	8.0	6.4	8.6	7.1	9.0	7.6	9.3	8.1	9.6	8.5	9.8	8.9
18	BP @ 24"	q	890	1200	730	970	630	840	560	740	500	660	450	600
		F	4.2+ 8.5R	4.2+ 6.6R	5.6+ 7.1R	5.3+ 5.7R	7.2+ 6.1R	6.8+ 4.9R	9.1+ 5.3R	8.7+ 4.3R	11.3+ 4.7R	10.9+ 3.8R	13.9+ 4.2R	13.6+ 3.4R
	BP @ 12"	q	950	1270	820	1050	710	910	630	800	560	720	510	660
		F	3.9+ 8.5R	4.1+ 6.6R	5.2+ 7.1R	5.0+ 5.7R	6.6+ 6.1R	6.4+ 4.9R	8.3+ 5.3R	8.1+ 4.3R	10.2+ 4.7R	10.2+ 3.8R	12.5+ 4.2R	12.6+ 3.4R
	TSW @ 24"	q	1160	1420	990	1200	930	1100	880	1040	860	1000	840	970
		F	6.6	5.0	7.9	6.0	8.7	6.8	9.4	7.6	10.0	8.3	10.5	8.9
	TSW @ 12"	q	1480	1690	1420	1560	1380	1500	1370	1470	1370	1460	1360	1470
		F	5.6	4.5	6.0	5.0	6.4	5.5	6.7	5.8	6.9	6.2	7.1	6.5
16	BP @ 24"	q	1080	1140	900	1200	770	1030	680	910	610	810	550	730
		F	3.6+ 4.3R	3.9+ 3.5R	5.4+ 3.6R	5.0+ 2.9R	7.0+ 3.1R	6.5+ 2.5R	8.9+ 2.7R	8.5+ 2.2R	11.2+ 2.4R	10.8+ 1.9R	13.9+ 2.2R	13.5+ 1.8R
	BP @ 12"	q	1140	1540	970	1270	840	1100	740	970	670	870	600	780
		F	3.5+ 4.3R	3.8+ 3.5R	5.0+ 3.6R	4.8+ 2.9R	6.5+ 3.1R	6.2+ 2.5R	8.3+ 2.7R	8.0+ 2.2R	10.4+ 2.4R	10.2+ 1.9R	12.8+ 2.2R	12.8+ 1.8R
	TSW @ 24"	q	1390	1740	1190	1470	1110	1350	1050	1270	1020	1210	1000	1180
		F	4.9	3.8	5.8	4.6	6.4	5.2	7.0	5.8	7.5	6.4	8.0	6.9
	TSW @ 12"	q	1740	2050	1660	1880	1610	1800	1580	1760	1580	1750	1590	1760
		F	4.2	3.5	4.6	3.9	4.9	4.2	5.1	4.5	5.4	4.8	5.5	5.1

[1] Footnotes 3 and 4 of Table 19 apply to this table.
[2] See Figure 8 for SHEARTRANZ details.
[3] For HSB-30 deck, 5 and 6 puddle weld patterns apply.

FIGURE 8–DETAILS FOR SHEARTRANZ® FOR HSB®-30, HSB®-36, AND N-24 DECKS

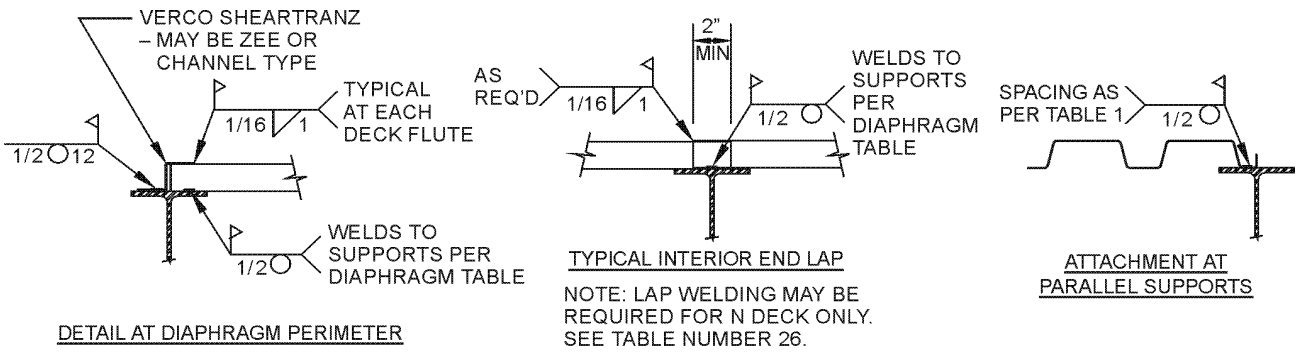


TABLE 24–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE PLN™-24 DECK WITH SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4,5,6]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
24/4 WELD PATTERN AT SUPPORTS											
22	VSC @ 24"	q	480	457	410	399	367	362	339	318	303
		F	20.4+51R	19.3+47R	24.3+44R	23.2+41R	27.9+39R	26.7+37R	31.2+36R	34.3+33R	37.2+31R
	VSC @ 18"	q	518	487	463	422	409	398	373	361	340
		F	15.0+51R	15.2+47R	15.5+44R	18.8+41R	18.9+39R	19.1+37R	22.1+36R	22.2+33R	25.0+31R
	VSC @ 12"	q	583	540	508	483	462	445	431	409	392
		F	10.0+51R	10.8+47R	11.5+44R	12.1+41R	12.8+39R	13.4+37R	13.9+36R	15.0+33R	16.1+31R
	VSC @ 8"	q	662	627	583	564	535	523	502	479	461
		F	7.0+51R	7.2+47R	7.8+44R	7.9+41R	8.5+39R	8.6+37R	9.2+36R	9.8+33R	10.3+31R
	VSC @ 6"	q	728	682	647	619	596	578	562	537	519
		F	5.7+51R	6.0+47R	6.2+44R	6.4+41R	6.7+39R	6.9+37R	7.1+36R	7.4+33R	7.8+31R
	VSC @ 4"	q	840	791	753	723	699	679	662	602	545
		F	4.5+51R	4.6+47R	4.7+44R	4.9+41R	5.0+39R	5.1+37R	5.2+36R	5.4+33R	5.6+31R
20	VSC @ 24"	q	680	646	580	563	518	510	477	448	426
		F	16.1+34R	15.4+31R	19.4+29R	18.5+27R	22.4+26R	21.5+25R	25.2+24R	27.8+22R	30.3+21R
	VSC @ 18"	q	733	687	652	595	576	560	525	507	477
		F	11.9+34R	12.1+31R	12.4+29R	15.1+27R	15.2+26R	15.4+25R	17.9+24R	18.1+22R	20.5+21R
	VSC @ 12"	q	820	759	713	677	648	624	604	573	549
		F	8.0+34R	8.7+31R	9.3+29R	9.8+27R	10.3+26R	10.9+25R	11.3+24R	12.3+22R	13.2+21R
	VSC @ 8"	q	927	877	815	787	747	730	701	668	644
		F	5.7+34R	5.8+31R	6.4+29R	6.5+27R	7.0+26R	7.0+25R	7.5+24R	8.0+22R	8.5+21R
	VSC @ 6"	q	1017	952	902	862	831	804	783	749	723
		F	4.6+34R	4.9+31R	5.1+29R	5.3+27R	5.4+26R	5.6+25R	5.8+24R	6.1+22R	6.4+21R
	VSC @ 4"	q	1169	1099	1046	1004	971	943	920	869	786
		F	3.7+34R	3.8+31R	3.9+29R	4.0+27R	4.1+26R	4.2+25R	4.3+24R	4.5+22R	4.6+21R
18	VSC @ 24"	q	1072	1016	913	885	816	802	752	707	674
		F	10.9+18R	10.5+16R	13.2+15R	12.7+14R	15.4+14R	14.8+13R	17.4+12R	19.4+12R	21.3+11R
	VSC @ 18"	q	1151	1079	1023	934	904	879	825	798	754
		F	8.1+18R	8.3+16R	8.6+15R	10.4+14R	10.5+14R	10.7+13R	12.5+12R	12.7+12R	14.4+11R
	VSC @ 12"	q	1284	1188	1116	1060	1015	978	948	900	865
		F	5.6+18R	6.0+16R	6.4+15R	6.8+14R	7.2+14R	7.6+13R	8.0+12R	8.7+12R	9.3+11R
	VSC @ 8"	q	1446	1367	1272	1229	1167	1141	1097	1048	1012
		F	4.0+18R	4.1+16R	4.5+15R	4.6+14R	4.9+14R	5.0+13R	5.3+12R	5.7+12R	6.1+11R
	VSC @ 6"	q	1583	1481	1404	1343	1295	1256	1224	1173	1136
		F	3.3+18R	3.5+16R	3.6+15R	3.8+14R	3.9+14R	4.0+13R	4.2+12R	4.4+12R	4.6+11R
	VSC @ 4"	q	1812	1705	1624	1561	1511	1469	1435	1383	1345
		F	2.6+18R	2.7+16R	2.8+15R	2.9+14R	3.0+14R	3.0+13R	3.1+12R	3.2+12R	3.4+11R
16	VSC @ 24"	q	1439	1364	1227	1192	1101	1084	1017	959	916
		F	7.9+11R	7.7+10R	9.7+9R	9.4+9R	11.3+8R	11.0+8R	12.9+8R	14.4+7R	15.8+7R
	VSC @ 18"	q	1544	1448	1375	1257	1219	1187	1116	1083	1025
		F	6.0+11R	6.1+10R	6.3+9R	7.7+9R	7.8+8R	7.9+8R	9.2+8R	9.4+7R	10.8+7R
	VSC @ 12"	q	1720	1594	1500	1426	1368	1321	1282	1221	1178
		F	4.1+11R	4.5+10R	4.8+9R	5.1+9R	5.4+8R	5.7+8R	6.0+8R	6.5+7R	7.0+7R
	VSC @ 8"	q	1937	1834	1709	1654	1573	1541	1484	1423	1378
		F	3.0+11R	3.1+10R	3.4+9R	3.4+9R	3.7+8R	3.8+8R	4.0+8R	4.3+7R	4.6+7R
	VSC @ 6"	q	2119	1985	1885	1808	1746	1696	1655	1593	1547
		F	2.5+11R	2.6+10R	2.7+9R	2.9+9R	3.0+8R	3.1+8R	3.2+8R	3.3+7R	3.5+7R
	VSC @ 4"	q	2424	2285	2181	2100	2036	1985	1942	1877	1831
		F	2.0+11R	2.1+10R	2.2+9R	2.2+9R	2.3+8R	2.3+8R	2.4+8R	2.5+7R	2.6+7R

[1] VSC = Verco sidelap connection described in Section 3.8.

[2] The dimension from the first and last sidelap connection within each span is to be no more than one-half of the specified spacing.

[3] R is the vertical span (L_v) of deck units divided by the length (L_s) of the deck sheet: $R = L_v/L_s$.

[4] The flexibility limitations shown in Table 7 may be used in lieu of a rational analysis of the anticipated deflections.

[5] Interpolation of diaphragm strength between adjacent spans is permissible. For interpolated lengths, use diaphragm flexibility factor for the closest span length.

[6] Diaphragm shear values for side seam fasteners placed at spacings other than those in the table should be determined based on the number of fasteners in each span.

TABLE 25–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE N-24 DECK WITH BUTTON PUNCHES (BP) OR 1½" TOP SEAM WELDS (TSW) AT SIDELAPS [1]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"
24/4 WELD PATTERN AT SUPPORTS											
22	BP @ 24"	q	234	216	189	180	163	158	145	130	119
		F	21.3+166R	23.3+143R	26.7+125R	28.4+111R	31.8+100R	33.2+91R	36.6+83R	41.1+71R	45.4+62R
	BP @ 12"	q	285	260	241	227	216	207	198	184	173
		F	18.0+166R	19.8+143R	21.5+125R	23.1+111R	24.6+100R	26.1+91R	27.4+83R	29.9+71R	32.1+62R
	TSW @ 24"	q	234	231	201	202	181	183	167	158	151
		F	15.5+166R	13.9+143R	14.1+125R	12.9+111R	13.1+100R	12.1+91R	12.2+83R	11.5+71R	11.0+62R
	TSW @ 12"	q	343	324	309	298	289	282	276	267	260
		F	11.4+166R	10.7+143R	10.1+125R	9.6+111R	9.2+100R	8.8+91R	8.5+83R	8.0+71R	7.5+62R
20	BP @ 24"	q	355	323	283	266	240	231	212	189	171
		F	16.3+96R	18.2+82R	20.9+72R	22.5+64R	25.3+58R	26.8+52R	29.6+48R	33.8+41R	37.8+36R
	BP @ 12"	q	415	374	344	321	303	289	277	253	235
		F	14.3+96R	16.0+82R	17.6+72R	19.1+64R	20.5+58R	21.9+52R	23.2+48R	25.7+41R	28.1+36R
	TSW @ 24"	q	384	371	322	320	286	287	262	245	232
		F	12.3+96R	11.3+82R	11.5+72R	10.6+64R	10.8+58R	10.1+52R	10.2+48R	9.7+41R	9.3+36R
	TSW @ 12"	q	540	505	479	459	443	429	418	401	389
		F	9.4+96R	8.9+82R	8.5+72R	8.1+64R	7.8+58R	7.5+52R	7.2+48R	6.8+41R	6.5+36R
18	BP @ 24"	q	637	568	498	461	416	394	362	324	296
		F	10.6+41R	12.0+35R	13.8+31R	15.2+27R	17.1+24R	18.5+22R	20.5+20R	23.9+17R	27.3+15R
	BP @ 12"	q	710	632	574	530	494	466	443	407	381
		F	9.7+41R	11.0+35R	12.2+31R	13.5+27R	14.7+24R	15.9+22R	17.1+20R	19.4+17R	21.6+15R
	TSW @ 24"	q	819	773	670	652	582	576	524	483	453
		F	8.4+41R	7.9+35R	8.0+31R	7.6+27R	7.7+24R	7.3+22R	7.4+20R	7.2+17R	6.9+15R
	TSW @ 12"	q	1096	1011	948	899	860	828	802	761	730
		F	6.7+41R	6.4+35R	6.2+31R	6.0+27R	5.8+24R	5.6+22R	5.5+20R	5.2+17R	5.0+15R
16	BP @ 24"	q	918	812	712	654	590	554	509	453	411
		F	7.5+21R	8.6+18R	9.9+16R	11.0+14R	12.5+12R	13.6+11R	15.1+10R	17.9+9R	20.7+8R
	BP @ 12"	q	1000	884	797	731	678	636	601	547	508
		F	7.0+21R	8.0+18R	9.0+16R	10.0+14R	11.0+12R	12.0+11R	13.0+10R	15.0+9R	17.0+8R
	TSW @ 24"	q	1197	1137	1002	982	891	888	821	774	742
		F	6.1+21R	5.8+18R	5.9+16R	5.7+14R	5.8+12R	5.6+11R	5.7+10R	5.5+9R	5.4+8R
	TSW @ 12"	q	1558	1453	1378	1322	1280	1248	1223	1190	1170
		F	5.0+21R	4.8+18R	4.7+16R	4.6+14R	4.5+12R	4.4+11R	4.3+10R	4.1+9R	3.9+8R

[1] Footnotes 2–6 of Table 24 apply to this table.

TABLE 26–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR TYPE N-24 DECK WITH VERCO SHEARTRANZ® AND 1½" TOP SEAM WELDS (TSW) AT SIDELAPS [1,2]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft- in.)									
			END LAP NOT WELDED					END LAP WELDED WITH 1-INCH FILLET WELD				
			6'-0"	8'-0"	10'-0"	12'-0"	14'-0"	6'-0"	8'-0"	10'-0"	12'-0"	14'-0"
24/4 WELD PATTERN AT SUPPORTS												
22	TSW @ 12"	q	620	620	540	450	380	750	670	540	450	380
		F	11.5	12.2	12.6	12.9	13.1	11.5	12.2	12.6	12.9	13.1
20	TSW @ 12"	q	750	750	650	540	460	1020	810	650	540	460
		F	9.2	9.8	10.3	10.6	10.8	9.2	9.8	10.3	10.6	10.8
18	TSW @ 12"	q	1000	1000	Use N Deck Values			1430	1080	Use N Deck Values		
		F	6.5	7.0				6.5	7.0			

[1] See Figure 8 for SHEARTRANZ® details.
[2] The flexibility limitations shown in Table 7 may be used in lieu of a rational analysis of the anticipated deflections.

TABLE 27–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH HILTI PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 HILTI X-EDN19 PINS AT SUPPORTS 0.313-⅜" THICK 36/7 HILTI X-EDNK22 PINS AT SUPPORTS 0.188-0.250" THICK											
22	VSC @ 24"	q	687	627	527	501	442	428	388	–	–
		F	11.3+23R	11.9+27R	20.4+31R	21.0+35R	32.3+38R	32.8+42R	46.9+45R	–	–
	VSC @ 18"	q	777	689	579	540	509	456	438	–	–
		F	6.9+23R	8.2+27R	13.2+31R	14.8+35R	16.7+38R	24.2+42R	26.4+45R	–	–
	VSC @ 12"	q	853	743	666	609	565	530	501	–	–
		F	5.2+23R	6.4+27R	7.7+31R	9.2+35R	10.9+38R	12.8+42R	14.9+45R	–	–
	VSC @ 8"	q	980	878	773	722	660	629	588	–	–
		F	3.9+23R	4.3+27R	5.1+31R	5.6+35R	6.6+38R	7.1+42R	8.4+45R	–	–
	VSC @ 6"	q	1087	955	862	793	740	697	661	–	–
		F	3.5+23R	3.8+27R	4.1+31R	4.5+35R	5.0+38R	5.5+42R	6.0+45R	–	–
	VSC @ 4"	q	1267	1118	1013	935	874	824	753	–	–
		F	3.1+23R	3.2+27R	3.4+31R	3.6+35R	3.8+38R	4.0+42R	4.3+45R	–	–
20	VSC @ 24"	q	826	750	631	598	528	511	464	453	419
		F	10.1+13R	10.7+15R	18.5+17R	19.2+19R	29.7+21R	30.3+23R	43.6+25R	44.2+27R	60.0 +29R
	VSC @ 18"	q	929	821	691	644	606	544	522	503	465
		F	6.1+13R	7.3+15R	11.9+17R	13.5+19R	15.3+21R	22.3+23R	24.5+25R	26.8+27R	36.1+29R
	VSC @ 12"	q	1016	883	791	723	671	629	595	566	542
		F	4.5+13R	5.6+15R	6.9+17R	8.3+19R	10.0+21R	11.7+23R	13.7+25R	15.8+27R	18.1+29R
	VSC @ 8"	q	1161	1039	913	853	780	744	695	672	637
		F	3.4+13R	3.7+15R	4.5+17R	4.9+19R	5.9+21R	6.4+23R	7.6+25R	8.2+27R	9.6+29R
	VSC @ 6"	q	1284	1126	1017	935	872	822	780	745	688
		F	2.9+13R	3.2+15R	3.6+17R	4.0+19R	4.4+21R	4.9+23R	5.4+25R	5.9+27R	6.5+29R
	VSC @ 4"	q	1489	1313	1190	1098	1027	969	922	818	688
		F	2.6+13R	2.7+15R	2.9+17R	3.1+19R	3.3+21R	3.5+23R	3.7+25R	4.0+27R	4.3+29R
18	VSC @ 24"	q	1040	941	793	750	663	640	583	569	528
		F	8.3+5R	8.9+6R	15.6+7R	16.3+8R	25.6+8R	26.3+9R	38.0+10R	38.8+11R	53.0+11R
	VSC @ 18"	q	1162	1025	864	804	757	680	653	630	584
		F	4.9+5R	6.0+6R	10.0+7R	11.4+8R	13.1+8R	19.3+9R	21.3+10R	23.5+11R	31.9+11R
	VSC @ 12"	q	1265	1099	984	900	835	784	742	707	678
		F	3.6+5R	4.6+6R	5.7+7R	7.0+8R	8.4+8R	10.0+9R	11.8+10R	13.8+11R	15.9+11R
	VSC @ 8"	q	1438	1285	1131	1056	967	923	864	835	793
		F	2.6+5R	2.9+6R	3.6+7R	4.0+8R	4.9+8R	5.4+9R	6.5+10R	7.0+11R	8.3+11R
	VSC @ 6"	q	1583	1389	1254	1155	1078	1017	967	925	890
		F	2.3+5R	2.5+6R	2.8+7R	3.2+8R	3.6+8R	4.0+9R	4.5+10R	5.0+11R	5.5+11R
	VSC @ 4"	q	1827	1612	1462	1350	1264	1195	1139	1092	1052
		F	2.0+5R	2.1+6R	2.3+7R	2.4+8R	2.6+8R	2.8+9R	3.0+10R	3.2+11R	3.5+11R
16	VSC @ 24"	q	1215	1096	926	874	775	748	682	667	619
		F	7.0+2R	7.6+3R	13.6+3R	14.3+4R	22.6+4R	23.4+4R	34.0+5R	34.9+5R	47.9+5R
	VSC @ 18"	q	1352	1191	1007	937	881	794	763	736	683
		F	4.1+2R	5.1+3R	8.7+3R	10.0+4R	11.5+4R	17.1+4R	19.0+5R	21.1+5R	28.7+5R
	VSC @ 12"	q	1468	1275	1142	1045	971	912	864	825	791
		F	3.0+2R	3.9+3R	4.9+3R	6.1+4R	7.4+4R	8.9+4R	10.5+5R	12.3+5R	14.2+5R
	VSC @ 8"	q	1662	1485	1309	1223	1121	1071	1004	972	924
		F	2.2+2R	2.5+3R	3.1+3R	3.4+4R	4.2+4R	4.7+4R	5.7+5R	6.2+5R	7.4+5R
	VSC @ 6"	q	1826	1603	1449	1335	1248	1179	1122	1075	1036
		F	1.9+2R	2.1+3R	2.4+3R	2.7+4R	3.0+4R	3.4+4R	3.9+5R	4.3+5R	4.9+5R
	VSC @ 4"	q	2100	1854	1684	1558	1461	1383	1320	1268	1223
		F	1.6+2R	1.7+3R	1.9+3R	2.0+4R	2.2+4R	2.3+4R	2.5+5R	2.8+5R	3.0+5R

(continued)

See Page 55 for footnotes.

TABLE 27–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH HILTI PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 HILTI X-EDN19 PINS AT SUPPORTS 0.250-0.313" THICK											
22	VSC @ 24"	q	563	514	432	411	362	351	318	–	–
		F	17.0+23R	17.9+27R	30.6+31R	31.5+35R	48.5+38R	49.2+42R	70.4+45R	–	–
	VSC @ 18"	q	637	565	475	443	417	374	359	–	–
		F	10.4+23R	12.3+27R	19.8+31R	22.2+35R	25.1+38R	36.3+42R	39.6+45R	–	–
	VSC @ 12"	q	699	609	546	499	463	435	411		–
		F	7.8+23R	9.6+27R	11.6+31R	13.8+35R	16.4+38R	19.2+42R	22.4+45R	–	–
	VSC @ 8"	q	804	720	634	592	541	516	482	–	–
		F	5.9+23R	6.5+27R	7.7+31R	8.4+35R	9.9+38R	10.7+42R	12.6+45R	–	–
	VSC @ 6"	q	891	783	707	650	607	572	542	–	–
		F	5.3+23R	5.7+27R	6.2+31R	6.8+35R	7.5+38R	8.3+42R	9.0+45R	–	–
	VSC @ 4"	q	1039	917	831	767	717	676	617	–	–
		F	4.7+23R	4.8+27R	5.1+31R	5.4+35R	5.7+38R	6.0+42R	6.5+45R	–	–
20	VSC @ 24"	q	677	615	517	490	433	419	380	371	344
		F	15.2+13R	16.1+15R	27.8+17R	28.8+19R	44.6+21R	45.5+23R	65.4+25R	66.3+27R	90.0+29R
	VSC @ 18"	q	762	673	567	528	497	446	428	412	381
		F	9.1+13R	11.0+15R	17.9+17R	20.3+19R	23.0+21R	33.5+23R	36.8+25R	40.2+27R	54.2+29R
	VSC @ 12"	q	833	724	649	593	550	516	488	464	444
		F	6.8+13R	8.4+15R	10.4+17R	12.5+19R	15.0+21R	17.6+23R	20.6+25R	23.7+27R	27.2+29R
	VSC @ 8"	q	952	852	749	699	640	610	570	551	522
		F	5.1+13R	5.6+15R	6.8+17R	7.4+19R	8.8+21R	9.6+23R	11.4+25R	12.3+27R	14.4+29R
	VSC @ 6"	q	1053	923	834	767	715	674	640	611	564
		F	4.4+13R	4.8+15R	5.4+17R	6.0+19R	6.6+21R	7.4+23R	8.1+25R	8.9+27R	9.8+29R
	VSC @ 4"	q	1221	1077	976	900	842	795	756	671	564
		F	3.9+13R	4.1+15R	4.4+17R	4.7+19R	5.0+21R	5.3+23R	5.6+25R	6.0+27R	6.5+29R
18	VSC @ 24"	q	853	772	650	615	544	525	478	467	433
		F	12.5+5R	13.4+6R	23.4+7R	24.5+8R	38.4+8R	39.5+9R	57.0+10R	58.2+11R	79.5+11R
	VSC @ 18"	q	953	841	708	659	621	558	535	517	479
		F	7.4+5R	9.0+6R	15.0+7R	17.1+8R	19.7+8R	29.0+9R	32.0+10R	35.3+11R	47.9+11R
	VSC @ 12"	q	1037	901	807	738	685	643	608	580	556
		F	5.4+5R	6.9+6R	8.6+7R	10.5+8R	12.6+8R	15.0+9R	17.7+10R	20.7+11R	23.9+11R
	VSC @ 8"	q	1179	1054	927	866	793	757	708	685	650
		F	3.9+5R	4.4+6R	5.4+7R	6.0+8R	7.4+8R	8.1+9R	9.7+10R	10.5+11R	12.5+11R
	VSC @ 6"	q	1298	1139	1028	947	884	834	793	759	730
		F	3.5+5R	3.8+6R	4.2+7R	4.8+8R	5.4+8R	6.0+9R	6.8+10R	7.5+11R	8.3+11R
	VSC @ 4"	q	1498	1322	1199	1107	1036	980	934	895	863
		F	3.0+5R	3.2+6R	3.5+7R	3.6+8R	3.9+8R	4.2+9R	4.5+10R	4.8+11R	5.3+11R
16	VSC @ 24"	q	996	899	759	717	636	613	559	547	508
		F	10.5+2R	11.4+3R	20.4+3R	21.5+4R	33.9+4R	35.1+4R	51.0+5R	52.4+5R	71.9+5R
	VSC @ 18"	q	1109	977	826	768	722	651	626	604	560
		F	6.2+2R	7.7+3R	13.1+3R	15.0+4R	17.3+4R	25.7+4R	28.5+5R	31.7+5R	43.1+5R
	VSC @ 12"	q	1204	1046	936	857	796	748	708	677	649
		F	4.5+2R	5.9+3R	7.4+3R	9.1+4R	11.1+4R	13.4+4R	15.8+5R	18.5+5R	21.3+5R
	VSC @ 8"	q	1363	1218	1073	1003	919	878	823	797	758
		F	3.3+2R	3.8+3R	4.7+3R	5.1+4R	6.3+4R	7.1+4R	8.6+5R	9.3+5R	11.1+5R
	VSC @ 6"	q	1497	1314	1188	1095	1023	967	920	882	850
		F	2.9+2R	3.2+3R	3.6+3R	4.1+4R	4.5+4R	5.1+4R	5.9+5R	6.5+5R	7.4+5R
	VSC @ 4"	q	1722	1520	1381	1278	1198	1134	1082	1040	1003
		F	2.4+2R	2.6+3R	2.9+3R	3.0+4R	3.3+4R	3.5+4R	3.8+5R	4.2+5R	4.5+5R

(continued)

See Page 55 for footnotes.

TABLE 27–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH HILTI PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 HILTI X-EDNK22 PINS AT SUPPORTS 1/8-0.188" THICK											
22	VSC @ 24"	q	522	477	401	381	336	325	295	–	–
		F	18.1+23R	19.0+27R	32.6+31R	33.6+35R	51.7+38R	52.5+42R	75.0+45R	–	–
	VSC @ 18"	q	591	524	440	410	387	347	3303	–	–
		F	11.0+23R	13.1+27R	21.1+31R	23.7+35R	26.7+38R	38.7+42R	42.2+45R	–	–
	VSC @ 12"	q	648	565	506	463	429	403	381		–
		F	8.3+23R	10.2+27R	12.3+31R	14.7+35R	17.4+38R	20.5+42R	23.8+45R	–	–
	VSC @ 8"	q	745	667	587	549	502	478	447	–	–
		F	6.2+23R	6.9+27R	8.2+31R	9.0+35R	10.6+38R	11.4+42R	13.4+45R	–	–
	VSC @ 6"	q	826	726	655	603	562	530	502	–	–
		F	5.6+23R	6.1+27R	6.6+31R	7.2+35R	8.0+38R	8.8+42R	9.6+45R	–	–
	VSC @ 4"	q	963	850	770	711	664	626	572	–	–
		F	5.0+23R	5.1+27R	5.4+31R	5.8+35R	6.1+38R	6.4+42R	6.9+45R	–	–
20	VSC @ 24"	q	628	570	480	454	401	388	353	344	318
		F	16.2+13R	17.1+15R	29.6+17R	30.7+19R	47.5+21R	48.5+23R	69.8+25R	70.7+27R	96.0+29R
	VSC @ 18"	q	706	624	525	489	461	413	397	382	353
		F	9.8+13R	11.7+15R	19.0+17R	21.6+19R	24.5+21R	35.7+23R	39.2+25R	42.9+27R	57.8+29R
	VSC @ 12"	q	772	671	601	549	510	478	452	430	412
		F	7.2+13R	9.0+15R	11.0+17R	13.3+19R	16.0+21R	18.7+23R	21.9+25R	25.3+27R	29.0+29R
	VSC @ 8"	q	882	790	694	648	593	565	528	511	484
		F	5.4+13R	5.9+15R	7.2+17R	7.8+19R	9.4+21R	10.2+23R	12.2+25R	13.1+27R	15.4+29R
	VSC @ 6"	q	976	856	773	711	663	625	593	566	523
		F	4.6+13R	5.1+15R	5.8+17R	6.4+19R	7.0+21R	7.8+23R	8.6+25R	9.4+27R	10.4+29R
	VSC @ 4"	q	1132	998	904	834	781	736	701	622	523
		F	4.2+13R	4.3+15R	4.6+17R	5.0+19R	5.3+21R	5.6+23R	5.9+25R	6.4+27R	6.9+29R
18	VSC @ 24"	q	790	715	603	570	504	486	443	432	401
		F	13.3+5R	14.2+6R	25.0+7R	26.1+8R	41.0+8R	42.1+9R	60.8+10R	62.1+11R	84.8+11R
	VSC @ 18"	q	883	779	657	611	575	517	496	479	444
		F	7.8+5R	9.6+6R	16.0+7R	18.2+8R	21.0+8R	30.9+9R	34.1+10R	37.6+11R	51.0+11R
	VSC @ 12"	q	961	835	748	684	635	596	564	537	515
		F	5.8+5R	7.4+6R	9.1+7R	11.2+8R	13.4+8R	16.0+9R	18.9+10R	22.1+11R	25.4+11R
	VSC @ 8"	q	1093	977	860	803	735	701	657	635	603
		F	4.2+5R	4.6+6R	5.8+7R	6.4+8R	7.8+8R	8.6+9R	10.4+10R	11.2+11R	13.3+11R
	VSC @ 6"	q	1203	1056	953	878	819	773	735	703	676
		F	3.7+5R	4.0+6R	4.5+7R	5.1+8R	5.8+8R	6.4+9R	7.2+10R	8.0+11R	8.8+11R
	VSC @ 4"	q	1389	1225	1111	1026	961	908	866	830	800
		F	3.2+5R	3.4+6R	3.7+7R	3.8+8R	4.2+8R	4.5+9R	4.8+10R	5.1+11R	5.6+11R
16	VSC @ 24"	q	923	833	704	664	589	568	518	507	470
		F	11.2+2R	12.2+3R	21.8+3R	22.9+4R	36.2+4R	37.4+4R	54.4+5R	55.8+5R	76.6+5R
	VSC @ 18"	q	1028	905	765	712	670	603	580	559	519
		F	6.6+2R	8.2+3R	13.9+3R	16.0+4R	18.4+4R	27.4+4R	30.4+5R	33.8+5R	45.9+5R
	VSC @ 12"	q	1116	969	868	794	738	693	657	627	601
		F	4.8+2R	6.2+3R	7.8+3R	9.8+4R	11.8+4R	14.2+4R	16.8+5R	19.7+5R	22.7+5R
	VSC @ 8"	q	1263	1129	995	929	852	814	763	739	702
		F	3.5+2R	4.0+3R	5.0+3R	5.4+4R	6.7+4R	7.5+4R	9.1+5R	9.9+5R	11.8+5R
	VSC @ 6"	q	1388	1218	1101	1015	948	896	853	817	787
		F	3.0+2R	3.4+3R	3.8+3R	4.3+4R	4.8+4R	5.4+4R	6.2+5R	6.9+5R	7.8+5R
	VSC @ 4"	q	1596	1409	1280	1184	1110	1051	1003	964	929
		F	2.6+2R	2.7+3R	3.0+3R	3.2+4R	3.5+4R	3.7+4R	4.0+5R	4.5+5R	4.8+5R

[1] Notes 1–6 of Table 19 apply to this table.
[2] See General Note 7c for spacing of Hilti fasteners at collector elements parallel to deck flutes.
[3] See Table 2 for Allowable Tension Loads for Hilti fasteners subjected to wind uplift loads.
[4] See Section 3.12 for Hilti fastener details.

TABLE 28–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH PNEUTEK® PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 PNEUTEK® K66062 OR K66075 PIN PATTERN AT SUPPORTS 0.281" THICK AND THICKER											
36/7 PNEUTEK® K64062 PIN PATTERN AT SUPPORTS 0.187 – 0.312" THICK											
22	VSC @ 24"	q	823	781	678	653	592	582	540	–	–
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R	–	–
	VSC @ 18"	q	933	843	733	698	671	617	604	–	–
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R	–	–
	VSC @ 12"	q	1003	897	826	776	738	708	684	–	–
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R	–	–
	VSC @ 8"	q	1121	1033	940	903	850	830	753	–	–
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R	–	–
	VSC @ 6"	q	1220	1110	1036	984	944	913	753	–	–
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R	–	–
	VSC @ 4"	q	1387	1273	1197	1143	1102	929	753	–	–
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R	–	–
20	VSC @ 24"	q	981	1008	810	843	720	751	665	693	627
		F	6.3+13R	7.0+10R	9.3+8R	10.0+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	1203	1088	947	902	867	798	781	767	688
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	1295	1158	1068	1003	954	916	885	818	688
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	1447	1335	1215	1168	1099	1075	990	818	688
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1576	1435	1340	1272	1222	1182	990	818	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1793	1647	1549	1479	1427	1223	990	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R
18	VSC @ 24"	q	1260	1302	1047	1094	935	978	866	904	819
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1678	1523	1311	1267	1221	1124	1102	1084	1023
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1809	1624	1500	1412	1346	1294	1253	1219	1057
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	2029	1878	1713	1650	1555	1523	1460	1257	1057
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	2215	2022	1893	1801	1731	1678	1521	1257	1057
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	2526	2327	2194	2099	2027	1878	1521	1257	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	1518	1576	1269	1331	1139	1194	1058	1107	1003
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	2057	1926	1594	1596	1555	1392	1407	1386	1287
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	2284	2058	1907	1799	1717	1654	1604	1562	1478
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	2571	2390	2184	2109	1990	1953	1874	1759	1478
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	2813	2577	2418	2305	2220	2154	2101	1759	1478
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	3219	2975	2811	2694	2606	2538	2129	1759	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

(continued)

See Page 58 for footnotes.

TABLE 28–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH PNEUTEK® PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4] - Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 PNEUTEK® SDK63075 PIN PATTERN AT SUPPORTS 0.155 – 0.250" THICK											
22	VSC @ 24"	q	782	742	644	621	562	553	513	–	–
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R	–	–
	VSC @ 18"	q	887	801	697	663	637	586	574	–	–
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R	–	–
	VSC @ 12"	q	953	852	785	737	701	673	650	–	–
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R	–	–
	VSC @ 8"	q	1065	982	893	858	807	789	753	–	–
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R	–	–
	VSC @ 6"	q	1159	1055	985	934	897	867	753	–	–
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R	–	–
	VSC @ 4"	q	1318	1210	1138	1086	1047	929	753	–	–
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R	–	–
20	VSC @ 24"	q	932	958	770	801	684	714	632	658	596
		F	6.3+13R	7.0+10R	9.3+8R	10.0+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	1143	1034	899	857	824	758	742	728	687
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	1230	1101	1014	952	906	870	841	817	688
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	1375	1268	1155	1109	1044	1021	978	818	688
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1498	1363	1273	1209	1160	1123	990	818	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1703	1564	1472	1405	1356	1223	990	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R
18	VSC @ 24"	q	1197	1237	995	1039	888	929	822	859	778
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1594	1446	1246	1203	1160	1068	1047	1030	972
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1718	1543	1425	1341	1278	1229	1190	1158	1057
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	1928	1784	1628	1567	1477	1447	1387	1257	1057
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	2104	1921	1798	1711	1645	1594	1521	1257	1057
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	2400	2211	2084	1994	1926	1873	1521	1257	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	1442	1498	1206	1264	1082	1134	1005	1052	953
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	1954	1829	1514	1516	1477	1322	1337	1317	1222
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	2170	1955	1811	1709	1632	1572	1523	1484	1451
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	2443	2270	2075	2003	1891	1855	1780	1759	1478
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	2673	2448	2297	2190	2109	2046	1996	1759	1478
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	3058	2826	2670	2559	2476	2411	2129	1759	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

(continued)

See Page 58 for footnotes.

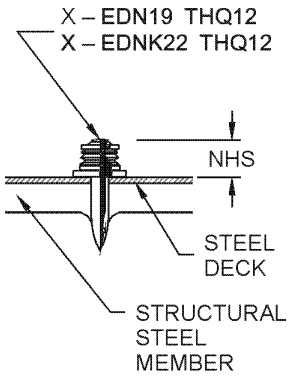
TABLE 28–ALLOWABLE DIAPHRAGM SHEAR, q (plf), AND FLEXIBILITY FACTORS, F, FOR PLB™-36 DECK ATTACHED WITH PNEUTEK® PINS TO SUPPORTS AND SIDELAPS CONNECTED WITH THE PUNCHLOK® SYSTEM [1,2,3,4]- Continued

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.)								
			4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
36/7 PNEUTEK® SDK61075 PIN PATTERN AT SUPPORTS 0.113 – 0.155" THICK											
22	VSC @ 24"	q	535	508	441	425	385	378	351	–	–
		F	7.6+24R	8.5+19R	11.2+16R	12.1+14R	15.1+12R	16.0+11R	19.4+10R	–	–
	VSC @ 18"	q	607	548	477	454	436	401	393	–	–
		F	6.3+24R	7.4+19R	9.5+16R	10.6+14R	11.7+12R	14.2+11R	15.3+10R	–	–
	VSC @ 12"	q	652	583	537	504	480	460	445	–	–
		F	5.6+24R	6.6+19R	7.6+16R	8.7+14R	9.8+12R	10.9+11R	12.0+10R	–	–
	VSC @ 8"	q	729	672	611	587	552	540	517	–	–
		F	4.9+24R	5.4+19R	6.3+16R	6.8+14R	7.8+12R	8.3+11R	9.3+10R	–	–
	VSC @ 6"	q	793	722	674	639	614	594	577	–	–
		F	4.4+24R	5.0+19R	5.5+16R	6.1+14R	6.7+12R	7.2+11R	7.8+10R	–	–
	VSC @ 4"	q	901	828	778	743	716	696	679	–	–
		F	4.0+24R	4.3+19R	4.7+16R	5.1+14R	5.5+12R	5.9+11R	6.3+10R	–	–
20	VSC @ 24"	q	638	655	527	548	468	488	432	451	408
		F	6.3+13R	7.0+10R	9.3+8R	10+7R	12.5+6R	13.3+6R	16.0+5R	16.7+5R	19.6+4R
	VSC @ 18"	q	782	707	615	586	564	519	508	498	470
		F	5.3+13R	6.1+10R	7.9+8R	8.8+7R	9.7+6R	11.7+6R	12.7+5R	13.6+5R	15.8+4R
	VSC @ 12"	q	841	753	694	652	620	595	575	559	546
		F	4.7+13R	5.5+10R	6.3+8R	7.2+7R	8.1+6R	9.0+6R	9.9+5R	10.9+5R	11.8+4R
	VSC @ 8"	q	941	868	790	759	714	699	669	660	639
		F	4.0+13R	4.5+10R	5.2+8R	5.7+7R	6.4+6R	6.9+6R	7.7+5R	8.2+5R	9.0+4R
	VSC @ 6"	q	1025	933	871	827	794	768	748	731	688
		F	3.7+13R	4.1+10R	4.6+8R	5.0+7R	5.5+6R	6.0+6R	6.5+5R	7.0+5R	7.4+4R
	VSC @ 4"	q	1165	1070	1007	962	928	901	880	818	688
		F	3.3+13R	3.6+10R	3.9+8R	4.2+7R	4.6+6R	4.9+6R	5.2+5R	5.5+5R	5.9+4R
18	VSC @ 24"	q	819	846	680	711	608	636	563	588	532
		F	4.6+5R	5.2+4R	6.8+3R	7.3+3R	9.1+2R	9.6+2R	11.6+2R	12.1+2R	14.1+2R
	VSC @ 18"	q	1090	990	852	823	794	731	717	705	665
		F	3.9+5R	4.5+4R	5.8+3R	6.4+3R	7.0+2R	8.5+2R	9.2+2R	9.8+2R	11.4+2R
	VSC @ 12"	q	1176	1056	975	918	875	841	814	792	774
		F	3.5+5R	4.0+4R	4.6+3R	5.3+3R	5.9+2R	6.6+2R	7.2+2R	7.9+2R	8.5+2R
	VSC @ 8"	q	1319	1221	1114	1072	1011	990	949	937	908
		F	3.0+5R	3.3+4R	3.8+3R	4.1+3R	4.7+2R	5.0+2R	5.6+2R	5.9+2R	6.5+2R
	VSC @ 6"	q	1440	1314	1230	1170	1125	1090	1062	1039	1020
		F	2.7+5R	3.0+4R	3.4+3R	3.7+3R	4.0+2R	4.4+2R	4.7+2R	5.0+2R	5.4+2R
	VSC @ 4"	q	1642	1513	1426	1364	1318	1282	1253	1229	1057
		F	2.5+5R	2.7+4R	2.9+3R	3.1+3R	3.3+2R	3.6+2R	3.8+2R	4.0+2R	4.3+2R
16	VSC @ 24"	q	987	1025	825	865	740	776	688	720	652
		F	3.6+2R	4.0+2R	5.3+1R	5.7+1R	7.0+1R	7.4+1R	8.9+1R	9.3+1R	10.8+1R
	VSC @ 18"	q	1337	1252	1036	1037	1011	904	915	901	836
		F	3.0+2R	3.5+2R	4.5+1R	4.9+1R	5.4+1R	6.6+1R	7.0+1R	7.5+1R	8.7+1R
	VSC @ 12"	q	1485	1338	1239	1169	1116	1075	1042	1015	993
		F	2.7+2R	3.1+2R	3.6+1R	4.1+1R	4.6+1R	5.0+1R	5.5+1R	6.0+1R	6.5+1R
	VSC @ 8"	q	1671	1553	1420	1371	1294	1269	1218	1204	1167
		F	2.3+2R	2.6+2R	3.0+1R	3.2+1R	3.6+1R	3.9+1R	4.3+1R	4.5+1R	5.0+1R
	VSC @ 6"	q	1829	1675	1572	1498	1443	1400	1366	1337	1314
		F	2.1+2R	2.4+2R	2.6+1R	2.9+1R	3.1+1R	3.4+1R	3.6+1R	3.9+1R	4.1+1R
	VSC @ 4"	q	2092	1933	1827	1751	1694	1649	1614	1585	1478
		F	1.9+2R	2.1+2R	2.3+1R	2.4+1R	2.6+1R	2.8+1R	2.9+1R	3.1+1R	3.3+1R

(continued)

1 Notes 1–6 of Table 19 apply to this table.
2 See General Note 7.d. for spacing of Pneutek fasteners at collector elements parallel to deck flutes.
3 See Table 3 for Allowable Tension Loads for Pneutek fasteners subjected to wind uplift forces.
4 See Section 3.13 for Pneutek fastener details.

FIGURE 9–HILTI FASTENER NAIL HEAD STANDOFF (NHS)



NOTE: NHS = 3/16" – 3/8"

FIGURE 10–PNEUTEK FASTENERS

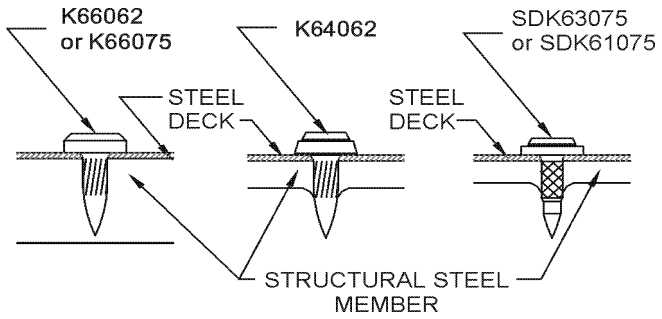


TABLE 29–DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR INVERTED AND "NORMAL" 1-5/16" (DEEP) VERCOR DECK WITH TEKS SCREWS [1,2,3,4,5,6,7]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
36/4 or 36/5 TEKS SCREW PATTERN AT SUPPORTS [5]									
26	TEKS @ 24"	q	100	103	105	106	107	107	108
		F	19.4+265.9R	16.6+212.7R	14.9+177.3R	13.6+151.9R	12.7+132.9R	12.0+118.2R	11.5+106.4R
	TEKS @ 18"	q	139	141	143	144	145	146	146
		F	15.8+265.9R	13.9+212.7R	12.6+177.3R	11.7+151.9R	11.1+132.9R	10.6+118.2R	10.2+106.4R
	TEKS @ 12"	q	215	218	219	220	221	222	223
		F	12.5+265.9R	11.2+212.7R	10.4+177.3R	9.9+151.9R	9.5+132.9R	9.1+118.2R	8.9+106.4R
24	TEKS @ 24"	q	147	147	147	147	147	147	147
		F	13.9+178.9R	12.2+143.1R	11.0+119.2R	10.2+102.2R	9.6+89.4R	9.1+79.5R	8.8+71.5R
	TEKS @ 18"	q	197	196	196	196	196	196	196
		F	11.6+178.9R	10.3+143.1R	9.5+119.2R	8.9+102.2R	8.4+89.4R	8.1+79.5R	7.8+71.5R
	TEKS @ 12"	q	296	296	296	296	296	296	296
		F	9.4+178.9R	8.5+143.1R	8.0+119.2R	7.6+102.2R	7.2+89.4R	7.0+79.5R	6.8+71.5R
22	TEKS @ 24"	q	201	197	194	192	190	189	188
		F	10.6+130.1R	9.5+104.1R	8.7+86.7R	8.1+74.4R	7.7+65.1R	7.3+57.8R	7.0+52.0R
	TEKS @ 18"	q	263	258	255	253	252	251	250
		F	9.0+130.1R	8.2+104.1R	7.6+86.7R	7.1+74.4R	6.8+65.1R	6.5+57.8R	6.3+52.0R
	TEKS @ 12"	q	386	382	379	376	375	374	373
		F	7.4+130.1R	6.8+104.1R	6.4+86.7R	6.1+74.4R	5.9+65.1R	5.7+57.8R	5.5+52.0R
20	TEKS @ 24"	q	263	253	246	241	237	234	232
		F	8.5+100.1R	7.7+80.1R	7.1+66.7R	6.7+57.2R	6.4+50.1R	6.1+44.5R	5.9+40.0R
	TEKS @ 18"	q	336	326	319	314	310	308	305
		F	7.3+100.1R	6.7+80.1R	6.2+66.7R	5.9+57.2R	5.6+50.1R	5.4+44.5R	5.3+40.0R
	TEKS @ 12"	q	483	472	466	461	457	454	452
		F	6.1+100.1R	5.7+80.1R	5.3+66.7R	5.1+57.2R	4.9+50.1R	4.8+44.5R	4.6+40.0R

(continued)

See Page 60 for footnotes

TABLE 29–DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR INVERTED AND "NORMAL" 1-5/16" (DEEP) VERCOR DECK WITH TEKS SCREWS [1,2,3,4,5,6,7]

GAGE	SIDELAP ATTACH-MENT		SPAN (ft-in.) 4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"
36/8 or 36/9 TEKS SCREW PATTERN AT SUPPORTS [5]									
26	TEKS @ 24"	q	118	117	116	115	115	115	114
		F	17.6+33.4R	15.6+26.7R	14.2+22.3R	13.2+19.1R	12.4+16.7R	11.9+14.9R	11.4+13.4R
	TEKS @ 18"	q	156	155	154	154	153	153	153
		F	14.9+33.4R	13.3+26.7R	12.3+22.3R	11.5+19.1R	10.9+16.7R	10.5+14.9R	10.1+13.4R
	TEKS @ 12"	q	233	231	231	230	230	229	229
		F	12.1+33.4R	11.0+26.7R	10.3+22.3R	9.8+19.1R	9.4+16.7R	9.1+14.9R	8.9+13.4R
24	TEKS @ 24"	q	176	169	165	162	160	158	157
		F	12.6+22.5R	11.4+18.0R	10.5+15.0R	9.9+12.8R	9.4+11.2R	9.0+10.0R	8.7+9.0R
	TEKS @ 18"	q	226	219	215	212	210	208	206
		F	10.9+22.5R	9.9+18.0R	9.2+15.0R	8.7+12.8R	8.3+11.2R	8.0+10.0R	7.8+9.0R
	TEKS @ 12"	q	325	319	314	311	309	307	306
		F	9.1+22.5R	8.3+18.0R	7.9+15.0R	7.5+12.8R	7.2+11.2R	7.0+10.0R	6.8+9.0R
22	TEKS @ 24"	q	245	231	221	215	210	206	203
		F	9.5+16.4R	8.8+13.1R	8.2+10.9R	7.8+9.3R	7.5+8.2R	7.2+7.3R	7.0+6.5R
	TEKS @ 18"	q	306	292	283	276	271	267	264
		F	8.4+16.4R	7.8+13.1R	7.3+10.9R	7.0+9.3R	6.7+8.2R	6.4+7.3R	6.3+6.5R
	TEKS @ 12"	q	429	415	406	399	394	390	387
		F	7.2+16.4R	6.7+13.1R	6.3+10.9R	6.0+9.3R	5.8+8.2R	5.7+7.3R	5.5+6.5R
20	TEKS @ 24"	q	323	299	283	272	263	257	252
		F	7.6+12.6R	7.1+10.1R	6.7+8.4R	6.4+7.2R	6.2+6.3R	6.0+5.6R	5.8+5.0R
	TEKS @ 18"	q	397	372	356	345	337	330	325
		F	6.8+12.6R	6.4+10.1R	6.0+8.4R	5.8+7.2R	5.6+6.3R	5.4+5.6R	5.3+5.0R
	TEKS @ 12"	q	543	519	503	492	483	477	472
		F	5.9+12.6R	5.5+10.1R	5.3+8.4R	5.0+7.2R	4.9+6.3R	4.8+5.6R	4.7+5.0R

[1] R is the vertical span (L_v) of deck units divided by the length (L_s) of the deck sheet: $R = L_v/L_s$.

[2] The spacing of TEKS Screws, a_s, to chords, struts and shear transfer elements, parallel to panel flutes, is equal to: $a_s = 11{,}600t/q_{s'}$
Where: a_s = Center to center spacing of screws, in feet.
t = Base metal thickness of deck sheet, in inches.
$q_{s'}$ = Actual shear on diaphragm, in pounds per lineal foot.

[3] Screws for deck-to-deck seam fastening must be No. 12-14 X 3/4" TEKS 1. Screws for deck to support fastening must be one of the following:

FASTENER DESCRIPTION	SUPPORT THICKNESS
#12-14 X 3/4" TEKS 3	16 GAGE TO 3/16"
#12-24 X 7/8" TEKS 4	1/8" TO 1/4"
#12-24 X 1 1/4" TEKS 5	1/8" TO 1/2"

See ICC-ES Evaluation Report ESR-1976 for additional details.

[4] The flexibility limitations shown in Table 7 may be used as a guide in lieu of rational analysis of the anticipated deflections.

[5] Deck support fastener patterns are as described in Figure 11.

[6] Eight or four screws used for Inverted 1 5/16" (Deep) Vercor. Nine or five screws used for (Deep)1 5/16" Vercor.

[7] Fasteners subjected to wind uplift (suction loads) must be evaluated based on the ALLOWABLE TENSION LOAD shown in the chart below. The tension loads are the lesser value of the allowable pullover (deck pulling over the head of the screw) or pullout (screw pulling out of the support member) loads for a given combination of deck gage and support member thickness. The ALLOWABLE TENSION LOAD assumes supports have a minimum 33 ksi yield strength and 45 ksi tensile strength.

ALLOWABLE TENSION LOAD (lb)

DECK GAGE	SUPPORT THICKNESS [GAGE / "t" (in.)] 16 0.0566	14 0.0713	12 0.1042	10 0.124	1/8" 0.125	3/16" 0.1875	1/4" or > 0.25 or >
26	155	195	280	330	330	330	330
24	155	195	280	340	340	430	430
22	155	195	280	340	340	515	530
20	155	195	280	340	340	515	630

Allowable loads in the shaded area to the left of the heavy line may be multiplied by 1.44 for supports with minimum 50 ksi yield strength and 65 ksi tensile strength.

FIGURE 11–TEKS FASTENER PATTERNS FOR 1-5/16" (DEEP) VERCOR

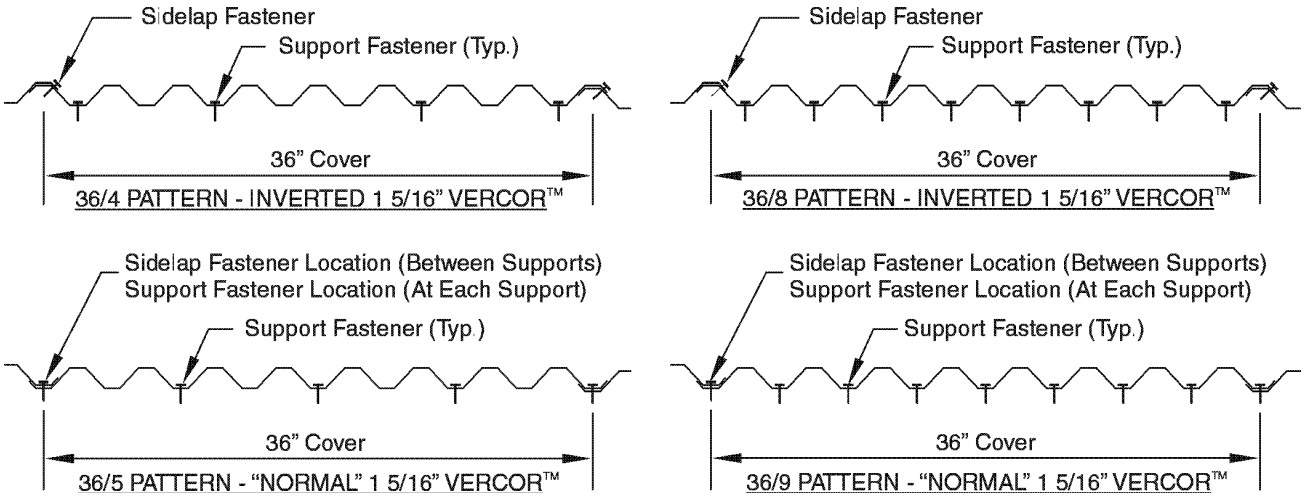
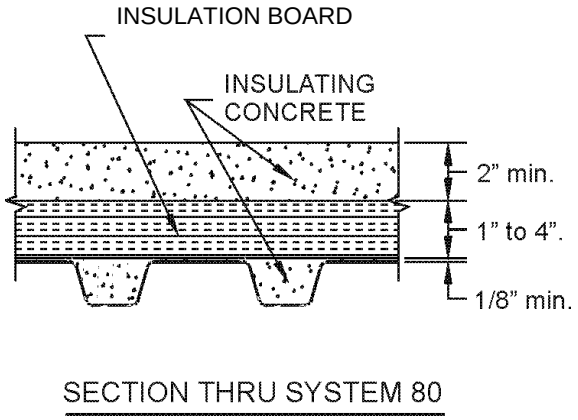


TABLE 30–DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR SYSTEM 80® WITH GALVANIZED HSB®-30, HSB®-36, B-30 FORMLOK™, AND B-36 FORMLOK™ DECKS [1,2,3,4,5,6]

GAGE	SEAM ATTACHMENT [5]		MAXIMUM CLEAR SPAN 8'-0"	9'-0"	10'-0"
22	BP @ 24"	q	880		
		F	13.0		
	TSW @ 24"	q	1050		
		F	8.0		
	TSW @ 16"	q	1160		
		F	4.5		
20	BP@ 24"	q	970	890	820
		F	13.0	13.0	13.0
	TSW @ 24"	q	1290	1190	1090
		F	8.0	8.0	8.0
	TSW @ 16"	q	1430	1340	1260
		F	4.5	4.5	4.5
18	BP@ 24"	q	1030	990	960
		F	13.0	13.0	13.0
	TSW @ 24"	q	1370	1320	1280
		F	8.0	8.0	8.0
	TSW @ 16"	q	1520	1490	1480
		F	4.5	4.5	4.5

FIGURE 12–SECTION OF SYSTEM 80 WITH INSULATING CONCRETE



1 System 80 is comprised of deck, ShearTranz, insulating concrete, and insulation board constructed in accordance with Figures 7, 8 and 12.
2 Attach HSB-30 and B-30 FORMLOK to supports with 6 arc spot welds per sheet. Attach HSB-36 and B-36 FORMLOK to supports with 7 arc spot welds per sheet.
3 These values may be used for systems without the insulation board if the net thickness of insulating concrete over the top of deck is 2¼ inches.
4 If venting is required, vent tabs may be provided in the interior low flutes of the deck.
5 BP = Button punch; TSW = Top seam weld.
6 Insulating concrete must comply with Section 3.14.

TABLE 31–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR GALVANIZED TYPE 1-5/16" (DEEP) VERCOR DECK WITH INSULATING CONCRETE FILL [1, 2, 3, 4, 5, 6]

DECK GAGE	WELD PATTERN		SPAN (ft.-In.)												
			4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-3"	6'-8"	7'-0"	7'-6"	8'-0"	8'-4"	9'-0"	10'-0"
MESH REQUIRED															
26	2-2	q	497	480	467	456	446	442							
		F	1.75	1.82	1.88	1.93	1.97	1.99							
	3-2	q	578	555	537	522	510	504							
		F	1.69	1.76	1.82	1.88	1.93	1.95							
	5-2	q	691	661	636	616	600	592							
		F	1.69	1.76	1.82	1.88	1.93	1.95							
	5-3	q	1019	979	947	920	897	889							
		F	1.67	1.74	1.81	1.86	1.91	1.94							
24	2-2	q	552	552	552	530	512	505	493	485	473	463	458		
		F	1.45	1.45	1.45	1.51	1.57	1.60	1.64	1.67	1.71	1.75	1.77		
	3-2	q	653	653	653	625	601	591	575	564	550	536	528		
		F	1.40	1.40	1.40	1.46	1.52	1.54	1.59	1.62	1.66	1.70	1.73		
	5-2	q	804	804	804	765	733	720	698	683	663	645	635		
		F	1.40	1.40	1.40	1.46	1.52	1.54	1.59	1.62	1.66	1.70	1.73		
	5-3	q	1142	1142	1142	1093	1052	1035	1008	989	963	941	928		
		F	1.39	1.39	1.39	1.45	1.51	1.54	1.58	1.61	1.66	1.70	1.72		
22	2-2	q	604	604	604	604	604	592	573	560	543	528	518	502	
		F	1.26	1.26	1.26	1.26	1.26	1.29	1.33	1.37	1.41	1.45	1.48	1.53	
	3-2	q	718	718	718	718	718	702	678	661	639	619	607	586	
		F	1.22	1.22	1.22	1.22	1.22	1.25	1.29	1.32	1.37	1.41	1.44	1.49	
	5-2	q	900	900	900	900	900	878	845	822	791	765	748	730	
		F	1.22	1.22	1.22	1.22	1.22	1.25	1.29	1.32	1.37	1.41	1.44	1.49	
	5-3	q	1241	1241	1241	1241	1241	1215	1175	1146	1108	1075	1055	1020	
		F	1.23	1.23	1.23	1.23	1.23	1.26	1.30	1.33	1.38	1.42	1.45	1.50	
20	2-2	q	642	642	642	642	642	642	642	642	619	598	586	563	536
		F	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.20	1.25	1.27	1.32	1.39
	3-2	q	763	763	763	763	763	763	763	763	733	707	691	663	628
		F	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.17	1.22	1.24	1.29	1.37
	5-2	q	965	965	965	965	965	965	965	965	924	888	867	828	780
		F	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.17	1.22	1.24	1.29	1.37
	5-3	q	1307	1307	1307	1307	1307	1307	1307	1307	1257	1214	1188	1141	1085
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.19	1.24	1.26	1.32	1.39
MESH NOT REQUIRED															
26	2-2	q	397	381	368	357	348	344							
		F	1.65	1.72	1.78	1.83	1.88	1.90							
	3-2	q	452	426	411	397	385	379							
		F	1.34	1.41	1.48	1.54	1.60	1.62							
	5-2	q	562	533	507	487	470	463							
		F	1.34	1.41	1.48	1.54	1.60	1.62							
	5-3	q	866	826	794	768	746	736							
		F	1.58	1.66	1.73	1.78	1.84	1.86							
24	2-2	q	492	492	492	471	453	446	434	426	415	405	400		
		F	1.39	1.39	1.39	1.45	1.51	1.54	1.58	1.61	1.65	1.69	1.72		
	3-2	q	569	569	569	541	518	508	492	481	467	454	447		
		F	1.09	1.09	1.09	1.15	1.21	1.24	1.28	1.31	1.36	1.40	1.42		
	5-2	q	719	719	719	680	649	635	613	598	578	560	550		
		F	1.09	1.09	1.09	1.15	1.21	1.24	1.28	1.31	1.36	1.40	1.42		
	5-3	q	1063	1063	1063	1014	973	958	929	910	885	862	849		
		F	1.35	1.35	1.35	1.41	1.47	1.50	1.54	1.57	1.62	1.66	1.69		
22	2-2	q	573	573	573	573	573	560	542	529	511	497	487	471	
		F	1.24	1.24	1.24	1.24	1.24	1.26	1.31	1.34	1.38	1.43	1.45	1.50	
	3-2	q	662	662	662	662	662	647	623	606	584	564	552	532	
		F	0.96	0.96	0.96	0.96	0.96	0.98	1.02	1.05	1.10	1.14	1.16	1.22	
	5-2	q	845	845	845	845	845	823	790	768	737	710	694	665	
		F	0.96	0.96	0.96	0.96	0.96	0.98	1.02	1.05	1.10	1.14	1.16	1.22	
	5-3	q	1208	1208	1208	1208	1208	1181	1141	1112	1075	1041	1022	986	
		F	1.22	1.22	1.22	1.22	1.22	1.24	1.29	1.32	1.37	1.41	1.44	1.49	
20	2-2	q	628	628	628	628	628	628	628	628	604	584	571	549	522
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.24	1.26	1.32	1.38
	3-2	q	724	724	724	724	724	724	724	724	694	668	652	624	589
		F	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.97	0.99	1.04	1.11
	5-2	q	926	926	926	926	926	926	926	926	885	849	826	789	742
		F	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.97	0.99	1.04	1.11
	5-3	q	1297	1297	1297	1297	1297	1297	1297	1297	1247	1203	1177	1130	1072
		F	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.24	1.27	1.32	1.39

[1] The values are based on decks filled to a minimum 2-inch depth over the top flange of light weight insulating concrete, conforming to Section 3.14 of this report.

[2] Welded wire mesh reinforcement consists of 2-inch hexagonal mesh woven from No. 19 gage galvanized wire with additional longitudinal No. 16 gage galvanized wire spaced 3½ inches on center. Mesh is placed at the approximate center of concrete fill.

[3] Continuous No. 3 bars shall be placed at exterior boundaries of diaphragm perpendicular to corrugations where anchor bar supports are specified.
[4] The first digit of the weld pattern indicates type of attachment at exterior supports; the second digit indicates type of attachment at interior supports; the type of deck attachment is as described in Table 32.
[5] Attachments to shear transfer elements parallel to deck corrugations: Fastener spacing to chords, struts, or other shear transfer framing members parallel to the deck flutes shall be such as to limit the amount of shear transfer to 800 pounds per fastener.
[6] Attachments at interior lines of shear transfer perpendicular to deck corrugations: The shear transfer from a diaphragm to interior chord or strut lines perpendicular to deck corrugations shall not exceed the shear values indicated in table above using connections at the line of shear transfer similar to those used for the exterior support connections. Two lines of such exterior connections may be used to develop the total shear transfer.

TABLE 32–DESCRIPTION OF DECK ATTACHMENT FOR 1-5/16" (DEEP) VERCOR DECKS WITH INSULATING CONCRETE FILL SHOWN IN TABLE 31 [1,2]

CONNECTION TYPE	DESCRIPTION OF 36-INCH-WIDE DECK END CONNECTIONS TO SUPPORTING MEMBERS
2	One fastener[1] at each lap and three intermediate fasteners
3	One fastener[1] at each lap and fastener in each remaining corrugation
5	One anchor bar[2] support at each lap and two intermediate anchor bar supports and fasteners in each remaining corrugation

[1] Fasteners consist of No. 14 gage steel washers attached by plug welds to supporting members through a ⅜ inch-diameter hole in the washer.
[2] Anchor bar supports consist of No. 16 gage steel, ear-type washers 2¼ inches high. The anchor bar support is connected to the deck and supporting member with a plug weld through a 7/16-inch-diameter hole. The anchor bar support is designed to support a No. 3 reinforcing bar running transverse to the direction of the corrugation.

TABLE 33–ALLOWABLE DIAPHRAGM SHEAR VALUES, q (plf), AND FLEXIBILITY FACTORS, F, FOR 30 AND 36 INCH WIDE GALVANIZED B DECK WITH 2-INCH-DEEP LIGHT WEIGHT INSULATING CONCRETE FILL [1,2,3,6,7,8]

GAGE	FACTOR	NUMBER OF PUDDLE WELDS PER PANEL END AND AT SUPPORTS [4,5]	
		4 OR 5	6 OR 7
16	q	$\frac{5382}{L} + 274$	$\frac{6791}{L} + 275$
	F	$\frac{1277}{5382/L + 274}$	$\frac{1283}{6791/L + 275}$
18	q	$\frac{4160}{L} + 299$	$\frac{5314}{L} + 302$
	F	$\frac{1403}{4160/L + 299}$	$\frac{1419}{5314/L + 302}$
20	q	$\frac{2799}{L} + 325$	$\frac{3702}{L} + 334$
	F	$\frac{1533}{2799/L + 325}$	$\frac{1577}{3702/L + 334}$
22	q	$\frac{2040}{L} + 333$	$\frac{2799}{L} + 348$
	F	$\frac{1570}{2040/L + 333}$	$\frac{1645}{2799/L + 348}$

[1] "B" Deck – PLB, & HSB, and PLB & B Formlok
[2] Sidelap attachments: Button punch sidelaps of 30" and 36" HSB and B Formlok decks at 36 inches on center. Connect sidelaps of 30" and 36" PLB and PLB Formlok decks at 36 inches on center with Verco sidelap connections (VSC).
[3] L = vertical load span of deck unit in feet.
[4] Minimum span "L" to compute diaphragm shears shall be 6'-0" for all gages.
[5] Four and six puddle welds are used with 30" wide decks. Five and seven puddle welds are used with 36" wide decks.
[6] Fill shall be a minimum of 2-inch depth over the top flange.
[7] The light weight insulating concrete must conform to the specifications set forth in Section 3.14 of the report.
[8] The flexibility limitations shown in Table 7 may be used in lieu of a rational analysis of the anticipated deflections.