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RESEARCH REPORT: RR 25758  
(CSI #: 05310)

BASED UPON ICC EVALUATION SERVICE  
ES REPORT NO. ESR-2657

REEVALUATION DUE DATE:

February 1, 2012

Issued: January 1, 2010

Code: 2008 LABC

**GENERAL APPROVAL** – Reevaluation - CSI Steel Roof Deck Panels – D4.5, D6.0 and D7.5 Deep-Dek<sup>®</sup> Roof Panels; and D4.5C, D6.0C and D7.5C Deep-Dek<sup>®</sup> Cellular Roof Panels

**DETAILS**

The above assemblies and/or products are approved when in compliance with the description, use, identification and findings of Report No. ESR-2657 dated October 1, 2008, of the ICC Evaluation Service, Incorporated. The report, in its entirety, is attached and made part of this general approval.

**The approval is subject to the following conditions:**

1. Deck units for each job shall be identified by the manufacturer's name and deck designation. The material thickness and amount of galvanizing shall also be indicated.
2. When requested by the Department, test data by the mill or by an approved testing agency shall be submitted to verify the deck material is as specified in the attachment.
3. Where exposed to the weather, the deck units shall be galvanized.
4. For each job where the deck units are specified, the following information shall be indicated on the plans to be reviewed by the Department: (a) Cross-section details of the

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- deck units; (b) fastener details, including deck welding or other fasteners at supports, at diaphragm boundaries parallel to flutes, at shear transfer elements, and at side seams if such fasteners are required; (c) minimum length of deck units; and (d) design shears.
5. Spacing of attachments parallel to flutes and at side seams shall be as required but shall not be greater than 3 feet at boundaries parallel to flutes nor greater than 4 feet at side seams if attachments are required.
  6. Any change of deck units from those specified on the approved plans shall be approved by the design engineer of the building and by Structural Plan Check of the Department. The proprietary nature of the data in this report precludes their use for deck units by other manufacturers.
  7. The allowable tension (uplift) load for arc spot welds fastening steel sheets to supporting members must be calculated in accordance with Section E2.2.2 of AISI NASPEC (and AISI/COS/NASPEC-SUP 04).
  8. The sizes of puddle welds specified are the fused sizes. For 1/2" round puddle welds, the top or appearance size is approximately 3/4" round.
  9. The number of "puddle welds" specified in the tables are required at each support for each deck unit.
  10. For diaphragm construction, the use of deck units less than the full width shall be designed to transfer all shear loads.
  11. Continuous inspection by deputy building inspectors shall be provided for welding of the deck units for diaphragms.
  12. Deck welding shall be performed by Los Angeles City certified light gage welders. Prior to proceeding with the welding, the welders shall demonstrate to the Deputy Inspectors their ability to produce the prescribed weld satisfactorily. A sample of the deck material shall be welded to steel simulating the framing. The sample specimen shall then be twisted, and if the deck material tears or if the weld in torsion indicates the proper fusion area, the weld shall be considered satisfactory.
  13. Allowable loads in the tables are not applicable to concentrated loads or to predominantly vibratory loads.
  14. Diaphragm shear values in the tables shall not be increased one-third for seismic or wind loading.
  15. Use of the roof decks in fire-resistive construction shall be in accordance with a separate Los Angeles City Research Report.
  16. When used as roof covering, panels must be covered with code complying roof covering.

Consolidated Systems, Inc.  
Re: CSE Steel Roof Deck Panels

## **DISCUSSION**

The approval is based on tests in accordance with ICC-ES Acceptance Criteria for Steel Deck Roof and Floor Systems (AC 43), dated February 2008 (editorially revised April 2008).

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revision to the report must be submitted to this Department for review with appropriate fee to continue the approval of the revised report.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this Approval have been met in the project in which it is to be used.

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YC:elcm  
RR25758/msw2003  
R12/29/09  
1A2/2B2/1602/1704.3/1705/1707.4/2203/2209

Attachment: ICC ES Report No. ESR-2657 (32 pages)

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**DIVISION: 05—METALS**  
**Section: 05310—Steel Deck**

**REPORT HOLDER:**

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**EVALUATION SUBJECT:**

**CSI® STEEL ROOF DECK PANELS: D4.5, D6.0 AND D7.5 DEEP-DEK® ROOF PANELS; AND D4.5C, D6.0C AND D7.5C DEEP-DEK® CELLULAR ROOF PANELS**

## 1.0 EVALUATION SCOPE

**Compliance with the following code:**

2006 *International Building Code*® (IBC)

**Property evaluated:**

Structural

## 2.0 USES

The CSI® Deep-Dek and Deep-Dek Cellular steel deck panels are used as roof decks to support the code-required roof loads.

## 3.0 DESCRIPTION

### 3.1 General:

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

The galvanized and galvanized/painted deck panels are formed from ASTM A 653 steel, with a minimum G40 galvanization coating applied to both surfaces. Galvanized/painted finished deck panels have a primed painted bottom surface.

The phosphatized/painted and nonphosphatized/painted deck panels are formed from ASTM A 1008 steel. Phosphatized/painted finished deck panels have an iron phosphate coating on the top surface and a primed painted bottom surface. Nonphosphatized/painted finished deck panels have a chrome-based or nonchrome-based coating on the top surface and a primed painted bottom surface.

### 3.2 D4.5, D6.0 and D7.5 Deep-Dek® Panels:

The roof deck panels are cold-formed from galvanized mill-finished or primer-painted, SS Grade 40 steel. The D4.5 and

D6.0 deck panels are fluted sections as shown in the accompanying profile drawings, and are available in design thicknesses ranging from No. 14 to No. 20 gage [0.0747 inch (1.90 mm) to 0.0358 inch (0.909 mm)]; the D7.5 deck panels are fluted sections as shown in the accompanying profile drawings, and are available in design thicknesses ranging from No. 14 to No. 18 gage [0.0747 inch (1.90 mm) to 0.0474 inch (1.20 mm)].

### 3.3 D4.5C, D6.0C and D7.5C Deep-Dek® Cellular Panels:

The roof deck panels are cold-formed from galvanized or galvanized/painted, cold-rolled mill-finished phosphatized/painted or nonphosphatized/painted, SS Grade 40 steel. The deck panels consist of fluted, hat sections that are factory-welded to pan, liner sections, as shown in the accompanying profile drawings. The D4.5 and D6.0 Cellular panels are available with hat section design thicknesses ranging from No. 14 to No. 20 gage [0.0747 inch (1.90 mm) to 0.0358 inch (0.909 mm)] and liner section design thicknesses ranging from No. 14 to No. 20 gage [0.0747 inch (1.90 mm) to 0.0358 inch (0.909 mm)]; the D7.5 Cellular panels are available with hat section design thicknesses ranging from No. 14 to No. 18 gage [0.0747 inch (1.90 mm) to 0.0474 inch (1.20 mm)] and liner section design thicknesses ranging from No. 14 to No. 20 gage [0.0747 inch (1.90 mm) to 0.0358 inch (0.909 mm)].

## 4.0 DESIGN AND INSTALLATION

### 4.1 Design:

Allowable gravity and wind uplift loads must be based on section properties shown in Table 1. Allowable reaction based on web crippling must not exceed values in Table 2. See the Table of Contents, following the text of this report, for allowable diaphragm shear values for each deck panel. The section properties and allowable reaction based on web crippling tables in this report are established using the design thicknesses of the deck panels noted in Table 1. Additional design criteria are set forth in the "Table Notes" preceding the figures and tables in this report.

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

The allowable tension (uplift) load for arc spot welds fastening steel sheets to supporting members must be calculated in accordance with Section E2.2.2 of AISI-NASPEC (and AISI/COS/NASPEC-SUP04).

The diaphragm design must take into account the following considerations:

1. Diaphragm classification (flexible or rigid) must comply with IBC Section 1602; the diaphragm deflection ( $\Delta$ ) must be calculated using the equations noted in the Diaphragm Flexibility Limitation Table (Table 3).

2. Diaphragm flexibility limitations must comply with Table 3.
3. Diaphragm deflection limits must comply with ASCE 7 Section 12.10.1 and 12.12.2.
4. Horizontal shears must be distributed in accordance with ASCE 7 Section 12.8.4.

#### 4.2 Installation:

The deck panels must be installed in accordance with this report and CSI's published installation guidelines and instructions. If there is a conflict between the manufacturer's published installation guidelines and instructions and this report, this report governs.

#### 4.3 Special Inspection:

**4.3.1 Jobsite Welding:** Continuous or Periodic special inspection for welding must be in accordance with 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 duties include verification of materials, weld preparation, welding procedures, and welding processes.

**4.3.2 Periodic Special Inspection:** Periodic special inspections in accordance with IBC Section 1707.4 are required where the steel deck 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 and button punches. Periodic special inspections also apply where noted in IBC Tables 1704.3 and 1704.4.

**4.3.3 Continuous Special Inspection:** Continuous special inspections must be provided where noted in IBC Tables 1704.3 and 1704.4.

**4.3.4 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 4.3).

#### 5.0 CONDITIONS OF USE

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

- 5.1 The deck panels are manufactured, identified and installed in accordance with this report and CSI's published installation guidelines and instructions. If there is a conflict between the manufacturer's published installation guidelines and instructions and this report, this report governs.
- 5.2 Vertical load design of deck panels must be based on section properties and reaction loads shown in Tables 1 and 2.

#### 5.3 Where use is 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, must 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 must not exceed the permitted relative deflections of walls between the diaphragm level and the floor below. The flexibility limitations shown in Table 3 may be used as a guide in lieu of the 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 flexibility demands.

**5.4** Special inspection for field-welding must be provided in accordance with Section 4.3.3.

**5.5** When the steel deck panels are used as roof coverings, the panels must be covered with a code-complying roof covering.

**5.6** Calculations and details demonstrating that the loads applied to the decks 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.

**5.7** The cellular deck panels are fabricated in Memphis, Tennessee, under a quality program with inspections by Testing Engineers, Inc. (AA-532).

#### 6.0 EVIDENCE SUBMITTED

Data in accordance with 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 the CSI® steel deck panels described in this report is identified by labeling bearing the manufacturer's name (CSI®); the deck panel profile name; the design thickness; the minimum specified yield strength; the cover width of the panel; and the evaluation report number (ICC-ES ESR-2657). The Deep-Dek Cellular steel deck panel labeling also includes the manufacturing location (Memphis, Tennessee), and the name of the inspection agency (Testing Engineers, Inc.).

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**ROOF DECK PANELS**

**(Allowable Diaphragm Shear Capacities)**

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## TABLE NOTES

The notes below apply to all of the tables unless noted otherwise.

<sup>1</sup>The allowable diaphragm shears listed in the tables are in pounds per linear foot.

<sup>2</sup>The design thicknesses and cross-sectional properties for all deck panels are indicated in Table 1. The design thickness is the uncoated base-metal thickness of the deck panel.

<sup>3</sup>The length of seam welds must be a minimum of 1½ inches.

<sup>4</sup>Arc spot (puddle) welds must have an effective fusion area to supporting members at least equivalent to ¾ inch by 1 inch long or ½ inch in diameter.

<sup>5</sup>Puddle-weld patterns are shown in Figure 2.

<sup>6</sup>The standing seam joint must be fastened at a maximum of 3 feet on center.

<sup>7</sup>Spacing of marginal welds to members parallel to flutes:

- (a) Arc spot (puddle) welds to members such as chords and to collector elements, such as struts or ties, must have a spacing in feet equal to  $32,000 (t) C/v$

where:

$t$  = Uncoated base-metal thickness of fluted deck panel in inches.

$C$  = 1.0 for galvanized deck panels and 0.65 for painted deck panels.

$v$  = Actual diaphragm shear at marginal supports or actual shear transferred to collector (at struts or ties) in pounds per foot.

- (b) Fillet welds to members such as diaphragm chords must have spacing in feet equal to  $480 l_w/v$

where:

$l_w$  = Length of weld in inches [not less than 1½ inches].

$v$  = Actual diaphragm shear to be transferred to chords in pounds per foot.

- (c) Fillet welds attaching the diaphragm to strut, ties or other collector elements must have a spacing in feet equal to  $300 l_w/v$  where  $v$  is the actual shear to be transferred to the collector elements.

- (d) In no case may any weld spacing exceed 3 feet.

<sup>8</sup>Attachments at interior lines of shear transfer perpendicular to deck panel corrugation:

- (a) The shear transfer from a diaphragm to interior tie or strut lines perpendicular to deck panel corrugation must not exceed the shear values indicated in the tables. Two lines of puddle welds may be used to develop the actual shear transfer to these collector elements,
- (b) In no case may the spacing of welds exceed the deck panel span divided by 3.0.

<sup>9</sup>Where individual panels are cut, the partial panel must 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.

<sup>10</sup>For **SI** dimensions: 1 inch = 25.4 mm; 1 plf = 14.6 N/m; 1 inch<sup>2</sup> = 645.16 mm<sup>2</sup>; 1 inch<sup>3</sup> = 16.4 × 10<sup>4</sup> mm<sup>3</sup>; 1 inch<sup>4</sup> = 41.6 × 10<sup>4</sup> mm<sup>4</sup>; 1 psf = 4.88 kg/m<sup>2</sup>; 1 pcf = 16.018 kg/m<sup>3</sup>; 1 inch-kip = 0.113 kN-m; 1 kip = 4.448 kN; 1 ksi = 6.89 MPa; 1 foot = 304.8 mm.

TABLE 1—SECTION PROPERTIES<sup>1, 2, 3, 4</sup>

DECK PANEL	GAGE	DESIGN THICKNESS (in)	EFFECTIVE MOMENT OF INERTIA (in <sup>4</sup> /ft width)		MOMENT OF INERTIA, I <sub>D</sub> (in <sup>4</sup> /ft width)		EFFECTIVE SECTION MODULUS (in <sup>3</sup> /ft width)	
		t	Normal, I <sub>on</sub>	Inverted, I <sub>oi</sub>	Simple Span	Multiple Span	Normal, S <sub>en</sub>	Inverted, S <sub>ei</sub>
Deep-Dek <sup>®</sup> D4.5	20	0.0358	2.866	2.980	2.904	2.980	1.101	1.209
	18	0.0474	3.923	3.941	3.929	3.941	1.549	1.599
	16	0.0598	4.966	4.966	4.966	4.966	1.991	2.014
	14	0.0747	6.195	6.195	6.195	6.195	2.511	2.511
Deep-Dek <sup>®</sup> D6	20	0.0358	5.537	5.637	5.609	5.676	1.570	1.715
	18	0.0474	7.569	7.609	7.583	7.609	2.292	2.363
	16	0.0598	9.589	9.589	9.589	9.589	2.943	2.978
	14	0.0747	11.963	11.963	11.963	11.963	3.713	3.713
Deep-Dek <sup>®</sup> D7.5	18	0.0474	12.639	12.445	12.661	12.661	3.097	3.061
	16	0.0598	16.014	16.014	16.014	16.014	3.973	4.020
	14	0.0747	19.979	19.979	19.979	19.979	5.013	5.013
Deep-Dek 4.5 Cellular	20/20	0.0358/0.0358	4.570	4.119	4.667	4.667	1.205	1.542
	20/18	0.0358/0.0474	4.862	4.732	4.995	4.995	1.208	1.597
	18/20	0.0474/0.0358	5.910	5.019	5.931	5.931	1.854	2.004
	18/18	0.0474/0.0474	6.389	5.697	6.412	6.412	1.860	2.069
	18/16	0.0474/0.0598	6.826	6.440	6.852	6.852	1.859	2.130
	16/18	0.0598/0.0474	7.655	6.699	7.655	7.655	2.525	2.566
	16/16	0.0598/0.0598	8.180	7.461	8.180	8.180	2.570	2.639
	16/14	0.0598/0.0747	8.730	8.410	8.730	8.730	2.617	2.709
	14/16	0.0747/0.0598	9.619	8.656	9.619	9.619	3.362	3.240
Deep-Dek 6.0 Cellular	20/20	0.0358/0.0358	8.222	7.632	8.491	8.491	1.629	2.192
	20/18	0.0358/0.0474	8.728	8.699	9.075	9.075	1.631	2.270
	18/20	0.0474/0.0358	10.983	9.336	11.018	11.018	2.527	2.846
	18/18	0.0474/0.0474	11.822	10.505	11.877	11.877	2.517	2.939
	18/16	0.0474/0.0598	12.443	11.805	12.565	12.565	2.513	3.026
	16/18	0.0598/0.0474	14.202	12.386	14.202	14.202	3.615	3.643
	16/16	0.0598/0.0598	15.165	13.712	15.165	15.165	3.616	3.746
	16/14	0.0598/0.0747	16.176	15.405	16.176	16.176	3.600	3.848
	14/16	0.0747/0.0598	17.829	15.957	17.829	17.829	4.787	4.598
Deep-Dek 7.5 Cellular	18/20	0.0474/0.0358	17.593	15.188	17.740	17.740	3.187	3.760
	18/18	0.0474/0.0474	18.661	16.961	18.940	18.940	3.178	3.886
	18/16	0.0474/0.0598	19.622	18.969	20.028	20.028	3.174	4.005
	16/18	0.0598/0.0474	23.086	20.043	23.086	23.086	4.593	4.812
	16/16	0.0598/0.0598	24.652	22.090	24.652	24.652	4.567	4.952
	16/14	0.0598/0.0747	25.953	24.769	26.069	26.069	4.550	5.085
	14/16	0.0747/0.0598	28.967	25.772	28.967	28.967	6.347	6.071
	14/14	0.0747/0.0747	30.874	28.628	30.874	30.874	6.444	6.245

For SI: 1 inch = 25.4 mm; 1 ksi = 6.89 MPa

1 Properties are determined in accordance with AISI-NAS

2 Properties are based on yield strength, F<sub>y</sub> = 40 ksi (tensile strength, F<sub>u</sub> = 55 ksi)

3 Effective Section Modulus values are net ("effective") values

4 Tabulated Moment of Inertia (I<sub>D</sub>) values for deflection are based on ICC-ES Acceptance Criteria for Steel Deck Roof and Floor Systems (AC43) Section 3.2.1.

TABLE 2—ALLOWABLE CONCENTRATED LOADS AND REACTION BASED ON WEB CRIPPLING - ASD <sup>1, 2</sup>						
Deck Type	Gage	Base Metal	Minimum Bearing Length (in.)		Allowable Reaction Load (plf)	
		Thickness	End	Interior	End	Interior
		(in.)	Reaction	Reaction	Reaction	Reaction
Deep-Dek 4.5	14	0.0747	2	4	1847	3860
	16	0.0598			1219	2580
	18	0.0474			788	1693
	20	0.0358			463	1018
Deep-Dek 6	14	0.0747	2	4	1778	3841
	16	0.0598			1166	2565
	18	0.0474			748	1682
	20	0.0358			435	1010
Deep-Dek 7.5	14	0.0747	2	4	1716	3824
	16	0.0598			1120	2552
	18	0.0474			714	1673
Deep-Dek 4.5 Cellular <sup>3</sup>	14	0.0747	2	4	1847	3860
	16	0.0598			1219	2580
	18	0.0474			788	1693
	20	0.0358			463	1018
Deep-Dek 6 Cellular <sup>3</sup>	14	0.0747	2	4	1778	3841
	16	0.0598			1166	2565
	18	0.0474			748	1682
	20	0.0358			435	1010
Deep-Dek 7.5 Cellular <sup>3</sup>	14	0.0747	2	4	1716	3824
	16	0.0598			1120	2552
	18	0.0474			714	1673

For **SI**: 1 inch = 25.4 mm, 1 plf = 14.594 N/m.

<sup>1</sup>Tabulated values are calculated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members, 2004 Supplement: Section C3.4, Web Crippling.

<sup>2</sup>Values are based on a steel yield strength of  $F_y = 40$  ksi and Tensile Strength  $F_u = 55$  ksi.

<sup>3</sup>Gage and thickness are that of the fluted hat section.

TABLE 3—DIAPHRAGM FLEXIBILITY LIMITATIONS<sup>1,2,3,4,5,6</sup>

F	MAXIMUM DIAPHRAGM SPAN FOR MASONRY OR CONCRETE WALLS (feet)	DIAPHRAGM SPAN-DEPTH LIMITATION			
		Rotation Not Considered in Diaphragm		Rotation Considered in Diaphragm	
		Masonry or Concrete Walls	Flexible Walls	Masonry or Concrete Walls	Flexible Walls
More than 150	Not used	Not used	2:1	Not used	1 <sup>1</sup> / <sub>2</sub> :1
70-150	200	2:1 or as required for deflection	3:1	Not used	2:1
10-70	400	2 <sup>1</sup> / <sub>2</sub> :1 or as required for deflection	4:1	As required for deflection	2 <sup>1</sup> / <sub>2</sub> :1
1-10	No limitation	3:1 or as required for deflection	5:1	As required for deflection	3:1
Less than 1	No limitation	As required for deflection	No limitation	As required for deflection	3 <sup>1</sup> / <sub>2</sub> :1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 plf = 14.594 N/m, 1 psi = 6894 Pa.

<sup>1</sup>Diaphragms must be investigated regarding their flexibility and recommended span-depth limitations.

<sup>2</sup>Diaphragms supporting masonry or concrete walls must have their deflections limited to the following amount:

$$\Delta_{\text{wall}} = \frac{H^2 f_c}{0.01 Et}$$

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,  $f_c = F_b = 0.33 f'_m$ .

<sup>3</sup>The total deflection  $\Delta$  of the diaphragm may be computed from the equation:  $\Delta = \Delta_f + \Delta_w$

where:

$\Delta_f$  = Flexural deflection of the diaphragm determined in the same manner as the deflection of beams.

$\Delta_w$  = The web deflection may be determined by the equation:

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

where:

$L$  = Distance in feet between vertical resisting element (such as shear wall) and the point to which the deflection is to be determined.

$q_{\text{ave}}$  = Average shear in diaphragm in pounds per foot over length  $L$ .

$F$  = Flexibility factor: The average micro inches ( $\mu\text{m}$ ) a diaphragm web will deflect in a span of 1 foot (m) under a shear of 1 pound per foot (N/m).  $F = \frac{10^3}{G'}$ , Where  $G'$  = effective shear modulus based on profile and thickness of deck panel and type and spacing of connectors.

<sup>4</sup>When applying these limitations to cantilevered diaphragms, the allowable span-depth ratio will be half that shown.

<sup>5</sup>Diaphragm classification (flexible or rigid) and deflection limits must comply with the diaphragm design considerations in Section 4.1.

<sup>6</sup>If there is a conflict between this table and the code requirements, the code requirements govern.

TABLE 4

## Deep-Dek® 4.5



## Allowable Diaphragm Shear

GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"
20 0.0358"	6"	S	1141	1134	1129	1124	1121	1118	978*	834*
		G'	9.1	10.5	11.8	13.1	14.4	15.7	16.9	18.2
	12"	S	906	887	872	861	852	844	838	832
		G'	8.9	10.2	11.4	12.7	13.9	15.0	16.1	17.2
	18"	S	687	665	648	635	625	617	609	603
		G'	8.7	9.9	11.1	12.3	13.4	14.4	15.5	16.4
	24"	S	567	544	527	513	502	493	486	479
		G'	8.5	9.7	10.8	11.9	13.0	13.9	14.9	15.8
	30"	S	492	469	451	437	426	417	409	403
		G'	8.4	9.5	10.6	11.6	12.6	13.5	14.4	15.2
	36"	S	442	418	400	385	374	365	357	351
		G'	8.3	9.4	10.4	11.4	12.3	13.1	13.9	14.7
18 0.0474"	6"	S	1537	1528	1520	1515	1510	1507	1489*	1269*
		G'	17.5	20.1	22.6	25.0	27.3	29.5	31.7	33.7
	12"	S	1221	1195	1175	1160	1147	1137	1129	1121
		G'	16.9	19.2	21.4	23.5	25.5	27.4	29.3	31.0
	18"	S	925	896	873	856	842	830	821	813
		G'	16.3	18.4	20.4	22.3	24.1	25.8	27.4	28.9
	24"	S	764	733	709	691	677	664	654	646
		G'	15.8	17.8	19.6	21.3	22.9	24.4	25.8	27.1
	30"	S	663	631	607	589	574	561	551	542
		G'	15.5	17.3	19.0	20.5	21.9	23.3	24.5	25.6
	36"	S	595	563	538	519	504	491	481	472
		G'	15.1	16.8	18.4	19.8	21.1	22.3	23.4	24.4
16 0.0598"	6"	S	1975	1963	1953	1946	1940	1936	1932	1796*
		G'	29.8	33.9	37.8	41.5	45.1	48.4	51.7	54.8
	12"	S	1568	1535	1510	1490	1474	1461	1450	1441
		G'	28.1	31.6	34.9	38.0	40.9	43.7	46.2	48.6
	18"	S	1188	1151	1122	1100	1082	1067	1055	1044
		G'	26.7	29.9	32.7	35.3	37.8	40.0	42.1	44.0
	24"	S	981	941	911	888	869	854	841	830
		G'	25.6	28.4	30.9	33.2	35.2	37.1	38.9	40.4
	30"	S	852	811	780	756	737	721	708	697
		G'	24.8	27.2	29.5	31.4	33.2	34.8	36.2	37.6
	36"	S	764	723	691	667	647	631	618	606
		G'	24.0	26.3	28.2	30.0	31.5	32.9	34.1	35.2
14 0.0747"	6"	S	2521	2505	2493	2484	2476	2470	2465	2461
		G'	48.5	54.7	60.5	65.9	70.9	75.7	80.2	84.4
	12"	S	2002	1959	1927	1902	1881	1864	1850	1838
		G'	44.6	49.6	54.1	58.3	62.1	65.6	68.9	71.9
	18"	S	1517	1469	1432	1403	1380	1362	1346	1332
		G'	41.6	45.8	49.5	52.8	55.8	58.5	60.9	63.2
	24"	S	1252	1202	1163	1133	1109	1089	1073	1059
		G'	39.3	42.8	45.9	48.6	50.9	53.1	55.0	56.7
	30"	S	1087	1035	996	965	941	920	903	889
		G'	37.4	40.4	43.0	45.3	47.2	48.9	50.4	51.7
	36"	S	975	922	882	851	826	806	788	774
		G'	35.9	38.5	40.7	42.6	44.2	45.5	46.7	47.8

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

Seismic:  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

Wind:  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

Other:  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 5

Deep-Dek® 4.5



Allowable Diaphragm Shear

GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"
20 0.0358"	6"	S	1282	1255	1235	1219	1206	1164*	978*	834*
		G'	9.1	10.5	11.8	13.2	14.4	15.7	17.0	18.2
	12"	S	1072	1034	1006	984	966	952	940	834*
		G'	8.9	10.2	11.5	12.7	13.9	15.1	16.2	17.3
	18"	S	818	779	750	727	709	694	681	670
		G'	8.7	10.0	11.2	12.3	13.5	14.5	15.6	16.5
	24"	S	688	649	619	595	577	561	549	538
		G'	8.6	9.8	10.9	12.0	13.1	14.1	15.0	15.9
	30"	S	609	569	539	516	497	481	469	458
		G'	8.5	9.7	10.7	11.8	12.8	13.7	14.6	15.4
	36"	S	556	516	486	462	443	428	415	404
		G'	8.4	9.5	10.6	11.6	12.5	13.3	14.2	14.9
18 0.0474"	6"	S	1728	1691	1663	1642	1624	1610	1489*	1269*
		G'	17.6	20.1	22.6	25.0	27.3	29.5	31.7	33.8
	12"	S	1444	1393	1355	1325	1302	1282	1266	1252
		G'	16.9	19.3	21.5	23.6	25.6	27.6	29.4	31.2
	18"	S	1102	1050	1010	979	955	934	917	903
		G'	16.5	18.6	20.6	22.5	24.3	26.0	27.6	29.2
	24"	S	927	874	833	802	777	756	739	725
		G'	16.1	18.1	19.9	21.7	23.3	24.8	26.2	27.5
	30"	S	820	767	726	694	669	648	631	617
		G'	15.7	17.6	19.4	20.9	22.4	23.7	25.0	26.2
	36"	S	749	695	654	622	597	576	559	544
		G'	15.5	17.3	18.9	20.3	21.7	22.9	24.0	25.0
16 0.0598"	6"	S	2220	2172	2137	2109	2087	2069	2054	1796*
		G'	29.9	34.0	37.9	41.6	45.2	48.5	51.8	54.9
	12"	S	1855	1790	1741	1703	1672	1647	1626	1608
		G'	28.3	31.9	35.2	38.3	41.2	44.0	46.5	49.0
	18"	S	1416	1349	1298	1258	1226	1200	1178	1160
		G'	27.1	30.3	33.2	35.8	38.3	40.5	42.6	44.6
	24"	S	1191	1122	1071	1030	998	972	950	931
		G'	26.2	29.0	31.6	33.9	36.0	37.9	39.6	41.2
	30"	S	1054	985	933	892	860	833	811	792
		G'	25.4	28.0	30.3	32.3	34.1	35.8	37.2	38.6
	36"	S	962	893	840	800	767	740	718	699
		G'	24.8	27.2	29.2	31.0	32.6	34.0	35.3	36.4
14 0.0747"	6"	S	2833	2772	2727	2692	2664	2640	2621	2505*
		G'	48.7	54.9	60.7	66.1	71.1	75.9	80.4	84.6
	12"	S	2368	2285	2222	2173	2134	2102	2075	2052
		G'	45.0	50.1	54.7	58.9	62.7	66.3	69.5	72.6
	18"	S	1808	1721	1656	1606	1565	1532	1504	1480
		G'	42.4	46.6	50.4	53.7	56.8	59.5	62.0	64.2
	24"	S	1520	1432	1366	1315	1274	1240	1212	1188
		G'	40.3	44.0	47.1	49.9	52.3	54.5	56.4	58.1
	30"	S	1345	1257	1190	1139	1097	1063	1035	1011
		G'	38.8	41.9	44.6	46.9	48.9	50.6	52.1	53.4
	36"	S	1228	1139	1072	1020	979	945	916	892
		G'	37.5	40.3	42.6	44.5	46.1	47.5	48.7	49.8

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 6

## Deep-Dek® 4.5



Metal Dek Group  
a unit of CSI

## Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT									
				12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"		
20 0.0358"		6"	S	618	601	589	579	571	565	559	555		
			G'	8.8	10.0	11.3	12.5	13.6	14.7	15.8	16.9		
		12"	S	382	364	350	340	331	325	319	314		
			G'	8.4	9.5	10.6	11.6	12.5	13.4	14.3	15.1		
		18"	S	299	281	268	257	248	241	235	230		
			G'	8.1	9.1	10.0	10.9	11.7	12.5	13.2	13.9		
		24"	S	258	239	226	215	206	199	193	188		
			G'	7.8	8.7	9.6	10.4	11.1	11.7	12.3	12.9		
		30"	S	233	214	200	190	181	174	168	163		
			G'	7.6	8.5	9.2	9.9	10.6	11.1	11.7	12.1		
		36"	S	216	197	183	173	164	157	151	146		
			G'	7.5	8.3	9.0	9.6	10.1	10.6	11.1	11.5		
		18 0.0474"		6"	S	821	799	782	769	758	749	742	736
					G'	16.5	18.8	20.9	22.9	24.8	26.6	28.3	30.0
				12"	S	508	484	466	452	440	431	423	417
					G'	15.3	17.1	18.8	20.4	21.8	23.1	24.4	25.5
				18"	S	399	374	356	342	330	321	313	306
					G'	14.4	16.0	17.4	18.6	19.7	20.7	21.7	22.5
24"	S			344	319	301	286	274	265	257	250		
	G'			13.8	15.1	16.3	17.3	18.2	19.0	19.7	20.3		
30"	S			310	286	267	253	241	231	224	217		
	G'			13.3	14.4	15.4	16.3	17.0	17.6	18.2	18.7		
36"	S			288	263	245	230	219	209	201	194		
	G'			12.9	13.9	14.7	15.5	16.1	16.6	17.0	17.4		
16 0.0598"		6"	S	1040	1011	990	973	959	948	939	931		
			G'	27.3	30.6	33.7	36.6	39.3	41.8	44.1	46.3		
		12"	S	644	613	590	572	558	546	536	527		
			G'	24.4	26.9	29.1	31.1	32.9	34.5	36.0	37.4		
		18"	S	507	475	452	433	418	406	396	388		
			G'	22.5	24.4	26.1	27.5	28.8	29.9	30.9	31.8		
		24"	S	437	405	382	363	348	336	326	317		
			G'	21.1	22.6	23.9	25.0	25.9	26.7	27.4	28.1		
		30"	S	395	363	339	321	306	294	284	275		
			G'	20.0	21.3	22.3	23.2	23.8	24.4	24.9	25.3		
		36"	S	367	335	311	293	278	265	255	247		
			G'	19.2	20.3	21.1	21.7	22.2	22.6	23.0	23.3		
14 0.0747"		6"	S	1306	1269	1241	1220	1203	1188	1176	1166		
			G'	42.8	47.4	51.6	55.4	58.8	61.9	64.8	67.5		
		12"	S	810	771	741	718	700	685	672	661		
			G'	36.7	39.8	42.4	44.7	46.7	48.4	50.0	51.4		
		18"	S	638	598	568	545	526	510	498	487		
			G'	32.9	35.0	36.8	38.3	39.5	40.6	41.5	42.3		
		24"	S	551	511	480	457	438	423	410	399		
			G'	30.3	31.8	33.0	34.0	34.8	35.5	36.0	36.5		
		30"	S	498	458	428	404	385	370	357	346		
			G'	28.4	29.5	30.3	31.0	31.5	31.9	32.2	32.4		
		36"	S	463	423	392	369	350	334	321	310		
			G'	26.9	27.7	28.3	28.7	29.0	29.2	29.3	29.4		

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 7

## Deep-Dek® 4.5



Metal Dek Group  
a unit of CSI®

## Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
				12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"
20 0.0358"	6"	S	743	710	685	665	650	637	627	618	
		G'	8.8	10.1	11.3	12.5	13.7	14.8	15.9	16.9	
	12"	S	494	460	435	415	399	386	376	366	
		G'	8.5	9.6	10.7	11.7	12.7	13.6	14.5	15.4	
	18"	S	410	376	351	331	315	302	291	282	
		G'	8.2	9.3	10.3	11.2	12.0	12.8	13.5	14.2	
	24"	S	368	334	308	288	272	259	249	239	
		G'	8.1	9.0	9.9	10.7	11.5	12.2	12.8	13.4	
	30"	S	343	308	283	263	247	234	223	214	
		G'	7.9	8.8	9.7	10.4	11.1	11.7	12.2	12.8	
	36"	S	326	291	266	246	230	217	206	197	
		G'	7.8	8.7	9.5	10.1	10.8	11.3	11.8	12.2	
	18 0.0474"	6"	S	988	944	911	885	864	847	832	820
			G'	16.7	18.9	21.0	23.1	25.0	26.8	28.5	30.2
12"		S	659	614	580	553	532	514	500	487	
		G'	15.6	17.5	19.2	20.8	22.3	23.6	24.9	26.1	
18"		S	548	502	468	441	420	402	388	375	
		G'	14.9	16.6	18.0	19.3	20.5	21.5	22.5	23.4	
24"		S	492	446	412	385	364	346	331	319	
		G'	14.4	15.9	17.1	18.2	19.2	20.0	20.8	21.4	
30"		S	458	413	378	351	330	312	298	285	
		G'	14.1	15.4	16.5	17.4	18.2	18.9	19.5	20.0	
36"		S	436	390	356	329	307	290	275	263	
		G'	13.8	15.0	15.9	16.8	17.4	18.0	18.5	18.9	
16 0.0598"	6"	S	1254	1197	1154	1121	1094	1072	1054	1038	
		G'	27.6	31.0	34.1	37.0	39.7	42.2	44.6	46.8	
	12"	S	838	780	736	702	675	653	634	618	
		G'	25.1	27.7	30.0	32.0	33.9	35.5	37.0	38.4	
	18"	S	698	639	595	561	534	511	492	477	
		G'	23.6	25.6	27.4	28.9	30.2	31.4	32.4	33.3	
	24"	S	628	569	525	490	463	440	421	406	
		G'	22.5	24.2	25.6	26.8	27.8	28.6	29.3	29.9	
	30"	S	585	526	482	448	420	398	379	363	
		G'	21.7	23.2	24.3	25.2	26.0	26.6	27.1	27.5	
	36"	S	557	498	454	419	392	369	350	334	
		G'	21.1	22.4	23.3	24.0	24.6	25.0	25.4	25.7	
14 0.0747"	6"	S	1577	1504	1450	1407	1373	1345	1322	1302	
		G'	43.5	48.1	52.3	56.1	59.6	62.7	65.6	68.3	
	12"	S	1058	983	928	884	849	821	797	777	
		G'	38.2	41.3	44.0	46.4	48.4	50.2	51.7	53.1	
	18"	S	882	807	751	708	673	644	620	600	
		G'	35.0	37.3	39.2	40.7	42.0	43.0	43.9	44.7	
	24"	S	794	719	663	619	584	555	531	511	
		G'	32.9	34.6	36.0	37.0	37.8	38.4	38.9	39.3	
	30"	S	741	666	610	566	531	502	478	458	
		G'	31.4	32.8	33.7	34.4	34.8	35.2	35.4	35.6	
	36"	S	706	631	574	531	495	467	443	422	
		G'	30.3	31.3	32.0	32.4	32.7	32.8	32.9	32.9	

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 8

## Deep-Dek® 6



## Allowable Diaphragm Shear

GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20 0.0358"	6"	S	1134	1129	1124	1121	1118	1116	1114	1113
		G'	6.6	7.5	8.3	9.2	10.0	10.9	11.7	12.5
	12"	S	887	872	861	852	844	838	832	828
		G'	6.5	7.3	8.2	9.0	9.8	10.5	11.3	12.0
	18"	S	665	648	635	625	617	609	603	598
		G'	6.4	7.2	8.0	8.8	9.5	10.2	10.9	11.6
	24"	S	544	527	513	502	493	486	479	474
		G'	6.3	7.1	7.8	8.6	9.3	10.0	10.6	11.3
	30"	S	469	451	437	426	417	409	403	397
		G'	6.2	7.0	7.7	8.4	9.1	9.7	10.4	11.0
	36"	S	418	400	385	374	365	357	351	345
		G'	6.2	6.9	7.6	8.3	8.9	9.5	10.1	10.7
18 0.0474"	6"	S	1528	1520	1515	1510	1507	1504	1501	1499
		G'	12.9	14.5	16.1	17.7	19.2	20.8	22.2	23.7
	12"	S	1195	1175	1160	1147	1137	1129	1121	1115
		G'	12.5	14.0	15.5	17.0	18.4	19.7	21.0	22.3
	18"	S	896	873	856	842	830	821	813	806
		G'	12.2	13.6	15.0	16.3	17.6	18.8	20.0	21.2
	24"	S	733	709	691	677	664	654	646	638
		G'	11.9	13.2	14.5	15.8	17.0	18.1	19.1	20.2
	30"	S	631	607	589	574	561	551	542	535
		G'	11.6	12.9	14.2	15.3	16.4	17.4	18.4	19.3
	36"	S	563	538	519	504	491	481	472	465
		G'	11.4	12.7	13.8	14.9	15.9	16.8	17.7	18.6
16 0.0598"	6"	S	1963	1953	1946	1940	1936	1932	1928	1925
		G'	22.1	24.8	27.4	29.9	32.4	34.8	37.1	39.3
	12"	S	1535	1510	1490	1474	1461	1450	1441	1432
		G'	21.1	23.5	25.8	28.1	30.2	32.2	34.2	36.0
	18"	S	1151	1122	1100	1082	1067	1055	1044	1035
		G'	20.3	22.5	24.6	26.5	28.4	30.2	31.8	33.4
	24"	S	941	911	888	869	854	841	830	820
		G'	19.6	21.6	23.5	25.3	26.9	28.5	29.9	31.3
	30"	S	811	780	756	737	721	708	697	687
		G'	19.0	20.9	22.6	24.2	25.7	27.0	28.3	29.5
	36"	S	723	691	667	647	631	618	606	597
		G'	18.6	20.3	21.9	23.3	24.6	25.8	27.0	28.0
14 0.0747"	6"	S	2505	2493	2484	2476	2470	2465	2461	2457
		G'	36.4	40.6	44.7	48.5	52.2	55.7	59.1	62.3
	12"	S	1959	1927	1902	1881	1864	1850	1838	1828
		G'	34.1	37.7	41.1	44.2	47.2	50.0	52.7	55.2
	18"	S	1469	1432	1403	1380	1362	1346	1332	1321
		G'	32.2	35.4	38.2	40.9	43.4	45.7	47.8	49.8
	24"	S	1202	1163	1133	1109	1089	1073	1059	1047
		G'	30.7	33.5	36.0	38.3	40.4	42.3	44.0	45.7
	30"	S	1035	996	965	941	920	903	889	877
		G'	29.5	32.0	34.1	36.1	37.9	39.5	41.0	42.3
	36"	S	922	882	851	826	806	788	774	761
		G'	28.5	30.7	32.6	34.3	35.8	37.2	38.5	39.6

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

Seismic:  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

Wind:  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

Other:  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 9

Deep-Dek® 6



Allowable Diaphragm Shear

GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20 0.0358"	6"	S	1255	1235	1219	1206	1195	1187	1179	1140*
		G'	6.6	7.5	8.3	9.2	10.0	10.9	11.7	12.5
	12"	S	1034	1006	984	966	952	940	929	920
		G'	6.5	7.3	8.2	9.0	9.8	10.6	11.3	12.1
	18"	S	779	750	727	709	694	681	670	661
		G'	6.4	7.2	8.0	8.8	9.5	10.3	11.0	11.7
	24"	S	649	619	595	577	561	549	538	529
		G'	6.3	7.1	7.9	8.6	9.3	10.0	10.7	11.4
	30"	S	569	539	516	497	481	469	458	448
		G'	6.3	7.0	7.8	8.5	9.2	9.8	10.5	11.1
	36"	S	516	486	462	443	428	415	404	395
		G'	6.2	7.0	7.7	8.4	9.0	9.7	10.3	10.8
18 0.0474"	6"	S	1691	1663	1642	1624	1610	1599	1589	1580
		G'	12.9	14.5	16.1	17.7	19.3	20.8	22.3	23.7
	12"	S	1393	1355	1325	1302	1282	1266	1252	1240
		G'	12.5	14.1	15.6	17.0	18.4	19.8	21.1	22.4
	18"	S	1050	1010	979	955	934	917	903	891
		G'	12.2	13.7	15.1	16.4	17.7	19.0	20.1	21.3
	24"	S	874	833	802	777	756	739	725	712
		G'	12.0	13.4	14.7	15.9	17.1	18.3	19.3	20.4
	30"	S	767	726	694	669	648	631	617	604
		G'	11.8	13.1	14.4	15.5	16.6	17.7	18.7	19.6
	36"	S	695	654	622	597	576	559	544	532
		G'	11.6	12.9	14.1	15.2	16.2	17.2	18.1	18.9
16 0.0598"	6"	S	2172	2137	2109	2087	2069	2054	2041	2030
		G'	22.1	24.8	27.4	30.0	32.5	34.8	37.1	39.4
	12"	S	1790	1741	1703	1672	1647	1626	1608	1593
		G'	21.2	23.6	26.0	28.2	30.3	32.4	34.3	36.2
	18"	S	1349	1298	1258	1226	1200	1178	1160	1144
		G'	20.5	22.7	24.8	26.8	28.7	30.5	32.1	33.7
	24"	S	1122	1071	1030	998	972	950	931	915
		G'	19.9	21.9	23.9	25.6	27.3	28.9	30.4	31.7
	30"	S	985	933	892	860	833	811	792	776
		G'	19.4	21.3	23.1	24.7	26.2	27.6	28.9	30.1
	36"	S	893	840	800	767	740	718	699	683
		G'	19.0	20.8	22.4	23.9	25.3	26.5	27.7	28.7
14 0.0747"	6"	S	2772	2727	2692	2664	2640	2621	2605	2591
		G'	36.5	40.7	44.8	48.6	52.3	55.8	59.2	62.5
	12"	S	2285	2222	2173	2134	2102	2075	2052	2033
		G'	34.3	38.0	41.4	44.5	47.5	50.4	53.0	55.6
	18"	S	1721	1656	1606	1565	1532	1504	1480	1460
		G'	32.7	35.8	38.8	41.5	44.0	46.3	48.4	50.5
	24"	S	1432	1366	1315	1274	1240	1212	1188	1167
		G'	31.3	34.2	36.7	39.0	41.2	43.1	44.9	46.5
	30"	S	1257	1190	1139	1097	1063	1035	1011	990
		G'	30.3	32.8	35.1	37.1	38.9	40.6	42.0	43.4
	36"	S	1139	1072	1020	979	945	916	892	871
		G'	29.4	31.7	33.7	35.5	37.1	38.5	39.7	40.9

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 10

Deep-Dek® 6



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT								
				14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	
<b>SUPPORT CONNECTION:</b> 1/2" Effective Weld Diameter <b>SIDELAP CONNECTION:</b> S/L Screws #10 <b>ATTACHMENT PATTERN:</b> 12 / 2  <b>S = Allowable Diaphragm Shear (lbs/foot)</b> <b>G' = Stiffness Factor (kips/in.)</b>		6"	S	601	589	579	571	565	559	555	551	
			G'	6.4	7.3	8.1	8.9	9.6	10.4	11.1	11.8	
		12"	S	364	350	340	331	325	319	314	310	
			G'	6.2	7.0	7.7	8.4	9.1	9.7	10.4	11.0	
		18"	S	281	268	257	248	241	235	230	226	
			G'	6.0	6.7	7.4	8.0	8.6	9.2	9.8	10.3	
		24"	S	239	226	215	206	199	193	188	184	
			G'	5.9	6.5	7.1	7.7	8.3	8.8	9.3	9.7	
		30"	S	214	200	190	181	174	168	163	159	
			G'	5.8	6.4	6.9	7.5	8.0	8.4	8.9	9.3	
		36"	S	197	183	173	164	157	151	146	142	
			G'	5.7	6.2	6.8	7.3	7.7	8.1	8.5	8.9	
		<b>20</b> <b>0.0358"</b>	6"	S	799	782	769	758	749	742	736	731
				G'	12.3	13.8	15.2	16.6	18.0	19.3	20.5	21.7
			12"	S	484	466	452	440	431	423	417	411
				G'	11.6	12.9	14.1	15.2	16.3	17.4	18.3	19.3
			18"	S	374	356	342	330	321	313	306	300
				G'	11.0	12.2	13.2	14.2	15.1	15.9	16.7	17.5
			24"	S	319	301	286	274	265	257	250	245
				G'	10.6	11.6	12.5	13.4	14.1	14.9	15.5	16.1
			30"	S	286	267	253	241	231	224	217	211
				G'	10.3	11.2	12.0	12.7	13.4	14.0	14.5	15.0
			36"	S	263	245	230	219	209	201	194	189
				G'	10.0	10.8	11.5	12.2	12.8	13.3	13.8	14.2
<b>18</b> <b>0.0474"</b>	6"	S	1011	990	973	959	948	939	931	924		
		G'	20.6	23.0	25.2	27.3	29.3	31.2	33.0	34.8		
	12"	S	613	590	572	558	546	536	527	520		
		G'	18.9	20.7	22.5	24.1	25.5	26.9	28.2	29.4		
	18"	S	475	452	433	418	406	396	388	380		
		G'	17.6	19.1	20.5	21.8	22.9	24.0	24.9	25.8		
	24"	S	405	382	363	348	336	326	317	310		
		G'	16.7	18.0	19.1	20.1	21.0	21.8	22.6	23.2		
	30"	S	363	339	321	306	294	284	275	268		
		G'	15.9	17.0	18.0	18.8	19.6	20.2	20.8	21.3		
	36"	S	335	311	293	278	265	255	247	239		
		G'	15.3	16.3	17.1	17.8	18.4	18.9	19.4	19.7		
<b>16</b> <b>0.0598"</b>	6"	S	1269	1241	1220	1203	1188	1176	1166	1158		
		G'	33.1	36.4	39.6	42.5	45.3	47.8	50.3	52.5		
	12"	S	771	741	718	700	685	672	661	652		
		G'	29.1	31.6	33.8	35.8	37.6	39.3	40.8	42.2		
	18"	S	598	568	545	526	510	498	487	477		
		G'	26.5	28.4	30.0	31.4	32.7	33.8	34.8	35.8		
	24"	S	511	480	457	438	423	410	399	389		
		G'	24.6	26.1	27.3	28.4	29.3	30.1	30.8	31.4		
	30"	S	458	428	404	385	370	357	346	336		
		G'	23.2	24.4	25.3	26.1	26.8	27.4	27.8	28.3		
	36"	S	423	392	369	350	334	321	310	301		
		G'	22.1	23.1	23.8	24.4	24.9	25.3	25.6	25.9		
<b>14</b> <b>0.0747"</b>	6"	S	1269	1241	1220	1203	1188	1176	1166	1158		
		G'	33.1	36.4	39.6	42.5	45.3	47.8	50.3	52.5		
	12"	S	771	741	718	700	685	672	661	652		
		G'	29.1	31.6	33.8	35.8	37.6	39.3	40.8	42.2		
	18"	S	598	568	545	526	510	498	487	477		
		G'	26.5	28.4	30.0	31.4	32.7	33.8	34.8	35.8		
	24"	S	511	480	457	438	423	410	399	389		
		G'	24.6	26.1	27.3	28.4	29.3	30.1	30.8	31.4		
	30"	S	458	428	404	385	370	357	346	336		
		G'	23.2	24.4	25.3	26.1	26.8	27.4	27.8	28.3		
	36"	S	423	392	369	350	334	321	310	301		
		G'	22.1	23.1	23.8	24.4	24.9	25.3	25.6	25.9		

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 11

Deep-Dek® 6



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
				14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20 0.0358"	6"	S	710	685	665	650	637	627	618	610	
		G'	6.4	7.3	8.1	8.9	9.7	10.4	11.2	11.9	
	12"	S	460	435	415	399	386	376	366	359	
		G'	6.3	7.0	7.8	8.5	9.2	9.8	10.5	11.1	
	18"	S	376	351	331	315	302	291	282	274	
		G'	6.1	6.8	7.5	8.2	8.8	9.4	9.9	10.5	
	24"	S	334	308	288	272	259	249	239	231	
		G'	6.0	6.7	7.3	7.9	8.5	9.0	9.5	10.0	
	30"	S	308	283	263	247	234	223	214	206	
		G'	5.9	6.6	7.2	7.7	8.2	8.7	9.2	9.6	
	36"	S	291	266	246	230	217	206	197	189	
		G'	5.8	6.5	7.0	7.6	8.0	8.5	8.9	9.3	
	18 0.0474"	6"	S	944	911	885	864	847	832	820	810
			G'	12.4	13.9	15.3	16.7	18.1	19.4	20.6	21.8
12"		S	614	580	553	532	514	500	487	477	
		G'	11.7	13.0	14.3	15.5	16.6	17.6	18.6	19.6	
18"		S	502	468	441	420	402	388	375	365	
		G'	11.3	12.5	13.6	14.6	15.5	16.4	17.2	18.0	
24"		S	446	412	385	364	346	331	319	308	
		G'	11.0	12.0	13.0	13.9	14.7	15.5	16.1	16.8	
30"		S	413	378	351	330	312	298	285	275	
		G'	10.7	11.7	12.6	13.4	14.1	14.7	15.3	15.8	
36"		S	390	356	329	307	290	275	263	252	
		G'	10.5	11.5	12.3	13.0	13.6	14.2	14.7	15.1	
16 0.0598"	6"	S	1197	1154	1121	1094	1072	1054	1038	1025	
		G'	20.8	23.1	25.4	27.5	29.5	31.4	33.3	35.0	
	12"	S	780	736	702	675	653	634	618	604	
		G'	19.3	21.2	22.9	24.6	26.1	27.5	28.8	30.0	
	18"	S	639	595	561	534	511	492	477	463	
		G'	18.2	19.8	21.3	22.6	23.8	24.9	25.8	26.7	
	24"	S	569	525	490	463	440	421	406	392	
		G'	17.5	18.9	20.1	21.2	22.1	23.0	23.7	24.4	
	30"	S	526	482	448	420	398	379	363	349	
		G'	17.0	18.2	19.2	20.1	20.9	21.6	22.2	22.7	
	36"	S	498	454	419	392	369	350	334	321	
		G'	16.5	17.6	18.5	19.3	20.0	20.5	21.0	21.4	
14 0.0747"	6"	S	1504	1450	1407	1373	1345	1322	1302	1285	
		G'	33.4	36.8	40.0	42.9	45.7	48.3	50.7	53.0	
	12"	S	983	928	884	849	821	797	777	759	
		G'	30.0	32.5	34.8	36.8	38.7	40.3	41.9	43.3	
	18"	S	807	751	708	673	644	620	600	583	
		G'	27.8	29.8	31.5	33.0	34.3	35.4	36.4	37.4	
	24"	S	719	663	619	584	555	531	511	494	
		G'	26.3	27.9	29.2	30.3	31.3	32.1	32.8	33.4	
	30"	S	666	610	566	531	502	478	458	441	
		G'	25.2	26.5	27.6	28.4	29.1	29.7	30.2	30.6	
	36"	S	631	574	531	495	467	443	422	405	
		G'	24.3	25.4	26.3	26.9	27.5	27.9	28.2	28.5	

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 12

Deep-Dek® 7.5



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT									
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"		
<b>SUPPORT CONNECTION:</b> 1/2" Effective Weld Diameter <b>SIDELAP CONNECTION:</b> 1-1/2" Seam Welds <b>ATTACHMENT PATTERN:</b> 12 / 2				<b>S = Allowable Diaphragm Shear (lbs/foot)</b> <b>G' = Stiffness Factor (kips/in.)</b>									
		18 0.0474"		6"	S	1520	1515	1510	1507	1504	1501	1499	1497
					G'	10.1	11.3	12.4	13.5	14.6	15.7	16.8	17.8
				12"	S	1175	1160	1147	1137	1129	1121	1115	1110
					G'	9.9	11.0	12.0	13.1	14.1	15.1	16.1	17.0
				18"	S	873	856	842	830	821	813	806	800
					G'	9.7	10.7	11.7	12.7	13.6	14.6	15.5	16.3
		24"	S	709	691	677	664	654	646	638	632		
			G'	9.5	10.5	11.4	12.3	13.2	14.1	14.9	15.7		
		30"	S	607	589	574	561	551	542	535	528		
			G'	9.3	10.3	11.2	12.0	12.9	13.7	14.5	15.2		
		36"	S	538	519	504	491	481	472	465	458		
			G'	9.2	10.1	11.0	11.8	12.6	13.3	14.0	14.7		
		16 0.0598"		6"	S	1953	1946	1940	1936	1932	1928	1925	1923
					G'	17.4	19.4	21.2	23.1	24.9	26.6	28.3	30.0
				12"	S	1510	1490	1474	1461	1450	1441	1432	1426
					G'	16.8	18.6	20.3	21.9	23.5	25.1	26.6	28.0
				18"	S	1122	1100	1082	1067	1055	1044	1035	1027
					G'	16.3	17.9	19.5	21.0	22.4	23.8	25.1	26.4
				24"	S	911	888	869	854	841	830	820	812
					G'	15.8	17.3	18.8	20.2	21.5	22.7	23.9	25.0
				30"	S	780	756	737	721	708	697	687	679
					G'	15.4	16.9	18.2	19.5	20.7	21.8	22.9	23.9
36"	S			691	667	647	631	618	606	597	588		
	G'			15.1	16.4	17.7	18.8	19.9	21.0	21.9	22.9		
14 0.0747"		6"	S	2493	2484	2476	2470	2465	2461	2457	2454		
			G'	29.0	32.1	35.0	37.9	40.6	43.3	45.9	48.4		
		12"	S	1927	1902	1881	1864	1850	1838	1828	1819		
			G'	27.5	30.2	32.8	35.2	37.5	39.8	41.9	44.0		
		18"	S	1432	1403	1380	1362	1346	1332	1321	1311		
			G'	26.2	28.6	30.9	33.0	35.0	36.9	38.7	40.5		
		24"	S	1163	1133	1109	1089	1073	1059	1047	1036		
			G'	25.2	27.4	29.4	31.2	33.0	34.6	36.2	37.6		
		30"	S	996	965	941	920	903	889	877	866		
			G'	24.3	26.3	28.1	29.7	31.3	32.7	34.0	35.3		
		36"	S	882	851	826	806	788	774	761	751		
			G'	23.6	25.3	27.0	28.5	29.8	31.1	32.3	33.3		

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 13

## Deep-Dek® 7.5



## Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT								
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"	
18 0.0474"	6"	S		1663	1642	1624	1610	1599	1589	1580	1573	
		G'		10.1	11.3	12.4	13.5	14.6	15.7	16.8	17.8	
	12"	S		1355	1325	1302	1282	1266	1252	1240	1229	
		G'		9.9	11.0	12.1	13.1	14.1	15.1	16.1	17.1	
	18"	S		1010	979	955	934	917	903	891	880	
		G'		9.7	10.7	11.8	12.7	13.7	14.6	15.5	16.4	
	24"	S		833	802	777	756	739	725	712	701	
		G'		9.5	10.5	11.5	12.4	13.3	14.2	15.0	15.9	
	30"	S		726	694	669	648	631	617	604	593	
		G'		9.4	10.4	11.3	12.2	13.0	13.8	14.6	15.4	
	36"	S		654	622	597	576	559	544	532	521	
		G'		9.3	10.2	11.1	11.9	12.7	13.5	14.2	14.9	
	16 0.0598"	6"	S		2137	2109	2087	2069	2054	2041	2030	2021
			G'		17.5	19.4	21.3	23.1	24.9	26.7	28.4	30.0
12"		S		1741	1703	1672	1647	1626	1608	1593	1580	
		G'		16.9	18.6	20.4	22.0	23.6	25.2	26.7	28.1	
18"		S		1298	1258	1226	1200	1178	1160	1144	1130	
		G'		16.4	18.0	19.6	21.1	22.6	24.0	25.3	26.6	
24"		S		1071	1030	998	972	950	931	915	901	
		G'		16.0	17.5	19.0	20.4	21.7	23.0	24.2	25.3	
30"		S		933	892	860	833	811	792	776	762	
		G'		15.7	17.1	18.5	19.8	21.0	22.1	23.2	24.2	
36"		S		840	800	767	740	718	699	683	669	
		G'		15.4	16.7	18.0	19.2	20.3	21.4	22.4	23.3	
14 0.0747"		6"	S		2727	2692	2664	2640	2621	2605	2591	2579
			G'		29.1	32.1	35.1	38.0	40.7	43.4	46.0	48.5
	12"	S		2222	2173	2134	2102	2075	2052	2033	2016	
		G'		27.6	30.3	32.9	35.4	37.7	40.0	42.1	44.2	
	18"	S		1656	1606	1565	1532	1504	1480	1460	1443	
		G'		26.5	28.9	31.2	33.4	35.4	37.3	39.1	40.8	
	24"	S		1366	1315	1274	1240	1212	1188	1167	1150	
		G'		25.6	27.8	29.8	31.7	33.5	35.2	36.7	38.2	
	30"	S		1190	1139	1097	1063	1035	1011	990	972	
		G'		24.8	26.8	28.7	30.4	31.9	33.4	34.7	36.0	
	36"	S		1072	1020	979	945	916	892	871	853	
		G'		24.2	26.0	27.7	29.2	30.6	31.9	33.1	34.2	

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 14

Deep-Dek® 7.5



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT									
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"		
18 0.0474"		6"	S	782	769	758	749	742	736	731	726		
			G'	9.8	10.8	11.9	12.9	13.9	14.8	15.8	16.7		
		12"	S	466	452	440	431	423	417	411	406		
			G'	9.3	10.2	11.1	12.0	12.8	13.7	14.4	15.2		
		18"	S	356	342	330	321	313	306	300	296		
			G'	8.9	9.8	10.6	11.3	12.1	12.8	13.4	14.0		
		24"	S	301	286	274	265	257	250	245	240		
			G'	8.6	9.4	10.1	10.8	11.4	12.0	12.6	13.1		
		30"	S	267	253	241	231	224	217	211	206		
			G'	8.4	9.1	9.7	10.3	10.9	11.4	11.9	12.4		
		36"	S	245	230	219	209	201	194	189	184		
			G'	8.2	8.8	9.4	10.0	10.5	10.9	11.4	11.8		
		16 0.0598"		6"	S	990	973	959	948	939	931	924	918
					G'	16.5	18.2	19.9	21.5	23.0	24.5	25.9	27.3
12"	S			590	572	558	546	536	527	520	514		
	G'			15.3	16.8	18.1	19.4	20.6	21.7	22.8	23.8		
18"	S			452	433	418	406	396	388	380	374		
	G'			14.5	15.7	16.8	17.8	18.8	19.7	20.6	21.4		
24"	S			382	363	348	336	326	317	310	304		
	G'			13.8	14.8	15.8	16.7	17.5	18.2	18.9	19.5		
30"	S			339	321	306	294	284	275	268	261		
	G'			13.2	14.1	15.0	15.7	16.4	17.0	17.6	18.1		
36"	S			311	293	278	265	255	247	239	233		
	G'			12.8	13.6	14.3	15.0	15.5	16.1	16.5	17.0		
14 0.0747"		6"	S	1241	1220	1203	1188	1176	1166	1158	1150		
			G'	26.8	29.4	31.8	34.1	36.3	38.4	40.4	42.3		
		12"	S	741	718	700	685	672	661	652	644		
			G'	24.1	26.1	27.9	29.6	31.1	32.6	33.9	35.2		
		18"	S	568	545	526	510	498	487	477	469		
			G'	22.2	23.8	25.2	26.5	27.6	28.7	29.7	30.6		
		24"	S	480	457	438	423	410	399	389	381		
			G'	20.8	22.0	23.2	24.2	25.1	25.9	26.6	27.3		
		30"	S	428	404	385	370	357	346	336	328		
			G'	19.7	20.7	21.6	22.4	23.1	23.8	24.3	24.8		
		36"	S	392	369	350	334	321	310	301	293		
			G'	18.8	19.7	20.4	21.1	21.6	22.1	22.5	22.9		

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 15

## Deep-Dek® 7.5



## Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT									
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"		
<b>SUPPORT CONNECTION:</b> 1/2" Effective Weld Diameter <b>SIDELAP CONNECTION:</b> S/L Screws #10 <b>ATTACHMENT PATTERN:</b> 12 / 4				<b>S = Allowable Diaphragm Shear (lbs/foot)</b> <b>G' = Stiffness Factor (kips/in.)</b>									
		18 0.0474"		6"	S	911	885	864	847	832	820	810	801
					G'	9.8	10.9	11.9	12.9	13.9	14.9	15.8	16.7
				12"	S	580	553	532	514	500	487	477	468
					G'	9.4	10.3	11.3	12.1	13.0	13.8	14.6	15.4
				18"	S	468	441	420	402	388	375	365	355
					G'	9.1	9.9	10.8	11.6	12.3	13.0	13.7	14.3
				24"	S	412	385	364	346	331	319	308	299
					G'	8.8	9.7	10.4	11.1	11.8	12.4	13.0	13.5
				30"	S	378	351	330	312	298	285	275	265
					G'	8.7	9.4	10.1	10.8	11.4	11.9	12.4	12.9
				36"	S	356	329	307	290	275	263	252	243
					G'	8.5	9.2	9.9	10.5	11.0	11.5	12.0	12.4
		16 0.0598"		6"	S	1154	1121	1094	1072	1054	1038	1025	1013
					G'	16.6	18.3	20.0	21.6	23.1	24.6	26.0	27.4
				12"	S	736	702	675	653	634	618	604	593
					G'	15.6	17.0	18.4	19.7	20.9	22.1	23.2	24.2
				18"	S	595	561	534	511	492	477	463	451
					G'	14.8	16.1	17.3	18.3	19.4	20.3	21.2	22.0
				24"	S	525	490	463	440	421	406	392	380
					G'	14.3	15.4	16.4	17.4	18.2	19.0	19.7	20.3
				30"	S	482	448	420	398	379	363	349	337
					G'	13.9	14.9	15.8	16.6	17.3	18.0	18.6	19.1
36"	S			454	419	392	369	350	334	321	309		
	G'			13.6	14.5	15.3	16.0	16.6	17.2	17.7	18.1		
14 0.0747"		6"	S	1450	1407	1373	1345	1322	1302	1285	1270		
			G'	27.0	29.6	32.0	34.4	36.6	38.6	40.6	42.6		
		12"	S	928	884	849	821	797	777	759	744		
			G'	24.6	26.6	28.5	30.2	31.8	33.3	34.7	35.9		
		18"	S	751	708	673	644	620	600	583	568		
			G'	23.0	24.7	26.1	27.5	28.7	29.8	30.8	31.7		
		24"	S	663	619	584	555	531	511	494	479		
			G'	21.9	23.3	24.5	25.5	26.5	27.3	28.0	28.7		
		30"	S	610	566	531	502	478	458	441	426		
			G'	21.0	22.2	23.2	24.1	24.8	25.4	26.0	26.5		
		36"	S	574	531	495	467	443	422	405	390		
			G'	20.4	21.4	22.2	22.9	23.5	24.0	24.5	24.8		

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03

S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).

The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.

**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.

**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.

**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.

Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.

Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 16



Deep-Dek® 4.5 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)									
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)									
ATTACHMENT PATTERN: 24 / 3											
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT								
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	
20/20 0.0358" / 0.0358"	12"	S	1878	1834	1800	1773	1752	1680*	1412*	1203*	
		G'	84.6	92.5	99.3	105.4	110.9	115.8	120.2	124.1	
	18"	S	1499	1444	1403	1370	1343	1321	1303	1203*	
		G'	77.4	83.5	88.7	93.1	97.0	100.5	103.5	106.2	
	24"	S	1278	1219	1174	1138	1109	1085	1065	1048	
		G'	72.0	76.9	80.9	84.2	87.1	89.6	91.8	93.7	
20/18 0.0358" / 0.0474"	12"	S	2218	2166	2127	2095	2069	1782*	1498*	1276*	
		G'	129.3	136.1	141.7	146.3	150.2	153.5	156.4	159.0	
	18"	S	1770	1706	1657	1618	1587	1561	1498*	1276*	
		G'	111.0	115.1	118.3	120.8	122.9	124.6	126.1	127.3	
	24"	S	1510	1440	1386	1344	1310	1282	1258	1238	
		G'	98.9	101.3	103.0	104.4	105.4	106.2	106.9	107.4	
18/20 0.0474" / 0.0358"	12"	S	2218	2166	2127	2095	2069	2048	2030	1733*	
		G'	82.7	91.7	99.7	107.0	113.7	119.8	125.4	130.5	
	18"	S	1770	1706	1657	1618	1587	1561	1539	1520	
		G'	77.4	84.8	91.4	97.2	102.4	107.1	111.3	115.1	
	24"	S	1510	1440	1386	1344	1310	1282	1258	1238	
		G'	73.3	79.6	85.0	89.7	93.9	97.5	100.8	103.7	
18/18 0.0474" / 0.0474"	12"	S	2543	2483	2438	2401	2372	2347	2156*	1838*	
		G'	136.8	146.2	154.2	161.0	166.9	172.0	176.5	180.5	
	18"	S	2029	1956	1900	1855	1819	1789	1764	1743	
		G'	120.9	127.4	132.6	137.0	140.7	143.8	146.5	148.8	
	24"	S	1731	1651	1589	1541	1501	1469	1442	1419	
		G'	109.8	114.3	117.9	120.7	123.0	124.9	126.5	127.9	
18/16 0.0474" / 0.0598"	12"	S	2832	2765	2714	2674	2641	2614	2267*	1931*	
		G'	178.9	185.6	190.9	195.2	198.8	201.8	204.3	206.5	
	18"	S	2260	2178	2115	2066	2025	1992	1964	1931*	
		G'	149.9	153.2	155.7	157.6	159.1	160.3	161.3	162.1	
	24"	S	1928	1838	1770	1716	1672	1636	1606	1580	
		G'	131.4	132.8	133.6	134.2	134.6	134.8	135.0	135.1	
16/18 0.0598" / 0.0474"	12"	S	2832	2765	2714	2674	2641	2614	2591	2484*	
		G'	139.7	151.3	161.3	170.1	177.8	184.6	190.7	196.2	
	18"	S	2260	2178	2115	2066	2025	1992	1964	1941	
		G'	126.2	134.9	142.2	148.3	153.6	158.2	162.2	165.8	
	24"	S	1928	1838	1770	1716	1672	1636	1606	1580	
		G'	116.5	123.1	128.5	132.9	136.6	139.8	142.5	144.9	
16/16 0.0598" / 0.0598"	12"	S	3110	3038	2982	2937	2901	2871	2846	2611*	
		G'	193.3	203.0	210.9	217.4	222.9	227.6	231.7	235.2	
	18"	S	2482	2392	2323	2269	2225	2188	2158	2132	
		G'	165.8	171.6	176.0	179.6	182.4	184.8	186.8	188.6	
	24"	S	2117	2019	1944	1884	1836	1797	1764	1735	
		G'	147.6	150.9	153.3	155.1	156.5	157.6	158.5	159.2	
16/14 0.0598" / 0.0747"	12"	S	3432	3351	3290	3241	3201	3168	3140	2742*	
		G'	232.9	238.3	242.5	245.8	248.4	250.6	252.4	254.0	
	18"	S	2739	2639	2563	2503	2455	2414	2381	2352	
		G'	190.4	192.1	193.3	194.0	194.6	195.0	195.3	195.6	
	24"	S	2336	2228	2145	2079	2026	1983	1946	1915	
		G'	164.4	164.0	163.6	163.0	162.5	162.0	161.6	161.2	
14/16 0.0747" / 0.0598"	12"	S	3432	3351	3290	3241	3201	3168	3140	3117	
		G'	203.9	216.7	227.5	236.5	244.3	251.0	256.9	262.1	
	18"	S	2739	2639	2563	2503	2455	2414	2381	2352	
		G'	178.9	187.4	194.2	199.8	204.5	208.4	211.8	214.7	
	24"	S	2336	2228	2145	2079	2026	1983	1946	1915	
		G'	161.6	167.4	171.8	175.2	178.0	180.3	182.2	183.8	
14/14 0.0747" / 0.0747"	12"	S	3739	3651	3584	3530	3487	3451	3421	3395	
		G'	258.0	266.7	273.5	279.0	283.5	287.3	290.5	293.3	
	18"	S	2984	2875	2793	2727	2674	2630	2594	2562	
		G'	215.4	219.4	222.4	224.6	226.4	227.8	228.9	229.8	
	24"	S	2545	2427	2336	2265	2207	2160	2120	2086	
		G'	188.4	189.7	190.5	190.9	191.2	191.3	191.4	191.4	

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 17



Deep-Dek® 4.5 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)									
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)									
ATTACHMENT PATTERN: 24 / 4											
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT								
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	
20/20 0.0358" / 0.0358"	12"	S	2015	1961	1919	1887	1861	1680*	1412*	1203*	
		G'	84.7	92.6	99.5	105.6	111.0	115.9	120.3	124.3	
	18"	S	1567	1505	1458	1421	1392	1367	1347	1203*	
		G'	77.5	83.6	88.8	93.3	97.2	100.6	103.7	106.4	
	24"	S	1321	1256	1206	1167	1136	1111	1089	1071	
		G'	72.2	77.1	81.1	84.5	87.3	89.8	92.0	93.9	
20/18 0.0358" / 0.0474"	12"	S	2380	2316	2268	2229	2156*	1782*	1498*	1276*	
		G'	129.5	136.4	141.9	146.5	150.4	153.8	156.6	159.2	
	18"	S	1851	1778	1723	1679	1644	1615	1498*	1276*	
		G'	111.4	115.4	118.6	121.1	123.2	124.9	126.4	127.6	
	24"	S	1561	1483	1425	1379	1342	1312	1286	1265	
		G'	99.3	101.7	103.4	104.8	105.8	106.6	107.2	107.8	
18/20 0.0474" / 0.0358"	12"	S	2380	2316	2268	2229	2198	2173	2033*	1733*	
		G'	82.8	91.7	99.8	107.1	113.8	119.9	125.5	130.6	
	18"	S	1851	1778	1723	1679	1644	1615	1591	1570	
		G'	77.5	84.9	91.5	97.3	102.5	107.2	111.4	115.3	
	24"	S	1561	1483	1425	1379	1342	1312	1286	1265	
		G'	73.4	79.7	85.2	89.9	94.1	97.7	101.0	103.9	
18/18 0.0474" / 0.0474"	12"	S	2728	2655	2599	2555	2520	2491	2156*	1838*	
		G'	137.0	146.4	154.4	161.2	167.1	172.2	176.7	180.7	
	18"	S	2122	2038	1975	1925	1884	1851	1823	1800	
		G'	121.2	127.7	132.9	137.3	141.0	144.1	146.8	149.1	
	24"	S	1789	1701	1633	1581	1539	1504	1475	1450	
		G'	110.2	114.7	118.3	121.1	123.4	125.3	126.9	128.3	
18/16 0.0474" / 0.0598"	12"	S	3038	2957	2894	2846	2806	2697*	2267*	1931*	
		G'	179.3	186.0	191.3	195.6	199.1	202.1	204.6	206.8	
	18"	S	2363	2270	2199	2143	2098	2061	2031	1931*	
		G'	150.4	153.7	156.2	158.0	159.5	160.7	161.7	162.5	
	24"	S	1992	1894	1819	1760	1713	1675	1642	1615	
		G'	132.0	133.4	134.2	134.7	135.1	135.3	135.4	135.5	
16/18 0.0598" / 0.0474"	12"	S	3038	2957	2894	2846	2806	2773	2746	2484*	
		G'	139.8	151.5	161.5	170.3	178.0	184.8	190.9	196.4	
	18"	S	2363	2270	2199	2143	2098	2061	2031	2004	
		G'	126.5	135.2	142.4	148.6	153.9	158.5	162.5	166.0	
	24"	S	1992	1894	1819	1760	1713	1675	1642	1615	
		G'	116.8	123.5	128.9	133.3	137.0	140.2	142.9	145.2	
16/16 0.0598" / 0.0598"	12"	S	3337	3248	3179	3126	3082	3046	3016	2611*	
		G'	193.7	203.4	211.3	217.8	223.3	227.9	232.0	235.5	
	18"	S	2595	2493	2415	2354	2305	2264	2230	2202	
		G'	166.4	172.1	176.5	180.0	182.9	185.3	187.3	189.0	
	24"	S	2188	2080	1998	1934	1882	1839	1804	1773	
		G'	148.3	151.6	153.9	155.7	157.1	158.1	159.0	159.7	
16/14 0.0598" / 0.0747"	12"	S	3682	3583	3508	3449	3401	3361	3328*	2742*	
		G'	233.5	238.9	243.0	246.2	248.9	251.0	252.8	254.4	
	18"	S	2863	2750	2665	2597	2543	2498	2461	2429	
		G'	191.2	192.8	193.9	194.7	195.2	195.6	195.9	196.1	
	24"	S	2414	2295	2204	2133	2076	2029	1990	1957	
		G'	165.3	164.9	164.3	163.7	163.2	162.6	162.2	161.7	
14/16 0.0747" / 0.0598"	12"	S	3682	3583	3508	3449	3401	3361	3328	3300	
		G'	204.2	217.1	227.8	236.9	244.6	251.4	257.2	262.4	
	18"	S	2863	2750	2665	2597	2543	2498	2461	2429	
		G'	179.3	187.9	194.7	200.3	205.0	208.9	212.2	215.1	
	24"	S	2414	2295	2204	2133	2076	2029	1990	1957	
		G'	162.3	168.0	172.4	175.8	178.6	180.9	182.8	184.3	
14/14 0.0747" / 0.0747"	12"	S	4011	3904	3821	3757	3705	3662	3625	3595	
		G'	258.6	267.2	274.0	279.5	284.0	287.8	290.9	293.7	
	18"	S	3119	2996	2903	2829	2770	2722	2681	2646	
		G'	216.2	220.2	223.1	225.3	227.0	228.4	229.5	230.4	
	24"	S	2630	2500	2401	2324	2262	2211	2168	2132	
		G'	189.3	190.6	191.3	191.7	191.9	192.0	192.0	192.0	

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 18



Deep-Dek® 4.5 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: S/L Screws #10		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 3										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"
20/20 0.0358" / 0.0358"	6"	S	875	824	785	755	731	711	694	680
		G'	80.4	87.4	93.4	98.8	103.5	107.7	111.5	114.9
	12"	S	637	584	543	512	487	466	449	434
		G'	66.4	70.4	73.6	76.3	78.6	80.6	82.3	83.8
	24"	S	514	460	419	387	361	340	323	308
		G'	53.2	54.6	55.6	56.4	56.9	57.2	57.5	57.7
20/18 0.0358" / 0.0474"	6"	S	1102	1042	997	961	933	909	890	873
		G'	118.3	123.8	128.4	132.1	135.2	137.9	140.2	142.2
	12"	S	790	727	679	642	612	587	567	550
		G'	87.2	88.8	90.0	90.9	91.6	92.2	92.6	93.0
	24"	S	628	564	515	477	447	422	401	383
		G'	63.4	62.6	61.9	61.2	60.5	60.0	59.4	59.0
18/20 0.0474" / 0.0358"	6"	S	945	884	839	803	774	750	730	713
		G'	79.6	87.8	95.2	101.8	107.7	113.2	118.2	122.7
	12"	S	705	642	594	557	527	503	483	465
		G'	68.8	74.2	78.8	82.8	86.3	89.3	92.0	94.4
	24"	S	581	517	469	432	402	377	357	339
		G'	57.6	60.4	62.5	64.2	65.5	66.6	67.5	68.2
18/18 0.0474" / 0.0474"	6"	S	1170	1101	1049	1008	975	948	925	906
		G'	127.3	135.3	142.1	147.8	152.7	156.9	160.6	163.9
	12"	S	855	782	728	685	651	623	599	580
		G'	98.7	102.1	104.8	106.9	108.6	110.0	111.2	112.2
	24"	S	692	618	563	520	485	457	433	413
		G'	74.7	74.9	74.9	74.7	74.4	74.1	73.8	73.5
18/16 0.0474" / 0.0598"	6"	S	1397	1321	1263	1218	1181	1151	1126	1105
		G'	161.2	166.5	170.7	174.0	176.8	179.1	181.0	182.7
	12"	S	1003	923	862	814	776	745	718	696
		G'	114.1	114.9	115.3	115.6	115.7	115.8	115.8	115.9
	24"	S	799	717	655	606	567	536	509	486
		G'	80.6	78.7	77.2	75.8	74.6	73.6	72.7	72.0
16/18 0.0598" / 0.0474"	6"	S	1230	1152	1094	1048	1011	981	956	934
		G'	131.7	141.9	150.7	158.2	164.8	170.7	175.8	180.5
	12"	S	912	832	771	724	686	654	628	606
		G'	106.4	111.7	116.0	119.5	122.4	124.8	126.9	128.7
	24"	S	749	667	606	558	519	488	461	439
		G'	83.5	85.0	85.9	86.4	86.7	86.9	87.0	87.1
16/16 0.0598" / 0.0598"	6"	S	1456	1371	1307	1257	1217	1184	1156	1133
		G'	176.7	184.7	191.1	196.3	200.7	204.4	207.6	210.4
	12"	S	1059	970	904	851	809	775	746	722
		G'	130.1	132.4	134.0	135.2	136.1	136.8	137.4	137.8
	24"	S	854	764	696	643	600	566	536	512
		G'	94.5	93.3	92.1	90.9	89.9	89.0	88.2	87.5
16/14 0.0598" / 0.0747"	6"	S	1723	1630	1560	1506	1461	1425	1395	1369
		G'	206.7	210.8	213.9	216.4	218.3	219.9	221.3	222.4
	12"	S	1232	1134	1061	1003	957	918	887	860
		G'	140.8	140.2	139.5	138.9	138.4	137.9	137.5	137.1
	24"	S	977	877	802	743	696	657	625	598
		G'	96.7	93.7	91.2	89.1	87.4	86.0	84.7	83.6
14/16 0.0747" / 0.0598"	6"	S	1522	1429	1358	1302	1258	1221	1191	1165
		G'	188.9	199.8	208.8	216.3	222.7	228.2	233.0	237.2
	12"	S	1122	1025	952	894	848	810	779	752
		G'	144.6	148.8	152.1	154.6	156.6	158.3	159.6	160.8
	24"	S	917	818	743	685	638	600	568	541
		G'	108.3	108.1	107.6	107.0	106.3	105.7	105.1	104.6
14/14 0.0747" / 0.0747"	6"	S	1787	1686	1610	1550	1501	1462	1429	1400
		G'	232.0	238.8	244.1	248.3	251.8	254.7	257.1	259.2
	12"	S	1293	1187	1107	1044	993	952	918	888
		G'	163.3	163.9	164.1	164.2	164.2	164.2	164.1	164.0
	24"	S	1037	929	847	784	732	691	656	626
		G'	114.8	111.9	109.5	107.4	105.7	104.2	102.9	101.7

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 19



Deep-Dek® 4.5 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: S/L Screws #10		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 4										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			12' - 0"	14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"
20/20 0.0358" / 0.0358"	6"	S	890	837	796	765	740	719	702	687
		G'	80.5	87.5	93.6	98.9	103.7	107.9	111.7	115.1
	12"	S	644	590	548	516	490	469	452	437
		G'	66.6	70.6	73.9	76.6	78.9	80.9	82.6	84.0
	24"	S	519	464	422	390	364	343	325	310
		G'	53.6	55.1	56.1	56.8	57.3	57.6	57.9	58.1
20/18 0.0358" / 0.0474"	6"	S	1123	1060	1012	975	946	921	901	883
		G'	118.6	124.1	128.7	132.4	135.5	138.1	140.4	142.4
	12"	S	800	735	686	648	617	592	571	553
		G'	87.7	89.3	90.5	91.4	92.1	92.6	93.0	93.3
	24"	S	634	569	519	481	450	424	403	385
		G'	64.1	63.3	62.5	61.8	61.1	60.5	59.9	59.4
18/20 0.0474" / 0.0358"	6"	S	959	896	849	812	782	757	737	720
		G'	79.7	87.9	95.3	101.9	107.9	113.3	118.3	122.8
	12"	S	712	648	599	562	531	506	486	468
		G'	69.0	74.4	79.1	83.1	86.5	89.6	92.6	94.7
	24"	S	587	522	473	435	405	380	359	341
		G'	58.0	60.8	62.9	64.6	65.9	67.0	67.9	68.6
18/18 0.0474" / 0.0474"	6"	S	1190	1118	1063	1020	986	958	935	915
		G'	127.5	135.6	142.4	148.1	152.9	157.2	160.9	164.2
	12"	S	864	790	734	691	656	627	603	583
		G'	99.2	102.6	105.3	107.4	109.1	110.5	111.6	112.6
	24"	S	699	624	568	524	489	460	436	415
		G'	75.5	75.7	75.6	75.3	75.0	74.7	74.4	74.1
18/16 0.0474" / 0.0598"	6"	S	1423	1343	1282	1235	1197	1166	1140	1118
		G'	161.7	167.0	171.1	174.4	177.2	179.5	181.4	183.1
	12"	S	1015	932	870	821	782	750	723	701
		G'	114.9	115.6	116.0	116.2	116.3	116.3	116.3	116.3
	24"	S	807	723	660	611	571	539	512	489
		G'	81.6	79.7	78.0	76.6	75.4	74.3	73.4	72.6
16/18 0.0598" / 0.0474"	6"	S	1249	1168	1107	1060	1022	991	965	943
		G'	132.0	142.2	150.9	158.5	165.1	170.9	176.1	180.7
	12"	S	922	840	778	729	691	659	632	610
		G'	106.9	112.2	116.5	119.9	122.8	125.2	127.3	129.1
	24"	S	756	673	611	562	523	491	464	442
		G'	84.3	85.7	86.6	87.1	87.4	87.6	87.7	87.7
16/16 0.0598" / 0.0598"	6"	S	1481	1393	1326	1274	1232	1198	1169	1145
		G'	177.2	185.1	191.5	196.7	201.1	204.8	208.0	210.8
	12"	S	1071	980	912	858	816	781	751	727
		G'	130.9	133.1	134.7	135.8	136.7	137.4	137.9	138.3
	24"	S	862	770	701	648	605	569	540	515
		G'	95.6	94.3	93.0	91.8	90.8	89.8	88.9	88.2
16/14 0.0598" / 0.0747"	6"	S	1756	1659	1585	1528	1482	1444	1412	1386
		G'	207.5	211.5	214.5	216.9	218.8	220.4	221.7	222.8
	12"	S	1247	1147	1071	1012	964	925	893	866
		G'	141.8	141.1	140.4	139.7	139.1	138.6	138.1	137.7
	24"	S	987	885	809	749	701	662	629	601
		G'	98.0	94.8	92.2	90.1	88.3	86.8	85.4	84.3
14/16 0.0747" / 0.0598"	6"	S	1547	1449	1375	1318	1272	1234	1203	1176
		G'	189.3	200.2	209.2	216.7	223.1	228.6	233.4	237.6
	12"	S	1135	1035	960	901	854	816	784	756
		G'	145.3	149.6	152.8	155.3	157.3	158.9	160.2	161.3
	24"	S	926	825	749	690	643	604	572	544
		G'	109.4	109.1	108.6	107.9	107.3	106.6	106.0	105.4
14/14 0.0747" / 0.0747"	6"	S	1820	1713	1633	1571	1520	1479	1445	1416
		G'	232.7	239.5	244.7	248.9	252.4	255.2	257.6	259.7
	12"	S	1308	1199	1117	1053	1001	959	924	894
		G'	164.4	164.9	165.1	165.1	165.1	164.9	164.8	164.7
	24"	S	1048	937	854	789	738	695	660	629
		G'	116.2	113.2	110.7	108.5	106.7	105.1	103.7	102.5

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 20



Deep-Dek® 6 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 3										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20/20 0.0358" / 0.0358"	12"	S	1834	1800	1773	1752	1734	1718	1705	1598*
		G'	80.8	87.4	93.4	98.7	103.6	108.0	112.0	115.7
	18"	S	1444	1403	1370	1343	1321	1303	1287	1273
		G'	73.9	79.1	83.6	87.6	91.2	94.4	97.2	99.8
	24"	S	1219	1174	1138	1109	1085	1065	1048	1033
		G'	68.7	72.8	76.4	79.4	82.1	84.5	86.6	88.5
20/18 0.0358" / 0.0474"	12"	S	2166	2127	2095	2069	2048	2030	1966*	1695*
		G'	124.5	130.4	135.5	139.8	143.5	146.7	149.6	152.1
	18"	S	1706	1657	1618	1587	1561	1539	1520	1504
		G'	106.6	110.3	113.3	115.8	117.9	119.7	121.2	122.6
	24"	S	1440	1386	1344	1310	1282	1258	1238	1220
		G'	94.7	97.0	98.7	100.2	101.3	102.3	103.1	103.8
18/20 0.0474" / 0.0358"	12"	S	2166	2127	2095	2069	2048	2030	2015	2001
		G'	78.8	86.2	93.0	99.3	105.1	110.5	115.5	120.2
	18"	S	1706	1657	1618	1587	1561	1539	1520	1504
		G'	73.7	79.9	85.5	90.6	95.2	99.4	103.3	106.8
	24"	S	1440	1386	1344	1310	1282	1258	1238	1220
		G'	69.7	75.0	79.7	83.9	87.6	91.0	94.0	96.8
18/18 0.0474" / 0.0474"	12"	S	2483	2438	2401	2372	2347	2327	2309	2294
		G'	131.1	139.2	146.3	152.4	157.8	162.7	167.0	170.8
	18"	S	1956	1900	1855	1819	1789	1764	1743	1724
		G'	115.7	121.4	126.2	130.2	133.7	136.8	139.5	141.8
	24"	S	1651	1589	1541	1501	1469	1442	1419	1399
		G'	104.8	108.9	112.2	115.0	117.3	119.2	120.9	122.4
18/16 0.0474" / 0.0598"	12"	S	2765	2714	2674	2641	2614	2591	2572	2555
		G'	172.6	178.6	183.6	187.7	191.3	194.3	196.9	199.2
	18"	S	2178	2115	2066	2025	1992	1964	1941	1920
		G'	144.2	147.4	149.9	151.9	153.6	155.0	156.1	157.1
	24"	S	1838	1770	1716	1672	1636	1606	1580	1558
		G'	126.0	127.5	128.6	129.4	130.0	130.5	130.9	131.2
16/18 0.0598" / 0.0474"	12"	S	2765	2714	2674	2641	2614	2591	2572	2555
		G'	133.5	143.3	152.0	159.7	166.7	172.9	178.6	183.8
	18"	S	2178	2115	2066	2025	1992	1964	1941	1920
		G'	120.5	128.0	134.4	139.9	144.8	149.2	153.0	156.5
	24"	S	1838	1770	1716	1672	1636	1606	1580	1558
		G'	111.0	116.8	121.6	125.7	129.3	132.3	135.0	137.4
16/16 0.0598" / 0.0598"	12"	S	3038	2982	2937	2901	2871	2846	2825	2806
		G'	185.9	194.4	201.5	207.6	212.8	217.4	221.4	224.9
	18"	S	2392	2323	2269	2225	2188	2158	2132	2109
		G'	159.2	164.4	168.6	172.0	175.0	177.5	179.6	181.4
	24"	S	2019	1944	1884	1836	1797	1764	1735	1711
		G'	141.2	144.4	146.9	148.8	150.4	151.7	152.8	153.7
16/14 0.0598" / 0.0747"	12"	S	3351	3290	3241	3201	3168	3140	3117	3096
		G'	225.3	230.4	234.5	237.8	240.6	242.9	244.9	246.6
	18"	S	2639	2563	2503	2455	2414	2381	2352	2327
		G'	183.5	185.5	186.9	188.0	188.9	189.6	190.2	190.6
	24"	S	2228	2145	2079	2026	1983	1946	1915	1888
		G'	157.7	158.0	158.0	157.9	157.8	157.6	157.5	157.3
14/16 0.0747" / 0.0598"	12"	S	3351	3290	3241	3201	3168	3140	3117	3096
		G'	195.3	206.4	215.9	224.2	231.4	237.7	243.4	248.4
	18"	S	2639	2563	2503	2455	2414	2381	2352	2327
		G'	171.2	178.7	184.9	190.2	194.7	198.6	202.0	205.0
	24"	S	2228	2145	2079	2026	1983	1946	1915	1888
		G'	154.3	159.5	163.7	167.1	170.0	172.4	174.4	176.2
14/14 0.0747" / 0.0747"	12"	S	3651	3584	3530	3487	3451	3421	3395	3373
		G'	248.7	256.6	263.0	268.3	272.8	276.7	280.0	282.9
	18"	S	2875	2793	2727	2674	2630	2594	2562	2535
		G'	207.1	211.1	214.1	216.6	218.6	220.2	221.6	222.8
	24"	S	2427	2336	2265	2207	2160	2120	2086	2057
		G'	180.5	182.1	183.3	184.2	184.8	185.3	185.6	185.9

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi

\* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 21



Deep-Dek® 6 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 4										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20/20 0.0358" / 0.0358"	12"	S	1961	1919	1887	1861	1839	1821	1806	1598*
		G'	80.9	87.5	93.5	98.8	103.7	108.1	112.1	115.8
	18"	S	1505	1458	1421	1392	1367	1347	1329	1314
		G'	74.0	79.2	83.7	87.7	91.3	94.5	97.4	100.0
	24"	S	1256	1206	1167	1136	1111	1089	1071	1055
		G'	68.8	73.0	76.5	79.6	82.3	84.7	86.8	88.7
20/18 0.0358" / 0.0474"	12"	S	2316	2268	2229	2198	2173	2151	1966*	1695*
		G'	124.7	130.6	135.7	140.0	143.7	146.9	149.8	152.3
	18"	S	1778	1723	1679	1644	1615	1591	1570	1553
		G'	106.9	110.6	113.6	116.1	118.2	120.0	121.5	122.8
	24"	S	1483	1425	1379	1342	1312	1286	1265	1246
		G'	95.0	97.3	99.1	100.5	101.6	102.6	103.4	104.1
18/20 0.0474" / 0.0358"	12"	S	2316	2268	2229	2198	2173	2151	2133	2117
		G'	78.8	86.3	93.1	99.4	105.2	110.6	115.6	120.2
	18"	S	1778	1723	1679	1644	1615	1591	1570	1553
		G'	73.8	80.0	85.6	90.7	95.3	99.5	103.4	106.9
	24"	S	1483	1425	1379	1342	1312	1286	1265	1246
		G'	69.8	75.1	79.8	84.0	87.8	91.1	94.2	96.9
18/18 0.0474" / 0.0474"	12"	S	2655	2599	2555	2520	2491	2466	2445	2427
		G'	131.3	139.4	146.4	152.6	158.0	162.8	167.1	171.0
	18"	S	2038	1975	1925	1884	1851	1823	1800	1780
		G'	116.0	121.7	126.4	130.5	134.0	137.0	139.7	142.1
	24"	S	1701	1633	1581	1539	1504	1475	1450	1429
		G'	105.2	109.2	112.6	115.3	117.6	119.6	121.3	122.7
18/16 0.0474" / 0.0598"	12"	S	2957	2894	2846	2806	2773	2746	2723	2564*
		G'	172.9	179.0	183.9	188.0	191.5	194.6	197.2	199.4
	18"	S	2270	2199	2143	2098	2061	2031	2004	1982
		G'	144.7	147.9	150.3	152.3	154.0	155.3	156.5	157.5
	24"	S	1894	1819	1760	1713	1675	1642	1615	1591
		G'	126.5	128.0	129.1	129.9	130.5	131.0	131.3	131.6
16/18 0.0598" / 0.0474"	12"	S	2957	2894	2846	2806	2773	2746	2723	2703
		G'	133.6	143.4	152.1	159.9	166.8	173.1	178.8	183.9
	18"	S	2270	2199	2143	2098	2061	2031	2004	1982
		G'	120.8	128.2	134.6	140.2	145.1	149.4	153.3	156.7
	24"	S	1894	1819	1760	1713	1675	1642	1615	1591
		G'	111.3	117.1	121.9	126.0	129.6	132.6	135.3	137.7
16/16 0.0598" / 0.0598"	12"	S	3248	3179	3126	3082	3046	3016	2991	2969
		G'	186.2	194.7	201.8	207.9	213.1	217.7	221.7	225.2
	18"	S	2493	2415	2354	2305	2264	2230	2202	2177
		G'	159.6	164.8	169.0	172.5	175.4	177.8	180.0	181.8
	24"	S	2080	1998	1934	1882	1839	1804	1773	1747
		G'	141.8	144.9	147.4	149.3	150.9	152.1	153.2	154.1
16/14 0.0598" / 0.0747"	12"	S	3583	3508	3449	3401	3361	3328	3300	3275
		G'	225.8	230.8	234.9	238.2	241.0	243.3	245.3	247.0
	18"	S	2750	2665	2597	2543	2498	2461	2429	2402
		G'	184.2	186.1	187.5	188.6	189.4	190.1	190.6	191.1
	24"	S	2295	2204	2133	2076	2029	1990	1957	1928
		G'	158.5	158.7	158.7	158.5	158.4	158.2	158.0	157.8
14/16 0.0747" / 0.0598"	12"	S	3583	3508	3449	3401	3361	3328	3300	3275
		G'	195.6	206.7	216.2	224.5	231.7	238.0	243.7	248.7
	18"	S	2750	2665	2597	2543	2498	2461	2429	2402
		G'	171.6	179.1	185.3	190.6	195.1	199.0	202.4	205.4
	24"	S	2295	2204	2133	2076	2029	1990	1957	1928
		G'	154.8	160.0	164.2	167.6	170.4	172.8	174.9	176.7
14/14 0.0747" / 0.0747"	12"	S	3904	3821	3757	3705	3662	3625	3595	3568
		G'	249.2	257.1	263.5	268.8	273.2	277.1	280.4	283.3
	18"	S	2996	2903	2829	2770	2722	2681	2646	2616
		G'	207.8	211.7	214.7	217.2	219.1	220.7	222.1	223.3
	24"	S	2500	2401	2324	2262	2211	2168	2132	2100
		G'	181.3	182.9	184.0	184.8	185.4	185.9	186.2	186.5

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 22



Deep-Dek® 6 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: S/L Screws #10		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 3										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"
20/20 0.0358" / 0.0358"	6"	S	785	755	731	711	694	680	668	657
		G'	82.8	88.1	92.8	97.1	101.0	104.5	107.7	110.6
	12"	S	543	512	487	466	449	434	421	410
		G'	66.9	69.8	72.3	74.5	76.4	78.1	79.6	80.9
	24"	S	419	387	361	340	323	308	295	284
		G'	51.7	52.7	53.5	54.1	54.6	55.0	55.3	55.5
20/18 0.0358" / 0.0474"	6"	S	997	961	933	909	890	873	859	846
		G'	119.1	123.2	126.7	129.7	132.3	134.6	136.7	138.5
	12"	S	679	642	612	587	567	550	535	522
		G'	85.4	86.6	87.6	88.5	89.1	89.7	90.2	90.6
	24"	S	515	477	447	422	401	383	368	355
		G'	59.6	59.2	58.8	58.4	58.0	57.6	57.3	57.0
18/20 0.0474" / 0.0358"	6"	S	839	803	774	750	730	713	699	686
		G'	82.8	89.0	94.8	100.0	104.9	109.3	113.5	117.4
	12"	S	594	557	527	503	483	465	450	438
		G'	70.2	74.2	77.8	80.9	83.7	86.3	88.6	90.7
	24"	S	469	432	402	377	357	339	324	311
		G'	56.9	58.9	60.5	61.8	62.9	63.9	64.7	65.4
18/18 0.0474" / 0.0474"	6"	S	1049	1008	975	948	925	906	889	875
		G'	129.3	135.3	140.5	145.0	149.1	152.6	155.8	158.7
	12"	S	728	685	651	623	599	580	563	548
		G'	97.7	100.2	102.3	104.0	105.5	106.8	107.9	108.9
	24"	S	563	520	485	457	433	413	396	381
		G'	71.1	71.3	71.4	71.4	71.3	71.2	71.1	70.9
18/16 0.0474" / 0.0598"	6"	S	1263	1218	1181	1151	1126	1105	1086	1071
		G'	160.8	164.7	168.0	170.7	173.1	175.1	176.9	178.5
	12"	S	862	814	776	745	718	696	677	661
		G'	110.7	111.4	111.9	112.3	112.5	112.8	112.9	113.1
	24"	S	655	606	567	536	509	486	467	450
		G'	75.1	74.0	73.0	72.2	71.4	70.8	70.2	69.6
16/18 0.0598" / 0.0474"	6"	S	1094	1048	1011	981	956	934	916	900
		G'	134.8	142.5	149.2	155.2	160.6	165.4	169.8	173.8
	12"	S	771	724	686	654	628	606	587	571
		G'	106.4	110.2	113.5	116.3	118.8	120.9	122.7	124.4
	24"	S	606	558	519	488	461	439	420	403
		G'	80.5	81.5	82.2	82.7	83.1	83.4	83.6	83.8
16/16 0.0598" / 0.0598"	6"	S	1307	1257	1217	1184	1156	1133	1113	1095
		G'	177.4	183.3	188.2	192.4	196.1	199.3	202.2	204.7
	12"	S	904	851	809	775	746	722	701	683
		G'	127.1	128.9	130.2	131.3	132.2	133.0	133.6	134.1
	24"	S	696	643	600	566	536	512	491	472
		G'	88.8	88.0	87.3	86.7	86.1	85.5	85.0	84.6
16/14 0.0598" / 0.0747"	6"	S	1560	1506	1461	1425	1395	1369	1347	1328
		G'	204.4	207.5	210.1	212.2	213.9	215.4	216.7	217.8
	12"	S	1061	1003	957	918	887	860	837	817
		G'	135.4	135.3	135.0	134.8	134.6	134.4	134.2	134.0
	24"	S	802	743	696	657	625	598	574	554
		G'	89.4	87.6	86.1	84.7	83.6	82.6	81.8	81.0
14/16 0.0747" / 0.0598"	6"	S	1358	1302	1258	1221	1191	1165	1142	1123
		G'	190.9	198.9	205.8	211.9	217.1	221.8	225.9	229.7
	12"	S	952	894	848	810	779	752	729	709
		G'	142.4	145.5	148.1	150.2	152.0	153.5	154.8	156.0
	24"	S	743	685	638	600	568	541	518	498
		G'	102.6	102.5	102.3	102.1	101.8	101.5	101.2	100.9
14/14 0.0747" / 0.0747"	6"	S	1610	1550	1501	1462	1429	1400	1376	1355
		G'	230.5	235.6	239.8	243.3	246.2	248.8	251.1	253.0
	12"	S	1107	1044	993	952	918	888	863	841
		G'	157.9	158.6	159.0	159.4	159.6	159.8	159.9	160.0
	24"	S	847	784	732	691	656	626	600	578
		G'	106.7	105.0	103.5	102.2	101.1	100.1	99.2	98.4

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 23



Deep-Dek® 6 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: S/L Screws #10		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 4										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			14' - 0"	16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
20/20 0.0358" / 0.0358"	6"	S	837	796	765	740	719	702	687	675
		G'	77.0	82.9	88.2	93.0	97.2	101.1	104.6	107.8
	12"	S	590	548	516	490	469	452	437	424
		G'	63.6	67.1	70.0	72.6	74.7	76.6	78.3	79.8
	24"	S	464	422	390	364	343	325	310	297
		G'	50.7	52.1	53.1	53.9	54.5	54.9	55.3	55.6
20/18 0.0358" / 0.0474"	6"	S	1060	1012	975	946	921	901	883	869
		G'	114.4	119.3	123.4	126.9	129.9	132.6	134.8	136.9
	12"	S	735	686	648	617	592	571	553	538
		G'	84.2	85.8	87.0	88.0	88.8	89.5	90.0	90.5
	24"	S	569	519	481	450	424	403	385	370
		G'	60.7	60.2	59.8	59.3	58.9	58.4	58.1	57.7
18/20 0.0474" / 0.0358"	6"	S	896	849	812	782	757	737	720	705
		G'	76.0	82.9	89.1	94.8	100.1	105.0	109.4	113.6
	12"	S	648	599	562	531	506	486	468	453
		G'	65.7	70.3	74.4	78.0	81.1	84.0	86.5	88.8
	24"	S	522	473	435	405	380	359	341	326
		G'	54.8	57.3	59.2	60.8	62.1	63.3	64.2	65.0
18/18 0.0474" / 0.0474"	6"	S	1118	1063	1020	986	958	935	915	898
		G'	122.5	129.5	135.5	140.7	145.3	149.3	152.8	156.0
	12"	S	790	734	691	656	627	603	583	566
		G'	94.9	98.1	100.6	102.7	104.4	105.9	107.2	108.3
	24"	S	624	568	524	489	460	436	415	398
		G'	71.4	71.8	71.9	72.0	71.9	71.8	71.7	71.5
18/16 0.0474" / 0.0598"	6"	S	1343	1282	1235	1197	1166	1140	1118	1099
		G'	156.4	161.2	165.1	168.3	171.1	173.4	175.4	177.2
	12"	S	932	870	821	782	750	723	701	681
		G'	110.4	111.3	112.0	112.4	112.8	113.0	113.2	113.4
	24"	S	723	660	611	571	539	512	489	470
		G'	77.2	75.9	74.7	73.7	72.8	72.0	71.3	70.7
16/18 0.0598" / 0.0474"	6"	S	1168	1107	1060	1022	991	965	943	924
		G'	126.3	135.0	142.7	149.4	155.4	160.8	165.6	170.0
	12"	S	840	778	729	691	659	632	610	591
		G'	102.1	106.8	110.6	113.9	116.7	119.1	121.2	123.1
	24"	S	673	611	562	523	491	464	442	422
		G'	79.7	81.1	82.1	82.8	83.3	83.7	84.0	84.2
16/16 0.0598" / 0.0598"	6"	S	1393	1326	1274	1232	1198	1169	1145	1124
		G'	170.8	177.8	183.6	188.6	192.8	196.4	199.6	202.5
	12"	S	980	912	858	816	781	751	727	705
		G'	125.5	127.8	129.5	130.8	131.9	132.7	133.5	134.1
	24"	S	770	701	648	605	569	540	515	493
		G'	90.4	89.6	88.9	88.1	87.4	86.8	86.2	85.6
16/14 0.0598" / 0.0747"	6"	S	1659	1585	1528	1482	1444	1412	1386	1363
		G'	201.1	205.0	208.1	210.6	212.6	214.4	215.8	217.1
	12"	S	1147	1071	1012	964	925	893	866	842
		G'	136.4	136.2	136.0	135.7	135.5	135.2	135.0	134.7
	24"	S	885	809	749	701	662	629	601	578
		G'	92.7	90.4	88.5	86.9	85.5	84.3	83.3	82.4
14/16 0.0747" / 0.0598"	6"	S	1449	1375	1318	1272	1234	1203	1176	1153
		G'	181.8	191.3	199.3	206.2	212.2	217.4	222.1	226.2
	12"	S	1035	960	901	854	816	784	756	733
		G'	139.1	143.0	146.1	148.7	150.8	152.6	154.1	155.3
	24"	S	825	749	690	643	604	572	544	521
		G'	103.4	103.6	103.4	103.2	102.9	102.6	102.2	101.9
14/14 0.0747" / 0.0747"	6"	S	1713	1633	1571	1520	1479	1445	1416	1391
		G'	224.9	231.1	236.1	240.3	243.7	246.7	249.3	251.5
	12"	S	1199	1117	1053	1001	959	924	894	868
		G'	157.9	158.8	159.4	159.8	160.1	160.3	160.4	160.5
	24"	S	937	854	789	738	695	660	629	604
		G'	109.8	107.8	106.0	104.5	103.1	101.9	100.9	99.9

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 Fy = 40 ksi and Fu = 55 ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 24

Deep-Dek® 7.5 Cellular



Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)									
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)									
ATTACHMENT PATTERN: 24 / 3											
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT								
			16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"	
18/20 0.0474"/ 0.0358"	12"	S	2127	2095	2069	2048	2030	2015	2001	1990	
		G'	76.1	82.5	88.4	93.9	99.1	103.9	108.4	112.6	
	18"	S	1657	1618	1587	1561	1539	1520	1504	1490	
		G'	71.2	76.5	81.4	85.9	90.0	93.9	97.4	100.7	
	24"	S	1386	1344	1310	1282	1258	1238	1220	1205	
		G'	67.2	71.8	75.9	79.7	83.1	86.1	89.0	91.6	
36"	S	1093	1048	1011	981	956	934	916	900		
	G'	61.4	64.9	67.9	70.6	72.9	75.0	76.9	78.6		
18/18 0.0474"/ 0.0474"	12"	S	2438	2401	2372	2347	2327	2309	2294	2281	
		G'	127.2	134.3	140.6	146.1	151.1	155.6	159.7	163.4	
	18"	S	1900	1855	1819	1789	1764	1743	1724	1708	
		G'	112.1	117.2	121.5	125.2	128.5	131.5	134.1	136.4	
	24"	S	1589	1541	1501	1469	1442	1419	1399	1382	
		G'	101.4	105.0	108.1	110.7	112.9	114.9	116.6	118.1	
36"	S	1253	1201	1159	1124	1095	1071	1050	1031		
	G'	87.1	89.0	90.6	91.8	92.8	93.6	94.3	94.9		
18/16 0.0474"/ 0.0598"	12"	S	2714	2674	2641	2614	2591	2572	2555	2540	
		G'	168.2	173.6	178.2	182.1	185.5	188.5	191.1	193.4	
	18"	S	2115	2066	2025	1992	1964	1941	1920	1902	
		G'	140.2	143.2	145.6	147.6	149.3	150.8	152.0	153.1	
	24"	S	1770	1716	1672	1636	1606	1580	1558	1539	
		G'	122.1	123.6	124.8	125.7	126.5	127.1	127.7	128.1	
36"	S	1395	1337	1291	1252	1220	1192	1169	1148		
	G'	99.9	99.9	99.7	99.6	99.3	99.1	98.9	98.7		
16/18 0.0598"/ 0.0474"	12"	S	2714	2674	2641	2614	2591	2572	2555	2540	
		G'	129.2	137.7	145.4	152.3	158.6	164.3	169.5	174.4	
	18"	S	2115	2066	2025	1992	1964	1941	1920	1902	
		G'	116.6	123.1	128.8	133.8	138.3	142.4	146.1	149.4	
	24"	S	1770	1716	1672	1636	1606	1580	1558	1539	
		G'	107.2	112.3	116.6	120.4	123.8	126.7	129.3	131.7	
36"	S	1395	1337	1291	1252	1220	1192	1169	1148		
	G'	94.3	97.4	100.1	102.3	104.1	105.7	107.1	108.3		
16/16 0.0598"/ 0.0598"	12"	S	2982	2937	2901	2871	2846	2825	2806	2790	
		G'	180.6	188.2	194.7	200.3	205.2	209.6	213.5	216.9	
	18"	S	2323	2269	2225	2188	2158	2132	2109	2090	
		G'	154.4	159.1	163.1	166.4	169.3	171.7	173.9	175.8	
	24"	S	1944	1884	1836	1797	1764	1735	1711	1690	
		G'	136.7	139.6	142.0	144.0	145.7	147.1	148.3	149.3	
36"	S	1533	1469	1418	1375	1340	1310	1284	1261		
	G'	114.2	115.1	115.8	116.2	116.6	116.8	117.0	117.1		
16/14 0.0598"/ 0.0747"	12"	S	3290	3241	3201	3168	3140	3117	3096	3078	
		G'	219.8	224.5	228.4	231.7	234.5	236.9	238.9	240.8	
	18"	S	2563	2503	2455	2414	2381	2352	2327	2306	
		G'	178.6	180.6	182.1	183.4	184.4	185.3	186.0	186.6	
	24"	S	2145	2079	2026	1983	1946	1915	1888	1865	
		G'	152.9	153.4	153.7	153.9	154.0	154.1	154.1	154.1	
36"	S	1691	1621	1564	1517	1478	1445	1416	1391		
	G'	122.7	121.6	120.6	119.8	119.0	118.2	117.6	117.0		
14/16 0.0747"/ 0.0598"	12"	S	3290	3241	3201	3168	3140	3117	3096	3078	
		G'	189.4	199.1	207.6	215.1	221.8	227.7	233.1	237.9	
	18"	S	2563	2503	2455	2414	2381	2352	2327	2306	
		G'	165.8	172.5	178.1	183.0	187.3	191.1	194.4	197.4	
	24"	S	2145	2079	2026	1983	1946	1915	1888	1865	
		G'	149.1	153.8	157.7	161.0	163.8	166.2	168.3	170.2	
36"	S	1691	1621	1564	1517	1478	1445	1416	1391		
	G'	127.2	129.5	131.3	132.6	133.8	134.7	135.4	136.0		
14/14 0.0747"/ 0.0747"	12"	S	3584	3530	3487	3451	3421	3395	3373	3354	
		G'	242.1	249.2	255.2	260.3	264.6	268.4	271.7	274.7	
	18"	S	2793	2727	2674	2630	2594	2562	2535	2512	
		G'	201.2	204.9	207.9	210.4	212.5	214.3	215.8	217.1	
	24"	S	2336	2265	2207	2160	2120	2086	2057	2031	
		G'	174.7	176.5	177.9	178.9	179.8	180.5	181.0	181.5	
36"	S	1842	1766	1704	1653	1610	1574	1543	1516		
	G'	142.6	142.3	141.8	141.4	140.9	140.5	140.1	139.7		

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 25



Deep-Dek® 7.5 Cellular

Allowable Diaphragm Shear

SUPPORT CONNECTION: 1/2" Effective Weld Diameter		S = Allowable Diaphragm Shear (lbs/foot)								
SIDELAP CONNECTION: 1-1/2" Seam Welds		G' = Stiffness Factor (kips/in.)								
ATTACHMENT PATTERN: 24 / 4										
GAGE	SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT							
			16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"	30' - 0"
18/20 0.0474"/ 0.0358"	12"	S	2268	2229	2198	2173	2151	2133	2117	2104
		G'	76.2	82.5	88.5	94.0	99.1	103.9	108.4	112.7
	18"	S	1723	1679	1644	1615	1591	1570	1553	1537
		G'	71.2	76.6	81.5	86.0	90.1	94.0	97.5	100.8
	24"	S	1425	1379	1342	1312	1286	1265	1246	1230
		G'	67.3	71.9	76.1	79.8	83.2	86.3	89.1	91.7
36"	S	1113	1065	1027	995	969	946	927	911	
	G'	61.6	65.1	68.1	70.8	73.1	75.2	77.1	78.8	
18/18 0.0474"/ 0.0474"	12"	S	2599	2555	2520	2491	2466	2445	2427	2411
		G'	127.3	134.4	140.7	146.3	151.3	155.8	159.8	163.5
	18"	S	1975	1925	1884	1851	1823	1800	1780	1762
		G'	112.4	117.4	121.7	125.5	128.8	131.7	134.3	136.6
	24"	S	1633	1581	1539	1504	1475	1450	1429	1410
		G'	101.7	105.3	108.4	111.0	113.2	115.2	116.9	118.4
36"	S	1276	1221	1177	1141	1111	1085	1063	1044	
	G'	87.5	89.4	90.9	92.2	93.2	94.0	94.7	95.2	
18/16 0.0474"/ 0.0598"	12"	S	2894	2846	2806	2773	2746	2723	2703	2685
		G'	168.4	173.9	178.5	182.4	185.7	188.7	191.3	193.6
	18"	S	2199	2143	2098	2061	2031	2004	1982	1962
		G'	140.6	143.6	146.0	148.0	149.7	151.1	152.3	153.4
	24"	S	1819	1760	1713	1675	1642	1615	1591	1570
		G'	122.5	124.1	125.2	126.2	126.9	127.5	128.0	128.5
36"	S	1421	1360	1311	1270	1237	1208	1184	1162	
	G'	100.5	100.4	100.3	100.1	99.8	99.6	99.3	99.1	
16/18 0.0598"/ 0.0474"	12"	S	2894	2846	2806	2773	2746	2723	2703	2685
		G'	129.3	137.8	145.5	152.4	158.7	164.4	169.7	174.5
	18"	S	2199	2143	2098	2061	2031	2004	1982	1962
		G'	116.8	123.3	129.0	134.0	138.6	142.6	146.3	149.6
	24"	S	1819	1760	1713	1675	1642	1615	1591	1570
		G'	107.5	112.6	116.9	120.7	124.0	127.0	129.6	131.9
36"	S	1421	1360	1311	1270	1237	1208	1184	1162	
	G'	94.6	97.8	100.4	102.6	104.5	106.1	107.4	108.6	
16/16 0.0598"/ 0.0598"	12"	S	3179	3126	3082	3046	3016	2991	2969	2950
		G'	180.9	188.4	194.9	200.5	205.5	209.8	213.7	217.2
	18"	S	2415	2354	2305	2264	2230	2202	2177	2155
		G'	154.8	159.5	163.4	166.8	169.6	172.1	174.2	176.1
	24"	S	1998	1934	1882	1839	1804	1773	1747	1725
		G'	137.2	140.1	142.5	144.4	146.1	147.5	148.6	149.7
36"	S	1561	1493	1440	1395	1358	1327	1300	1277	
	G'	114.8	115.7	116.4	116.8	117.1	117.3	117.4	117.5	
16/14 0.0598"/ 0.0747"	12"	S	3508	3449	3401	3361	3328	3300	3275	3254
		G'	220.2	224.9	228.8	232.1	234.8	237.2	239.3	241.1
	18"	S	2665	2597	2543	2498	2461	2429	2402	2378
		G'	179.2	181.1	182.7	183.9	184.9	185.7	186.4	187.0
	24"	S	2204	2133	2076	2029	1990	1957	1928	1903
		G'	153.6	154.0	154.3	154.5	154.6	154.6	154.6	154.6
36"	S	1722	1648	1588	1539	1499	1464	1434	1408	
	G'	123.5	122.4	121.3	120.4	119.6	118.8	118.1	117.5	
14/16 0.0747"/ 0.0598"	12"	S	3508	3449	3401	3361	3328	3300	3275	3254
		G'	189.6	199.4	207.8	215.3	222.0	227.9	233.3	238.1
	18"	S	2665	2597	2543	2498	2461	2429	2402	2378
		G'	166.1	172.8	178.5	183.4	187.7	191.4	194.7	197.7
	24"	S	2204	2133	2076	2029	1990	1957	1928	1903
		G'	149.6	154.3	158.2	161.4	164.2	166.6	168.8	170.6
36"	S	1722	1648	1588	1539	1499	1464	1434	1408	
	G'	127.9	130.1	131.9	133.2	134.3	135.2	135.9	136.5	
14/14 0.0747"/ 0.0747"	12"	S	3821	3757	3705	3662	3625	3595	3568	3545
		G'	242.6	249.7	255.6	260.6	265.0	268.8	272.1	275.0
	18"	S	2903	2829	2770	2722	2681	2646	2616	2590
		G'	201.8	205.5	208.5	210.9	213.0	214.8	216.3	217.6
	24"	S	2401	2324	2262	2211	2168	2132	2100	2073
		G'	175.4	177.2	178.5	179.5	180.4	181.0	181.6	182.0
36"	S	1876	1795	1730	1677	1633	1595	1562	1534	
	G'	143.5	143.1	142.6	142.1	141.6	141.1	140.7	140.3	

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 26

Deep-Dek® 7.5 Cellular



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT						
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
18/20 0.0474" / 0.0358"	6"	S	839	803	774	750	730	713	699	686
		G'	73.4	79.3	84.8	89.8	94.5	98.8	102.9	106.7
	12"	S	594	557	527	503	483	465	450	438
		G'	63.3	67.3	70.9	74.1	77.0	79.6	82.0	84.2
	18"	S	511	474	444	419	399	381	366	353
		G'	56.8	59.7	62.2	64.4	66.3	68.0	69.5	70.8
	24"	S	469	432	402	377	357	339	324	311
		G'	52.3	54.5	56.2	57.7	59.0	60.1	61.1	61.9
18/18 0.0474" / 0.0474"	6"	S	1049	1008	975	948	925	906	889	875
		G'	118.8	125.0	130.3	135.1	139.3	143.1	146.5	149.6
	12"	S	728	685	651	623	599	580	563	548
		G'	91.6	94.4	96.8	98.8	100.6	102.1	103.4	104.5
	18"	S	618	575	541	512	489	469	451	437
		G'	77.0	78.3	79.4	80.2	80.9	81.4	81.9	82.3
	24"	S	563	520	485	457	433	413	396	381
		G'	67.9	68.4	68.7	68.9	69.0	69.0	69.1	69.1
18/16 0.0474" / 0.0598"	6"	S	1263	1218	1181	1151	1126	1105	1086	1071
		G'	152.2	156.6	160.3	163.4	166.1	168.4	170.5	172.3
	12"	S	862	814	776	745	718	696	677	661
		G'	106.6	107.6	108.4	109.0	109.5	109.9	110.3	110.6
	18"	S	724	676	637	606	579	557	537	521
		G'	85.4	85.2	84.9	84.7	84.4	84.2	83.9	83.7
	24"	S	655	606	567	536	509	486	467	450
		G'	73.2	72.3	71.5	70.8	70.2	69.6	69.1	68.7
16/18 0.0598" / 0.0474"	6"	S	1094	1048	1011	981	956	934	916	900
		G'	122.3	129.8	136.6	142.7	148.1	153.1	157.6	161.8
	12"	S	771	724	686	654	628	606	587	571
		G'	98.4	102.5	106.1	109.1	111.8	114.1	116.2	118.1
	18"	S	661	613	575	544	517	495	476	459
		G'	84.7	87.1	89.1	90.7	92.1	93.2	94.2	95.1
	24"	S	606	558	519	488	461	439	420	403
		G'	75.8	77.2	78.2	79.0	79.7	80.2	80.6	80.9
16/16 0.0598" / 0.0598"	6"	S	1307	1257	1217	1184	1156	1133	1113	1095
		G'	165.9	172.2	177.5	182.1	186.2	189.7	192.8	195.6
	12"	S	904	851	809	775	746	722	701	683
		G'	121.1	123.3	125.0	126.4	127.6	128.6	129.5	130.2
	18"	S	765	713	670	636	607	582	561	543
		G'	99.0	99.5	99.8	100.0	100.1	100.2	100.2	100.2
	24"	S	696	643	600	566	536	512	491	472
		G'	85.8	85.4	85.0	84.5	84.1	83.7	83.3	83.0
16/14 0.0598" / 0.0747"	6"	S	1560	1506	1461	1425	1395	1369	1347	1328
		G'	196.1	199.7	202.7	205.2	207.4	209.2	210.7	212.1
	12"	S	1061	1003	957	918	887	860	837	817
		G'	131.7	131.9	132.0	132.0	132.0	131.9	131.9	131.8
	18"	S	889	830	783	745	713	686	662	642
		G'	103.6	102.6	101.7	100.9	100.2	99.5	99.0	98.5
	24"	S	802	743	696	657	625	598	574	554
		G'	87.8	86.2	84.8	83.6	82.6	81.7	80.9	80.2
14/16 0.0747" / 0.0598"	6"	S	1358	1302	1258	1221	1191	1165	1142	1123
		G'	176.3	184.6	191.8	198.1	203.7	208.7	213.2	217.2
	12"	S	952	894	848	810	779	752	729	709
		G'	134.1	137.7	140.7	143.2	145.3	147.1	148.7	150.1
	18"	S	813	755	709	670	639	612	588	568
		G'	111.9	113.4	114.6	115.5	116.2	116.8	117.2	117.6
	24"	S	743	685	638	600	568	541	518	498
		G'	98.2	98.6	98.7	98.8	98.7	98.7	98.5	98.4
14/14 0.0747" / 0.0747"	6"	S	1610	1550	1501	1462	1429	1400	1376	1355
		G'	218.8	224.5	229.2	233.2	236.6	239.6	242.2	244.5
	12"	S	1107	1044	993	952	918	888	863	841
		G'	152.3	153.5	154.3	155.0	155.5	155.9	156.3	156.5
	18"	S	934	871	820	778	743	714	688	666
		G'	121.7	121.2	120.6	120.1	119.6	119.2	118.8	118.4
	24"	S	847	784	732	691	656	626	600	578
		G'	104.1	102.7	101.5	100.4	99.4	98.5	97.8	97.1

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
**Wind:**  $\phi = .70$  for LRFD and  $\Omega = 2.35$  for ASD for welds.  
**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

TABLE 27

Deep-Dek® 7.5 Cellular



Allowable Diaphragm Shear

GAGE		SIDE LAP SPACING	FACTOR	DECK SPAN - C to C SUPPORT						
				16' - 0"	18' - 0"	20' - 0"	22' - 0"	24' - 0"	26' - 0"	28' - 0"
18/20 0.0474" / 0.0358"	6"	S	849	812	782	757	737	720	705	692
		G'	73.5	79.4	84.8	89.9	94.6	98.9	103.0	106.8
	12"	S	599	562	531	506	486	468	453	440
		G'	63.5	67.5	71.1	74.3	77.2	79.8	82.2	84.4
	18"	S	515	477	447	422	401	383	368	355
		G'	57.1	60.0	62.4	64.6	66.5	68.2	69.7	71.1
	24"	S	473	435	405	380	359	341	326	313
		G'	52.6	54.8	56.5	58.1	59.3	60.4	61.4	62.2
18/18 0.0474" / 0.0474"	6"	S	1063	1020	986	958	935	915	898	883
		G'	119.0	125.2	130.5	135.3	139.5	143.3	146.7	149.8
	12"	S	734	691	656	627	603	583	566	551
		G'	92.0	94.8	97.2	99.2	100.9	102.4	103.7	104.8
	18"	S	623	580	544	516	492	471	454	439
		G'	77.5	78.8	79.8	80.7	81.3	81.9	82.3	82.7
	24"	S	568	524	489	460	436	415	398	383
		G'	68.4	68.9	69.2	69.4	69.5	69.5	69.5	69.5
18/16 0.0474" / 0.0598"	6"	S	1282	1235	1197	1166	1140	1118	1099	1082
		G'	152.6	157.0	160.6	163.7	166.4	168.7	170.8	172.6
	12"	S	870	821	782	750	723	701	681	665
		G'	107.2	108.2	108.9	109.5	110.0	110.4	110.7	110.9
	18"	S	730	681	642	610	583	560	540	523
		G'	86.1	85.8	85.5	85.2	84.9	84.7	84.4	84.2
	24"	S	660	611	571	539	512	489	470	453
		G'	73.9	73.0	72.2	71.4	70.8	70.2	69.7	69.2
16/18 0.0598" / 0.0474"	6"	S	1107	1060	1022	991	965	943	924	907
		G'	122.4	130.0	136.8	142.8	148.3	153.3	157.8	161.9
	12"	S	778	729	691	659	632	610	591	574
		G'	98.7	102.9	106.4	109.5	112.1	114.5	116.5	118.4
	18"	S	666	618	579	547	520	498	479	462
		G'	85.2	87.6	89.5	91.1	92.5	93.7	94.6	95.5
	24"	S	611	562	523	491	464	442	422	406
		G'	76.4	77.7	78.8	79.6	80.2	80.7	81.1	81.4
16/16 0.0598" / 0.0598"	6"	S	1326	1274	1232	1198	1169	1145	1124	1106
		G'	166.2	172.5	177.8	182.4	186.4	190.0	193.1	195.9
	12"	S	912	858	816	781	751	727	705	687
		G'	121.7	123.8	125.5	126.9	128.1	129.1	129.9	130.6
	18"	S	772	718	675	640	610	586	564	546
		G'	99.7	100.2	100.4	100.6	100.7	100.7	100.7	100.7
	24"	S	701	648	605	569	540	515	493	475
		G'	86.6	86.2	85.7	85.2	84.8	84.3	83.9	83.5
16/14 0.0598" / 0.0747"	6"	S	1585	1528	1482	1444	1412	1386	1363	1343
		G'	196.6	200.2	203.2	205.7	207.8	209.6	211.1	212.5
	12"	S	1071	1012	964	925	893	866	842	822
		G'	132.5	132.6	132.6	132.6	132.6	132.5	132.4	132.3
	18"	S	896	837	789	750	717	690	666	645
		G'	104.5	103.4	102.4	101.6	100.8	100.1	99.5	99.0
	24"	S	809	749	701	662	629	601	578	557
		G'	88.7	87.1	85.6	84.4	83.3	82.3	81.5	80.8
14/16 0.0747" / 0.0598"	6"	S	1375	1318	1272	1234	1203	1176	1153	1133
		G'	176.6	184.9	192.1	198.4	204.0	209.0	213.4	217.4
	12"	S	960	901	854	816	784	756	733	713
		G'	134.6	138.2	141.2	143.7	145.8	147.6	149.2	150.6
	18"	S	820	761	713	675	642	615	592	571
		G'	112.6	114.1	115.3	116.1	116.8	117.4	117.8	118.2
	24"	S	749	690	643	604	572	544	521	500
		G'	99.1	99.4	99.5	99.5	99.5	99.3	99.2	99.0
14/14 0.0747" / 0.0747"	6"	S	1633	1571	1520	1479	1445	1416	1391	1369
		G'	219.3	225.0	229.7	233.7	237.1	240.0	242.6	244.9
	12"	S	1117	1053	1001	959	924	894	868	846
		G'	153.1	154.2	155.0	155.7	156.1	156.5	156.8	157.1
	18"	S	942	877	826	783	748	718	692	670
		G'	122.7	122.1	121.5	120.9	120.4	119.9	119.4	119.0
	24"	S	854	789	738	695	660	629	604	581
		G'	105.2	103.7	102.4	101.3	100.2	99.3	98.5	97.8

NOTES: Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, DDM03  
 S values have been divided by a Safety Factor of 3 to obtain (ASD) Diaphragm Shear values for seismic loading (worst case).  
 The following Safety Factors shown are from Table D5 of 2004 Supplement AISI Specifications.  
**Seismic:**  $\phi = .55$  for LRFD and  $\Omega = 3.00$  for ASD for welds.  
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**Other:**  $\phi = .60$  for LRFD and  $\Omega = 2.65$  for ASD for welds.  
 Calculations are based on a "SINGLE SPAN CONDITION". For "Other Span Conditions" contact the Metal Dek Group for additional information.  
 $F_y = 40$  ksi and  $F_u = 55$  ksi  
 \* Indicates Shear Buckling controls. A Safety Factor of 2.00 was used as referenced in SDI DDM03.

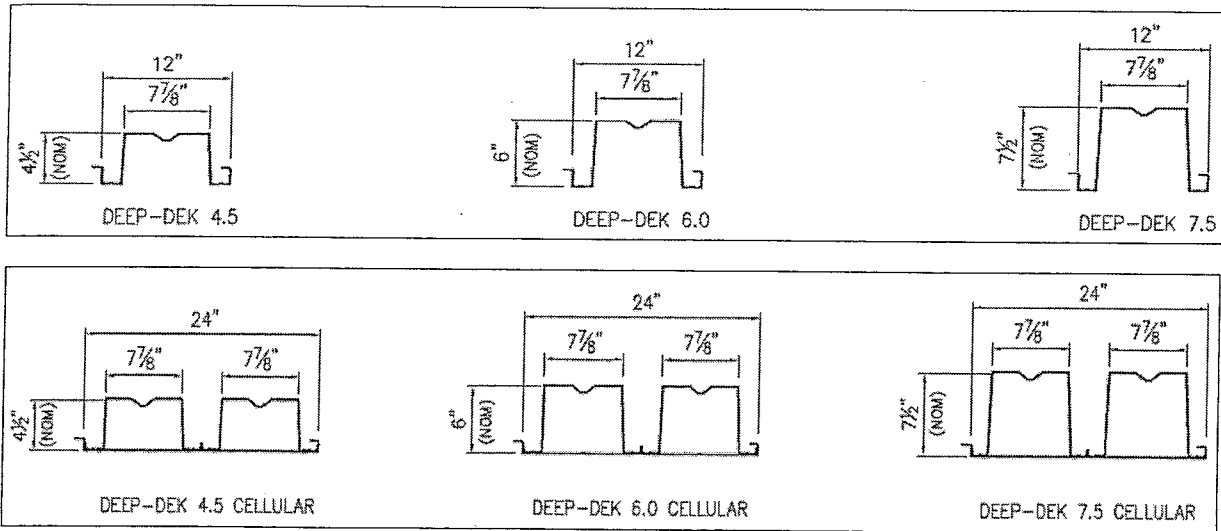


FIGURE 1 - STEEL DECK PANEL PROFILES

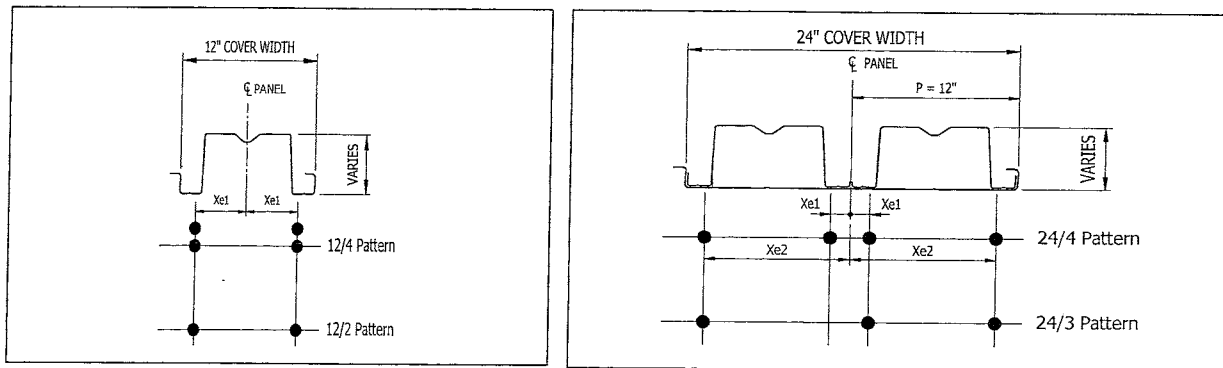


FIGURE 2 - STEEL DECK PANEL ATTACHMENT PATTERNS AT SUPPORT