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# ICC-ES Evaluation Report

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**ESR-2635**

Reissued 01/2018
This report is subject to renewal 01/2020.

**DIVISION: 05 00 00—METALS**
**SECTION: 05 31 00—STEEL DECKING**

**REPORT HOLDER:**

## NEW MILLENNIUM BUILDING SYSTEMS, LLC

**7575 WEST JEFFERSON BOULEVARD**
**FORT WAYNE, INDIANA 46804**

**EVALUATION SUBJECT:**

## NEW MILLENNIUM COMPOSITE DECK PANELS:
## VERSA-DEK® COMPOSITE 3.5 LS DECK PANELS, AND
## VERSA-DEK® COMPOSITE 3.5 LS ACOUSTICAL DECK PANELS

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*Reissued January 2018*

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**DIVISION: 05 00 00—METALS**
**Section: 05 31 00—Steel Decking**

**REPORT HOLDER:**

**NEW MILLENNIUM BUILDING SYSTEMS, LLC**
**7575 WEST JEFFERSON BOULEVARD**
**FORT WAYNE, INDIANA 46804**
**(260) 969-3500**
**www.newmill.com**

**EVALUATION SUBJECT:**

**NEW MILLENNIUM COMPOSITE DECK PANELS: VERSA-DEK® COMPOSITE 3.5 LS DECK PANELS, AND VERSA-DEK® COMPOSITE 3.5 LS ACOUSTICAL DECK PANELS**

## 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

2012, 2009, and 2006 *International Building Code®* (IBC)

**Property evaluated:**

Structural

## 2.0 USES

The New Millennium Versa-Dek Composite 3.5 LS and Versa-Dek Composite 3.5 LS Acoustical deck panels are used in conjunction with a concrete topping to support the code-required loads, and as components of horizontal diaphragms.

## 3.0 DESCRIPTION

### 3.1 Versa-Dek Composite 3.5 LS (VDC35LS) and Versa-Dek Composite 3.5 LS Acoustical (VDC35LSA) Panels:

The deck panels with dimensions and profiles as shown in Figure 1 are cold-formed from No. 16 gage [0.0598 inch (1.52 mm)] to No. 20 gage [0.0358 inch (0.909 mm)] steel sheets complying with either of the following:

- ASTM A653 SS Grade 40 steel with a minimum G40 galvanization. An optional prime paint is available for the bottom surface which is applied over the galvanization.
- ASTM A1008-13 SS Grade 40 steel with a mill finished (bare steel) top surface and primed painted bottom surface. Optional coatings are available for the top surface.

The VDC35LSA deck panel is identical to the VDC35LS except that the bottom flanges of the acoustical panel are perforated as shown in Figure 2 and the assembly includes factory-installed acoustical insulation and a nonstructural No. 20 gage [0.0358 inch (0.909 mm)] cap to protect the acoustical insulation during concrete placement.

### 3.2 Support Connections:

**3.2.1 Arc Spot (Puddle) Welds:** Arc spot (puddle) welds must have a minimum effective fusion area to supporting members of at least $^1/_2$ inch (13 mm) in diameter. Arc spot welds must be made using E60 or E70 filler metal and must comply with AWS D1.3.

**3.2.2 Hilti X-ENP-19-L15 Powder-Driven Fastener**: The fastener must be as recognized in ESR-2197 and ESR-2776.

**3.2.3 Hilti X-HSN 24 Powder-Driven Fastener:** The fastener must be as recognized in ESR-2197 and ESR-2776.

### 3.3 Seam (Sidelap) Connections:

**3.3.1 #10 Screws:** Screws must be self-drilling or self-piercing tapping screws complying with ASTM C1513-13. The screws must be long enough to penetrate through the connected steel panels with a minimum of three threads protruding past the back side of the connected deck panels.

**3.3.2 #12 Screws:** Screws must be self-drilling or self-piercing tapping screws complying with ASTM C1513-13. The screws must be long enough to penetrate through the connected steel panels with a minimum of three threads protruding past the back side of the connected deck panels.

**3.3.3 Hilti S-SLC01 M HWH and Hilti S-SLC02 M HWH Sidelap Connectors:** The screws must be as recognized in ESR-2776. The screws must be long enough to penetrate through the connected steel panels with a minimum of three threads protruding past the back side of the connected panels.

### 3.4 Concrete Fill Requirements For Composite Deck Panels:

The deck panels described in Section 3.1 are designed to act compositely with normal weight or structural lightweight concrete fill incorporating rock or expanded shale aggregates, having a minimum 28-day compressive strength of 3,000 psi (20.6 MPa). Normal-weight structural concrete [w = 145 ± pcf (2323 kg/m$^3$)] must be coarse aggregate conforming to ASTM C33; structural sand-

lightweight concrete fill [w = 110 ± pcf (1762 kg/m$^3$)] must be light coarse aggregate conforming to ASTM C330. The concrete must extend a minimum of 2 inches (51 mm) above the top surface of the steel deck panel, and must be reinforced with minimum 6 x 6 W1.4 x W1.4 steel welded-wire reinforcement complying with ASTM A185-06e1, placed at the approximate center of the concrete fill. If fill in excess of $3^1/_4$ inches (82 mm) is used, the concrete must be reinforced in each direction with steel of a cross-sectional area (in square inches per linear foot) equal to 0.01 times the depth of fill over the top of the deck panel.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Tabulated Design Values:

**4.1.1 Section Properties:** Deck panel section properties are provided in Table 1.

**4.1.2 Support Reactions:** Before concrete fill is applied, support reactions must not exceed the allowable reactions based on web crippling of the bare deck panels provided in Table 2.

**4.1.3 Superimposed Loads:** Maximum superimposed loads are provided in Tables 10 through 13 which are based on simple span concrete design along with deck panels installed with 1, 2, or 3 equal spans. However, deck panels may be installed with 3 or more equal spans.

**4.1.4 Unshored Spans:** Unshored deck panel spans are provided in Tables 10 through 13 which are based on the following:

- The dead load of the deck and the dead load of the concrete.
- A deck load deflection less than $^1/_{180}$ of the span length or $^3/_4$ inch (19.1 mm), whichever is smaller.
- A construction uniform live load of 20 psf (960 Pa) or a concentrated live load of 150 pounds (670 N), whichever produced the greatest effect.

**4.1.5 Diaphragm Design: 4.1.5.1 Shear and Shear Stiffness:** Allowable diaphragm shear and shear stiffness (G') values for concrete filled deck panels are provided in Tables 4 through 9. The Flexibility Factor (F) is equal to 1000/G', where G' is in kips/inch and F is in micro-inches/lb.

**4.1.5.1 Flexibility Limitations:** Diaphragm span/depth limitations based on diaphragm flexibility must comply with Table 3.

**4.1.5.2 Deflections:** Diaphragm deflection ($\Delta$) must be calculated using the equation noted in Table 3.

### 4.2 Installation:

**4.2.1 General:** The deck panels must be installed in accordance with this report and also with New Millennium's and Hilti's recommended guidelines and installation instructions. If there is a conflict between New Millennium's and Hilti's recommended installation instructions and this report, this report governs.

**4.2.2 Concrete Fill Requirements:** Deck panels must be installed with the galvanized or bare steel deck panel face in contact with the concrete and the galvanized or prime painted deck panel surface on the underside. Deck panels must be clean and free of foreign materials prior to placement of concrete.

## 5.0 CONDITIONS OF USE

The Versa-Dek® Composite 3.5 LS and Versa-Dek® Composite 3.5 LS Acoustical deck panels described in this report comply with, or are suitable alternatives to what is specified in, those codes listed 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 New Millennium'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** The design base-metal thicknesses for all steel deck panels are indicated in Table 1. The thickness delivered to the jobsite must be at least 95 percent of the thickness noted in the tables.

**5.3** The minimum loads of IBC Section 1607 must be considered by the design professional based on the specific occupancy or use, as applicable.

**5.4** Concrete-filled sections must not be used to support loads that are predominantly vibratory, such as those for operation of heavy machinery, reciprocating motors and moving loads.

**5.5** Special inspections must be provided in accordance with Chapter 17 of the IBC.

**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.

## 6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Steel Deck Roof and Floor Systems (AC43), dated April 2010 (editorially revised September 2013).

## 7.0 IDENTIFICATION

Each bundle of the New Millenium Versa-Dek Composite 3.5 LS and/or Versa-Dek® Composite 3.5 LS Acoustical composite steel deck panels described in this report is identified by labeling bearing the manufacture's name (New Millennium Building Systems, LLC); the deck panel profile name; the design thickness; the minimum specified yield strength; the cover width of the panel; the manufacturing location ( MD—Memphis, Tennessee or PD—Phoenix, Arizona); and the evaluation report number (ESR-2635).

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For **SI** dimensions: 1 inch = 25.4 mm; 1 plf = 14.6 N/m; 1 inch$^2$ = 645.16 mm$^2$; 1 inch$^3$ = 16.4 × 10$^4$ mm$^3$; 1 inch$^4$ = 41.6 × 10$^4$ mm$^4$; 1 psf = 4.88 kg/m$^2$; 1 pcf = 16.018 kg/m$^3$; 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[1, 2, 3]

| DECK PANEL | GAGE | DESIGN THICKNESS (inches) | FULL MOMENT OF INERTIA (in$^4$ / ft. width) | EFFECTIVE MOMENT OF INERTIA (in$^4$ / ft. width) | | EFFECTIVE SECTION MODULUS (in$^3$ / ft. width) | |
|---|---|---|---|---|---|---|---|
| | | t | $I_x$ | Normal, $I_{on}$ | Inverted, $I_{oi}$ | Normal, $S_{en}$ | Inverted, $S_{ei}$ |
| VersaDek® Composite 3.5 LS | 20 | 0.0358 | 2.042 | 1.917 | 1.766 | 0.775 | 0.910 |
| | 18 | 0.0474 | 2.697 | 2.648 | 2.475 | 1.113 | 1.226 |
| | 16 | 0.0598 | 3.395 | 3.394 | 3.262 | 1.504 | 1.573 |
| VersaDek® Composite 3.5 LS Acoustical | 20 | 0.0358 | 1.877 | 1.766 | 1.742 | 0.754 | 0.909 |
| | 18 | 0.0474 | 2.480 | 2.436 | 2.418 | 1.084 | 1.224 |
| | 16 | 0.0598 | 3.123 | 3.122 | 3.123 | 1.466 | 1.564 |

Notes:

[1]Effective properties are based on yield strength (Fy) of 40 ksi.
[2]The design thickness is the uncoated base-metal thickness of the deck panel.
[3]The full moment of inertia is also referred to as the gross moment of inertia.

### TABLE 2—ALLOWABLE CONCENTRATED LOADS AND REACTIONS BASED ON WEB CRIPPLING (ASD)[1]

| DECK PANEL | GAGE | BASE METAL THICKNESS, t (in) | ALLOWABLE LOAD (plf) REACTION LOCATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BEARING LENGTH (in) | | | | | | | | | |
| | | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | | | Interior | End | Interior | End | Interior | End | Interior | End | Interior | End |
| VersaDek® Composite 3.5 LS & VersaDek® Composite 3.5 LS Acoustical | 20 | 0.0358 | — | 681 | — | 781 | 1437 | 865 | 1546 | 939 | 1645 | 1006 |
| | 18 | 0.0474 | — | 1151 | — | 1311 | 2390 | 1446 | 2561 | 1565 | 2717 | 1672 |
| | 16 | 0.0598 | — | 1771 | — | 2007 | 3638 | 2205 | 3888 | 2380 | 4114 | 2538 |

[1]Tabulated values are based on a yield stress of 40 ksi and one-flange loading with fasteners at supports.

**TABLE 3—DIAPHRAGM FLEXIBILITY LIMITATIONS TABLE[1,2,3,4]**

| *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 1/2:1 |
| 70-150 | 200 | 2:1 or as required for deflection | 3:1 | Not used | 2:1 |
| 10-70 | 400 | 2 1/2:1 or as required for deflection | 4:1 | As required for deflection | 2 1/2:1 |
| 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 1/2:1 |

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

[1]Diaphragms must be investigated regarding their flexibility and recommended span-depth limitations.
[2]Diaphragms supporting masonry or concrete walls must have their deflections limited to the following amount:

$$\Delta_{wall} = \frac{H^2 f'_c}{0.01Et}$$

where:

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

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

where:

- $\Delta_f$ = 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:

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

where:

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

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

**TABLE 4**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**LIGHTWEIGHT CONCRETE (110 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: 1/2" Effective Weld Diameter** | **ATTACHMENT PATTERN: 24/3** | **S = Allowable Diaphragm Shear (lbf/ft.)**

**SIDELAP CONNECTION: S/L Screws #10** | **SIDELAP SPACING: ≤ 36" o.c.** | **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS (in.) | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 1084 | 1065 | 1049 | 1036 | 1025 | 1015 | 1006 | 999 | 992 | 986 | 980 | 976 | 971 | 967 | 963 |
| | | G' | 1960 | 1958 | 1957 | 1955 | 1954 | 1953 | 1952 | 1951 | 1950 | 1950 | 1949 | 1948 | 1948 | 1947 | 1947 |
| | 2.25" | S | 1184 | 1165 | 1149 | 1136 | 1125 | 1115 | 1106 | 1098 | 1092 | 1086 | 1080 | 1075 | 1071 | 1067 | 1063 |
| | | G' | 2198 | 2196 | 2194 | 2193 | 2192 | 2191 | 2190 | 2189 | 2188 | 2187 | 2187 | 2186 | 2186 | 2185 | 2185 |
| | 2.5" | S | 1283 | 1265 | 1249 | 1236 | 1224 | 1214 | 1206 | 1198 | 1191 | 1185 | 1180 | 1175 | 1170 | 1166 | 1163 |
| | | G' | 2435 | 2434 | 2432 | 2431 | 2429 | 2428 | 2427 | 2426 | 2426 | 2425 | 2424 | 2424 | 2423 | 2423 | 2422 |
| | 2.75" | S | 1383 | 1364 | 1349 | 1335 | 1324 | 1314 | 1305 | 1298 | 1291 | 1285 | 1280 | 1275 | 1270 | 1266 | 1262 |
| | | G' | 2673 | 2671 | 2670 | 2668 | 2667 | 2666 | 2665 | 2664 | 2663 | 2663 | 2662 | 2661 | 2661 | 2660 | 2660 |
| | 3" | S | 1483 | 1464 | 1448 | 1435 | 1424 | 1414 | 1405 | 1398 | 1391 | 1385 | 1379 | 1374 | 1370 | 1366 | 1362 |
| | | G' | 2911 | 2909 | 2907 | 2906 | 2905 | 2904 | 2903 | 2902 | 2901 | 2900 | 2900 | 2899 | 2899 | 2898 | 2898 |
| | 3.25" | S | 1582 | 1564 | 1548 | 1535 | 1523 | 1514 | 1505 | 1497 | 1491 | 1484 | 1479 | 1474 | 1470 | 1466 | 1462 |
| | | G' | 3149 | 3147 | 3145 | 3144 | 3142 | 3141 | 3140 | 3140 | 3139 | 3138 | 3137 | 3137 | 3136 | 3136 | 3135 |
| | 3.5" | S | 1682 | 1663 | 1648 | 1634 | 1623 | 1613 | 1605 | 1597 | 1590 | 1584 | 1579 | 1574 | 1569 | 1565 | 1561 |
| | | G' | 3386 | 3384 | 3383 | 3381 | 3380 | 3379 | 3378 | 3377 | 3376 | 3376 | 3375 | 3375 | 3374 | 3373 | 3373 |
| | 3.75" | S | 1782 | 1763 | 1747 | 1734 | 1723 | 1713 | 1704 | 1697 | 1690 | 1684 | 1678 | 1674 | 1669 | 1665 | 1661 |
| | | G' | 3624 | 3622 | 3620 | 3619 | 3618 | 3617 | 3616 | 3615 | 3614 | 3613 | 3613 | 3612 | 3612 | 3611 | 3611 |
| | 4" | S | 1882 | 1863 | 1847 | 1834 | 1822 | 1813 | 1804 | 1796 | 1790 | 1784 | 1778 | 1773 | 1769 | 1765 | 1761 |
| | | G' | 3862 | 3860 | 3858 | 3857 | 3855 | 3854 | 3853 | 3853 | 3852 | 3851 | 3850 | 3850 | 3849 | 3849 | 3848 |
| | 4.25" | S | 1981 | 1963 | 1947 | 1934 | 1922 | 1912 | 1904 | 1896 | 1889 | 1883 | 1878 | 1873 | 1868 | 1864 | 1861 |
| | | G' | 4099 | 4097 | 4096 | 4094 | 4093 | 4092 | 4091 | 4090 | 4089 | 4089 | 4088 | 4088 | 4087 | 4087 | 4086 |
| | 4.5" | S | 2081 | 2062 | 2047 | 2033 | 2022 | 2012 | 2003 | 1996 | 1989 | 1983 | 1978 | 1973 | 1968 | 1964 | 1960 |
| | | G' | 4337 | 4335 | 4333 | 4332 | 4331 | 4330 | 4329 | 4328 | 4327 | 4326 | 4326 | 4325 | 4325 | 4324 | 4324 |
| | 4.75" | S | 2181 | 2162 | 2146 | 2133 | 2122 | 2112 | 2103 | 2096 | 2089 | 2083 | 2077 | 2072 | 2068 | 2064 | 2060 |
| | | G' | 4575 | 4573 | 4571 | 4570 | 4568 | 4567 | 4566 | 4566 | 4565 | 4564 | 4563 | 4563 | 4562 | 4562 | 4561 |
| 18 0.0474" | 2" | S | 1173 | 1149 | 1128 | 1111 | 1096 | 1083 | 1072 | 1062 | 1053 | 1045 | 1038 | 1031 | 1026 | 1020 | 1015 |
| | | G' | 1972 | 1970 | 1968 | 1966 | 1964 | 1963 | 1962 | 1961 | 1960 | 1959 | 1958 | 1957 | 1957 | 1956 | 1956 |
| | 2.25" | S | 1273 | 1248 | 1228 | 1211 | 1196 | 1183 | 1171 | 1162 | 1153 | 1145 | 1138 | 1131 | 1125 | 1120 | 1115 |
| | | G' | 2210 | 2207 | 2205 | 2204 | 2202 | 2201 | 2199 | 2198 | 2197 | 2197 | 2196 | 2195 | 2194 | 2194 | 2193 |
| | 2.5" | S | 1373 | 1348 | 1328 | 1310 | 1295 | 1282 | 1271 | 1261 | 1252 | 1244 | 1237 | 1231 | 1225 | 1220 | 1215 |
| | | G' | 2447 | 2445 | 2443 | 2441 | 2440 | 2438 | 2437 | 2436 | 2435 | 2434 | 2433 | 2433 | 2432 | 2431 | 2431 |
| | 2.75" | S | 1472 | 1448 | 1427 | 1410 | 1395 | 1382 | 1371 | 1361 | 1352 | 1344 | 1337 | 1331 | 1325 | 1319 | 1314 |
| | | G' | 2685 | 2683 | 2681 | 2679 | 2677 | 2676 | 2675 | 2674 | 2673 | 2672 | 2671 | 2670 | 2670 | 2669 | 2669 |
| | 3" | S | 1572 | 1548 | 1527 | 1510 | 1495 | 1482 | 1471 | 1461 | 1452 | 1444 | 1437 | 1430 | 1424 | 1419 | 1414 |
| | | G' | 2923 | 2920 | 2918 | 2917 | 2915 | 2914 | 2913 | 2911 | 2910 | 2910 | 2909 | 2908 | 2907 | 2907 | 2906 |
| | 3.25" | S | 1672 | 1647 | 1627 | 1609 | 1595 | 1582 | 1570 | 1560 | 1552 | 1544 | 1536 | 1530 | 1524 | 1519 | 1514 |
| | | G' | 3160 | 3158 | 3156 | 3154 | 3153 | 3151 | 3150 | 3149 | 3148 | 3147 | 3147 | 3146 | 3145 | 3145 | 3144 |
| | 3.5" | S | 1772 | 1747 | 1726 | 1709 | 1694 | 1681 | 1670 | 1660 | 1651 | 1643 | 1636 | 1630 | 1624 | 1619 | 1614 |
| | | G' | 3398 | 3396 | 3394 | 3392 | 3390 | 3389 | 3388 | 3387 | 3386 | 3385 | 3384 | 3383 | 3383 | 3382 | 3382 |
| | 3.75" | S | 1871 | 1847 | 1826 | 1809 | 1794 | 1781 | 1770 | 1760 | 1751 | 1743 | 1736 | 1729 | 1724 | 1718 | 1713 |
| | | G' | 3636 | 3633 | 3631 | 3630 | 3628 | 3627 | 3626 | 3624 | 3624 | 3623 | 3622 | 3621 | 3620 | 3620 | 3619 |
| | 4" | S | 1971 | 1946 | 1926 | 1909 | 1894 | 1881 | 1869 | 1860 | 1851 | 1843 | 1836 | 1829 | 1823 | 1818 | 1813 |
| | | G' | 3873 | 3871 | 3869 | 3867 | 3866 | 3864 | 3863 | 3862 | 3861 | 3860 | 3860 | 3859 | 3858 | 3858 | 3857 |
| | 4.25" | S | 2071 | 2046 | 2026 | 2008 | 1993 | 1980 | 1969 | 1959 | 1950 | 1942 | 1935 | 1929 | 1923 | 1918 | 1913 |
| | | G' | 4111 | 4109 | 4107 | 4105 | 4103 | 4102 | 4101 | 4100 | 4099 | 4098 | 4097 | 4097 | 4096 | 4095 | 4095 |
| | 4.5" | S | 2170 | 2146 | 2125 | 2108 | 2093 | 2080 | 2069 | 2059 | 2050 | 2042 | 2035 | 2029 | 2023 | 2017 | 2012 |
| | | G' | 4349 | 4346 | 4344 | 4343 | 4341 | 4340 | 4339 | 4338 | 4337 | 4336 | 4335 | 4334 | 4334 | 4333 | 4332 |
| | 4.75" | S | 2270 | 2246 | 2225 | 2208 | 2193 | 2180 | 2169 | 2159 | 2150 | 2142 | 2135 | 2128 | 2122 | 2117 | 2112 |
| | | G' | 4586 | 4584 | 4582 | 4580 | 4579 | 4577 | 4576 | 4575 | 4574 | 4573 | 4573 | 4572 | 4571 | 4571 | 4570 |
| 16 0.0598" | 2" | S | 1267 | 1236 | 1211 | 1189 | 1171 | 1155 | 1141 | 1128 | 1117 | 1107 | 1098 | 1090 | 1083 | 1076 | 1070 |
| | | G' | 1983 | 1980 | 1978 | 1976 | 1974 | 1973 | 1971 | 1970 | 1969 | 1968 | 1967 | 1966 | 1965 | 1964 | 1964 |
| | 2.25" | S | 1367 | 1336 | 1311 | 1289 | 1270 | 1254 | 1240 | 1228 | 1217 | 1207 | 1198 | 1190 | 1183 | 1176 | 1170 |
| | | G' | 2221 | 2218 | 2216 | 2214 | 2212 | 2210 | 2209 | 2208 | 2206 | 2205 | 2204 | 2204 | 2203 | 2202 | 2201 |
| | 2.5" | S | 1467 | 1436 | 1410 | 1389 | 1370 | 1354 | 1340 | 1328 | 1317 | 1307 | 1298 | 1290 | 1283 | 1276 | 1270 |
| | | G' | 2459 | 2456 | 2453 | 2451 | 2450 | 2448 | 2446 | 2445 | 2444 | 2443 | 2442 | 2441 | 2441 | 2440 | 2439 |
| | 2.75" | S | 1566 | 1536 | 1510 | 1488 | 1470 | 1454 | 1440 | 1427 | 1416 | 1406 | 1398 | 1390 | 1382 | 1376 | 1370 |
| | | G' | 2696 | 2694 | 2691 | 2689 | 2687 | 2686 | 2684 | 2683 | 2682 | 2681 | 2680 | 2679 | 2678 | 2677 | 2677 |
| | 3" | S | 1666 | 1635 | 1610 | 1588 | 1570 | 1554 | 1539 | 1527 | 1516 | 1506 | 1497 | 1489 | 1482 | 1475 | 1469 |
| | | G' | 2934 | 2931 | 2929 | 2927 | 2925 | 2923 | 2922 | 2921 | 2919 | 2918 | 2917 | 2917 | 2916 | 2915 | 2915 |
| | 3.25" | S | 1766 | 1735 | 1709 | 1688 | 1669 | 1653 | 1639 | 1627 | 1616 | 1606 | 1597 | 1589 | 1582 | 1575 | 1569 |
| | | G' | 3172 | 3169 | 3166 | 3164 | 3163 | 3161 | 3160 | 3158 | 3157 | 3156 | 3155 | 3154 | 3154 | 3153 | 3152 |
| | 3.5" | S | 1865 | 1835 | 1809 | 1788 | 1769 | 1753 | 1739 | 1727 | 1715 | 1706 | 1697 | 1689 | 1681 | 1675 | 1669 |
| | | G' | 3409 | 3407 | 3404 | 3402 | 3400 | 3399 | 3397 | 3396 | 3395 | 3394 | 3393 | 3392 | 3391 | 3391 | 3390 |
| | 3.75" | S | 1965 | 1934 | 1909 | 1887 | 1869 | 1853 | 1839 | 1826 | 1815 | 1805 | 1796 | 1788 | 1781 | 1774 | 1768 |
| | | G' | 3647 | 3644 | 3642 | 3640 | 3638 | 3636 | 3635 | 3634 | 3632 | 3631 | 3631 | 3630 | 3629 | 3628 | 3628 |
| | 4" | S | 2065 | 2034 | 2009 | 1987 | 1968 | 1952 | 1938 | 1926 | 1915 | 1905 | 1896 | 1888 | 1881 | 1874 | 1868 |
| | | G' | 3885 | 3882 | 3879 | 3877 | 3876 | 3874 | 3873 | 3871 | 3870 | 3869 | 3868 | 3867 | 3867 | 3866 | 3865 |
| | 4.25" | S | 2165 | 2134 | 2108 | 2087 | 2068 | 2052 | 2038 | 2026 | 2015 | 2005 | 1996 | 1988 | 1981 | 1974 | 1968 |
| | | G' | 4122 | 4120 | 4117 | 4115 | 4113 | 4112 | 4110 | 4109 | 4108 | 4107 | 4106 | 4105 | 4104 | 4104 | 4103 |
| | 4.5" | S | 2264 | 2234 | 2208 | 2186 | 2168 | 2152 | 2138 | 2125 | 2114 | 2104 | 2096 | 2088 | 2080 | 2074 | 2067 |
| | | G' | 4360 | 4357 | 4355 | 4353 | 4351 | 4349 | 4348 | 4347 | 4346 | 4345 | 4344 | 4343 | 4342 | 4341 | 4341 |
| | 4.75" | S | 2364 | 2333 | 2308 | 2286 | 2268 | 2251 | 2237 | 2225 | 2214 | 2204 | 2195 | 2187 | 2180 | 2173 | 2167 |
| | | G' | 4598 | 4595 | 4593 | 4590 | 4589 | 4587 | 4586 | 4584 | 4583 | 4582 | 4581 | 4580 | 4580 | 4579 | 4578 |

Notes:

1. Tabulated *S* values include an ASD safety factor (Ω) of 3.25 for earthquake, wind, and other load combinations. For LRFD values, multiply the *S* values in the table by 1.75 (3.25 x 0.5).

2. Tabulated values based on a steel deck yield stress of 40 ksi and a minimum concrete compressive strength (f'c) of 3000 psi.

3. Concrete cover thickness is defined as the thickness above the top flange of deck panel.

4. For 20 and 18 gage decks, use S-SLC 01 M HWH, S-SLC02 M HWH, #12 or #10 screws for sidelaps. For 16 gage decks, use S-SLC02 M HWH, #12 or #10 screws for sidelaps.

**TABLE 5**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**NORMAL WEIGHT CONCRETE (145 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: 1/2" Effective Weld Diameter** **ATTACHMENT PATTERN: 24/3** **S = Allowable Diaphragm Shear (lbf/ft.)**
**SIDELAP CONNECTION: S/L Screws #10** **SIDELAP SPACING: ≤ 36" o.c.** **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 1494 | 1475 | 1459 | 1446 | 1434 | 1425 | 1416 | 1408 | 1402 | 1395 | 1390 | 1385 | 1381 | 1377 | 1373 |
| | | G' | 1960 | 1958 | 1957 | 1955 | 1954 | 1953 | 1952 | 1951 | 1950 | 1950 | 1949 | 1948 | 1948 | 1947 | 1947 |
| | 2.25" | S | 1644 | 1626 | 1610 | 1597 | 1585 | 1575 | 1567 | 1559 | 1552 | 1546 | 1541 | 1536 | 1532 | 1527 | 1524 |
| | | G' | 2198 | 2196 | 2194 | 2193 | 2192 | 2191 | 2190 | 2189 | 2188 | 2187 | 2187 | 2186 | 2186 | 2185 | 2185 |
| | 2.5" | S | 1795 | 1776 | 1761 | 1748 | 1736 | 1726 | 1718 | 1710 | 1703 | 1697 | 1692 | 1687 | 1682 | 1678 | 1675 |
| | | G' | 2435 | 2434 | 2432 | 2431 | 2429 | 2428 | 2427 | 2426 | 2426 | 2425 | 2424 | 2424 | 2423 | 2423 | 2422 |
| | 2.75" | S | 1946 | 1927 | 1912 | 1898 | 1887 | 1877 | 1869 | 1861 | 1854 | 1848 | 1843 | 1838 | 1833 | 1829 | 1825 |
| | | G' | 2673 | 2671 | 2670 | 2668 | 2667 | 2666 | 2665 | 2664 | 2663 | 2663 | 2662 | 2661 | 2661 | 2660 | 2660 |
| | 3" | S | 2097 | 2078 | 2063 | 2049 | 2038 | 2028 | 2020 | 2012 | 2005 | 1999 | 1994 | 1989 | 1984 | 1980 | 1976 |
| | | G' | 2911 | 2909 | 2907 | 2906 | 2905 | 2904 | 2903 | 2902 | 2901 | 2900 | 2900 | 2899 | 2899 | 2898 | 2898 |
| | 3.25" | S | 2248 | 2229 | 2214 | 2200 | 2189 | 2179 | 2170 | 2163 | 2156 | 2150 | 2145 | 2140 | 2135 | 2131 | 2127 |
| | | G' | 3149 | 3147 | 3145 | 3144 | 3142 | 3141 | 3140 | 3140 | 3139 | 3138 | 3137 | 3137 | 3136 | 3136 | 3135 |
| | 3.5" | S | 2399 | 2380 | 2364 | 2351 | 2340 | 2330 | 2321 | 2314 | 2307 | 2301 | 2295 | 2291 | 2286 | 2282 | 2278 |
| | | G' | 3386 | 3384 | 3383 | 3381 | 3380 | 3379 | 3378 | 3377 | 3376 | 3376 | 3375 | 3375 | 3374 | 3373 | 3373 |
| | 3.75" | S | 2550 | 2531 | 2515 | 2502 | 2491 | 2481 | 2472 | 2465 | 2458 | 2452 | 2446 | 2441 | 2437 | 2433 | 2429 |
| | | G' | 3624 | 3622 | 3620 | 3619 | 3618 | 3617 | 3616 | 3615 | 3614 | 3613 | 3613 | 3612 | 3612 | 3611 | 3611 |
| | 4" | S | 2701 | 2682 | 2666 | 2653 | 2642 | 2632 | 2623 | 2616 | 2609 | 2603 | 2597 | 2592 | 2588 | 2584 | 2580 |
| | | G' | 3862 | 3860 | 3858 | 3857 | 3855 | 3854 | 3853 | 3853 | 3852 | 3851 | 3850 | 3850 | 3849 | 3849 | 3848 |
| | 4.25" | S | 2852 | 2833 | 2817 | 2804 | 2792 | 2783 | 2774 | 2766 | 2760 | 2754 | 2748 | 2743 | 2739 | 2735 | 2731 |
| | | G' | 4099 | 4097 | 4096 | 4094 | 4093 | 4092 | 4091 | 4090 | 4089 | 4089 | 4088 | 4088 | 4087 | 4087 | 4086 |
| | 4.5" | S | 3003 | 2984 | 2968 | 2955 | 2943 | 2934 | 2925 | 2917 | 2911 | 2904 | 2899 | 2894 | 2890 | 2886 | 2882 |
| | | G' | 4337 | 4335 | 4333 | 4332 | 4331 | 4330 | 4329 | 4328 | 4327 | 4326 | 4326 | 4325 | 4325 | 4324 | 4324 |
| | 4.75" | S | 3153 | 3135 | 3119 | 3106 | 3094 | 3084 | 3076 | 3068 | 3061 | 3055 | 3050 | 3045 | 3041 | 3036 | 3033 |
| | | G' | 4575 | 4573 | 4571 | 4570 | 4568 | 4567 | 4566 | 4566 | 4565 | 4564 | 4563 | 4563 | 4562 | 4562 | 4561 |
| 18 0.0474" | 2" | S | 1583 | 1558 | 1538 | 1520 | 1506 | 1493 | 1481 | 1471 | 1463 | 1455 | 1447 | 1441 | 1435 | 1430 | 1425 |
| | | G' | 1972 | 1970 | 1968 | 1966 | 1964 | 1963 | 1962 | 1961 | 1960 | 1959 | 1958 | 1957 | 1957 | 1956 | 1956 |
| | 2.25" | S | 1734 | 1709 | 1689 | 1671 | 1656 | 1644 | 1632 | 1622 | 1613 | 1606 | 1598 | 1592 | 1586 | 1581 | 1576 |
| | | G' | 2210 | 2207 | 2205 | 2204 | 2202 | 2201 | 2199 | 2198 | 2197 | 2197 | 2196 | 2195 | 2194 | 2194 | 2193 |
| | 2.5" | S | 1885 | 1860 | 1840 | 1822 | 1807 | 1794 | 1783 | 1773 | 1764 | 1756 | 1749 | 1743 | 1737 | 1732 | 1727 |
| | | G' | 2447 | 2445 | 2443 | 2441 | 2440 | 2438 | 2437 | 2436 | 2435 | 2434 | 2433 | 2433 | 2432 | 2431 | 2431 |
| | 2.75" | S | 2036 | 2011 | 1990 | 1973 | 1958 | 1945 | 1934 | 1924 | 1915 | 1907 | 1900 | 1894 | 1888 | 1883 | 1878 |
| | | G' | 2685 | 2683 | 2681 | 2679 | 2677 | 2676 | 2675 | 2674 | 2673 | 2672 | 2671 | 2670 | 2670 | 2669 | 2669 |
| | 3" | S | 2186 | 2162 | 2141 | 2124 | 2109 | 2096 | 2085 | 2075 | 2066 | 2058 | 2051 | 2045 | 2039 | 2033 | 2029 |
| | | G' | 2923 | 2920 | 2918 | 2917 | 2915 | 2914 | 2913 | 2911 | 2910 | 2910 | 2909 | 2908 | 2907 | 2907 | 2906 |
| | 3.25" | S | 2337 | 2313 | 2292 | 2275 | 2260 | 2247 | 2236 | 2226 | 2217 | 2209 | 2202 | 2196 | 2190 | 2184 | 2179 |
| | | G' | 3160 | 3158 | 3156 | 3154 | 3153 | 3151 | 3150 | 3149 | 3148 | 3147 | 3147 | 3146 | 3145 | 3145 | 3144 |
| | 3.5" | S | 2488 | 2464 | 2443 | 2426 | 2411 | 2398 | 2387 | 2377 | 2368 | 2360 | 2353 | 2346 | 2341 | 2335 | 2330 |
| | | G' | 3398 | 3396 | 3394 | 3392 | 3390 | 3389 | 3388 | 3387 | 3386 | 3385 | 3384 | 3383 | 3383 | 3382 | 3382 |
| | 3.75" | S | 2639 | 2615 | 2594 | 2577 | 2562 | 2549 | 2538 | 2528 | 2519 | 2511 | 2504 | 2497 | 2491 | 2486 | 2481 |
| | | G' | 3636 | 3633 | 3631 | 3630 | 3628 | 3627 | 3626 | 3624 | 3624 | 3623 | 3622 | 3621 | 3620 | 3620 | 3619 |
| | 4" | S | 2790 | 2765 | 2745 | 2728 | 2713 | 2700 | 2689 | 2679 | 2670 | 2662 | 2655 | 2648 | 2642 | 2637 | 2632 |
| | | G' | 3873 | 3871 | 3869 | 3867 | 3866 | 3864 | 3863 | 3862 | 3861 | 3860 | 3860 | 3859 | 3858 | 3858 | 3857 |
| | 4.25" | S | 2941 | 2916 | 2896 | 2879 | 2864 | 2851 | 2839 | 2829 | 2821 | 2813 | 2806 | 2799 | 2793 | 2788 | 2783 |
| | | G' | 4111 | 4109 | 4107 | 4105 | 4103 | 4102 | 4101 | 4100 | 4099 | 4098 | 4097 | 4097 | 4096 | 4095 | 4095 |
| | 4.5" | S | 3092 | 3067 | 3047 | 3029 | 3015 | 3002 | 2990 | 2980 | 2972 | 2964 | 2957 | 2950 | 2944 | 2939 | 2934 |
| | | G' | 4349 | 4346 | 4344 | 4343 | 4341 | 4340 | 4339 | 4338 | 4337 | 4336 | 4335 | 4334 | 4334 | 4333 | 4332 |
| | 4.75" | S | 3243 | 3218 | 3198 | 3180 | 3165 | 3153 | 3141 | 3131 | 3122 | 3115 | 3107 | 3101 | 3095 | 3090 | 3085 |
| | | G' | 4586 | 4584 | 4582 | 4580 | 4579 | 4577 | 4576 | 4575 | 4574 | 4573 | 4573 | 4572 | 4571 | 4571 | 4570 |
| 16 0.0598" | 2" | S | 1677 | 1646 | 1620 | 1599 | 1580 | 1564 | 1550 | 1538 | 1527 | 1517 | 1508 | 1500 | 1493 | 1486 | 1480 |
| | | G' | 1983 | 1980 | 1978 | 1976 | 1974 | 1973 | 1971 | 1970 | 1969 | 1968 | 1967 | 1966 | 1965 | 1964 | 1964 |
| | 2.25" | S | 1828 | 1797 | 1771 | 1750 | 1731 | 1715 | 1701 | 1689 | 1678 | 1668 | 1659 | 1651 | 1644 | 1637 | 1631 |
| | | G' | 2221 | 2218 | 2216 | 2214 | 2212 | 2210 | 2209 | 2208 | 2206 | 2205 | 2204 | 2204 | 2203 | 2202 | 2201 |
| | 2.5" | S | 1978 | 1948 | 1922 | 1901 | 1882 | 1866 | 1852 | 1840 | 1829 | 1819 | 1810 | 1802 | 1795 | 1788 | 1782 |
| | | G' | 2459 | 2456 | 2453 | 2451 | 2450 | 2448 | 2446 | 2445 | 2444 | 2443 | 2442 | 2441 | 2441 | 2440 | 2439 |
| | 2.75" | S | 2129 | 2099 | 2073 | 2052 | 2033 | 2017 | 2003 | 1991 | 1979 | 1970 | 1961 | 1953 | 1945 | 1939 | 1933 |
| | | G' | 2696 | 2694 | 2691 | 2689 | 2687 | 2686 | 2684 | 2683 | 2682 | 2681 | 2680 | 2679 | 2678 | 2677 | 2677 |
| | 3" | S | 2280 | 2250 | 2224 | 2202 | 2184 | 2168 | 2154 | 2141 | 2130 | 2121 | 2112 | 2104 | 2096 | 2090 | 2084 |
| | | G' | 2934 | 2931 | 2929 | 2927 | 2925 | 2923 | 2922 | 2921 | 2919 | 2918 | 2917 | 2917 | 2916 | 2915 | 2915 |
| | 3.25" | S | 2431 | 2401 | 2375 | 2353 | 2335 | 2319 | 2305 | 2292 | 2281 | 2271 | 2263 | 2255 | 2247 | 2241 | 2234 |
| | | G' | 3172 | 3169 | 3166 | 3164 | 3163 | 3161 | 3160 | 3158 | 3157 | 3156 | 3155 | 3154 | 3154 | 3153 | 3152 |
| | 3.5" | S | 2582 | 2551 | 2526 | 2504 | 2486 | 2470 | 2456 | 2443 | 2432 | 2422 | 2413 | 2405 | 2398 | 2391 | 2385 |
| | | G' | 3409 | 3407 | 3404 | 3402 | 3400 | 3399 | 3397 | 3396 | 3395 | 3394 | 3393 | 3392 | 3391 | 3391 | 3390 |
| | 3.75" | S | 2733 | 2702 | 2677 | 2655 | 2637 | 2621 | 2607 | 2594 | 2583 | 2573 | 2564 | 2556 | 2549 | 2542 | 2536 |
| | | G' | 3647 | 3644 | 3642 | 3640 | 3638 | 3636 | 3635 | 3634 | 3632 | 3631 | 3631 | 3630 | 3629 | 3628 | 3628 |
| | 4" | S | 2884 | 2853 | 2828 | 2806 | 2788 | 2771 | 2757 | 2745 | 2734 | 2724 | 2715 | 2707 | 2700 | 2693 | 2687 |
| | | G' | 3885 | 3882 | 3879 | 3877 | 3876 | 3874 | 3873 | 3871 | 3870 | 3869 | 3868 | 3867 | 3867 | 3866 | 3865 |
| | 4.25" | S | 3035 | 3004 | 2979 | 2957 | 2938 | 2922 | 2908 | 2896 | 2885 | 2875 | 2866 | 2858 | 2851 | 2844 | 2838 |
| | | G' | 4122 | 4120 | 4117 | 4115 | 4113 | 4112 | 4110 | 4109 | 4108 | 4107 | 4106 | 4105 | 4104 | 4104 | 4103 |
| | 4.5" | S | 3186 | 3155 | 3129 | 3108 | 3089 | 3073 | 3059 | 3047 | 3036 | 3026 | 3017 | 3009 | 3002 | 2995 | 2989 |
| | | G' | 4360 | 4357 | 4355 | 4353 | 4351 | 4349 | 4348 | 4347 | 4346 | 4345 | 4344 | 4343 | 4342 | 4341 | 4341 |
| | 4.75" | S | 3337 | 3306 | 3280 | 3259 | 3240 | 3224 | 3210 | 3198 | 3187 | 3177 | 3168 | 3160 | 3153 | 3146 | 3140 |
| | | G' | 4598 | 4595 | 4593 | 4590 | 4589 | 4587 | 4586 | 4584 | 4583 | 4582 | 4581 | 4580 | 4580 | 4579 | 4578 |

See Table 4 notes.

**TABLE 6**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**LIGHTWEIGHT CONCRETE (110 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: Hilti X-ENP-19 L15** **ATTACHMENT PATTERN: 24/3** **S = Allowable Diaphragm Shear (lbf/ft.)**
**SIDELAP CONNECTION: Hilti S-SLC01 M HWH, S-SLC02 M HWH, #12 or #10 self-drilling screws** **SIDELAP SPACING: ≤ 36" o.c.** **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 966 | 958 | 951 | 945 | 941 | 936 | 933 | 929 | 926 | 924 | 922 | 919 | 917 | 916 | 914 |
| | | G' | 1963 | 1961 | 1959 | 1958 | 1956 | 1955 | 1954 | 1953 | 1952 | 1952 | 1951 | 1950 | 1950 | 1949 | 1949 |
| | 2.25" | S | 1066 | 1058 | 1051 | 1045 | 1040 | 1036 | 1032 | 1029 | 1026 | 1024 | 1021 | 1019 | 1017 | 1015 | 1014 |
| | | G' | 2201 | 2199 | 2197 | 2195 | 2194 | 2193 | 2192 | 2191 | 2190 | 2189 | 2189 | 2188 | 2187 | 2187 | 2186 |
| | 2.5" | S | 1165 | 1157 | 1151 | 1145 | 1140 | 1136 | 1132 | 1129 | 1126 | 1123 | 1121 | 1119 | 1117 | 1115 | 1114 |
| | | G' | 2439 | 2437 | 2435 | 2433 | 2432 | 2431 | 2430 | 2429 | 2428 | 2427 | 2426 | 2426 | 2425 | 2424 | 2424 |
| | 2.75" | S | 1265 | 1257 | 1250 | 1245 | 1240 | 1235 | 1232 | 1228 | 1226 | 1223 | 1221 | 1219 | 1217 | 1215 | 1213 |
| | | G' | 2676 | 2674 | 2672 | 2671 | 2669 | 2668 | 2667 | 2666 | 2665 | 2665 | 2664 | 2663 | 2663 | 2662 | 2662 |
| | 3" | S | 1365 | 1357 | 1350 | 1344 | 1339 | 1335 | 1331 | 1328 | 1325 | 1323 | 1320 | 1318 | 1316 | 1315 | 1313 |
| | | G' | 2914 | 2912 | 2910 | 2909 | 2907 | 2906 | 2905 | 2904 | 2903 | 2902 | 2902 | 2901 | 2900 | 2900 | 2899 |
| | 3.25" | S | 1465 | 1456 | 1450 | 1444 | 1439 | 1435 | 1431 | 1428 | 1425 | 1422 | 1420 | 1418 | 1416 | 1414 | 1413 |
| | | G' | 3152 | 3150 | 3148 | 3146 | 3145 | 3144 | 3143 | 3142 | 3141 | 3140 | 3139 | 3139 | 3138 | 3137 | 3137 |
| | 3.5" | S | 1564 | 1556 | 1549 | 1544 | 1539 | 1535 | 1531 | 1528 | 1525 | 1522 | 1520 | 1518 | 1516 | 1514 | 1512 |
| | | G' | 3389 | 3387 | 3385 | 3384 | 3383 | 3381 | 3380 | 3379 | 3378 | 3378 | 3377 | 3376 | 3376 | 3375 | 3375 |
| | 3.75" | S | 1664 | 1656 | 1649 | 1643 | 1639 | 1634 | 1631 | 1627 | 1624 | 1622 | 1619 | 1617 | 1615 | 1614 | 1612 |
| | | G' | 3627 | 3625 | 3623 | 3622 | 3620 | 3619 | 3618 | 3617 | 3616 | 3615 | 3615 | 3614 | 3613 | 3613 | 3612 |
| | 4" | S | 1764 | 1756 | 1749 | 1743 | 1738 | 1734 | 1730 | 1727 | 1724 | 1722 | 1719 | 1717 | 1715 | 1713 | 1712 |
| | | G' | 3865 | 3863 | 3861 | 3859 | 3858 | 3857 | 3856 | 3855 | 3854 | 3853 | 3852 | 3852 | 3851 | 3850 | 3850 |
| | 4.25" | S | 1863 | 1855 | 1849 | 1843 | 1838 | 1834 | 1830 | 1827 | 1824 | 1821 | 1819 | 1817 | 1815 | 1813 | 1811 |
| | | G' | 4102 | 4100 | 4098 | 4097 | 4096 | 4094 | 4093 | 4092 | 4091 | 4091 | 4090 | 4089 | 4089 | 4088 | 4088 |
| | 4.5" | S | 1963 | 1955 | 1948 | 1943 | 1938 | 1933 | 1930 | 1926 | 1924 | 1921 | 1919 | 1916 | 1915 | 1913 | 1911 |
| | | G' | 4340 | 4338 | 4336 | 4335 | 4333 | 4332 | 4331 | 4330 | 4329 | 4328 | 4328 | 4327 | 4326 | 4326 | 4325 |
| | 4.75" | S | 2063 | 2055 | 2048 | 2042 | 2037 | 2033 | 2029 | 2026 | 2023 | 2021 | 2018 | 2016 | 2014 | 2013 | 2011 |
| | | G' | 4578 | 4576 | 4574 | 4572 | 4571 | 4570 | 4569 | 4568 | 4567 | 4566 | 4565 | 4565 | 4564 | 4564 | 4563 |
| 18 0.0474" | 2" | S | 1019 | 1009 | 1000 | 992 | 986 | 980 | 976 | 971 | 967 | 964 | 961 | 958 | 956 | 953 | 951 |
| | | G' | 1976 | 1973 | 1971 | 1969 | 1967 | 1966 | 1965 | 1963 | 1962 | 1961 | 1960 | 1960 | 1959 | 1958 | 1958 |
| | 2.25" | S | 1119 | 1108 | 1100 | 1092 | 1086 | 1080 | 1075 | 1071 | 1067 | 1064 | 1061 | 1058 | 1055 | 1053 | 1051 |
| | | G' | 2214 | 2211 | 2209 | 2207 | 2205 | 2204 | 2202 | 2201 | 2200 | 2199 | 2198 | 2197 | 2197 | 2196 | 2195 |
| | 2.5" | S | 1219 | 1208 | 1199 | 1192 | 1185 | 1180 | 1175 | 1171 | 1167 | 1163 | 1160 | 1158 | 1155 | 1153 | 1151 |
| | | G' | 2451 | 2449 | 2446 | 2444 | 2443 | 2441 | 2440 | 2439 | 2438 | 2437 | 2436 | 2435 | 2434 | 2434 | 2433 |
| | 2.75" | S | 1319 | 1308 | 1299 | 1292 | 1285 | 1280 | 1275 | 1270 | 1267 | 1263 | 1260 | 1257 | 1255 | 1252 | 1250 |
| | | G' | 2689 | 2686 | 2684 | 2682 | 2680 | 2679 | 2678 | 2676 | 2675 | 2674 | 2673 | 2673 | 2672 | 2671 | 2671 |
| | 3" | S | 1418 | 1408 | 1399 | 1391 | 1385 | 1379 | 1374 | 1370 | 1366 | 1363 | 1360 | 1357 | 1354 | 1352 | 1350 |
| | | G' | 2927 | 2924 | 2922 | 2920 | 2918 | 2917 | 2915 | 2914 | 2913 | 2912 | 2911 | 2910 | 2910 | 2909 | 2908 |
| | 3.25" | S | 1518 | 1507 | 1498 | 1491 | 1485 | 1479 | 1474 | 1470 | 1466 | 1463 | 1460 | 1457 | 1454 | 1452 | 1450 |
| | | G' | 3164 | 3162 | 3159 | 3157 | 3156 | 3154 | 3153 | 3152 | 3151 | 3150 | 3149 | 3148 | 3147 | 3147 | 3146 |
| | 3.5" | S | 1618 | 1607 | 1598 | 1591 | 1584 | 1579 | 1574 | 1570 | 1566 | 1562 | 1559 | 1556 | 1554 | 1552 | 1549 |
| | | G' | 3402 | 3399 | 3397 | 3395 | 3393 | 3392 | 3391 | 3389 | 3388 | 3387 | 3386 | 3386 | 3385 | 3384 | 3384 |
| | 3.75" | S | 1717 | 1707 | 1698 | 1690 | 1684 | 1678 | 1674 | 1669 | 1665 | 1662 | 1659 | 1656 | 1654 | 1651 | 1649 |
| | | G' | 3640 | 3637 | 3635 | 3633 | 3631 | 3630 | 3628 | 3627 | 3626 | 3625 | 3624 | 3623 | 3623 | 3622 | 3621 |
| | 4" | S | 1817 | 1806 | 1798 | 1790 | 1784 | 1778 | 1773 | 1769 | 1765 | 1762 | 1759 | 1756 | 1753 | 1751 | 1749 |
| | | G' | 3877 | 3875 | 3872 | 3870 | 3869 | 3867 | 3866 | 3865 | 3864 | 3863 | 3862 | 3861 | 3860 | 3860 | 3859 |
| | 4.25" | S | 1917 | 1906 | 1897 | 1890 | 1883 | 1878 | 1873 | 1869 | 1865 | 1861 | 1858 | 1856 | 1853 | 1851 | 1849 |
| | | G' | 4115 | 4112 | 4110 | 4108 | 4106 | 4105 | 4104 | 4102 | 4101 | 4100 | 4100 | 4099 | 4098 | 4097 | 4097 |
| | 4.5" | S | 2016 | 2006 | 1997 | 1990 | 1983 | 1978 | 1973 | 1968 | 1965 | 1961 | 1958 | 1955 | 1953 | 1950 | 1948 |
| | | G' | 4353 | 4350 | 4348 | 4346 | 4344 | 4343 | 4341 | 4340 | 4339 | 4338 | 4337 | 4336 | 4336 | 4335 | 4334 |
| | 4.75" | S | 2116 | 2106 | 2097 | 2089 | 2083 | 2077 | 2072 | 2068 | 2064 | 2061 | 2058 | 2055 | 2052 | 2050 | 2048 |
| | | G' | 4590 | 4588 | 4585 | 4584 | 4582 | 4580 | 4579 | 4578 | 4577 | 4576 | 4575 | 4574 | 4573 | 4573 | 4572 |
| 16 0.0598" | 2" | S | 1076 | 1063 | 1052 | 1042 | 1034 | 1027 | 1021 | 1016 | 1011 | 1007 | 1003 | 999 | 996 | 993 | 991 |
| | | G' | 1988 | 1985 | 1982 | 1980 | 1978 | 1976 | 1974 | 1973 | 1972 | 1971 | 1969 | 1969 | 1968 | 1967 | 1966 |
| | 2.25" | S | 1176 | 1162 | 1151 | 1142 | 1134 | 1127 | 1121 | 1115 | 1111 | 1106 | 1103 | 1099 | 1096 | 1093 | 1090 |
| | | G' | 2226 | 2222 | 2220 | 2217 | 2215 | 2214 | 2212 | 2211 | 2209 | 2208 | 2207 | 2206 | 2205 | 2205 | 2204 |
| | 2.5" | S | 1275 | 1262 | 1251 | 1242 | 1234 | 1227 | 1221 | 1215 | 1210 | 1206 | 1202 | 1199 | 1196 | 1193 | 1190 |
| | | G' | 2463 | 2460 | 2457 | 2455 | 2453 | 2451 | 2450 | 2448 | 2447 | 2446 | 2445 | 2444 | 2443 | 2442 | 2441 |
| | 2.75" | S | 1375 | 1362 | 1351 | 1341 | 1333 | 1326 | 1320 | 1315 | 1310 | 1306 | 1302 | 1298 | 1295 | 1292 | 1290 |
| | | G' | 2701 | 2698 | 2695 | 2693 | 2691 | 2689 | 2687 | 2686 | 2685 | 2684 | 2683 | 2682 | 2681 | 2680 | 2679 |
| | 3" | S | 1475 | 1461 | 1450 | 1441 | 1433 | 1426 | 1420 | 1415 | 1410 | 1406 | 1402 | 1398 | 1395 | 1392 | 1390 |
| | | G' | 2939 | 2936 | 2933 | 2931 | 2928 | 2927 | 2925 | 2924 | 2922 | 2921 | 2920 | 2919 | 2918 | 2918 | 2917 |
| | 3.25" | S | 1574 | 1561 | 1550 | 1541 | 1533 | 1526 | 1520 | 1514 | 1510 | 1505 | 1501 | 1498 | 1495 | 1492 | 1489 |
| | | G' | 3176 | 3173 | 3171 | 3168 | 3166 | 3164 | 3163 | 3161 | 3160 | 3159 | 3158 | 3157 | 3156 | 3155 | 3155 |
| | 3.5" | S | 1674 | 1661 | 1650 | 1640 | 1632 | 1625 | 1619 | 1614 | 1609 | 1605 | 1601 | 1598 | 1594 | 1592 | 1589 |
| | | G' | 3414 | 3411 | 3408 | 3406 | 3404 | 3402 | 3400 | 3399 | 3398 | 3397 | 3396 | 3395 | 3394 | 3393 | 3392 |
| | 3.75" | S | 1774 | 1761 | 1749 | 1740 | 1732 | 1725 | 1719 | 1714 | 1709 | 1705 | 1701 | 1697 | 1694 | 1691 | 1689 |
| | | G' | 3652 | 3649 | 3646 | 3644 | 3642 | 3640 | 3638 | 3637 | 3635 | 3634 | 3633 | 3632 | 3631 | 3631 | 3630 |
| | 4" | S | 1874 | 1860 | 1849 | 1840 | 1832 | 1825 | 1819 | 1813 | 1809 | 1804 | 1801 | 1797 | 1794 | 1791 | 1788 |
| | | G' | 3889 | 3886 | 3884 | 3881 | 3879 | 3877 | 3876 | 3874 | 3873 | 3872 | 3871 | 3870 | 3869 | 3868 | 3868 |
| | 4.25" | S | 1973 | 1960 | 1949 | 1940 | 1932 | 1925 | 1918 | 1913 | 1908 | 1904 | 1900 | 1897 | 1894 | 1891 | 1888 |
| | | G' | 4127 | 4124 | 4121 | 4119 | 4117 | 4115 | 4114 | 4112 | 4111 | 4110 | 4109 | 4108 | 4107 | 4106 | 4105 |
| | 4.5" | S | 2073 | 2060 | 2049 | 2039 | 2031 | 2024 | 2018 | 2013 | 2008 | 2004 | 2000 | 1996 | 1993 | 1990 | 1988 |
| | | G' | 4365 | 4362 | 4359 | 4357 | 4355 | 4353 | 4351 | 4350 | 4349 | 4347 | 4346 | 4345 | 4344 | 4344 | 4343 |
| | 4.75" | S | 2173 | 2159 | 2148 | 2139 | 2131 | 2124 | 2118 | 2113 | 2108 | 2103 | 2100 | 2096 | 2093 | 2090 | 2087 |
| | | G' | 4602 | 4599 | 4597 | 4594 | 4592 | 4590 | 4589 | 4587 | 4586 | 4585 | 4584 | 4583 | 4582 | 4581 | 4581 |

See Table 4 notes.

**TABLE 7**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**NORMAL WEIGHT CONCRETE (145 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: Hilti X-ENP-19 L15** **ATTACHMENT PATTERN: 24/3** **S = Allowable Diaphragm Shear (lbf/ft.)**
**SIDELAP CONNECTION: Hilti S-SLC01 M HWH, S-SLC02 M HWH, #12 or #10 self-drilling screws** **SIDELAP SPACING: ≤ 36" o.c.** **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 1376 | 1367 | 1361 | 1355 | 1350 | 1346 | 1342 | 1339 | 1336 | 1333 | 1331 | 1329 | 1327 | 1325 | 1324 |
| | | G' | 1963 | 1961 | 1959 | 1958 | 1956 | 1955 | 1954 | 1953 | 1952 | 1952 | 1951 | 1950 | 1950 | 1949 | 1949 |
| | 2.25" | S | 1526 | 1518 | 1512 | 1506 | 1501 | 1497 | 1493 | 1490 | 1487 | 1484 | 1482 | 1480 | 1478 | 1476 | 1475 |
| | | G' | 2201 | 2199 | 2197 | 2195 | 2194 | 2193 | 2192 | 2191 | 2190 | 2189 | 2189 | 2188 | 2187 | 2187 | 2186 |
| | 2.5" | S | 1677 | 1669 | 1663 | 1657 | 1652 | 1648 | 1644 | 1641 | 1638 | 1635 | 1633 | 1631 | 1629 | 1627 | 1625 |
| | | G' | 2439 | 2437 | 2435 | 2433 | 2432 | 2431 | 2430 | 2429 | 2428 | 2427 | 2426 | 2426 | 2425 | 2424 | 2424 |
| | 2.75" | S | 1828 | 1820 | 1813 | 1808 | 1803 | 1799 | 1795 | 1792 | 1789 | 1786 | 1784 | 1782 | 1780 | 1778 | 1776 |
| | | G' | 2676 | 2674 | 2672 | 2671 | 2669 | 2668 | 2667 | 2666 | 2665 | 2665 | 2664 | 2663 | 2663 | 2662 | 2662 |
| | 3" | S | 1979 | 1971 | 1964 | 1959 | 1954 | 1950 | 1946 | 1943 | 1940 | 1937 | 1935 | 1933 | 1931 | 1929 | 1927 |
| | | G' | 2914 | 2912 | 2910 | 2909 | 2907 | 2906 | 2905 | 2904 | 2903 | 2902 | 2902 | 2901 | 2900 | 2900 | 2899 |
| | 3.25" | S | 2130 | 2122 | 2115 | 2110 | 2105 | 2100 | 2097 | 2093 | 2091 | 2088 | 2086 | 2083 | 2082 | 2080 | 2078 |
| | | G' | 3152 | 3150 | 3148 | 3146 | 3145 | 3144 | 3143 | 3142 | 3141 | 3140 | 3139 | 3139 | 3138 | 3137 | 3137 |
| | 3.5" | S | 2281 | 2273 | 2266 | 2260 | 2256 | 2251 | 2248 | 2244 | 2241 | 2239 | 2236 | 2234 | 2232 | 2231 | 2229 |
| | | G' | 3389 | 3387 | 3385 | 3384 | 3383 | 3381 | 3380 | 3379 | 3378 | 3378 | 3377 | 3376 | 3376 | 3375 | 3375 |
| | 3.75" | S | 2432 | 2424 | 2417 | 2411 | 2406 | 2402 | 2399 | 2395 | 2392 | 2390 | 2387 | 2385 | 2383 | 2382 | 2380 |
| | | G' | 3627 | 3625 | 3623 | 3622 | 3620 | 3619 | 3618 | 3617 | 3616 | 3615 | 3615 | 3614 | 3613 | 3613 | 3612 |
| | 4" | S | 2583 | 2575 | 2568 | 2562 | 2557 | 2553 | 2549 | 2546 | 2543 | 2541 | 2538 | 2536 | 2534 | 2532 | 2531 |
| | | G' | 3865 | 3863 | 3861 | 3859 | 3858 | 3857 | 3856 | 3855 | 3854 | 3853 | 3852 | 3852 | 3851 | 3850 | 3850 |
| | 4.25" | S | 2734 | 2726 | 2719 | 2713 | 2708 | 2704 | 2700 | 2697 | 2694 | 2692 | 2689 | 2687 | 2685 | 2683 | 2682 |
| | | G' | 4102 | 4100 | 4098 | 4097 | 4096 | 4094 | 4093 | 4092 | 4091 | 4091 | 4090 | 4089 | 4089 | 4088 | 4088 |
| | 4.5" | S | 2885 | 2877 | 2870 | 2864 | 2859 | 2855 | 2851 | 2848 | 2845 | 2842 | 2840 | 2838 | 2836 | 2834 | 2833 |
| | | G' | 4340 | 4338 | 4336 | 4335 | 4333 | 4332 | 4331 | 4330 | 4329 | 4328 | 4328 | 4327 | 4326 | 4326 | 4325 |
| | 4.75" | S | 3035 | 3027 | 3021 | 3015 | 3010 | 3006 | 3002 | 2999 | 2996 | 2993 | 2991 | 2989 | 2987 | 2985 | 2984 |
| | | G' | 4578 | 4576 | 4574 | 4572 | 4571 | 4570 | 4569 | 4568 | 4567 | 4566 | 4565 | 4565 | 4564 | 4564 | 4563 |
| 18 0.0474" | 2" | S | 1429 | 1418 | 1409 | 1402 | 1396 | 1390 | 1385 | 1381 | 1377 | 1374 | 1371 | 1368 | 1365 | 1363 | 1361 |
| | | G' | 1976 | 1973 | 1971 | 1969 | 1967 | 1966 | 1965 | 1963 | 1962 | 1961 | 1960 | 1960 | 1959 | 1958 | 1958 |
| | 2.25" | S | 1580 | 1569 | 1560 | 1553 | 1546 | 1541 | 1536 | 1532 | 1528 | 1524 | 1521 | 1519 | 1516 | 1514 | 1512 |
| | | G' | 2214 | 2211 | 2209 | 2207 | 2205 | 2204 | 2202 | 2201 | 2200 | 2199 | 2198 | 2197 | 2197 | 2196 | 2195 |
| | 2.5" | S | 1731 | 1720 | 1711 | 1704 | 1697 | 1692 | 1687 | 1683 | 1679 | 1675 | 1672 | 1670 | 1667 | 1665 | 1663 |
| | | G' | 2451 | 2449 | 2446 | 2444 | 2443 | 2441 | 2440 | 2439 | 2438 | 2437 | 2436 | 2435 | 2434 | 2434 | 2433 |
| | 2.75" | S | 1882 | 1871 | 1862 | 1855 | 1848 | 1843 | 1838 | 1834 | 1830 | 1826 | 1823 | 1820 | 1818 | 1816 | 1813 |
| | | G' | 2689 | 2686 | 2684 | 2682 | 2680 | 2679 | 2678 | 2676 | 2675 | 2674 | 2673 | 2673 | 2672 | 2671 | 2671 |
| | 3" | S | 2033 | 2022 | 2013 | 2006 | 1999 | 1994 | 1989 | 1984 | 1981 | 1977 | 1974 | 1971 | 1969 | 1966 | 1964 |
| | | G' | 2927 | 2924 | 2922 | 2920 | 2918 | 2917 | 2915 | 2914 | 2913 | 2912 | 2911 | 2910 | 2910 | 2909 | 2908 |
| | 3.25" | S | 2183 | 2173 | 2164 | 2156 | 2150 | 2144 | 2140 | 2135 | 2132 | 2128 | 2125 | 2122 | 2120 | 2117 | 2115 |
| | | G' | 3164 | 3162 | 3159 | 3157 | 3156 | 3154 | 3153 | 3152 | 3151 | 3150 | 3149 | 3148 | 3147 | 3147 | 3146 |
| | 3.5" | S | 2334 | 2324 | 2315 | 2307 | 2301 | 2295 | 2291 | 2286 | 2282 | 2279 | 2276 | 2273 | 2271 | 2268 | 2266 |
| | | G' | 3402 | 3399 | 3397 | 3395 | 3393 | 3392 | 3391 | 3389 | 3388 | 3387 | 3386 | 3386 | 3385 | 3384 | 3384 |
| | 3.75" | S | 2485 | 2475 | 2466 | 2458 | 2452 | 2446 | 2441 | 2437 | 2433 | 2430 | 2427 | 2424 | 2422 | 2419 | 2417 |
| | | G' | 3640 | 3637 | 3635 | 3633 | 3631 | 3630 | 3628 | 3627 | 3626 | 3625 | 3624 | 3623 | 3623 | 3622 | 3621 |
| | 4" | S | 2636 | 2626 | 2617 | 2609 | 2603 | 2597 | 2592 | 2588 | 2584 | 2581 | 2578 | 2575 | 2572 | 2570 | 2568 |
| | | G' | 3877 | 3875 | 3872 | 3870 | 3869 | 3867 | 3866 | 3865 | 3864 | 3863 | 3862 | 3861 | 3860 | 3860 | 3859 |
| | 4.25" | S | 2787 | 2776 | 2768 | 2760 | 2754 | 2748 | 2743 | 2739 | 2735 | 2732 | 2729 | 2726 | 2723 | 2721 | 2719 |
| | | G' | 4115 | 4112 | 4110 | 4108 | 4106 | 4105 | 4104 | 4102 | 4101 | 4100 | 4100 | 4099 | 4098 | 4097 | 4097 |
| | 4.5" | S | 2938 | 2927 | 2918 | 2911 | 2905 | 2899 | 2894 | 2890 | 2886 | 2883 | 2880 | 2877 | 2874 | 2872 | 2870 |
| | | G' | 4353 | 4350 | 4348 | 4346 | 4344 | 4343 | 4341 | 4340 | 4339 | 4338 | 4337 | 4336 | 4336 | 4335 | 4334 |
| | 4.75" | S | 3089 | 3078 | 3069 | 3062 | 3055 | 3050 | 3045 | 3041 | 3037 | 3034 | 3030 | 3028 | 3025 | 3023 | 3021 |
| | | G' | 4590 | 4588 | 4585 | 4584 | 4582 | 4580 | 4579 | 4578 | 4577 | 4576 | 4575 | 4574 | 4573 | 4573 | 4572 |
| 16 0.0598" | 2" | S | 1485 | 1472 | 1461 | 1452 | 1444 | 1437 | 1431 | 1425 | 1421 | 1416 | 1412 | 1409 | 1406 | 1403 | 1400 |
| | | G' | 1988 | 1985 | 1982 | 1980 | 1978 | 1976 | 1974 | 1973 | 1972 | 1971 | 1969 | 1969 | 1968 | 1967 | 1966 |
| | 2.25" | S | 1636 | 1623 | 1612 | 1603 | 1595 | 1588 | 1582 | 1576 | 1571 | 1567 | 1563 | 1560 | 1557 | 1554 | 1551 |
| | | G' | 2226 | 2222 | 2220 | 2217 | 2215 | 2214 | 2212 | 2211 | 2209 | 2208 | 2207 | 2206 | 2205 | 2205 | 2204 |
| | 2.5" | S | 1787 | 1774 | 1763 | 1754 | 1745 | 1739 | 1732 | 1727 | 1722 | 1718 | 1714 | 1711 | 1708 | 1705 | 1702 |
| | | G' | 2463 | 2460 | 2457 | 2455 | 2453 | 2451 | 2450 | 2448 | 2447 | 2446 | 2445 | 2444 | 2443 | 2442 | 2441 |
| | 2.75" | S | 1938 | 1925 | 1914 | 1904 | 1896 | 1889 | 1883 | 1878 | 1873 | 1869 | 1865 | 1862 | 1858 | 1856 | 1853 |
| | | G' | 2701 | 2698 | 2695 | 2693 | 2691 | 2689 | 2687 | 2686 | 2685 | 2684 | 2683 | 2682 | 2681 | 2680 | 2679 |
| | 3" | S | 2089 | 2076 | 2065 | 2055 | 2047 | 2040 | 2034 | 2029 | 2024 | 2020 | 2016 | 2013 | 2009 | 2006 | 2004 |
| | | G' | 2939 | 2936 | 2933 | 2931 | 2928 | 2927 | 2925 | 2924 | 2922 | 2921 | 2920 | 2919 | 2918 | 2918 | 2917 |
| | 3.25" | S | 2240 | 2227 | 2216 | 2206 | 2198 | 2191 | 2185 | 2180 | 2175 | 2171 | 2167 | 2163 | 2160 | 2157 | 2155 |
| | | G' | 3176 | 3173 | 3171 | 3168 | 3166 | 3164 | 3163 | 3161 | 3160 | 3159 | 3158 | 3157 | 3156 | 3155 | 3155 |
| | 3.5" | S | 2391 | 2378 | 2366 | 2357 | 2349 | 2342 | 2336 | 2331 | 2326 | 2322 | 2318 | 2314 | 2311 | 2308 | 2306 |
| | | G' | 3414 | 3411 | 3408 | 3406 | 3404 | 3402 | 3400 | 3399 | 3398 | 3397 | 3396 | 3395 | 3394 | 3393 | 3392 |
| | 3.75" | S | 2542 | 2528 | 2517 | 2508 | 2500 | 2493 | 2487 | 2482 | 2477 | 2473 | 2469 | 2465 | 2462 | 2459 | 2457 |
| | | G' | 3652 | 3649 | 3646 | 3644 | 3642 | 3640 | 3638 | 3637 | 3635 | 3634 | 3633 | 3632 | 3631 | 3631 | 3630 |
| | 4" | S | 2693 | 2679 | 2668 | 2659 | 2651 | 2644 | 2638 | 2632 | 2628 | 2623 | 2620 | 2616 | 2613 | 2610 | 2607 |
| | | G' | 3889 | 3886 | 3884 | 3881 | 3879 | 3877 | 3876 | 3874 | 3873 | 3872 | 3871 | 3870 | 3869 | 3868 | 3868 |
| | 4.25" | S | 2844 | 2830 | 2819 | 2810 | 2802 | 2795 | 2789 | 2783 | 2779 | 2774 | 2771 | 2767 | 2764 | 2761 | 2758 |
| | | G' | 4127 | 4124 | 4121 | 4119 | 4117 | 4115 | 4114 | 4112 | 4111 | 4110 | 4109 | 4108 | 4107 | 4106 | 4105 |
| | 4.5" | S | 2994 | 2981 | 2970 | 2961 | 2953 | 2946 | 2940 | 2934 | 2930 | 2925 | 2921 | 2918 | 2915 | 2912 | 2909 |
| | | G' | 4365 | 4362 | 4359 | 4357 | 4355 | 4353 | 4351 | 4350 | 4349 | 4347 | 4346 | 4345 | 4344 | 4344 | 4343 |
| | 4.75" | S | 3145 | 3132 | 3121 | 3112 | 3104 | 3097 | 3091 | 3085 | 3080 | 3076 | 3072 | 3069 | 3066 | 3063 | 3060 |
| | | G' | 4602 | 4599 | 4597 | 4594 | 4592 | 4590 | 4589 | 4587 | 4586 | 4585 | 4584 | 4583 | 4582 | 4581 | 4581 |

See Table 4 notes.

**TABLE 8**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**LIGHTWEIGHT CONCRETE (110 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: Hilti X-HSN 24** **ATTACHMENT PATTERN: 24/3** **S = Allowable Diaphragm Shear (lbf/ft.)**
**SIDELAP CONNECTION: Hilti S-SLC01 M HWH, S-SLC02 M HWH, #12 or #10 self-drilling screws** **SIDELAP SPACING: ≤ 36" o.c.** **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 961 | 954 | 947 | 942 | 937 | 933 | 930 | 927 | 924 | 921 | 919 | 917 | 915 | 914 | 912 |
| | | G' | 1956 | 1954 | 1953 | 1952 | 1951 | 1950 | 1949 | 1948 | 1948 | 1947 | 1947 | 1946 | 1946 | 1945 | 1945 |
| | 2.25" | S | 1061 | 1053 | 1047 | 1042 | 1037 | 1033 | 1029 | 1026 | 1024 | 1021 | 1019 | 1017 | 1015 | 1013 | 1012 |
| | | G' | 2194 | 2192 | 2191 | 2190 | 2188 | 2188 | 2187 | 2186 | 2185 | 2185 | 2184 | 2184 | 2183 | 2183 | 2183 |
| | 2.5" | S | 1161 | 1153 | 1147 | 1141 | 1137 | 1133 | 1129 | 1126 | 1123 | 1121 | 1119 | 1117 | 1115 | 1113 | 1112 |
| | | G' | 2431 | 2430 | 2428 | 2427 | 2426 | 2425 | 2424 | 2424 | 2423 | 2422 | 2422 | 2421 | 2421 | 2421 | 2420 |
| | 2.75" | S | 1260 | 1253 | 1246 | 1241 | 1236 | 1232 | 1229 | 1226 | 1223 | 1221 | 1218 | 1216 | 1214 | 1213 | 1211 |
| | | G' | 2669 | 2667 | 2666 | 2665 | 2664 | 2663 | 2662 | 2661 | 2661 | 2660 | 2660 | 2659 | 2659 | 2658 | 2658 |
| | 3" | S | 1360 | 1353 | 1346 | 1341 | 1336 | 1332 | 1329 | 1325 | 1323 | 1320 | 1318 | 1316 | 1314 | 1313 | 1311 |
| | | G' | 2907 | 2905 | 2904 | 2903 | 2902 | 2901 | 2900 | 2899 | 2898 | 2898 | 2897 | 2897 | 2896 | 2896 | 2896 |
| | 3.25" | S | 1460 | 1452 | 1446 | 1440 | 1436 | 1432 | 1428 | 1425 | 1422 | 1420 | 1418 | 1416 | 1414 | 1412 | 1411 |
| | | G' | 3144 | 3143 | 3141 | 3140 | 3139 | 3138 | 3137 | 3137 | 3136 | 3136 | 3135 | 3135 | 3134 | 3134 | 3133 |
| | 3.5" | S | 1560 | 1552 | 1546 | 1540 | 1536 | 1531 | 1528 | 1525 | 1522 | 1520 | 1517 | 1515 | 1514 | 1512 | 1510 |
| | | G' | 3382 | 3380 | 3379 | 3378 | 3377 | 3376 | 3375 | 3374 | 3374 | 3373 | 3373 | 3372 | 3372 | 3371 | 3371 |
| | 3.75" | S | 1659 | 1652 | 1645 | 1640 | 1635 | 1631 | 1628 | 1625 | 1622 | 1619 | 1617 | 1615 | 1613 | 1612 | 1610 |
| | | G' | 3620 | 3618 | 3617 | 3616 | 3615 | 3614 | 3613 | 3612 | 3611 | 3611 | 3610 | 3610 | 3609 | 3609 | 3609 |
| | 4" | S | 1759 | 1751 | 1745 | 1740 | 1735 | 1731 | 1727 | 1724 | 1722 | 1719 | 1717 | 1715 | 1713 | 1711 | 1710 |
| | | G' | 3857 | 3856 | 3854 | 3853 | 3852 | 3851 | 3851 | 3850 | 3849 | 3849 | 3848 | 3848 | 3847 | 3847 | 3846 |
| | 4.25" | S | 1859 | 1851 | 1845 | 1839 | 1835 | 1831 | 1827 | 1824 | 1821 | 1819 | 1817 | 1815 | 1813 | 1811 | 1810 |
| | | G' | 4095 | 4094 | 4092 | 4091 | 4090 | 4089 | 4088 | 4087 | 4087 | 4086 | 4086 | 4085 | 4085 | 4084 | 4084 |
| | 4.5" | S | 1958 | 1951 | 1944 | 1939 | 1934 | 1930 | 1927 | 1924 | 1921 | 1918 | 1916 | 1914 | 1912 | 1911 | 1909 |
| | | G' | 4333 | 4331 | 4330 | 4329 | 4328 | 4327 | 4326 | 4325 | 4325 | 4324 | 4323 | 4323 | 4322 | 4322 | 4322 |
| | 4.75" | S | 2058 | 2050 | 2044 | 2039 | 2034 | 2030 | 2027 | 2023 | 2021 | 2018 | 2016 | 2014 | 2012 | 2010 | 2009 |
| | | G' | 4571 | 4569 | 4568 | 4566 | 4565 | 4564 | 4564 | 4563 | 4562 | 4562 | 4561 | 4561 | 4560 | 4560 | 4559 |
| 18 0.0474" | 2" | S | 1013 | 1003 | 995 | 988 | 982 | 976 | 972 | 968 | 964 | 961 | 958 | 955 | 953 | 951 | 949 |
| | | G' | 1967 | 1965 | 1963 | 1962 | 1960 | 1959 | 1958 | 1957 | 1957 | 1956 | 1955 | 1955 | 1954 | 1953 | 1953 |
| | 2.25" | S | 1113 | 1103 | 1095 | 1087 | 1081 | 1076 | 1071 | 1067 | 1064 | 1061 | 1058 | 1055 | 1053 | 1050 | 1048 |
| | | G' | 2205 | 2202 | 2201 | 2199 | 2198 | 2197 | 2196 | 2195 | 2194 | 2193 | 2193 | 2192 | 2192 | 2191 | 2191 |
| | 2.5" | S | 1213 | 1203 | 1194 | 1187 | 1181 | 1176 | 1171 | 1167 | 1163 | 1160 | 1157 | 1155 | 1152 | 1150 | 1148 |
| | | G' | 2442 | 2440 | 2438 | 2437 | 2436 | 2435 | 2434 | 2433 | 2432 | 2431 | 2431 | 2430 | 2429 | 2429 | 2428 |
| | 2.75" | S | 1312 | 1302 | 1294 | 1287 | 1281 | 1275 | 1271 | 1267 | 1263 | 1260 | 1257 | 1254 | 1252 | 1250 | 1248 |
| | | G' | 2680 | 2678 | 2676 | 2675 | 2673 | 2672 | 2671 | 2670 | 2670 | 2669 | 2668 | 2668 | 2667 | 2667 | 2666 |
| | 3" | S | 1412 | 1402 | 1394 | 1387 | 1380 | 1375 | 1371 | 1367 | 1363 | 1360 | 1357 | 1354 | 1352 | 1350 | 1348 |
| | | G' | 2918 | 2916 | 2914 | 2912 | 2911 | 2910 | 2909 | 2908 | 2907 | 2907 | 2906 | 2905 | 2905 | 2904 | 2904 |
| | 3.25" | S | 1512 | 1502 | 1493 | 1486 | 1480 | 1475 | 1470 | 1466 | 1463 | 1459 | 1456 | 1454 | 1451 | 1449 | 1447 |
| | | G' | 3155 | 3153 | 3152 | 3150 | 3149 | 3148 | 3147 | 3146 | 3145 | 3144 | 3144 | 3143 | 3142 | 3142 | 3141 |
| | 3.5" | S | 1612 | 1601 | 1593 | 1586 | 1580 | 1575 | 1570 | 1566 | 1562 | 1559 | 1556 | 1554 | 1551 | 1549 | 1547 |
| | | G' | 3393 | 3391 | 3389 | 3388 | 3386 | 3385 | 3384 | 3383 | 3383 | 3382 | 3381 | 3381 | 3380 | 3380 | 3379 |
| | 3.75" | S | 1711 | 1701 | 1693 | 1686 | 1680 | 1674 | 1670 | 1666 | 1662 | 1659 | 1656 | 1653 | 1651 | 1649 | 1647 |
| | | G' | 3631 | 3629 | 3627 | 3625 | 3624 | 3623 | 3622 | 3621 | 3620 | 3620 | 3619 | 3618 | 3618 | 3617 | 3617 |
| | 4" | S | 1811 | 1801 | 1792 | 1785 | 1779 | 1774 | 1769 | 1765 | 1762 | 1758 | 1756 | 1753 | 1751 | 1748 | 1746 |
| | | G' | 3868 | 3866 | 3865 | 3863 | 3862 | 3861 | 3860 | 3859 | 3858 | 3857 | 3857 | 3856 | 3855 | 3855 | 3854 |
| | 4.25" | S | 1911 | 1901 | 1892 | 1885 | 1879 | 1874 | 1869 | 1865 | 1861 | 1858 | 1855 | 1853 | 1850 | 1848 | 1846 |
| | | G' | 4106 | 4104 | 4102 | 4101 | 4099 | 4098 | 4097 | 4096 | 4096 | 4095 | 4094 | 4094 | 4093 | 4093 | 4092 |
| | 4.5" | S | 2010 | 2000 | 1992 | 1985 | 1979 | 1973 | 1969 | 1965 | 1961 | 1958 | 1955 | 1952 | 1950 | 1948 | 1946 |
| | | G' | 4344 | 4342 | 4340 | 4338 | 4337 | 4336 | 4335 | 4334 | 4333 | 4333 | 4332 | 4331 | 4331 | 4330 | 4330 |
| | 4.75" | S | 2110 | 2100 | 2092 | 2085 | 2078 | 2073 | 2069 | 2064 | 2061 | 2058 | 2055 | 2052 | 2050 | 2047 | 2045 |
| | | G' | 4581 | 4579 | 4578 | 4576 | 4575 | 4574 | 4573 | 4572 | 4571 | 4570 | 4570 | 4569 | 4568 | 4568 | 4568 |
| 16 0.0598" | 2" | S | 1068 | 1056 | 1045 | 1036 | 1029 | 1022 | 1016 | 1011 | 1007 | 1003 | 999 | 996 | 993 | 990 | 988 |
| | | G' | 1977 | 1975 | 1973 | 1971 | 1969 | 1968 | 1967 | 1966 | 1965 | 1964 | 1963 | 1963 | 1962 | 1961 | 1961 |
| | 2.25" | S | 1168 | 1155 | 1145 | 1136 | 1128 | 1122 | 1116 | 1111 | 1106 | 1102 | 1099 | 1095 | 1092 | 1090 | 1087 |
| | | G' | 2215 | 2212 | 2210 | 2209 | 2207 | 2206 | 2205 | 2204 | 2203 | 2202 | 2201 | 2200 | 2200 | 2199 | 2198 |
| | 2.5" | S | 1268 | 1255 | 1245 | 1236 | 1228 | 1222 | 1216 | 1211 | 1206 | 1202 | 1198 | 1195 | 1192 | 1189 | 1187 |
| | | G' | 2453 | 2450 | 2448 | 2446 | 2445 | 2443 | 2442 | 2441 | 2440 | 2439 | 2439 | 2438 | 2437 | 2437 | 2436 |
| | 2.75" | S | 1367 | 1355 | 1344 | 1335 | 1328 | 1321 | 1315 | 1310 | 1306 | 1302 | 1298 | 1295 | 1292 | 1289 | 1287 |
| | | G' | 2690 | 2688 | 2686 | 2684 | 2682 | 2681 | 2680 | 2679 | 2678 | 2677 | 2676 | 2676 | 2675 | 2674 | 2674 |
| | 3" | S | 1467 | 1454 | 1444 | 1435 | 1428 | 1421 | 1415 | 1410 | 1406 | 1402 | 1398 | 1395 | 1392 | 1389 | 1386 |
| | | G' | 2928 | 2925 | 2923 | 2922 | 2920 | 2919 | 2918 | 2917 | 2916 | 2915 | 2914 | 2913 | 2913 | 2912 | 2912 |
| | 3.25" | S | 1567 | 1554 | 1544 | 1535 | 1527 | 1521 | 1515 | 1510 | 1505 | 1501 | 1498 | 1494 | 1491 | 1489 | 1486 |
| | | G' | 3166 | 3163 | 3161 | 3159 | 3158 | 3156 | 3155 | 3154 | 3153 | 3152 | 3152 | 3151 | 3150 | 3150 | 3149 |
| | 3.5" | S | 1666 | 1654 | 1643 | 1635 | 1627 | 1620 | 1615 | 1610 | 1605 | 1601 | 1597 | 1594 | 1591 | 1588 | 1586 |
| | | G' | 3403 | 3401 | 3399 | 3397 | 3396 | 3394 | 3393 | 3392 | 3391 | 3390 | 3389 | 3389 | 3388 | 3387 | 3387 |
| | 3.75" | S | 1766 | 1754 | 1743 | 1734 | 1727 | 1720 | 1714 | 1709 | 1705 | 1701 | 1697 | 1694 | 1691 | 1688 | 1685 |
| | | G' | 3641 | 3639 | 3636 | 3635 | 3633 | 3632 | 3631 | 3630 | 3629 | 3628 | 3627 | 3626 | 3626 | 3625 | 3625 |
| | 4" | S | 1866 | 1853 | 1843 | 1834 | 1826 | 1820 | 1814 | 1809 | 1804 | 1800 | 1797 | 1793 | 1790 | 1788 | 1785 |
| | | G' | 3879 | 3876 | 3874 | 3872 | 3871 | 3870 | 3868 | 3867 | 3866 | 3865 | 3865 | 3864 | 3863 | 3863 | 3862 |
| | 4.25" | S | 1966 | 1953 | 1943 | 1934 | 1926 | 1919 | 1914 | 1909 | 1904 | 1900 | 1896 | 1893 | 1890 | 1887 | 1885 |
| | | G' | 4116 | 4114 | 4112 | 4110 | 4109 | 4107 | 4106 | 4105 | 4104 | 4103 | 4102 | 4102 | 4101 | 4100 | 4100 |
| | 4.5" | S | 2065 | 2053 | 2042 | 2033 | 2026 | 2019 | 2013 | 2008 | 2004 | 2000 | 1996 | 1993 | 1990 | 1987 | 1985 |
| | | G' | 4354 | 4352 | 4350 | 4348 | 4346 | 4345 | 4344 | 4343 | 4342 | 4341 | 4340 | 4339 | 4339 | 4338 | 4338 |
| | 4.75" | S | 2165 | 2152 | 2142 | 2133 | 2125 | 2119 | 2113 | 2108 | 2104 | 2099 | 2096 | 2093 | 2090 | 2087 | 2084 |
| | | G' | 4592 | 4589 | 4587 | 4585 | 4584 | 4583 | 4581 | 4580 | 4579 | 4579 | 4578 | 4577 | 4576 | 4576 | 4575 |

See Table 4 notes.

**TABLE 9**
**VERSA-DEK® COMPOSITE 3.5 LS & LS ACOUSTICAL**
**NORMAL WEIGHT CONCRETE (145 PCF) - ALLOWABLE DIAPHRAGM SHEAR**

**SUPPORT CONNECTION: Hilti X-HSN 24** **ATTACHMENT PATTERN: 24/3** **S = Allowable Diaphragm Shear (lbf/ft.)**
**SIDELAP CONNECTION: Hilti S-SLC01 M HWH, S-SLC02 M HWH, #12 or #10 self-drilling screws** **SIDELAP SPACING: ≤ 36" o.c.** **G' = Stiffness Factor (kips/in.)**

| GAGE (in.) | CONC. COVER THICKNESS | FACTOR | SINGLE SPAN CONDITION DECK SPAN - C to C SUPPORT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10' | 11' | 12' | 13' | 14' | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' |
| 20 0.0358" | 2" | S | 1371 | 1363 | 1357 | 1351 | 1347 | 1343 | 1339 | 1336 | 1333 | 1331 | 1329 | 1327 | 1325 | 1323 | 1322 |
| | | G' | 1956 | 1954 | 1953 | 1952 | 1951 | 1950 | 1949 | 1948 | 1948 | 1947 | 1947 | 1946 | 1946 | 1945 | 1945 |
| | 2.25" | S | 1522 | 1514 | 1508 | 1502 | 1498 | 1494 | 1490 | 1487 | 1484 | 1482 | 1480 | 1478 | 1476 | 1474 | 1473 |
| | | G' | 2194 | 2192 | 2191 | 2190 | 2188 | 2188 | 2187 | 2186 | 2185 | 2185 | 2184 | 2184 | 2183 | 2183 | 2183 |
| | 2.5" | S | 1673 | 1665 | 1659 | 1653 | 1649 | 1645 | 1641 | 1638 | 1635 | 1633 | 1631 | 1629 | 1627 | 1625 | 1624 |
| | | G' | 2431 | 2430 | 2428 | 2427 | 2426 | 2425 | 2424 | 2424 | 2423 | 2422 | 2422 | 2421 | 2421 | 2421 | 2420 |
| | 2.75" | S | 1824 | 1816 | 1810 | 1804 | 1800 | 1795 | 1792 | 1789 | 1786 | 1784 | 1781 | 1779 | 1778 | 1776 | 1774 |
| | | G' | 2669 | 2667 | 2666 | 2665 | 2664 | 2663 | 2662 | 2661 | 2661 | 2660 | 2660 | 2659 | 2659 | 2658 | 2658 |
| | 3" | S | 1975 | 1967 | 1960 | 1955 | 1950 | 1946 | 1943 | 1940 | 1937 | 1935 | 1932 | 1930 | 1929 | 1927 | 1925 |
| | | G' | 2907 | 2905 | 2904 | 2903 | 2902 | 2901 | 2900 | 2899 | 2898 | 2898 | 2897 | 2897 | 2896 | 2896 | 2896 |
| | 3.25" | S | 2125 | 2118 | 2111 | 2106 | 2101 | 2097 | 2094 | 2091 | 2088 | 2085 | 2083 | 2081 | 2079 | 2078 | 2076 |
| | | G' | 3144 | 3143 | 3141 | 3140 | 3139 | 3138 | 3137 | 3137 | 3136 | 3136 | 3135 | 3135 | 3134 | 3134 | 3133 |
| | 3.5" | S | 2276 | 2269 | 2262 | 2257 | 2252 | 2248 | 2245 | 2242 | 2239 | 2236 | 2234 | 2232 | 2230 | 2229 | 2227 |
| | | G' | 3382 | 3380 | 3379 | 3378 | 3377 | 3376 | 3375 | 3374 | 3374 | 3373 | 3373 | 3372 | 3372 | 3371 | 3371 |
| | 3.75" | S | 2427 | 2420 | 2413 | 2408 | 2403 | 2399 | 2396 | 2392 | 2390 | 2387 | 2385 | 2383 | 2381 | 2380 | 2378 |
| | | G' | 3620 | 3618 | 3617 | 3616 | 3615 | 3614 | 3613 | 3612 | 3611 | 3611 | 3610 | 3610 | 3609 | 3609 | 3609 |
| | 4" | S | 2578 | 2570 | 2564 | 2559 | 2554 | 2550 | 2546 | 2543 | 2541 | 2538 | 2536 | 2534 | 2532 | 2530 | 2529 |
| | | G' | 3857 | 3856 | 3854 | 3853 | 3852 | 3851 | 3851 | 3850 | 3849 | 3849 | 3848 | 3848 | 3847 | 3847 | 3846 |
| | 4.25" | S | 2729 | 2721 | 2715 | 2710 | 2705 | 2701 | 2697 | 2694 | 2692 | 2689 | 2687 | 2685 | 2683 | 2681 | 2680 |
| | | G' | 4095 | 4094 | 4092 | 4091 | 4090 | 4089 | 4088 | 4087 | 4087 | 4086 | 4086 | 4085 | 4085 | 4084 | 4084 |
| | 4.5" | S | 2880 | 2872 | 2866 | 2860 | 2856 | 2852 | 2848 | 2845 | 2842 | 2840 | 2838 | 2836 | 2834 | 2832 | 2831 |
| | | G' | 4333 | 4331 | 4330 | 4329 | 4328 | 4327 | 4326 | 4325 | 4325 | 4324 | 4323 | 4323 | 4322 | 4322 | 4322 |
| | 4.75" | S | 3031 | 3023 | 3017 | 3011 | 3007 | 3003 | 2999 | 2996 | 2993 | 2991 | 2989 | 2987 | 2985 | 2983 | 2982 |
| | | G' | 4571 | 4569 | 4568 | 4566 | 4565 | 4564 | 4564 | 4563 | 4562 | 4562 | 4561 | 4561 | 4560 | 4560 | 4559 |
| 18 0.0474" | 2" | S | 1423 | 1413 | 1404 | 1397 | 1391 | 1386 | 1381 | 1377 | 1374 | 1370 | 1367 | 1365 | 1362 | 1360 | 1358 |
| | | G' | 1967 | 1965 | 1963 | 1962 | 1960 | 1959 | 1958 | 1957 | 1957 | 1956 | 1955 | 1955 | 1954 | 1953 | 1953 |
| | 2.25" | S | 1574 | 1564 | 1555 | 1548 | 1542 | 1537 | 1532 | 1528 | 1525 | 1521 | 1518 | 1516 | 1513 | 1511 | 1509 |
| | | G' | 2205 | 2202 | 2201 | 2199 | 2198 | 2197 | 2196 | 2195 | 2194 | 2193 | 2193 | 2192 | 2192 | 2191 | 2191 |
| | 2.5" | S | 1725 | 1715 | 1706 | 1699 | 1693 | 1688 | 1683 | 1679 | 1675 | 1672 | 1669 | 1667 | 1664 | 1662 | 1660 |
| | | G' | 2442 | 2440 | 2438 | 2437 | 2436 | 2435 | 2434 | 2433 | 2432 | 2431 | 2431 | 2430 | 2429 | 2429 | 2428 |
| | 2.75" | S | 1876 | 1865 | 1857 | 1850 | 1844 | 1839 | 1834 | 1830 | 1826 | 1823 | 1820 | 1818 | 1815 | 1813 | 1811 |
| | | G' | 2680 | 2678 | 2676 | 2675 | 2673 | 2672 | 2671 | 2670 | 2670 | 2669 | 2668 | 2668 | 2667 | 2667 | 2666 |
| | 3" | S | 2026 | 2016 | 2008 | 2001 | 1995 | 1990 | 1985 | 1981 | 1977 | 1974 | 1971 | 1968 | 1966 | 1964 | 1962 |
| | | G' | 2918 | 2916 | 2914 | 2912 | 2911 | 2910 | 2909 | 2908 | 2907 | 2907 | 2906 | 2905 | 2905 | 2904 | 2904 |
| | 3.25" | S | 2177 | 2167 | 2159 | 2152 | 2146 | 2140 | 2136 | 2132 | 2128 | 2125 | 2122 | 2119 | 2117 | 2115 | 2113 |
| | | G' | 3155 | 3153 | 3152 | 3150 | 3149 | 3148 | 3147 | 3146 | 3145 | 3144 | 3144 | 3143 | 3142 | 3142 | 3141 |
| | 3.5" | S | 2328 | 2318 | 2310 | 2303 | 2297 | 2291 | 2287 | 2283 | 2279 | 2276 | 2273 | 2270 | 2268 | 2266 | 2264 |
| | | G' | 3393 | 3391 | 3389 | 3388 | 3386 | 3385 | 3384 | 3383 | 3383 | 3382 | 3381 | 3381 | 3380 | 3380 | 3379 |
| | 3.75" | S | 2479 | 2469 | 2461 | 2454 | 2447 | 2442 | 2438 | 2434 | 2430 | 2427 | 2424 | 2421 | 2419 | 2417 | 2415 |
| | | G' | 3631 | 3629 | 3627 | 3625 | 3624 | 3623 | 3622 | 3621 | 3620 | 3620 | 3619 | 3618 | 3618 | 3617 | 3617 |
| | 4" | S | 2630 | 2620 | 2612 | 2604 | 2598 | 2593 | 2589 | 2584 | 2581 | 2578 | 2575 | 2572 | 2570 | 2567 | 2565 |
| | | G' | 3868 | 3866 | 3865 | 3863 | 3862 | 3861 | 3860 | 3859 | 3858 | 3857 | 3857 | 3856 | 3855 | 3855 | 3854 |
| | 4.25" | S | 2781 | 2771 | 2762 | 2755 | 2749 | 2744 | 2739 | 2735 | 2732 | 2728 | 2726 | 2723 | 2721 | 2718 | 2716 |
| | | G' | 4106 | 4104 | 4102 | 4101 | 4099 | 4098 | 4097 | 4096 | 4096 | 4095 | 4094 | 4094 | 4093 | 4093 | 4092 |
| | 4.5" | S | 2932 | 2922 | 2913 | 2906 | 2900 | 2895 | 2890 | 2886 | 2883 | 2879 | 2876 | 2874 | 2871 | 2869 | 2867 |
| | | G' | 4344 | 4342 | 4340 | 4338 | 4337 | 4336 | 4335 | 4334 | 4333 | 4333 | 4332 | 4331 | 4331 | 4330 | 4330 |
| | 4.75" | S | 3083 | 3073 | 3064 | 3057 | 3051 | 3046 | 3041 | 3037 | 3034 | 3030 | 3027 | 3025 | 3022 | 3020 | 3018 |
| | | G' | 4581 | 4579 | 4578 | 4576 | 4575 | 4574 | 4573 | 4572 | 4571 | 4570 | 4570 | 4569 | 4568 | 4568 | 4568 |
| 16 0.0598" | 2" | S | 1478 | 1465 | 1455 | 1446 | 1438 | 1432 | 1426 | 1421 | 1416 | 1412 | 1409 | 1405 | 1402 | 1400 | 1397 |
| | | G' | 1977 | 1975 | 1973 | 1971 | 1969 | 1968 | 1967 | 1966 | 1965 | 1964 | 1963 | 1963 | 1962 | 1961 | 1961 |
| | 2.25" | S | 1629 | 1616 | 1606 | 1597 | 1589 | 1583 | 1577 | 1572 | 1567 | 1563 | 1559 | 1556 | 1553 | 1550 | 1548 |
| | | G' | 2215 | 2212 | 2210 | 2209 | 2207 | 2206 | 2205 | 2204 | 2203 | 2202 | 2201 | 2200 | 2200 | 2199 | 2198 |
| | 2.5" | S | 1780 | 1767 | 1757 | 1748 | 1740 | 1733 | 1728 | 1723 | 1718 | 1714 | 1710 | 1707 | 1704 | 1701 | 1699 |
| | | G' | 2453 | 2450 | 2448 | 2446 | 2445 | 2443 | 2442 | 2441 | 2440 | 2439 | 2439 | 2438 | 2437 | 2437 | 2436 |
| | 2.75" | S | 1930 | 1918 | 1907 | 1899 | 1891 | 1884 | 1879 | 1874 | 1869 | 1865 | 1861 | 1858 | 1855 | 1852 | 1850 |
| | | G' | 2690 | 2688 | 2686 | 2684 | 2682 | 2681 | 2680 | 2679 | 2678 | 2677 | 2676 | 2676 | 2675 | 2674 | 2674 |
| | 3" | S | 2081 | 2069 | 2058 | 2049 | 2042 | 2035 | 2030 | 2024 | 2020 | 2016 | 2012 | 2009 | 2006 | 2003 | 2001 |
| | | G' | 2928 | 2925 | 2923 | 2922 | 2920 | 2919 | 2918 | 2917 | 2916 | 2915 | 2914 | 2913 | 2913 | 2912 | 2912 |
| | 3.25" | S | 2232 | 2220 | 2209 | 2200 | 2193 | 2186 | 2180 | 2175 | 2171 | 2167 | 2163 | 2160 | 2157 | 2154 | 2152 |
| | | G' | 3166 | 3163 | 3161 | 3159 | 3158 | 3156 | 3155 | 3154 | 3153 | 3152 | 3152 | 3151 | 3150 | 3150 | 3149 |
| | 3.5" | S | 2383 | 2371 | 2360 | 2351 | 2344 | 2337 | 2331 | 2326 | 2322 | 2318 | 2314 | 2311 | 2308 | 2305 | 2302 |
| | | G' | 3403 | 3401 | 3399 | 3397 | 3396 | 3394 | 3393 | 3392 | 3391 | 3390 | 3389 | 3389 | 3388 | 3387 | 3387 |
| | 3.75" | S | 2534 | 2522 | 2511 | 2502 | 2495 | 2488 | 2482 | 2477 | 2473 | 2469 | 2465 | 2462 | 2459 | 2456 | 2453 |
| | | G' | 3641 | 3639 | 3636 | 3635 | 3633 | 3632 | 3631 | 3630 | 3629 | 3628 | 3627 | 3626 | 3626 | 3625 | 3625 |
| | 4" | S | 2685 | 2672 | 2662 | 2653 | 2645 | 2639 | 2633 | 2628 | 2623 | 2619 | 2616 | 2613 | 2610 | 2607 | 2604 |
| | | G' | 3879 | 3876 | 3874 | 3872 | 3871 | 3870 | 3868 | 3867 | 3866 | 3865 | 3865 | 3864 | 3863 | 3863 | 3862 |
| | 4.25" | S | 2836 | 2823 | 2813 | 2804 | 2796 | 2790 | 2784 | 2779 | 2774 | 2770 | 2767 | 2763 | 2760 | 2758 | 2755 |
| | | G' | 4116 | 4114 | 4112 | 4110 | 4109 | 4107 | 4106 | 4105 | 4104 | 4103 | 4102 | 4102 | 4101 | 4100 | 4100 |
| | 4.5" | S | 2987 | 2974 | 2964 | 2955 | 2947 | 2941 | 2935 | 2930 | 2925 | 2921 | 2918 | 2914 | 2911 | 2909 | 2906 |
| | | G' | 4354 | 4352 | 4350 | 4348 | 4346 | 4345 | 4344 | 4343 | 4342 | 4341 | 4340 | 4339 | 4339 | 4338 | 4338 |
| | 4.75" | S | 3138 | 3125 | 3115 | 3106 | 3098 | 3092 | 3086 | 3081 | 3076 | 3072 | 3069 | 3065 | 3062 | 3059 | 3057 |
| | | G' | 4592 | 4589 | 4587 | 4585 | 4584 | 4583 | 4581 | 4580 | 4579 | 4579 | 4578 | 4577 | 4576 | 4576 | 4575 |

See Table 4 notes.

## Notes for Tables 10-13

1. MAXIMUM SUPERIMPOSED LOADS (psf)

| | | |
|---|---|---|
| 1.2D+1.6L (Strength) | # | ← Maximum Factored (LRFD) Superimposed Load governed by strength limitations |
| D+L (Deflection) | # | ← Maximum Unfactored Superimposed Load governed by an instantaneous deflection limit of L/240 |
| L (Deflection) | # | ← Maximum Unfactored Live Load or simply governed by an instantaneous deflection limit of L/360 |

2. MAXIMUM UNSHORED CLEAR SPANS (l') (feet-inch)

| | | |
|---|---|---|
| Single Span ($l_1$') | # | ← Maximum Unshored Clear Span for Deck Panels installed in Single Spans |
| Double Span ($l_2$') | # | ← Maximum Unshored Clear Span for Deck Panels installed in Double Equal Spans |
| Triple Span ($l_3$') | # | ← Maximum Unshored Clear Span for Deck Panels installed in Triple Equal Spans |
| Cantilever | # | ← Maximum Unshored Clear Length |

Single Span Deck Installation:
a.) No shoring required when $l \le l_1$'
b.) One row of shoring required when $l_1' < l \le 2 * l_2'$ (install shoring at midspan of $l$)
c.) Two rows of shoring required when $2 * l_2' < l \le 3 * l_3'$ (install shoring at $^1/_3$ and $^2/_3$ of $l$)

Double Span Deck Installation:
a.) No shoring required when $l \le l_2$'
b.) One row of shoring required when $l_3' < l \le 2 * l_3'$ (install shoring at midspan of $l$ for each span)
c.) Two rows of shoring required when $2 * l_3' < l \le 3 * l_3'$ (install shoring at $^1/_3$ and $^2/_3$ of $l$ for each span)

Triple or More Span Deck Installation:
a.) No shoring required when $l \le l_3$'
b.) One row of shoring required when $l_3' < l \le 2 * l_3'$ (install shoring at midspan of $l$ for each span)
c.) Two rows of shoring required when $2 * l_3' < l \le 3 * l_3'$ (install shoring at $^1/_3$ and $^2/_3$ of $l$ for each span)

3. Definitions

h = total height of concrete slab measure from the bottom flange of the steel deck to the top of concrete, inches
Wc = Weight of concrete (neglecting deflection), psf
D = Uniform Superimposed Dead Load (dead load in addition to the self-weight of concrete, Wc), psf
L = Uniform live load, psf
$l$ = span length between permanent supports for 1 (single), 2 (double), or 3 (triple) deck panel span conditions, feet
$l$'= maximum unshored clear span length, feet-inch

4. Maximum Unshored Construction Clear Spans are based on 2" exterior bearing and 4" interior bearing width.
5. Minimum area of reinforcement (welded wire fabric) must be equal to 0.00075 times the area of concrete above the steel deck.
6. Additional reinforcement may be required for Long-Term Deflection design requirements.

TABLE 10—VERSA-DEK® COMPOSITE 3.5 LS

LIGHTWEIGHT CONCRETE (110 PCF), f'c = 3,000 psi

SIMPLE SPAN SLAB DESIGN - NO STUDS ON BEAMS
MAXIMUM SUPERIMPOSED LOADS (psf)

| h, inch (Wc, psf) | | 5.5" (42.4) | | | 5.75" (44.69) | | | 6" (46.98) | | | 6.25" (49.27) | | | 6.5" (51.56) | | | 6.75" (53.85) | | | 7" (56.15) | | | 7.25" (58.44) | | | 7.5" (60.73) | | | 7.75" (63.02) | | | 8" (65.31) | | | 8.25" (67.6) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Span (l) | Based on the following Load Combinations | GAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 |
| 11' | 1.2D+1.6L (Strength) | 306 | 446 | 581 | 324 | 478 | 618 | 343 | 519 | 640 | 354 | 543 | 640 | 363 | 566 | 640 | 372 | 587 | 640 | 380 | 609 | 640 | 387 | 629 | 640 | 393 | 640 | 640 | 397 | 640 | 640 | 401 | 640 | 640 | 403 | 640 | 640 |
| | D+L (Deflection) | 306 | 400 | 400 | 324 | 400 | 400 | 343 | 400 | 400 | 354 | 400 | 400 | 363 | 400 | 400 | 372 | 400 | 400 | 380 | 400 | 400 | 387 | 400 | 400 | 393 | 400 | 400 | 397 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 306 | 400 | 400 | 324 | 400 | 400 | 343 | 400 | 400 | 354 | 400 | 400 | 363 | 400 | 400 | 372 | 400 | 400 | 380 | 400 | 400 | 387 | 400 | 400 | 393 | 400 | 400 | 397 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| 12' | 1.2D+1.6L (Strength) | 234 | 350 | 466 | 247 | 374 | 494 | 253 | 404 | 530 | 258 | 421 | 574 | 262 | 436 | 606 | 265 | 450 | 631 | 267 | 464 | 640 | 268 | 477 | 640 | 267 | 489 | 640 | 373 | 500 | 640 | 388 | 510 | 640 | 403 | 520 | 640 |
| | D+L (Deflection) | 234 | 350 | 400 | 247 | 374 | 400 | 253 | 400 | 400 | 258 | 400 | 400 | 262 | 400 | 400 | 265 | 400 | 400 | 267 | 400 | 400 | 268 | 400 | 400 | 267 | 400 | 400 | 373 | 400 | 400 | 388 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 234 | 324 | 366 | 247 | 361 | 400 | 253 | 400 | 400 | 258 | 400 | 400 | 262 | 400 | 400 | 265 | 400 | 400 | 267 | 400 | 400 | 268 | 400 | 400 | 267 | 400 | 400 | 373 | 400 | 400 | 388 | 400 | 400 | 400 | 400 | 400 |
| 13' | 1.2D+1.6L (Strength) | 174 | 276 | 377 | 181 | 293 | 398 | 183 | 315 | 425 | 183 | 325 | 458 | 248 | 335 | 483 | 261 | 343 | 501 | 273 | 351 | 519 | 285 | 358 | 536 | 298 | 364 | 552 | 310 | 369 | 568 | 322 | 373 | 583 | 327 | 376 | 598 |
| | D+L (Deflection) | 174 | 276 | 377 | 181 | 293 | 398 | 183 | 315 | 400 | 183 | 325 | 400 | 248 | 335 | 400 | 261 | 343 | 400 | 273 | 351 | 400 | 285 | 358 | 400 | 298 | 364 | 400 | 310 | 369 | 400 | 322 | 373 | 400 | 327 | 376 | 400 |
| | L (Deflection) | 174 | 255 | 288 | 181 | 284 | 317 | 183 | 315 | 351 | 183 | 325 | 389 | 248 | 335 | 400 | 261 | 343 | 400 | 273 | 351 | 400 | 285 | 358 | 400 | 298 | 364 | 400 | 310 | 369 | 400 | 322 | 373 | 400 | 327 | 376 | 400 |
| 14' | 1.2D+1.6L (Strength) | 167 | 217 | 306 | 177 | 229 | 322 | 188 | 244 | 342 | 198 | 250 | 367 | 208 | 255 | 385 | 219 | 258 | 397 | 227 | 262 | 409 | 239 | 264 | 421 | 250 | 265 | 431 | 260 | 265 | 441 | 270 | 415 | 450 | 281 | 425 | 458 |
| | D+L (Deflection) | 167 | 217 | 306 | 177 | 229 | 322 | 188 | 244 | 342 | 198 | 250 | 367 | 208 | 255 | 385 | 219 | 258 | 397 | 227 | 262 | 400 | 239 | 264 | 400 | 250 | 265 | 400 | 260 | 265 | 400 | 270 | 400 | 400 | 281 | 400 | 400 |
| | L (Deflection) | 167 | 204 | 230 | 177 | 227 | 254 | 188 | 244 | 281 | 198 | 250 | 312 | 208 | 255 | 346 | 219 | 258 | 382 | 227 | 262 | 400 | 239 | 264 | 400 | 250 | 265 | 400 | 260 | 265 | 400 | 270 | 400 | 400 | 281 | 400 | 400 |
| 15' | 1.2D+1.6L (Strength) | 141 | 170 | 248 | 150 | 177 | 260 | 159 | 186 | 275 | 167 | 269 | 294 | 176 | 279 | 306 | 185 | 288 | 314 | 194 | 297 | 321 | 203 | 305 | 328 | 211 | 313 | 451 | 220 | 320 | 466 | 229 | 327 | 481 | 238 | 333 | 495 |
| | D+L (Deflection) | 141 | 170 | 248 | 150 | 177 | 260 | 159 | 186 | 275 | 167 | 269 | 294 | 176 | 279 | 306 | 185 | 288 | 314 | 194 | 297 | 321 | 203 | 305 | 328 | 211 | 313 | 400 | 220 | 320 | 400 | 229 | 327 | 400 | 238 | 333 | 400 |
| | L (Deflection) | 141 | 166 | 187 | 150 | 177 | 207 | 159 | 186 | 228 | 167 | 230 | 253 | 176 | 255 | 281 | 185 | 283 | 311 | 194 | 297 | 321 | 203 | 305 | 328 | 211 | 313 | 400 | 220 | 320 | 400 | 229 | 327 | 400 | 238 | 333 | 400 |
| 16' | 1.2D+1.6L (Strength) | 120 | 185 | 202 | 128 | 197 | 210 | 135 | 212 | 284 | 143 | 219 | 307 | 150 | 226 | 323 | 158 | 232 | 336 | 165 | 238 | 348 | 173 | 243 | 360 | 180 | 361 | 371 | 188 | 376 | 382 | 195 | 391 | 393 | 203 | 405 | 403 |
| | D+L (Deflection) | 120 | 158 | 202 | 128 | 179 | 210 | 135 | 203 | 230 | 143 | 219 | 258 | 150 | 226 | 290 | 158 | 232 | 325 | 165 | 238 | 348 | 173 | 243 | 360 | 180 | 361 | 371 | 188 | 376 | 382 | 195 | 391 | 393 | 203 | 400 | 400 |
| | L (Deflection) | 120 | 137 | 154 | 128 | 152 | 170 | 135 | 170 | 188 | 143 | 189 | 209 | 150 | 210 | 232 | 158 | 232 | 256 | 165 | 238 | 282 | 173 | 243 | 311 | 180 | 310 | 341 | 188 | 340 | 373 | 195 | 371 | 393 | 203 | 400 | 400 |
| 17' | 1.2D+1.6L (Strength) | 103 | 153 | 213 | 109 | 162 | 224 | 116 | 173 | 239 | 122 | 178 | 257 | 129 | 264 | 270 | 135 | 277 | 279 | 142 | 290 | 288 | 148 | 304 | 297 | 154 | 317 | 305 | 161 | 330 | 313 | 167 | 343 | 320 | 174 | 356 | 326 |
| | D+L (Deflection) | 103 | 124 | 145 | 109 | 141 | 162 | 116 | 161 | 183 | 122 | 178 | 206 | 129 | 207 | 232 | 135 | 233 | 261 | 142 | 261 | 288 | 148 | 291 | 297 | 154 | 317 | 305 | 161 | 330 | 313 | 167 | 343 | 320 | 174 | 356 | 326 |
| | L (Deflection) | 100 | 114 | 129 | 109 | 127 | 142 | 116 | 142 | 157 | 122 | 158 | 174 | 129 | 175 | 193 | 135 | 194 | 214 | 142 | 214 | 236 | 148 | 236 | 259 | 154 | 259 | 284 | 161 | 283 | 311 | 167 | 309 | 320 | 174 | 336 | 326 |
| 18' | 1.2D+1.6L (Strength) | 89 | 126 | 180 | 94 | 197 | 189 | 100 | 210 | 201 | 105 | 222 | 215 | 111 | 233 | 225 | 116 | 245 | 232 | 122 | 257 | 308 | 128 | 268 | 330 | 133 | 280 | 353 | 139 | 292 | 377 | 144 | 303 | 402 | 150 | 315 | 427 |
| | D+L (Deflection) | 81 | 97 | 115 | 94 | 111 | 129 | 100 | 127 | 146 | 105 | 146 | 165 | 111 | 165 | 187 | 116 | 187 | 210 | 122 | 210 | 236 | 128 | 235 | 263 | 133 | 262 | 292 | 139 | 290 | 324 | 144 | 303 | 357 | 150 | 315 | 393 |
| | L (Deflection) | 81 | 96 | 108 | 94 | 107 | 120 | 100 | 119 | 132 | 105 | 133 | 147 | 111 | 148 | 163 | 116 | 163 | 180 | 122 | 180 | 198 | 128 | 199 | 218 | 133 | 218 | 239 | 139 | 238 | 262 | 144 | 260 | 285 | 150 | 283 | 311 |
| 19' | 1.2D+1.6L (Strength) | 77 | 157 | 153 | 81 | 171 | 172 | 86 | 182 | 224 | 91 | 195 | 220 | 96 | 207 | 232 | 101 | 218 | 249 | 105 | 228 | 267 | 110 | 238 | 287 | 115 | 249 | 307 | 120 | 259 | 328 | 125 | 269 | 350 | 130 | 280 | 372 |
| | D+L (Deflection) | 62 | 76 | 90 | 73 | 87 | 102 | 85 | 101 | 116 | 91 | 116 | 132 | 96 | 132 | 150 | 101 | 150 | 170 | 105 | 170 | 191 | 110 | 190 | 214 | 115 | 213 | 239 | 120 | 237 | 265 | 125 | 262 | 293 | 130 | 280 | 323 |
| | L (Deflection) | 62 | 76 | 90 | 73 | 87 | 102 | 85 | 101 | 112 | 91 | 113 | 125 | 96 | 126 | 138 | 101 | 139 | 153 | 105 | 153 | 169 | 110 | 169 | 186 | 115 | 185 | 203 | 120 | 203 | 222 | 125 | 221 | 243 | 130 | 241 | 264 |
| 20' | 1.2D+1.6L (Strength) | 66 | 136 | 170 | 71 | 148 | 183 | 75 | 157 | 195 | 79 | 168 | 191 | 83 | 182 | 201 | 87 | 195 | 216 | 92 | 204 | 232 | 96 | 213 | 249 | 100 | 222 | 267 | 104 | 232 | 286 | 108 | 241 | 305 | 113 | 250 | 325 |
| | D+L (Deflection) | 47 | 58 | 71 | 56 | 68 | 80 | 66 | 79 | 92 | 77 | 92 | 105 | 83 | 105 | 121 | 87 | 120 | 137 | 92 | 137 | 155 | 96 | 154 | 174 | 100 | 173 | 195 | 104 | 193 | 217 | 108 | 215 | 241 | 113 | 238 | 266 |
| | L (Deflection) | 47 | 58 | 71 | 56 | 68 | 80 | 66 | 79 | 92 | 77 | 92 | 105 | 83 | 105 | 119 | 87 | 119 | 131 | 92 | 132 | 145 | 96 | 145 | 159 | 100 | 159 | 174 | 104 | 174 | 191 | 108 | 190 | 208 | 113 | 207 | 226 |
| 21' | 1.2D+1.6L (Strength) | | 118 | 148 | 61 | 129 | 161 | 65 | 135 | 169 | 69 | 145 | 165 | 72 | 157 | 174 | 76 | 170 | 188 | 80 | 183 | 202 | 83 | 191 | 217 | 87 | 199 | 233 | 91 | 208 | 250 | 94 | 216 | 267 | 98 | 224 | 285 |
| | D+L (Deflection) | | 44 | 54 | 41 | 52 | 63 | 50 | 61 | 72 | 59 | 72 | 84 | 70 | 83 | 96 | 76 | 96 | 110 | 80 | 110 | 126 | 83 | 125 | 142 | 87 | 141 | 160 | 91 | 158 | 178 | 94 | 176 | 199 | 98 | 195 | 220 |
| | L (Deflection) | | 44 | 54 | 41 | 52 | 63 | 50 | 61 | 72 | 59 | 72 | 84 | 40 | 83 | 96 | 76 | 96 | 110 | 80 | 110 | 125 | 83 | 125 | 137 | 87 | 137 | 151 | 91 | 150 | 165 | 94 | 164 | 180 | 98 | 178 | 196 |
| 22' | 1.2D+1.6L (Strength) | | | 130 | | 112 | 141 | | 116 | 147 | 60 | 125 | 143 | 63 | 136 | 151 | 66 | 147 | 163 | 69 | 159 | 176 | 73 | 171 | 189 | 76 | 180 | 204 | 79 | 187 | 218 | 82 | 195 | 234 | 86 | 202 | 250 |
| | D+L (Deflection) | | | 41 | | 39 | 48 | | 46 | 56 | 45 | 55 | 66 | 53 | 65 | 76 | 63 | 76 | 88 | 69 | 88 | 101 | 73 | 100 | 115 | 76 | 114 | 130 | 79 | 128 | 146 | 82 | 144 | 164 | 86 | 161 | 182 |
| | L (Deflection) | | | 41 | | 39 | 48 | | 46 | 56 | 45 | 55 | 66 | 53 | 65 | 76 | 63 | 76 | 88 | 69 | 88 | 101 | 73 | 100 | 115 | 76 | 114 | 130 | 79 | 128 | 143 | 82 | 143 | 156 | 86 | 155 | 170 |
| 23' | 1.2D+1.6L (Strength) | | | | | | | | | 128 | | 108 | 124 | 55 | 117 | 131 | 58 | 127 | 142 | 61 | 138 | 153 | 63 | 149 | 165 | 66 | 160 | 178 | 69 | 169 | 191 | 72 | 176 | 205 | 75 | 183 | 219 |
| | D+L (Deflection) | | | | | | | | | 42 | | 42 | 50 | 40 | 50 | 60 | 48 | 59 | 70 | 57 | 69 | 81 | 63 | 80 | 93 | 66 | 91 | 106 | 69 | 104 | 119 | 72 | 117 | 134 | 75 | 132 | 150 |
| | L (Deflection) | | | | | | | | | 42 | | 42 | 50 | 40 | 50 | 60 | 48 | 59 | 70 | 57 | 69 | 81 | 63 | 80 | 93 | 66 | 91 | 106 | 69 | 104 | 119 | 72 | 117 | 134 | 75 | 132 | 149 |
| MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS (l ') (feet-inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Span (l$_1$') | | 13'-10" | 15' - 5" | 16' - 3" | 13' - 7" | 15' - 3" | 16' - 1" | 13' - 4" | 15' - 0" | 15' 11" | 13' - 1" | 14' 10" | 15' - 9" | 12' 10" | 14' - 9" | 15' - 7" | 12' - 7" | 14' - 7" | 15' - 5" | 12' - 5" | 14' - 5" | 15' - 3" | 12' - 2" | 14' - 3" | 15' - 1" | 12' - 0" | 14' - 2" | 15' - 0" | 11' - 10" | 14' - 1" | 14' - 10" | 11' - 8" | 13' - 11" | 14' - 9" | 11' - 6" | 13' - 10" | 14' - 7" |
| Double Span (l$_2$') | | 15' - 1" | 17' - 6" | 19' - 8" | 14' - 10" | 17' - 2" | 19' - 4" | 14' - 7" | 16' - 11" | 19' - 0" | 14' - 4" | 16' - 7" | 18' - 8" | 14' - 2" | 16' - 4" | 18' - 5" | 13' - 10" | 16' - 1" | 18' - 2" | 13' - 8" | 15' - 10" | 17' - 10" | 13' - 5" | 15' - 7" | 17' - 7" | 13' - 4" | 15' - 4" | 17' - 4" | 13' - 1" | 15' - 2" | 17' - 1" | 12' - 11" | 15' - 0" | 16' - 11" | 12' - 8" | 14' - 9" | 16' - 8" |
| Triple Span (l$_3$') | | 15' - 7" | 18' - 0" | 19' - 0" | 15' - 3" | 17' - 9" | 18' - 10" | 15' - 0" | 17' - 6" | 18' - 7" | 14- 10" | 17' - 1" | 18' - 5" | 14' - 6" | 16' - 10" | 18' - 3" | 14' - 4" | 16' - 7" | 18' - 1" | 14' - 1" | 16' - 4" | 17' - 11" | 13' - 10" | 16' - 1" | 17' - 9" | 13' - 8" | 15' - 10" | 17' - 7" | 13' - 6" | 15' - 8" | 17' - 5" | 13' - 4" | 15' - 6" | 17' - 3" | 13' - 2" | 15' - 3" | 17' - 2" |
| Cantilever | | 6' - 6" | 7' - 10" | 9' - 1" | 6' - 5" | 7' - 8" | 8' - 11" | 6' - 3" | 7' - 7" | 8' - 9" | 6' - 2" | 7' - 5" | 8' - 7" | 6' - 1" | 7' - 4" | 8' - 6" | 6' - 0" | 7' - 2" | 8' - 4" | 5' - 11" | 7' - 1" | 8' - 3" | 5' - 10" | 7' - 0" | 8' - 1" | 5' - 9" | 6' - 11" | 8' - 0" | 5' - 8" | 6' - 10" | 7' - 10" | 5' - 7" | 6' - 9" | 7' - 9" | 5' - 6" | 6' - 8" | 7' - 8" |
| cy/100sf | | 1.43 | | | 1.50 | | | 1.58 | | | 1.66 | | | 1.74 | | | 1.81 | | | 1.89 | | | 1.97 | | | 2.04 | | | 2.12 | | | 2.20 | | | 2.28 | | |

See Tables notes on page 11.

TABLE 11—VERSA-DEK® COMPOSITE 3.5 LS

NORMAL WEIGHT CONCRETE (145 PCF), f'c = 3,000 psi

SIMPLE SPAN SLAB DESIGN - NO STUDS ON BEAMS
MAXIMUM SUPERIMPOSED LOADS (psf)

| h, inch (Wc, psf) | | 5.5" (55.89) | | | 5.75" (58.91) | | | 6" (61.93) | | | 6.25" (64.95) | | | 6.5" (67.97) | | | 6.75" (70.99) | | | 7" (74.01) | | | 7.25" (77.03) | | | 7.5" (80.05) | | | 7.75" (83.07) | | | 8" (86.09) | | | 8.25" (89.11) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Span (ℓ) | Based on the following Load Combinations | GAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 |
| 11' | 1.2D+1.6L (Strength) | 280 | 446 | 592 | 286 | 468 | 640 | 290 | 486 | 640 | 293 | 502 | 640 | 295 | 518 | 640 | 295 | 533 | 640 | 294 | 547 | 640 | 414 | 559 | 640 | 432 | 571 | 640 | 450 | 581 | 640 | 468 | 589 | 640 | 486 | 596 | 640 |
| | D+L (Deflection) | 280 | 400 | 400 | 286 | 400 | 400 | 290 | 400 | 400 | 293 | 400 | 400 | 295 | 400 | 400 | 295 | 400 | 400 | 294 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 280 | 400 | 400 | 286 | 400 | 400 | 290 | 400 | 400 | 293 | 400 | 400 | 295 | 400 | 400 | 295 | 400 | 400 | 294 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| 12' | 1.2D+1.6L (Strength) | 197 | 340 | 466 | 197 | 354 | 505 | 265 | 364 | 530 | 280 | 374 | 551 | 295 | 382 | 571 | 309 | 389 | 590 | 324 | 395 | 608 | 339 | 399 | 626 | 353 | 402 | 640 | 368 | 404 | 640 | 382 | 404 | 640 | 397 | 403 | 640 |
| | D+L (Deflection) | 197 | 340 | 400 | 197 | 354 | 400 | 265 | 364 | 400 | 280 | 374 | 400 | 295 | 382 | 400 | 309 | 389 | 400 | 324 | 395 | 400 | 339 | 399 | 400 | 353 | 400 | 400 | 368 | 400 | 400 | 382 | 400 | 400 | 397 | 400 | 400 |
| | L (Deflection) | 197 | 340 | 400 | 197 | 354 | 400 | 265 | 364 | 400 | 280 | 374 | 400 | 295 | 382 | 400 | 309 | 389 | 400 | 324 | 395 | 400 | 339 | 399 | 400 | 353 | 400 | 400 | 368 | 400 | 400 | 382 | 400 | 400 | 397 | 400 | 400 |
| 13' | 1.2D+1.6L (Strength) | 195 | 258 | 369 | 207 | 266 | 397 | 219 | 270 | 414 | 232 | 273 | 428 | 239 | 276 | 440 | 256 | 277 | 452 | 268 | 276 | 463 | 280 | 274 | 473 | 292 | 271 | 481 | 304 | 456 | 489 | 317 | 465 | 495 | 329 | 474 | 500 |
| | D+L (Deflection) | 195 | 258 | 369 | 207 | 266 | 397 | 219 | 270 | 400 | 232 | 273 | 400 | 239 | 276 | 400 | 256 | 277 | 400 | 268 | 276 | 400 | 280 | 274 | 400 | 292 | 271 | 400 | 304 | 400 | 400 | 317 | 400 | 400 | 329 | 400 | 400 |
| | L (Deflection) | 195 | 258 | 354 | 207 | 266 | 396 | 219 | 270 | 400 | 232 | 273 | 400 | 239 | 276 | 400 | 256 | 277 | 400 | 268 | 276 | 400 | 280 | 274 | 400 | 292 | 271 | 400 | 304 | 400 | 400 | 317 | 400 | 400 | 329 | 400 | 400 |
| 14' | 1.2D+1.6L (Strength) | 163 | 192 | 291 | 173 | 195 | 311 | 183 | 195 | 322 | 193 | 303 | 330 | 204 | 312 | 337 | 214 | 321 | 343 | 224 | 328 | 348 | 234 | 335 | 351 | 244 | 341 | 354 | 254 | 347 | 529 | 265 | 512 | 543 | 275 | 532 | 557 |
| | D+L (Deflection) | 163 | 192 | 291 | 173 | 195 | 311 | 183 | 195 | 322 | 193 | 303 | 330 | 204 | 312 | 337 | 214 | 321 | 343 | 224 | 328 | 348 | 234 | 335 | 351 | 244 | 341 | 354 | 254 | 347 | 400 | 265 | 400 | 400 | 275 | 400 | 400 |
| | L (Deflection) | 163 | 192 | 283 | 173 | 195 | 311 | 183 | 195 | 322 | 193 | 303 | 330 | 204 | 312 | 337 | 214 | 321 | 343 | 224 | 328 | 348 | 234 | 335 | 351 | 244 | 341 | 354 | 254 | 347 | 400 | 265 | 400 | 400 | 275 | 400 | 400 |
| 15' | 1.2D+1.6L (Strength) | 137 | 218 | 229 | 146 | 227 | 242 | 154 | 233 | 288 | 163 | 239 | 310 | 172 | 244 | 335 | 180 | 327 | 360 | 189 | 351 | 387 | 197 | 377 | 401 | 206 | 404 | 411 | 214 | 425 | 421 | 223 | 442 | 430 | 232 | 459 | 438 |
| | D+L (Deflection) | 137 | 218 | 229 | 146 | 227 | 242 | 154 | 233 | 288 | 163 | 239 | 310 | 172 | 244 | 335 | 180 | 327 | 360 | 189 | 351 | 387 | 197 | 377 | 400 | 206 | 400 | 400 | 214 | 400 | 400 | 223 | 400 | 400 | 232 | 400 | 400 |
| | L (Deflection) | 137 | 209 | 229 | 146 | 227 | 242 | 154 | 233 | 288 | 163 | 239 | 310 | 172 | 244 | 335 | 180 | 327 | 360 | 189 | 351 | 387 | 197 | 377 | 400 | 206 | 400 | 400 | 214 | 400 | 400 | 223 | 400 | 400 | 232 | 400 | 400 |
| 16' | 1.2D+1.6L (Strength) | 116 | 175 | 237 | 124 | 180 | 227 | 131 | 216 | 240 | 138 | 234 | 260 | 145 | 253 | 281 | 153 | 273 | 303 | 160 | 295 | 313 | 167 | 317 | 320 | 175 | 339 | 327 | 182 | 363 | 401 | 189 | 385 | 428 | 197 | 399 | 455 |
| | D+L (Deflection) | 116 | 175 | 223 | 124 | 180 | 227 | 131 | 216 | 240 | 138 | 234 | 260 | 145 | 253 | 281 | 153 | 273 | 303 | 160 | 295 | 313 | 167 | 317 | 320 | 175 | 339 | 327 | 182 | 363 | 400 | 189 | 385 | 400 | 197 | 399 | 400 |
| | L (Deflection) | 116 | 172 | 190 | 124 | 180 | 213 | 131 | 216 | 238 | 138 | 234 | 260 | 145 | 253 | 281 | 153 | 273 | 303 | 160 | 295 | 313 | 167 | 317 | 320 | 175 | 339 | 327 | 182 | 363 | 400 | 189 | 385 | 400 | 197 | 399 | 400 |
| 17' | 1.2D+1.6L (Strength) | 99 | 156 | 199 | 105 | 165 | 190 | 112 | 180 | 201 | 118 | 196 | 218 | 124 | 212 | 236 | 130 | 229 | 255 | 137 | 247 | 275 | 143 | 266 | 296 | 149 | 286 | 317 | 155 | 307 | 340 | 161 | 328 | 363 | 168 | 350 | 387 |
| | D+L (Deflection) | 99 | 155 | 176 | 105 | 165 | 190 | 112 | 180 | 201 | 118 | 196 | 218 | 124 | 212 | 236 | 130 | 229 | 255 | 137 | 247 | 275 | 143 | 266 | 296 | 149 | 286 | 317 | 155 | 307 | 340 | 161 | 328 | 363 | 168 | 350 | 387 |
| | L (Deflection) | 99 | 143 | 158 | 105 | 161 | 177 | 112 | 180 | 198 | 118 | 196 | 218 | 124 | 212 | 236 | 130 | 229 | 255 | 137 | 247 | 275 | 143 | 266 | 296 | 149 | 286 | 317 | 155 | 307 | 340 | 161 | 328 | 363 | 168 | 350 | 387 |
| 18' | 1.2D+1.6L (Strength) | 85 | 129 | 168 | 90 | 137 | 159 | 95 | 150 | 169 | 101 | 163 | 183 | 106 | 177 | 199 | 112 | 192 | 215 | 117 | 208 | 232 | 122 | 224 | 250 | 128 | 242 | 269 | 133 | 260 | 289 | 138 | 278 | 309 | 144 | 297 | 330 |
| | D+L (Deflection) | 85 | 121 | 139 | 90 | 137 | 159 | 95 | 150 | 169 | 101 | 163 | 183 | 106 | 177 | 199 | 112 | 192 | 215 | 117 | 208 | 232 | 122 | 224 | 250 | 128 | 242 | 269 | 133 | 260 | 289 | 138 | 278 | 309 | 144 | 297 | 330 |
| | L (Deflection) | 85 | 121 | 133 | 90 | 136 | 149 | 95 | 150 | 167 | 101 | 163 | 183 | 106 | 177 | 199 | 112 | 192 | 215 | 117 | 208 | 232 | 122 | 224 | 250 | 128 | 242 | 269 | 133 | 260 | 289 | 138 | 278 | 309 | 144 | 297 | 330 |
| 19' | 1.2D+1.6L (Strength) | 73 | 107 | 141 | 77 | 114 | 133 | 82 | 124 | 141 | 87 | 136 | 154 | 91 | 148 | 167 | 96 | 161 | 181 | 100 | 175 | 196 | 105 | 189 | 212 | 110 | 204 | 228 | 114 | 219 | 245 | 119 | 236 | 263 | 124 | 252 | 282 |
| | D+L (Deflection) | 73 | 94 | 109 | 77 | 110 | 126 | 82 | 124 | 141 | 87 | 136 | 154 | 91 | 148 | 167 | 96 | 161 | 181 | 100 | 175 | 196 | 105 | 189 | 212 | 110 | 204 | 228 | 114 | 219 | 245 | 119 | 236 | 263 | 124 | 252 | 282 |
| | L (Deflection) | 73 | 94 | 109 | 77 | 110 | 126 | 82 | 124 | 141 | 87 | 136 | 154 | 91 | 148 | 167 | 96 | 161 | 181 | 100 | 175 | 196 | 105 | 189 | 212 | 110 | 204 | 228 | 114 | 219 | 245 | 119 | 236 | 263 | 124 | 252 | 282 |
| 20' | 1.2D+1.6L (Strength) | 63 | 88 | 119 | 67 | 93 | 110 | 71 | 102 | 117 | 75 | 112 | 128 | 79 | 123 | 140 | 83 | 134 | 152 | 87 | 146 | 165 | 91 | 159 | 179 | 95 | 172 | 194 | 99 | 185 | 209 | 103 | 199 | 224 | 107 | 214 | 240 |
| | D+L (Deflection) | 59 | 72 | 84 | 67 | 85 | 99 | 71 | 100 | 115 | 75 | 112 | 128 | 79 | 123 | 140 | 83 | 134 | 152 | 87 | 146 | 165 | 91 | 159 | 179 | 95 | 172 | 194 | 99 | 185 | 209 | 103 | 199 | 224 | 107 | 214 | 240 |
| | L (Deflection) | 59 | 72 | 84 | 67 | 85 | 99 | 71 | 100 | 115 | 75 | 112 | 128 | 79 | 123 | 140 | 83 | 134 | 152 | 87 | 146 | 165 | 91 | 159 | 179 | 95 | 172 | 194 | 99 | 185 | 209 | 103 | 199 | 224 | 107 | 214 | 240 |
| 21' | 1.2D+1.6L (Strength) | 54 | 71 | 99 | 57 | 76 | 91 | 61 | 84 | 97 | 64 | 92 | 107 | 68 | 101 | 117 | 71 | 111 | 128 | 75 | 122 | 139 | 78 | 133 | 151 | 82 | 144 | 164 | 85 | 156 | 177 | 89 | 168 | 191 | 87 | 181 | 205 |
| | D+L (Deflection) | 43 | 54 | 64 | 53 | 65 | 76 | 61 | 78 | 90 | 64 | 92 | 106 | 68 | 101 | 117 | 71 | 111 | 128 | 75 | 122 | 139 | 78 | 133 | 151 | 82 | 144 | 164 | 85 | 156 | 177 | 89 | 168 | 191 | 87 | 181 | 205 |
| | L (Deflection) | 43 | 54 | 64 | 53 | 65 | 76 | 61 | 78 | 90 | 64 | 92 | 106 | 68 | 101 | 117 | 71 | 111 | 128 | 75 | 122 | 139 | 78 | 133 | 151 | 82 | 144 | 164 | 85 | 156 | 177 | 89 | 168 | 191 | 87 | 181 | 205 |
| 22' | 1.2D+1.6L (Strength) | | | 82 | | 61 | 74 | 52 | 67 | 80 | 55 | 75 | 88 | 58 | 83 | 97 | 61 | 91 | 106 | 64 | 100 | 116 | 67 | 110 | 127 | 70 | 120 | 138 | 69 | 130 | 149 | 72 | 141 | 161 | 75 | 153 | 174 |
| | D+L (Deflection) | | | 48 | | 48 | 58 | 48 | 59 | 70 | 55 | 71 | 83 | 58 | 83 | 97 | 61 | 91 | 106 | 64 | 100 | 116 | 67 | 110 | 127 | 70 | 120 | 138 | 69 | 130 | 149 | 72 | 141 | 161 | 75 | 153 | 174 |
| | L (Deflection) | | | 48 | | 48 | 58 | 48 | 59 | 70 | 55 | 71 | 83 | 58 | 83 | 97 | 61 | 91 | 106 | 64 | 100 | 116 | 67 | 110 | 127 | 70 | 120 | 138 | 69 | 130 | 149 | 72 | 141 | 161 | 75 | 153 | 174 |
| 23' | 1.2D+1.6L (Strength) | | | | | | 60 | | 53 | 64 | 46 | 60 | 71 | 50 | 67 | 79 | 53 | 74 | 87 | 56 | 82 | 96 | 54 | 90 | 105 | 57 | 99 | 115 | 59 | 108 | 125 | 62 | 118 | 136 | 64 | 128 | 147 |
| | D+L (Deflection) | | | | | | 43 | | 43 | 53 | 42 | 53 | 64 | 50 | 64 | 76 | 53 | 74 | 87 | 56 | 82 | 96 | 54 | 90 | 105 | 57 | 99 | 115 | 59 | 108 | 125 | 62 | 118 | 136 | 64 | 128 | 147 |
| | L (Deflection) | | | | | | 43 | | 43 | 53 | 42 | 53 | 64 | 50 | 64 | 76 | 53 | 74 | 87 | 56 | 82 | 96 | 54 | 90 | 105 | 57 | 99 | 115 | 59 | 108 | 125 | 62 | 118 | 136 | 64 | 128 | 147 |
| MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS (ℓ') (feet-inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Span ($\ell_1$') | | 12' - 5" | 14' - 5" | 15' - 3" | 12' - 2" | 14' - 3" | 15' - 1" | 11' - 11" | 14' - 1" | 14' - 11" | 11' - 8" | 13' - 11" | 14' - 9" | 11' - 6" | 13' - 10" | 14' - 7" | 11' - 3" | 13' - 8" | 14' - 6" | 11' - 1" | 13' - 6" | 14' - 4" | 10 11" | 13' - 3" | 14' - 2" | 10' - 8" | 13' - 1" | 14' - 1" | 10' - 6" | 12' - 10" | 13'-11" | 10' - 5" | 12' - 8" | 13'-10" | 10' - 3" | 12' - 6" | 13' - 9" |
| Double Span ($\ell_2$') | | 13' - 8" | 15' - 10" | 17'-10" | 13' - 5" | 15' - 6" | 17' - 6" | 13' - 2" | 15' - 3" | 17' - 3" | 12'-11" | 15' - 0" | 16'-11" | 12' - 7" | 14' - 9" | 16' - 8" | 12' - 2" | 14' - 6" | 16' - 4" | 11'-10" | 14' - 3" | 16' - 2" | 11' - 6" | 14' - 0" | 15'-10" | 11' - 1" | 13' - 10" | 15' - 7" | 10'-10" | 13' - 7" | 15' - 5" | 10' - 6" | 13' - 5" | 15' - 2" | 10' - 3" | 13' - 3" | 14' - 11" |
| Triple Span ($\ell_3$') | | 14' - 2" | 16' - 4" | 17'-11" | 13' - 10" | 16' - 0" | 17' - 8" | 13' - 7" | 15' - 9" | 17' - 6" | 13' - 4" | 15' - 6" | 17' - 3" | 13' - 1" | 15' - 3" | 17' - 1" | 12' - 8" | 14' - 11" | 16'-11" | 12' - 4" | 14' - 9" | 16' - 7" | 11'-11" | 14' - 6" | 16' - 4" | 11' - 7" | 14' - 3" | 16' - 1" | 11' - 3" | 14' - 1" | 15'-10" | 10'-11" | 13' - 10" | 15' - 8" | 10' - 8" | 13' - 8" | 15' - 6" |
| Cantilever | | 5' - 11" | 7' - 1" | 8' - 3" | 5' - 10" | 7' - 0" | 8' - 1" | 5' - 9" | 6' - 10" | 7' - 11" | 5' - 7" | 6' - 9" | 7' - 9" | 5' - 6" | 6' - 7" | 7' - 8" | 5' - 5" | 6' - 6" | 7' - 6" | 5' - 4" | 6' - 5" | 7' - 5" | 5' - 3" | 6' - 4" | 7' - 3" | 5' - 3" | 6' - 3" | 7' - 2" | 5' - 2" | 6' - 2" | 7' - 1" | 5' - 1" | 6' - 0" | 7' - 0" | 5' - 0" | 6' - 0" | 6' - 11" |
| cy/100sf | | 1.43 | | | 1.50 | | | 1.58 | | | 1.66 | | | 1.74 | | | 1.81 | | | 1.89 | | | 1.97 | | | 2.04 | | | 2.12 | | | 2.20 | | | 2.28 | | |

See Tables notes on page 11.

TABLE 12—VERSA-DEK® COMPOSITE 3.5 LS ACOUSTICAL

LIGHT WEIGHT CONCRETE (110 PCF), f'c = 3,000 psi

SIMPLE SPAN SLAB DESIGN - NO STUDS ON BEAMS
MAXIMUM SUPERIMPOSED LOADS (psf)

| h, inch (Wc, psf) | | 5.5" (33.8) | | | 5.75" (36.09) | | | 6" (38.39) | | | 6.25" (40.68) | | | 6.5" (42.97) | | | 6.75" (45.26) | | | 7" (47.55) | | | 7.25" (49.84) | | | 7.5" (52.14) | | | 7.75" (54.43) | | | 8" (56.72) | | | 8.25" (59.01) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Span (l) | Based on the following Load Combinations | GAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 |
| 11' | 1.2D+1.6L (Strength) | 304 | 414 | 511 | 319 | 440 | 543 | 331 | 466 | 576 | 342 | 492 | 608 | 353 | 518 | 640 | 363 | 544 | 640 | 373 | 570 | 640 | 381 | 592 | 640 | 388 | 612 | 640 | 395 | 632 | 640 | 400 | 640 | 640 | 404 | 640 | 640 |
| | D+L (Deflection) | 304 | 400 | 400 | 319 | 400 | 400 | 331 | 400 | 400 | 342 | 400 | 400 | 353 | 400 | 400 | 363 | 400 | 400 | 373 | 400 | 400 | 381 | 400 | 400 | 388 | 400 | 400 | 395 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 293 | 341 | 391 | 319 | 382 | 400 | 331 | 400 | 400 | 342 | 400 | 400 | 353 | 400 | 400 | 363 | 400 | 400 | 373 | 400 | 400 | 381 | 400 | 400 | 388 | 400 | 400 | 395 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| 12' | 1.2D+1.6L (Strength) | 235 | 333 | 421 | 244 | 360 | 448 | 252 | 382 | 475 | 258 | 398 | 501 | 264 | 413 | 528 | 268 | 428 | 554 | 272 | 443 | 581 | 275 | 456 | 607 | 277 | 470 | 634 | 278 | 482 | 640 | 277 | 493 | 640 | 420 | 504 | 640 |
| | D+L (Deflection) | 235 | 333 | 400 | 244 | 360 | 400 | 252 | 382 | 400 | 258 | 398 | 400 | 264 | 400 | 400 | 268 | 400 | 400 | 272 | 400 | 400 | 275 | 400 | 400 | 277 | 400 | 400 | 278 | 400 | 400 | 277 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 226 | 263 | 301 | 244 | 294 | 334 | 252 | 329 | 371 | 258 | 368 | 400 | 264 | 400 | 400 | 268 | 400 | 400 | 272 | 400 | 400 | 275 | 400 | 400 | 277 | 400 | 400 | 278 | 400 | 400 | 277 | 400 | 400 | 400 | 400 | 400 |
| 13' | 1.2D+1.6L (Strength) | 181 | 267 | 352 | 187 | 287 | 374 | 190 | 303 | 397 | 192 | 314 | 419 | 194 | 324 | 441 | 195 | 334 | 463 | 194 | 343 | 486 | 294 | 351 | 506 | 302 | 359 | 523 | 308 | 365 | 539 | 314 | 371 | 555 | 320 | 376 | 570 |
| | D+L (Deflection) | 181 | 267 | 352 | 187 | 287 | 374 | 190 | 303 | 397 | 192 | 314 | 400 | 194 | 324 | 400 | 195 | 334 | 400 | 194 | 343 | 400 | 294 | 351 | 400 | 302 | 359 | 400 | 308 | 365 | 400 | 314 | 371 | 400 | 320 | 376 | 400 |
| | L (Deflection) | 178 | 207 | 237 | 187 | 231 | 263 | 190 | 259 | 292 | 192 | 290 | 325 | 194 | 322 | 362 | 195 | 334 | 400 | 194 | 343 | 400 | 294 | 351 | 400 | 302 | 359 | 400 | 308 | 365 | 400 | 314 | 371 | 400 | 320 | 376 | 400 |
| 14' | 1.2D+1.6L (Strength) | 139 | 215 | 289 | 141 | 229 | 308 | 141 | 241 | 331 | 207 | 248 | 352 | 213 | 254 | 366 | 219 | 259 | 379 | 224 | 264 | 392 | 229 | 268 | 404 | 233 | 271 | 415 | 236 | 273 | 426 | 239 | 274 | 436 | 310 | 384 | 445 |
| | D+L (Deflection) | 139 | 215 | 285 | 141 | 229 | 308 | 141 | 241 | 331 | 207 | 248 | 352 | 213 | 254 | 366 | 219 | 259 | 379 | 224 | 264 | 392 | 229 | 268 | 400 | 233 | 271 | 400 | 236 | 273 | 400 | 239 | 274 | 400 | 310 | 384 | 400 |
| | L (Deflection) | 139 | 166 | 190 | 141 | 185 | 210 | 141 | 207 | 234 | 202 | 232 | 260 | 213 | 254 | 290 | 219 | 259 | 321 | 224 | 264 | 355 | 229 | 268 | 391 | 233 | 271 | 400 | 236 | 273 | 400 | 239 | 274 | 400 | 310 | 384 | 400 |
| 15' | 1.2D+1.6L (Strength) | 150 | 173 | 239 | 156 | 183 | 253 | 161 | 190 | 271 | 165 | 194 | 287 | 169 | 197 | 296 | 172 | 250 | 305 | 213 | 263 | 314 | 222 | 275 | 321 | 232 | 287 | 328 | 242 | 299 | 335 | 252 | 311 | 397 | 261 | 322 | 413 |
| | D+L (Deflection) | 137 | 173 | 232 | 156 | 183 | 253 | 161 | 190 | 271 | 165 | 194 | 287 | 169 | 197 | 296 | 172 | 250 | 305 | 213 | 263 | 314 | 222 | 275 | 321 | 232 | 287 | 328 | 242 | 299 | 335 | 252 | 311 | 397 | 261 | 322 | 400 |
| | L (Deflection) | 116 | 135 | 154 | 131 | 151 | 171 | 147 | 169 | 190 | 164 | 188 | 212 | 169 | 197 | 235 | 172 | 233 | 261 | 213 | 258 | 288 | 222 | 275 | 318 | 232 | 287 | 328 | 242 | 299 | 335 | 252 | 311 | 397 | 261 | 322 | 400 |
| 16' | 1.2D+1.6L (Strength) | 122 | 161 | 198 | 126 | 171 | 208 | 129 | 182 | 222 | 156 | 192 | 233 | 164 | 202 | 261 | 172 | 212 | 274 | 180 | 222 | 287 | 189 | 233 | 300 | 197 | 242 | 313 | 205 | 247 | 326 | 213 | 252 | 340 | 222 | 255 | 353 |
| | D+L (Deflection) | 106 | 129 | 191 | 122 | 146 | 208 | 129 | 166 | 222 | 156 | 188 | 233 | 164 | 202 | 243 | 172 | 212 | 272 | 180 | 222 | 287 | 189 | 233 | 300 | 197 | 242 | 313 | 205 | 247 | 326 | 213 | 252 | 340 | 222 | 255 | 353 |
| | L (Deflection) | 95 | 111 | 127 | 108 | 124 | 141 | 121 | 139 | 157 | 135 | 155 | 174 | 151 | 173 | 194 | 168 | 192 | 215 | 180 | 212 | 238 | 189 | 233 | 262 | 197 | 242 | 288 | 205 | 247 | 315 | 213 | 252 | 340 | 222 | 255 | 353 |
| 17' | 1.2D+1.6L (Strength) | 112 | 137 | 179 | 119 | 146 | 190 | 126 | 155 | 202 | 133 | 164 | 213 | 140 | 172 | 224 | 147 | 181 | 236 | 154 | 188 | 247 | 161 | 191 | 258 | 168 | 207 | 270 | 175 | 216 | 281 | 182 | 224 | 292 | 189 | 233 | 304 |
| | D+L (Deflection) | 82 | 101 | 120 | 95 | 115 | 135 | 110 | 131 | 152 | 125 | 149 | 172 | 140 | 169 | 194 | 147 | 181 | 218 | 154 | 188 | 244 | 161 | 191 | 258 | 168 | 207 | 270 | 175 | 216 | 281 | 182 | 224 | 292 | 189 | 233 | 304 |
| | L (Deflection) | 79 | 93 | 106 | 90 | 103 | 117 | 101 | 116 | 131 | 113 | 129 | 145 | 126 | 144 | 162 | 140 | 160 | 179 | 154 | 177 | 198 | 161 | 191 | 218 | 168 | 207 | 240 | 175 | 216 | 263 | 182 | 224 | 287 | 189 | 233 | 304 |
| 18' | 1.2D+1.6L (Strength) | 96 | 118 | 155 | 102 | 125 | 165 | 108 | 133 | 174 | 114 | 140 | 184 | 120 | 148 | 194 | 126 | 155 | 204 | 132 | 162 | 214 | 138 | 170 | 224 | 144 | 177 | 233 | 150 | 185 | 243 | 156 | 192 | 253 | 162 | 200 | 263 |
| | D+L (Deflection) | 64 | 79 | 95 | 74 | 90 | 107 | 86 | 104 | 121 | 99 | 119 | 138 | 113 | 135 | 156 | 126 | 153 | 176 | 132 | 162 | 198 | 138 | 170 | 221 | 144 | 177 | 233 | 150 | 185 | 243 | 156 | 192 | 253 | 162 | 200 | 263 |
| | L (Deflection) | 64 | 78 | 89 | 74 | 87 | 99 | 85 | 98 | 110 | 95 | 109 | 123 | 106 | 121 | 136 | 118 | 135 | 151 | 131 | 149 | 167 | 138 | 164 | 184 | 144 | 177 | 202 | 150 | 185 | 221 | 156 | 192 | 242 | 162 | 200 | 263 |
| 19' | 1.2D+1.6L (Strength) | 82 | 101 | 135 | 87 | 108 | 143 | 93 | 114 | 152 | 98 | 120 | 160 | 103 | 127 | 169 | 108 | 133 | 177 | 113 | 140 | 186 | 119 | 146 | 194 | 124 | 153 | 203 | 129 | 159 | 212 | 134 | 165 | 220 | 139 | 172 | 229 |
| | D+L (Deflection) | 48 | 61 | 75 | 57 | 71 | 85 | 67 | 82 | 97 | 77 | 94 | 110 | 89 | 108 | 126 | 102 | 122 | 142 | 113 | 138 | 160 | 119 | 146 | 179 | 124 | 153 | 200 | 129 | 159 | 212 | 134 | 165 | 220 | 139 | 172 | 229 |
| | L (Deflection) | 48 | 61 | 75 | 57 | 71 | 84 | 67 | 82 | 94 | 77 | 93 | 104 | 89 | 103 | 116 | 100 | 115 | 128 | 111 | 127 | 142 | 119 | 140 | 156 | 124 | 153 | 172 | 129 | 159 | 188 | 134 | 165 | 206 | 139 | 172 | 224 |
| 20' | 1.2D+1.6L (Strength) | | 87 | 118 | 75 | 93 | 125 | 80 | 98 | 132 | 84 | 104 | 140 | 89 | 109 | 147 | 93 | 115 | 155 | 98 | 120 | 162 | 102 | 126 | 170 | 107 | 132 | 177 | 111 | 137 | 185 | 116 | 143 | 192 | 120 | 148 | 200 |
| | D+L (Deflection) | | 47 | 59 | 43 | 55 | 67 | 51 | 64 | 77 | 60 | 74 | 88 | 70 | 86 | 101 | 80 | 98 | 115 | 92 | 111 | 130 | 102 | 126 | 146 | 107 | 132 | 164 | 111 | 137 | 182 | 116 | 143 | 192 | 120 | 148 | 200 |
| | L (Deflection) | | 47 | 59 | 43 | 55 | 67 | 51 | 64 | 77 | 60 | 74 | 88 | 70 | 86 | 99 | 80 | 98 | 110 | 92 | 109 | 122 | 102 | 120 | 134 | 107 | 132 | 147 | 111 | 137 | 161 | 116 | 143 | 176 | 120 | 148 | 192 |
| 21' | 1.2D+1.6L (Strength) | | | 103 | | 80 | 110 | | 85 | 116 | 73 | 90 | 123 | 77 | 95 | 129 | 81 | 99 | 136 | 85 | 104 | 142 | 89 | 109 | 149 | 92 | 114 | 155 | 96 | 119 | 162 | 100 | 123 | 168 | 104 | 128 | 175 |
| | D+L (Deflection) | | | 45 | | 42 | 52 | | 50 | 60 | 46 | 58 | 70 | 54 | 68 | 81 | 63 | 78 | 92 | 73 | 89 | 105 | 83 | 101 | 119 | 92 | 114 | 133 | 96 | 119 | 149 | 100 | 123 | 167 | 104 | 128 | 175 |
| | L (Deflection) | | | 45 | | 42 | 52 | | 50 | 60 | 46 | 58 | 70 | 54 | 68 | 81 | 63 | 78 | 92 | 73 | 89 | 105 | 83 | 101 | 116 | 92 | 114 | 127 | 96 | 119 | 139 | 100 | 123 | 152 | 104 | 128 | 166 |
| 22' | 1.2D+1.6L (Strength) | | | | | | 96 | | | 102 | | 78 | 108 | 67 | 82 | 113 | 70 | 86 | 119 | 73 | 90 | 125 | 77 | 94 | 131 | 80 | 98 | 136 | 83 | 103 | 142 | 87 | 107 | 148 | 90 | 111 | 154 |
| | D+L (Deflection) | | | | | | 40 | | | 47 | | 45 | 55 | 41 | 53 | 64 | 48 | 61 | 74 | 57 | 71 | 84 | 65 | 81 | 96 | 75 | 92 | 109 | 83 | 103 | 122 | 87 | 107 | 137 | 90 | 111 | 152 |
| | L (Deflection) | | | | | | 40 | | | 47 | | 45 | 55 | 41 | 53 | 64 | 48 | 61 | 74 | 57 | 71 | 84 | 65 | 81 | 96 | 75 | 92 | 109 | 83 | 103 | 121 | 87 | 107 | 132 | 90 | 111 | 144 |
| 23' | 1.2D+1.6L (Strength) | | | | | | | | | | | | 95 | | 71 | 100 | | 75 | 105 | 64 | 78 | 110 | 66 | 82 | 115 | 69 | 85 | 120 | 72 | 89 | 125 | 75 | 92 | 130 | 78 | 96 | 135 |
| | D+L (Deflection) | | | | | | | | | | | | 42 | | 40 | 50 | | 48 | 58 | 43 | 56 | 67 | 51 | 64 | 77 | 59 | 74 | 88 | 68 | 84 | 99 | 75 | 92 | 112 | 78 | 96 | 125 |
| | L (Deflection) | | | | | | | | | | | | 42 | | 40 | 50 | | 48 | 58 | 43 | 56 | 67 | 51 | 64 | 77 | 59 | 74 | 88 | 68 | 84 | 99 | 75 | 92 | 112 | 78 | 96 | 125 |
| MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS (l ') (feet-inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Span ($l_1$') | | 14' - 10" | 15' - 11" | 16' - 9" | 14' - 6" | 15' - 8" | 16' - 6" | 14' - 3" | 15' - 5" | 16' - 4" | 13' -11" | 15' - 3" | 16' - 1" | 13' - 7" | 15' - 1" | 15' - 11" | 13' - 4" | 14' - 10" | 15' - 9" | 13' - 1" | 14' - 9" | 15' - 6" | 12'-10" | 14' - 7" | 15' - 5" | 12' - 7" | 14' - 5" | 15' - 3" | 12' - 5" | 14' - 3" | 15' - 1" | 12' - 2" | 14' - 1" | 14' - 11" | 12' - 0" | 14' - 0" | 14' - 10" |
| Double Span ($l_2$') | | 16' - 4" | 18' - 10" | 20'-11" | 16' - 0" | 18' - 6" | 20' - 7" | 15' - 8" | 18' - 1" | 20' - 4" | 15' - 4" | 17' - 9" | 19' - 11" | 15' - 0" | 17' - 5" | 19' - 7" | 14'-10" | 17' - 2" | 19' - 3" | 14' - 6" | 16'-10" | 18'-11" | 14' - 4" | 16' - 6" | 18' - 8" | 14' - 1" | 16' - 4" | 18' - 4" | 13'-10" | 16' - 1" | 18' - 1" | 13' - 7" | 15'-10" | 17' - 9" | 13' - 5" | 15' - 7" | 17' - 6" |
| Triple Span ($l_3$') | | 16' - 10" | 18' - 7" | 19' - 8" | 16' - 5" | 18' - 4" | 19' - 4" | 16' - 1" | 18' - 1" | 19' - 1" | 15'-10" | 17'-10" | 18' - 10" | 15' - 7" | 17' - 8" | 18' - 8" | 15' - 3" | 17' - 5" | 18' - 5" | 15' - 0" | 17' - 3" | 18' - 3" | 14' - 9" | 17' - 0" | 18' - 0" | 14' - 6" | 16'-10" | 17' - 10" | 14' - 3" | 16' - 7" | 17' - 8" | 14' - 1" | 16' - 4" | 17' - 6" | 13'-10" | 16' - 1" | 17' - 4" |
| Cantilever | | 7' - 0" | 8' - 5" | 9' - 6" | 6' - 10" | 8' - 3" | 9' - 5" | 6' - 9" | 8' - 1" | 9' - 3" | 6' - 7" | 7' - 11" | 9' - 2" | 6' - 6" | 7' - 10" | 9' - 0" | 6' - 4" | 7' - 8" | 8' - 10" | 6' - 3" | 7' - 6" | 8' - 9" | 6' - 2" | 7' - 5" | 8' - 7" | 6' - 1" | 7' - 3" | 8' - 5" | 6' - 0" | 7' - 2" | 8' - 4" | 5' - 11" | 7' - 1" | 8' - 2" | 5' - 10" | 7' - 0" | 8' - 1" |
| cy/100sf | | 1.14 | | | 1.22 | | | 1.29 | | | 1.37 | | | 1.45 | | | 1.52 | | | 1.60 | | | 1.68 | | | 1.76 | | | 1.83 | | | 1.91 | | | 1.99 | | |

See Tables notes on page 11.

TABLE 13—VERSA-DEK® COMPOSITE 3.5 LS ACOUSTICAL

NORMAL WEIGHT CONCRETE (145 PCF), f'c = 3,000 psi

SIMPLE SPAN SLAB DESIGN - NO STUDS ON BEAMS
MAXIMUM SUPERIMPOSED LOADS (psf)

| h, inch (Wc, psf) | | 5.5" (44.56) | | | 5.75" (47.58) | | | 6" (50.6) | | | 6.25" (53.62) | | | 6.5" (56.64) | | | 6.75" (59.66) | | | 7" (62.68) | | | 7.25" (65.7) | | | 7.5" (68.72) | | | 7.75" (71.74) | | | 8" (74.77) | | | 8.25" (77.79) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Span (l) | Based on the following Load Combinations | GAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 | 20 | 18 | 16 |
| 11' | 1.2D+1.6L (Strength) | 281 | 414 | 511 | 289 | 440 | 543 | 296 | 463 | 576 | 301 | 481 | 608 | 305 | 498 | 640 | 308 | 514 | 640 | 310 | 529 | 640 | 310 | 543 | 640 | 309 | 556 | 640 | 306 | 568 | 640 | 482 | 578 | 640 | 491 | 587 | 640 |
| | D+L (Deflection) | 281 | 400 | 400 | 289 | 400 | 400 | 296 | 400 | 400 | 301 | 400 | 400 | 305 | 400 | 400 | 308 | 400 | 400 | 310 | 400 | 400 | 310 | 400 | 400 | 309 | 400 | 400 | 306 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 281 | 400 | 400 | 289 | 400 | 400 | 296 | 400 | 400 | 301 | 400 | 400 | 305 | 400 | 400 | 308 | 400 | 400 | 310 | 400 | 400 | 310 | 400 | 400 | 309 | 400 | 400 | 306 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| 12' | 1.2D+1.6L (Strength) | 209 | 332 | 421 | 211 | 345 | 448 | 213 | 356 | 475 | 213 | 367 | 501 | 212 | 377 | 528 | 322 | 386 | 554 | 330 | 394 | 580 | 337 | 401 | 598 | 343 | 406 | 616 | 349 | 411 | 632 | 353 | 413 | 640 | 445 | 415 | 640 |
| | D+L (Deflection) | 209 | 332 | 400 | 211 | 345 | 400 | 213 | 356 | 400 | 213 | 367 | 400 | 212 | 377 | 400 | 322 | 386 | 400 | 330 | 394 | 400 | 337 | 400 | 400 | 343 | 400 | 400 | 349 | 400 | 400 | 353 | 400 | 400 | 400 | 400 | 400 |
| | L (Deflection) | 209 | 320 | 360 | 211 | 345 | 400 | 213 | 356 | 400 | 213 | 367 | 400 | 212 | 377 | 400 | 322 | 386 | 400 | 330 | 394 | 400 | 337 | 400 | 400 | 343 | 400 | 400 | 349 | 400 | 400 | 353 | 400 | 400 | 400 | 400 | 400 |
| 13' | 1.2D+1.6L (Strength) | 152 | 260 | 352 | 151 | 267 | 374 | 229 | 274 | 397 | 235 | 279 | 411 | 240 | 284 | 425 | 245 | 287 | 439 | 248 | 290 | 451 | 251 | 290 | 462 | 253 | 290 | 473 | 339 | 288 | 482 | 353 | 285 | 490 | 367 | 280 | 497 |
| | D+L (Deflection) | 152 | 260 | 352 | 151 | 267 | 374 | 229 | 274 | 397 | 235 | 279 | 400 | 240 | 284 | 400 | 245 | 287 | 400 | 248 | 290 | 400 | 251 | 290 | 400 | 253 | 290 | 400 | 339 | 288 | 400 | 353 | 285 | 400 | 367 | 280 | 400 |
| | L (Deflection) | 152 | 251 | 283 | 151 | 267 | 319 | 229 | 274 | 358 | 235 | 279 | 400 | 240 | 284 | 400 | 245 | 287 | 400 | 248 | 290 | 400 | 251 | 290 | 400 | 253 | 290 | 400 | 339 | 288 | 400 | 353 | 285 | 400 | 367 | 280 | 400 |
| 14' | 1.2D+1.6L (Strength) | 170 | 202 | 288 | 174 | 206 | 306 | 177 | 208 | 316 | 180 | 209 | 326 | 182 | 210 | 334 | 237 | 294 | 342 | 248 | 308 | 349 | 260 | 322 | 355 | 271 | 335 | 359 | 282 | 341 | 363 | 294 | 347 | 365 | 305 | 351 | 481 |
| | D+L (Deflection) | 170 | 202 | 288 | 174 | 206 | 306 | 177 | 208 | 316 | 180 | 209 | 326 | 182 | 210 | 334 | 237 | 294 | 342 | 248 | 308 | 349 | 260 | 322 | 355 | 271 | 335 | 359 | 282 | 341 | 363 | 294 | 347 | 365 | 305 | 351 | 400 |
| | L (Deflection) | 170 | 201 | 227 | 174 | 206 | 255 | 177 | 208 | 286 | 180 | 209 | 320 | 182 | 210 | 334 | 237 | 294 | 342 | 248 | 308 | 349 | 260 | 322 | 355 | 271 | 335 | 359 | 282 | 341 | 363 | 294 | 347 | 365 | 305 | 351 | 400 |
| 15' | 1.2D+1.6L (Strength) | 133 | 187 | 233 | 161 | 199 | 245 | 170 | 211 | 251 | 180 | 223 | 257 | 189 | 235 | 301 | 199 | 246 | 316 | 208 | 252 | 331 | 218 | 257 | 347 | 227 | 260 | 362 | 237 | 294 | 377 | 247 | 306 | 392 | 256 | 317 | 407 |
| | D+L (Deflection) | 133 | 187 | 233 | 161 | 199 | 245 | 170 | 211 | 251 | 180 | 223 | 257 | 189 | 235 | 301 | 199 | 246 | 316 | 208 | 252 | 331 | 218 | 257 | 347 | 227 | 260 | 362 | 237 | 294 | 377 | 247 | 306 | 392 | 256 | 317 | 400 |
| | L (Deflection) | 133 | 164 | 184 | 161 | 185 | 207 | 170 | 208 | 233 | 180 | 223 | 257 | 189 | 235 | 290 | 199 | 246 | 316 | 208 | 252 | 331 | 218 | 257 | 347 | 227 | 260 | 362 | 237 | 294 | 377 | 247 | 306 | 392 | 256 | 317 | 400 |
| 16' | 1.2D+1.6L (Strength) | 128 | 158 | 205 | 136 | 168 | 218 | 144 | 178 | 231 | 152 | 188 | 244 | 160 | 193 | 257 | 168 | 208 | 270 | 176 | 218 | 283 | 184 | 228 | 296 | 192 | 238 | 309 | 200 | 248 | 322 | 208 | 258 | 332 | 216 | 268 | 337 |
| | D+L (Deflection) | 128 | 154 | 178 | 136 | 168 | 204 | 144 | 178 | 231 | 152 | 188 | 244 | 160 | 193 | 257 | 168 | 208 | 270 | 176 | 218 | 283 | 184 | 228 | 296 | 192 | 238 | 309 | 200 | 248 | 322 | 208 | 258 | 332 | 216 | 268 | 337 |
| | L (Deflection) | 118 | 135 | 152 | 133 | 152 | 171 | 144 | 171 | 192 | 152 | 188 | 215 | 160 | 193 | 239 | 168 | 208 | 266 | 176 | 218 | 283 | 184 | 228 | 296 | 192 | 238 | 309 | 200 | 248 | 322 | 208 | 258 | 332 | 216 | 268 | 337 |
| 17' | 1.2D+1.6L (Strength) | 108 | 134 | 176 | 115 | 143 | 186 | 122 | 151 | 198 | 129 | 160 | 209 | 136 | 168 | 220 | 143 | 177 | 232 | 150 | 185 | 243 | 156 | 194 | 254 | 163 | 202 | 265 | 170 | 211 | 276 | 177 | 219 | 287 | 184 | 228 | 298 |
| | D+L (Deflection) | 99 | 120 | 140 | 115 | 139 | 161 | 122 | 151 | 184 | 129 | 160 | 209 | 136 | 168 | 220 | 143 | 177 | 232 | 150 | 185 | 243 | 156 | 194 | 254 | 163 | 202 | 265 | 170 | 211 | 276 | 177 | 219 | 287 | 184 | 228 | 298 |
| | L (Deflection) | 98 | 112 | 127 | 111 | 127 | 142 | 122 | 143 | 160 | 129 | 160 | 179 | 136 | 168 | 200 | 143 | 177 | 222 | 150 | 185 | 243 | 156 | 194 | 254 | 163 | 202 | 265 | 170 | 211 | 276 | 177 | 219 | 287 | 184 | 228 | 298 |
| 18' | 1.2D+1.6L (Strength) | 93 | 115 | 152 | 98 | 122 | 158 | 104 | 129 | 170 | 110 | 136 | 181 | 116 | 144 | 190 | 122 | 151 | 200 | 128 | 158 | 209 | 133 | 165 | 219 | 139 | 173 | 229 | 145 | 180 | 238 | 151 | 187 | 248 | 157 | 194 | 258 |
| | D+L (Deflection) | 76 | 93 | 110 | 90 | 109 | 127 | 104 | 126 | 146 | 110 | 136 | 167 | 116 | 144 | 190 | 122 | 151 | 200 | 128 | 158 | 209 | 133 | 165 | 219 | 139 | 173 | 229 | 145 | 180 | 238 | 151 | 187 | 248 | 157 | 194 | 258 |
| | L (Deflection) | 76 | 93 | 107 | 90 | 107 | 120 | 104 | 120 | 135 | 110 | 135 | 151 | 116 | 144 | 168 | 122 | 151 | 187 | 128 | 158 | 207 | 133 | 165 | 219 | 139 | 173 | 229 | 145 | 180 | 238 | 151 | 187 | 248 | 157 | 194 | 258 |
| 19' | 1.2D+1.6L (Strength) | 79 | 98 | 132 | 84 | 104 | 133 | 89 | 111 | 144 | 94 | 117 | 156 | 99 | 123 | 165 | 104 | 129 | 173 | 109 | 135 | 182 | 114 | 142 | 190 | 119 | 148 | 198 | 124 | 154 | 207 | 129 | 160 | 215 | 134 | 166 | 223 |
| | D+L (Deflection) | 58 | 72 | 86 | 69 | 85 | 100 | 81 | 99 | 116 | 94 | 114 | 133 | 99 | 123 | 153 | 104 | 129 | 173 | 109 | 135 | 182 | 114 | 142 | 190 | 119 | 148 | 198 | 124 | 154 | 207 | 129 | 160 | 215 | 134 | 166 | 223 |
| | L (Deflection) | 58 | 72 | 86 | 69 | 85 | 100 | 81 | 99 | 115 | 94 | 114 | 128 | 99 | 123 | 143 | 104 | 129 | 159 | 109 | 135 | 176 | 114 | 142 | 190 | 119 | 148 | 198 | 124 | 154 | 207 | 129 | 160 | 215 | 134 | 166 | 223 |
| 20' | 1.2D+1.6L (Strength) | 68 | 84 | 113 | 72 | 90 | 113 | 76 | 95 | 122 | 81 | 100 | 132 | 85 | 106 | 143 | 89 | 111 | 151 | 94 | 116 | 158 | 98 | 122 | 165 | 102 | 127 | 173 | 106 | 132 | 180 | 111 | 138 | 187 | 115 | 143 | 194 |
| | D+L (Deflection) | 43 | 55 | 67 | 52 | 65 | 78 | 62 | 77 | 92 | 73 | 90 | 106 | 85 | 104 | 122 | 89 | 111 | 139 | 94 | 116 | 158 | 98 | 122 | 165 | 102 | 127 | 173 | 106 | 132 | 180 | 111 | 138 | 187 | 115 | 143 | 194 |
| | L (Deflection) | 43 | 55 | 67 | 52 | 65 | 78 | 62 | 77 | 92 | 73 | 90 | 106 | 85 | 104 | 122 | 89 | 111 | 136 | 94 | 116 | 151 | 98 | 122 | 165 | 102 | 127 | 173 | 106 | 132 | 180 | 111 | 138 | 187 | 115 | 143 | 194 |
| 21' | 1.2D+1.6L (Strength) | | 72 | 96 | | 77 | 95 | 66 | 82 | 103 | 69 | 86 | 112 | 73 | 91 | 121 | 77 | 95 | 132 | 80 | 100 | 138 | 84 | 104 | 144 | 88 | 109 | 151 | 91 | 114 | 157 | 95 | 118 | 163 | 99 | 123 | 170 |
| | D+L (Deflection) | | 41 | 51 | | 49 | 61 | 46 | 59 | 72 | 55 | 70 | 84 | 65 | 81 | 97 | 77 | 94 | 112 | 80 | 100 | 127 | 84 | 104 | 144 | 88 | 109 | 151 | 91 | 114 | 157 | 95 | 118 | 163 | 99 | 123 | 170 |
| | L (Deflection) | | 41 | 51 | | 49 | 61 | 46 | 59 | 72 | 55 | 70 | 84 | 65 | 81 | 97 | 77 | 94 | 112 | 80 | 100 | 127 | 84 | 104 | 144 | 88 | 109 | 151 | 91 | 114 | 157 | 95 | 118 | 163 | 99 | 123 | 170 |
| 22' | 1.2D+1.6L (Strength) | | | | | | 79 | | 70 | 86 | 60 | 74 | 94 | 63 | 78 | 102 | 66 | 82 | 111 | 69 | 86 | 121 | 72 | 90 | 126 | 75 | 94 | 132 | 79 | 98 | 137 | 82 | 102 | 143 | 85 | 106 | 148 |
| | D+L (Deflection) | | | | | | 46 | | 44 | 55 | 41 | 53 | 65 | 49 | 63 | 76 | 58 | 74 | 89 | 69 | 86 | 102 | 72 | 90 | 117 | 75 | 94 | 132 | 79 | 98 | 137 | 82 | 102 | 143 | 85 | 106 | 148 |
| | L (Deflection) | | | | | | 46 | | 44 | 55 | 41 | 53 | 65 | 49 | 63 | 76 | 58 | 74 | 89 | 69 | 86 | 102 | 72 | 90 | 117 | 75 | 94 | 132 | 79 | 98 | 137 | 82 | 102 | 143 | 85 | 106 | 148 |
| 23' | 1.2D+1.6L (Strength) | | | | | | | | | 72 | | | 79 | | 67 | 86 | 57 | 70 | 94 | 59 | 74 | 102 | 62 | 77 | 111 | 65 | 81 | 116 | 67 | 84 | 120 | 70 | 87 | 125 | 69 | 91 | 130 |
| | D+L (Deflection) | | | | | | | | | 41 | | | 50 | | 47 | 59 | 43 | 57 | 69 | 52 | 67 | 81 | 62 | 77 | 93 | 65 | 81 | 107 | 67 | 84 | 120 | 70 | 87 | 125 | 69 | 91 | 130 |
| | L (Deflection) | | | | | | | | | 41 | | | 50 | | 47 | 59 | 43 | 57 | 69 | 52 | 67 | 81 | 62 | 77 | 93 | 65 | 81 | 107 | 67 | 84 | 120 | 70 | 87 | 125 | 69 | 91 | 130 |
| MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS (l') (feet-inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Span ($l_1$') | | 13' - 5" | 14' - 11" | 15' - 9" | 13' - 1" | 14' - 8" | 15' - 6" | 12' - 9" | 14' - 6" | 15' - 4" | 12' - 5" | 14' - 4" | 15' - 2" | 12' - 2" | 14' - 1" | 14' - 11" | 11'-11" | 13' - 11" | 14' - 9" | 11' - 8" | 13' - 9" | 14' - 7" | 11' - 6" | 13' - 8" | 14' - 5" | 11' - 3" | 13' - 6" | 14' - 3" | 11' - 1" | 13' - 4" | 14' - 2" | 10'-10" | 13' - 3" | 14' - 0" | 10' - 8" | 13' - 0" | 13' - 11" |
| Double Span ($l_2$') | | 14' - 10" | 17' - 2" | 19' - 4" | 14' - 7" | 16'- 10" | 18'-11" | 14' - 2" | 16' - 5" | 18' - 6" | 13'-11" | 16' - 1" | 18' - 1" | 13' - 8" | 15' - 9" | 17' - 9" | 13' - 4" | 15' - 6" | 17' - 6" | 13' - 1" | 15' - 3" | 17' - 2" | 12'-11" | 14'-11" | 16' - 9" | 12' - 6" | 14' - 8" | 16' - 6" | 12' - 2" | 14' - 6" | 16' - 3" | 11' - 9" | 14' - 3" | 16' - 0" | 11' - 5" | 14' - 0" | 15' - 9" |
| Triple Span ($l_3$') | | 15' - 4" | 17' - 6" | 18' - 6" | 15' - 0" | 17' - 3" | 18' - 3" | 14' - 8" | 17' - 0" | 18' - 0" | 14' - 4" | 16' - 8" | 17' - 9" | 14' - 0" | 16' - 4" | 17' - 6" | 13' - 9" | 16' - 0" | 17' - 3" | 13' - 6" | 15' - 9" | 17' - 1" | 13' - 3" | 15' - 5" | 16' - 11" | 13' - 0" | 15' - 2" | 16' - 9" | 12' - 8" | 14'-11" | 16' - 7" | 12' - 3" | 14' - 8" | 16' - 5" | 11' - 10" | 14' - 5" | 16' - 3" |
| Cantilever | | 6' - 5" | 7' - 8" | 8' - 11" | 6' - 3" | 7' - 6" | 8' - 9" | 6' - 2" | 7' - 4" | 8' - 6" | 6' - 0" | 7' - 3" | 8' - 4" | 5' - 11" | 7' - 1" | 8' - 2" | 5' - 9" | 6' - 11" | 8' - 0" | 5' - 8" | 6' - 10" | 7' - 10" | 5' - 7" | 6' - 8" | 7' - 9" | 5' - 6" | 6' - 7" | 7' - 7" | 5' - 5" | 6' - 6" | 7' - 6" | 5' - 4" | 6' - 5" | 7' - 4" | 5' - 3" | 6' - 3" | 7' - 3" |
| cy/100sf | | 1.14 | | | 1.22 | | | 1.29 | | | 1.37 | | | 1.45 | | | 1.52 | | | 1.60 | | | 1.68 | | | 1.76 | | | 1.83 | | | 1.91 | | | 1.99 | | |

See Tables notes on page 11.

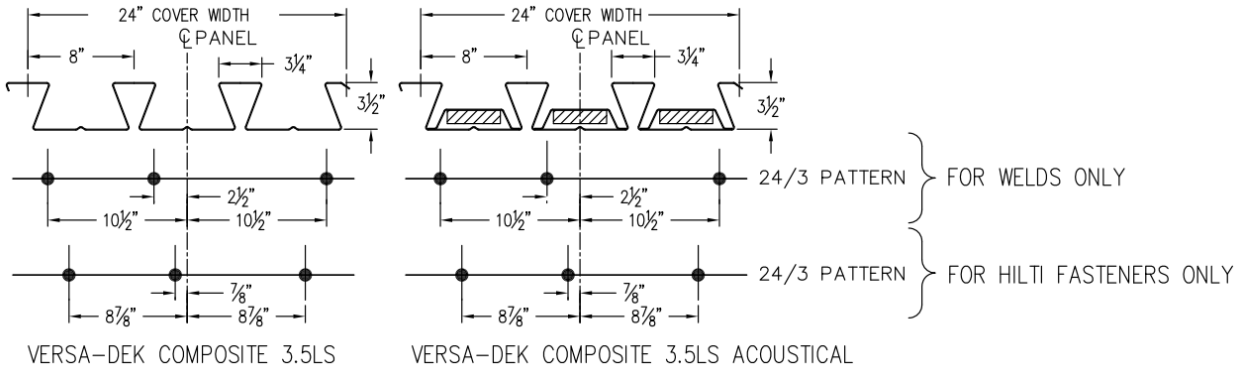


**FIGURE 1—STEEL DECK PANEL PROFILES AND ATTACHMENT PATTERNS AT SUPPORT**

| DECK TYPE | DECK GAGE (in) | PERFORATION DIAMETER (in) | PERFORATION SPACING, a (in) |
|---|---|---|---|
| Versa-Dek Composite 3.5 LS Acoustical | 20 [0.0358] | 0.156 | 19 SPACES x 0.324 +0.156 = 6.312 |
| | 18 [0.0474]<br>16 [0.0598] | | 17 SPACES x 0.324 +0.156 = 5.664 |

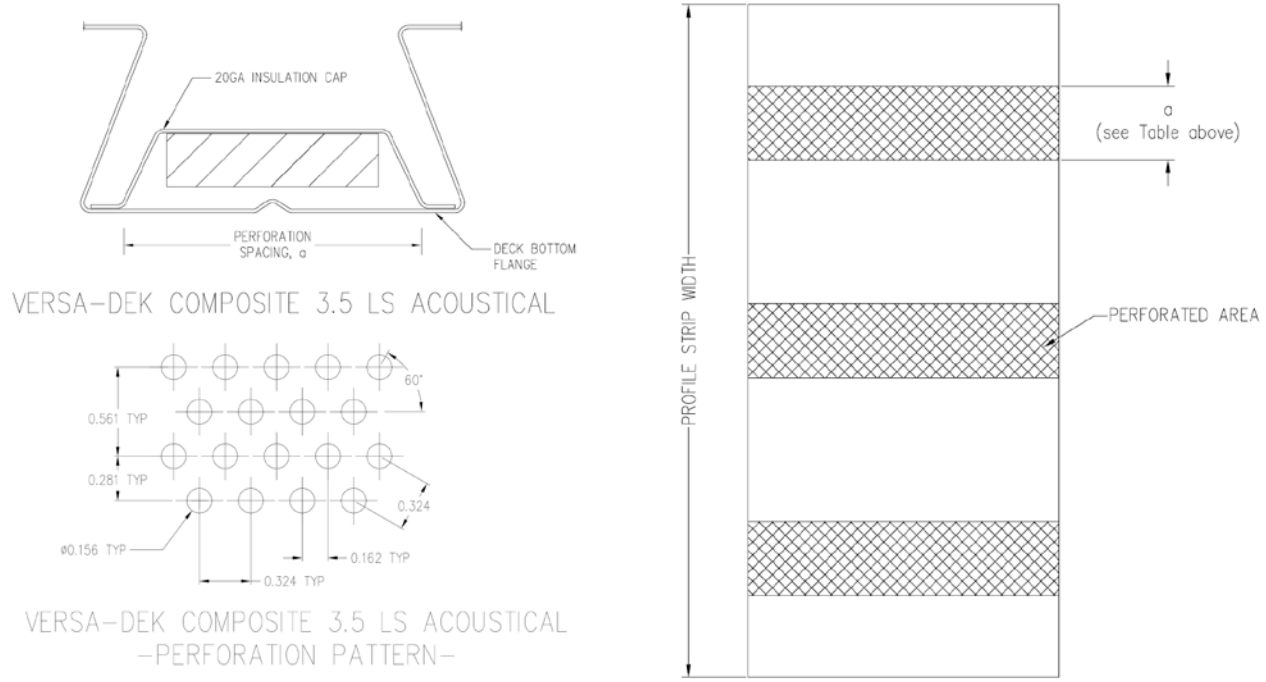


**FIGURE 2—PERFORATION PATTERN OF ACOUSTICAL PROFILE**

# ICC-ES Evaluation Report

# ESR-2635 CBC Supplement

*Reissued January 2018*

*This report is subject to renewal January 2020.*

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**DIVISION: 05 00 00—METALS**
**Section: 05 31 00—Steel Decking**

**REPORT HOLDER:**

**NEW MILLENNIUM BUILDING SYSTEMS, LLC**
**7575 WEST JEFFERSON BOULEVARD**
**FORT WAYNE, INDIANA 46804**
**(260) 969-3500**
**www.newmill.com**

**EVALUATION SUBJECT:**

**NEW MILLENNIUM COMPOSITE DECK PANELS: VERSA-DEK® COMPOSITE 3.5 LS DECK PANELS, AND VERSA-DEK® COMPOSITE 3.5 LS ACOUSTICAL DECK PANELS**

## 1.0 REPORT PURPOSE AND SCOPE

**Purpose:**

The purpose of this evaluation report supplement is to indicate that New Millennium Composite deck panels: Versa-Dek® Composite 3.5 LS deck panels, and Versa-Dek® Composite 3.5 LS Acoustical deck panels, recognized in ICC-ES master evaluation report ESR-2635, have also been evaluated for compliance with Chapters 22 and 22A of the code noted below.

**Applicable code edition:**

2013 *California Building Code* (CBC)

## 2.0 CONCLUSIONS

The New Millennium Composite deck panels: Versa-Dek® Composite 3.5 LS deck panels, and Versa-Dek® Composite 3.5 LS Acoustical deck panels, described in Sections 2.0 through 7.0 of the master evaluation report ESR-2635, comply with CBC Chapters 22 and 22A, provided the design and installation are in accordance with the 2012 *International Building Code®* (IBC) provisions noted in the master report and the additional requirements of CBC Chapters 16, 16A, 17, 17A, 22 and 22A, as applicable.

This supplement expires concurrently with the master report, reissued January 2018.