# LOAD TABLES

## 3-D PANEL SYSTEM

## LINTELS OR BEAMS

## INTERMEDIATE FLOORS

## ROOFS

PREPARED BY
Pruitt & Purcell, P.E.
Structural & Civil Engineers
119 Cypress Mill Rd.
Brunswick, GA 31525

MAY 1995

# ENGINEERING LIMITATIONS

The following load tables have been prepared in accordance with generally accepted engineering practices and design standards. We recommend that this information not be used or relied upon for any applications without a thorough review by a licensed professional engineer or architect.

The suitability of these load tables for a specific application is neither expressed or implied. The load tables are for uniform loading. Other loading conditions must be considered separately.

# SECTION 1

# LINTELS OR BEAMS

# INSTEEL 3-D BEAM LOAD TABLE INSTRUCTIONS

## GENERAL:

The Insteel 3-D beam load tables have been developed to aid in the selection of beam depth and reinforcement for conditions where lintels or beams need to be incorporated into the 3-D wall system. The following load tables have been divided into two categories based on 1) Service or working loads, and 2) Ultimate loads. Service or working load tables are intended to be used with unfactored loads as typically used in systems designed by allowable stress such as wood flooring systems. The service load tables are based on an assumed Live Load to Dead Load ratio of 2. Ultimate load tables are intended to be used with design loads factored in accordance with ACI 318.

Each category is further divided based on concrete strength and type of beam section. Tables for 3,000 psi and 4,000 psi concrete strengths and beam sections with and without the insulation core in place are available.

These load tables are based on a simple span with uniform loading. Lateral support of the top or compression side of the beam is assumed. Deflection limitations have been incorporated into the charts. Shaded values indicate deflections exceed $\ell/360$ but are less than $\ell/180$.

## DESIGN PROCEDURE:

The following method may be used for selection of a reinforced 3-D beam:

1) Determine beam span. Beam span is the clear span between supporting walls or columns.

2) Determine overall depth of beam and calculate "h" based on top and bottom beam conditions. "h" equals the actual depth of concrete. (Refer to figures on load tables.)

3) Determine beam design load "*W*" in pounds per foot based on weights of material and code requirements for live loads. Include estimated dead weight of beam. "Service Load" tables may be used with live load to dead load ratios of approximately 2. Alternatively, "Ultimate Load" tables may be used with design loads factored in accordance with $Wu = 1.4\ D.L. + 1.7\ L.L.$

4) Refer to tables for concrete strength and type of 3-D beam used. Find correct span and follow down in the table to the group of beams corresponding to the "h" value previously calculated. Select the beam with an allowable load greater than or equal to the design load. Read size of reinforcing bars from the "Bar Size #" column.

## EXAMPLE:

Design a garage header to span an opening of 18'. Garage beam is to support a 2nd story bonus room and roof with a combined roof and floor live load of 600 plf and a combined dead load of 270 plf. Concrete strength is to be 4,000 psi. Overall beam depth is 24 inches. Deflection is to be limited to $\ell$ /360.

1) Span = 18'.

2) Calculate "h" - Use beam with 2x top plates and "U" mesh on bottom. h = 24" - 2(1½") = 21".

## SERVICE LOAD METHOD:

3) $W$ = 600 + 270 = 870 plf estimate beam weight = 35 plf $W$ total = 905 plf.

4) Use "Service Load" table with f'c = 4,000 psi for beams with insulation core left in place. Use 18' span column. Use h = 20" since 21" is between 20" and 22" groups. This is conservative approach. Read allowable load of 952 plf with 2 #6 rebars. Values may be interpolated between h = 20" and h = 22" for a given rebar size.

5) Check approximate beam weight:

3" x 12 lb/ft²/in x (21/12) = 63 plf > estimate, therefore, recheck "$W$"
"$W$" = 600 + 270 + 63 = 933 plf < 952 plf - ok.

## ULTIMATE LOAD METHOD:

3) $Wu$ = 1.7(600) + 1.4(270) = 1,398 plf.

4) Use "Ultimate Load" table with f'c = 4,000 psi for beams with insulation core left in place. Proceed as above and read allowable load of 1,524 plf for h = 20" with 2 #6 rebars.

5) Subtract beam weight (1.4) 63 = 88.2 plf $Wu$ = 1,524 - 88.2 = 1,435.8 plf > 1,398 plf - ok.

# ANALYSIS PROCEDURE: 3-D BEAMS

The Insteel 3-D beam is analyzed as a reinforced concrete beam in accordance with ACI 318-89 (Rev '92). The beams have been designed as simply supported with a uniform load and assume adequate lateral support against buckling. A live load to dead load ratio of 2 was used for deflection and service load calculations.

Flexural capacity was determined in accordance with:

$$\phi M_n = \phi A_s f_y \left(d - \frac{a}{2}\right)$$

where: $\phi = 0.9$

$A_s$ = Area of rebar reinforcement, longitudinal wires of W.W.F. are neglected.

$f_y$ = 60,000 psi.

$d$ = "h" dimension (see figure) less distance to centroid of rebar.

$$a = \frac{A_s f_y}{.85\ b f\acute{c}}$$

$b$ = 3" or sum of each wythe thickness for beams with core in place and 5½" for solid beams.

Shear capacity was determined in accordance with:

$$\phi V_n = \phi (V_c + V_s)$$

where: $V_c = 2 (\sqrt{f\acute{c}})\ bd$

$$*V_s = \frac{A_v f_y\ d}{s}$$

$\phi = 0.85$

$A_v = 0.011 \text{ in}^2$

$s = 2 \text{ in}$

$f_y = 56{,}000 \text{ psi}$

* Vertical wires of the 2x2 - W1.1x W1.1 mesh were considered for shear reinforcement. Development of shear reinforcement shall be in accordance with Sect. 12.13.2.4 of ACI 318-89 (Rev. '92).

Deflections were computed in accordance with:

$$\Delta = \frac{5\, w\, \ell^4}{384\, E_c\, I_e}$$

where: $w$ = uniform service load

$\ell$ = clear span

$E_c = 57{,}000\,(\sqrt{f'c})$

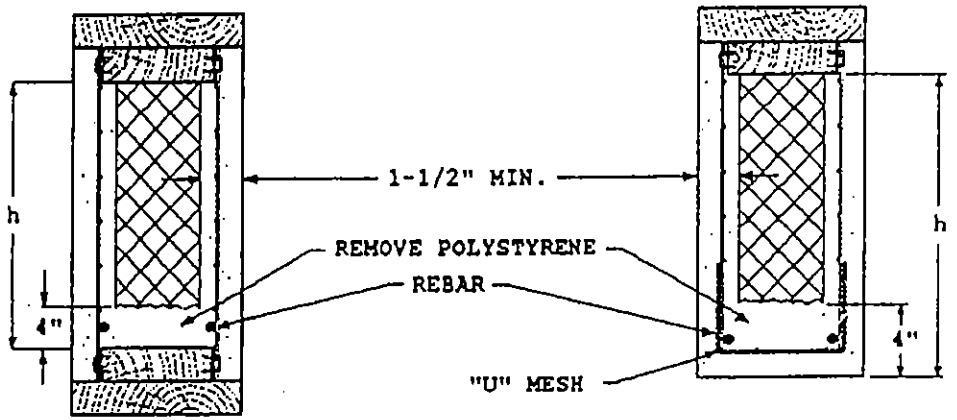
$$I_e = \left(\frac{M_{cr}}{M_a}\right)^3 (I_g - I_{cr}) + I_{cr}$$

$$M_{cr} = \frac{f_r\, I_g}{Y_t}$$

$f_r = 7.5\,(\sqrt{f'c})$

The 3-D beam load tables were developed by comparing the maximum uniform load based on flexure, shear and deflection criteria for a given section and span to determine which condition controlled. Service load values were determined by dividing the ultimate load values by a weighted load factor of 1.6. Deflections were computed for total service load including dead and live loads. Values which are shaded indicate deflections exceed $\ell$ /360 but are less than $\ell$ /180.

# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 6 | 3 | 2 | 268 | 211 | | | | | | | | | | | | | | | |
| 7 | 3 | 2 | 345 | 273 | 221 | | | | | | | | | | | | | | |
| 8 | 3 | 2 | 423 | 334 | 271 | 224 | | | | | | | | | | | | | |
| 9 | 3 | 2 | 500 | 395 | 320 | 265 | 222 | | | | | | | | | | | | |
| 10 | 3 | 2 | 578 | 457 | 370 | 306 | 257 | 219 | | | | | | | | | | | |
| 10 | 4 | 2 | 926 | 732 | 593 | 490 | 412 | 351 | 302 | 263 | 232 | 205 | | | | | | | |
| 11 | 3 | 2 | 656 | 518 | 420 | 347 | 291 | 248 | 214 | | | | | | | | | | |
| 11 | 4 | 2 | 1064 | 841 | 681 | 563 | 473 | 403 | 347 | 303 | 266 | 236 | 210 | | | | | | |
| 12 | 3 | 2 | 733 | 579 | 469 | 388 | 326 | 278 | 239 | 209 | | | | | | | | | |
| 12 | 4 | 2 | 1202 | 950 | 769 | 636 | 534 | 456 | 392 | 342 | 300 | 266 | 237 | 213 | | | | | |
| 13 | 3 | 2 | 811 | 641 | 519 | 429 | 360 | 307 | 265 | 231 | 203 | | | | | | | | |
| 13 | 4 | 2 | 1340 | 1059 | 858 | 709 | 596 | 507 | 438 | 381 | 335 | 297 | 265 | 238 | 214 | | | | |
| 14 | 3 | 2 | 888 | 702 | 569 | 470 | 395 | 336 | 290 | 253 | 222 | | | | | | | | |
| 14 | 4 | 2 | 1478 | 1168 | 946 | 782 | 657 | 560 | 483 | 420 | 369 | 327 | 292 | 262 | 236 | 214 | | | |
| 14 | 5 | 2 | 1529 | 1359 | 1223 | 1112 | 937 | 799 | 689 | 600 | 527 | 467 | 417 | 374 | 337 | 306 | 279 | 255 | 234 |

(continued)

**NOTES:**

1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES. AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4 * DEAD LOAD + 1.7 * LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
2. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
3. STRENGTH REDUCTION FACTORS HAVE BEEN INCORPORATED INTO THE TABLES.
4. SHADED VALUES INDICATE DEFLECTIONS THAT EXCEED l /360 BUT ARE LESS THAN l /180.
5. DEFLECTION CALCULATIONS ARE BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 2.
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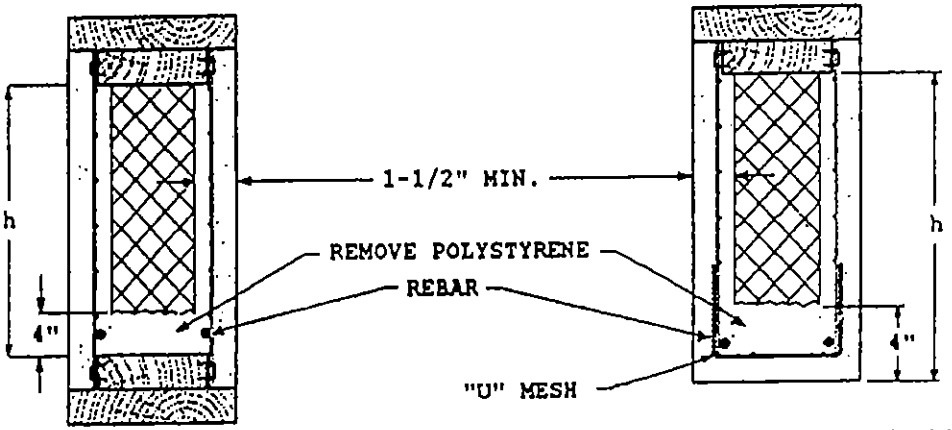


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 15 | 3 | 2 | 966 | 763 | 618 | 511 | 429 | 366 | 315 | 275 | 242 | 214 | | | | | | | |
| 15 | 4 | 2 | 1616 | 1277 | 1034 | 865 | 718 | 612 | 528 | 460 | 404 | 358 | 318 | 286 | 259 | 236 | 214 | | |
| 15 | 6 | 2 | 1654 | 1471 | 1324 | 1203 | 1033 | 880 | 759 | 661 | 581 | 515 | 459 | 412 | 372 | 337 | 307 | 281 | 258 |
| 16 | 3 | 2 | 1044 | 826 | 668 | 552 | 464 | 395 | 341 | 297 | 261 | 231 | 206 | | | | | | |
| 16 | 4 | 2 | 1754 | 1386 | 1123 | 928 | 780 | 664 | 573 | 499 | 438 | 388 | 346 | 311 | 281 | 255 | 232 | 212 | |
| 16 | 6 | 2 | 1780 | 1582 | 1424 | 1295 | 1129 | 962 | 830 | 723 | 635 | 563 | 502 | 450 | 406 | 369 | 336 | 307 | 282 |
| 17 | 3 | 2 | 1121 | 886 | 718 | 593 | 498 | 425 | 366 | 319 | 280 | 248 | 221 | | | | | | |
| 17 | 4 | 2 | 1892 | 1495 | 1211 | 1001 | 841 | 716 | 618 | 538 | 473 | 419 | 374 | 336 | 303 | 275 | 250 | 229 | 210 |
| 17 | 6 | 2 | 1905 | 1694 | 1524 | 1386 | 1225 | 1044 | 900 | 784 | 689 | 610 | 544 | 489 | 441 | 400 | 364 | 333 | 306 |
| 18 | 3 | 2 | 1199 | 947 | 767 | 634 | 533 | 454 | 391 | 341 | 300 | 266 | 237 | 213 | | | | | |
| 18 | 4 | 2 | 2030 | 1604 | 1299 | 1074 | 902 | 769 | 663 | 577 | 507 | 450 | 401 | 360 | 326 | 296 | 268 | 246 | 226 |
| 18 | 6 | 2 | 2031 | 1805 | 1625 | 1477 | 1321 | 1125 | 970 | 845 | 743 | 658 | 587 | 527 | 478 | 431 | 383 | 360 | 330 |
| 19 | 3 | 2 | 1277 | 1009 | 817 | 675 | 567 | 483 | 417 | 363 | 319 | 283 | 252 | 226 | 204 | | | | |
| 19 | 4 | 2 | 2164 | 1713 | 1387 | 1147 | 964 | 821 | 708 | 617 | 542 | 480 | 428 | 384 | 347 | 316 | 287 | 262 | 241 |
| 19 | 6 | 2 | 2156 | 1917 | 1725 | 1568 | 1417 | 1207 | 1041 | 907 | 797 | 706 | 630 | 565 | 510 | 463 | 421 | 386 | 354 |
| 19 | 6 | 2 | 2148 | 1910 | 1719 | 1563 | 1432 | 1322 | 1228 | 1146 | 1060 | 939 | 838 | 752 | 679 | 616 | 561 | 513 | 471 |

(continued)

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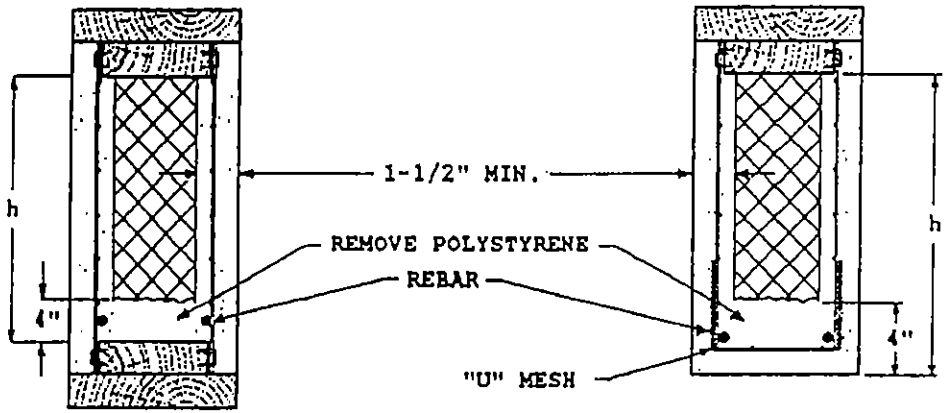


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Rebar - fy = 60000 psi
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### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 20 | 3 | 2 | 1354 | 1070 | 867 | 716 | 602 | 513 | 442 | 385 | 339 | 300 | 267 | 240 | 217 | | | | |
| 20 | 4 | 2 | 2290 | 1822 | 1476 | 1220 | 1025 | 873 | 753 | 656 | 576 | 511 | 456 | 409 | 369 | 335 | 305 | 279 | 256 |
| 20 | 5 | 2 | 2282 | 2028 | 1825 | 1659 | 1512 | 1289 | 1111 | 968 | 851 | 754 | 672 | 603 | 544 | 494 | 450 | 412 | 378 |
| 20 | 6 | 2 | 2274 | 2021 | 1819 | 1654 | 1516 | 1399 | 1299 | 1213 | 1137 | 1008 | 899 | 807 | 728 | 661 | 602 | 551 | 506 |
| 22 | 3 | 2 | 1509 | 1193 | 966 | 798 | 671 | 572 | 493 | 429 | 377 | 334 | 298 | 268 | 242 | 219 | | | |
| 22 | 4 | 2 | 2541 | 2040 | 1652 | 1366 | 1147 | 978 | 843 | 734 | 645 | 572 | 510 | 458 | 413 | 375 | 341 | 312 | 287 |
| 22 | 5 | 2 | 2533 | 2251 | 2026 | 1842 | 1688 | 1452 | 1252 | 1091 | 959 | 849 | 757 | 680 | 613 | 556 | 507 | 464 | 426 |
| 22 | 6 | 2 | 2525 | 2244 | 2020 | 1836 | 1683 | 1554 | 1443 | 1347 | 1262 | 1146 | 1022 | 917 | 828 | 751 | 684 | 626 | 576 |
| 24 | 3 | 2 | 1665 | 1315 | 1065 | 880 | 740 | 630 | 544 | 474 | 416 | 369 | 329 | 295 | 266 | 242 | 220 | 201 | |
| 24 | 4 | 2 | 2791 | 2258 | 1829 | 1512 | 1270 | 1082 | 933 | 813 | 714 | 633 | 565 | 507 | 457 | 415 | 378 | 346 | 318 |
| 24 | 5 | 2 | 2784 | 2474 | 2227 | 2024 | 1856 | 1615 | 1393 | 1213 | 1066 | 945 | 843 | 756 | 682 | 619 | 564 | 516 | 474 |
| 24 | 6 | 2 | 2776 | 2467 | 2221 | 2019 | 1851 | 1708 | 1586 | 1480 | 1388 | 1283 | 1144 | 1027 | 927 | 841 | 766 | 701 | 644 |
| 26 | 3 | 2 | 1820 | 1438 | 1165 | 963 | 809 | 689 | 594 | 518 | 455 | 403 | 359 | 323 | 291 | 264 | 241 | 220 | 202 |
| 26 | 4 | 2 | 3042 | 2476 | 2006 | 1658 | 1393 | 1187 | 1023 | 891 | 783 | 694 | 619 | 556 | 501 | 455 | 414 | 379 | 348 |
| 26 | 5 | 2 | 3035 | 2697 | 2428 | 2207 | 2023 | 1779 | 1534 | 1336 | 1174 | 1040 | 928 | 833 | 751 | 682 | 621 | 568 | 523 |
| 26 | 6 | 2 | 3027 | 2690 | 2421 | 2201 | 2018 | 1863 | 1730 | 1614 | 1513 | 1421 | 1267 | 1137 | 1026 | 931 | 848 | 776 | 713 |
| 26 | 7 | 2 | 3019 | 2683 | 2416 | 2196 | 2013 | 1858 | 1725 | 1610 | 1509 | 1421 | 1342 | 1271 | 1208 | 1150 | 1081 | 989 | 909 |

(continued)

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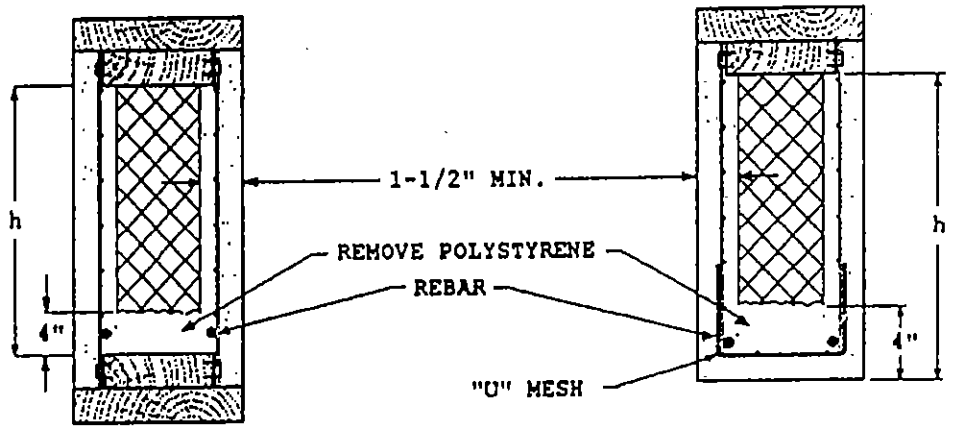


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

### UNIFORM LOAD (PLF)

| h In. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 3 | 2 | 1975 | 1561 | 1264 | 1045 | 878 | 748 | 645 | 562 | 494 | 437 | 390 | 350 | 316 | 287 | 261 | 239 | 219 |
| 28 | 4 | 2 | 3293 | 2694 | 2182 | 1804 | 1515 | 1291 | 1113 | 970 | 852 | 755 | 674 | 605 | 546 | 495 | 451 | 413 | 379 |
| 28 | 5 | 2 | 3285 | 2920 | 2628 | 2389 | 2190 | 1942 | 1674 | 1459 | 1282 | 1136 | 1013 | 909 | 820 | 744 | 678 | 620 | 570 |
| 28 | 6 | 2 | 3278 | 2913 | 2622 | 2384 | 2185 | 2017 | 1873 | 1748 | 1639 | 1542 | 1390 | 1247 | 1126 | 1021 | 930 | 851 | 782 |
| 28 | 7 | 2 | 3270 | 2906 | 2616 | 2378 | 2180 | 2012 | 1868 | 1744 | 1635 | 1539 | 1453 | 1377 | 1308 | 1246 | 1189 | 1091 | 1002 |
| 30 | 3 | 2 | 2130 | 1683 | 1363 | 1127 | 947 | 807 | 696 | 606 | 533 | 472 | 421 | 378 | 341 | 309 | 282 | 258 | 237 |
| 30 | 4 | 2 | 3644 | 2912 | 2368 | 1950 | 1638 | 1396 | 1204 | 1048 | 921 | 816 | 728 | 653 | 590 | 535 | 487 | 446 | 410 |
| 30 | 5 | 2 | 3536 | 3143 | 2829 | 2572 | 2368 | 2105 | 1815 | 1581 | 1390 | 1231 | 1098 | 986 | 889 | 807 | 736 | 673 | 618 |
| 30 | 6 | 2 | 3529 | 3136 | 2823 | 2566 | 2362 | 2171 | 2016 | 1882 | 1764 | 1660 | 1512 | 1367 | 1225 | 1111 | 1012 | 926 | 851 |
| 30 | 7 | 2 | 3521 | 3130 | 2817 | 2561 | 2347 | 2167 | 2012 | 1878 | 1760 | 1657 | 1565 | 1482 | 1408 | 1341 | 1280 | 1194 | 1096 |
| 32 | 3 | 2 | 2286 | 1806 | 1463 | 1209 | 1016 | 866 | 746 | 650 | 571 | 506 | 451 | 405 | 366 | 332 | 302 | 277 | 254 |
| 32 | 4 | 2 | 3795 | 3130 | 2536 | 2095 | 1761 | 1500 | 1294 | 1127 | 990 | 877 | 783 | 702 | 634 | 575 | 524 | 479 | 440 |
| 32 | 5 | 2 | 3787 | 3366 | 3030 | 2754 | 2525 | 2268 | 1956 | 1704 | 1498 | 1327 | 1183 | 1062 | 958 | 869 | 792 | 725 | 666 |
| 32 | 6 | 2 | 3779 | 3360 | 3024 | 2749 | 2520 | 2326 | 2160 | 2016 | 1890 | 1779 | 1635 | 1468 | 1324 | 1201 | 1095 | 1001 | 920 |
| 32 | 7 | 2 | 3772 | 3353 | 3017 | 2743 | 2514 | 2321 | 2155 | 2012 | 1886 | 1775 | 1676 | 1588 | 1509 | 1437 | 1371 | 1296 | 1190 |
| 32 | 8 | 2 | 3764 | 3346 | 3011 | 2737 | 2509 | 2316 | 2151 | 2007 | 1882 | 1771 | 1673 | 1585 | 1506 | 1434 | 1369 | 1309 | 1255 |

(continued)

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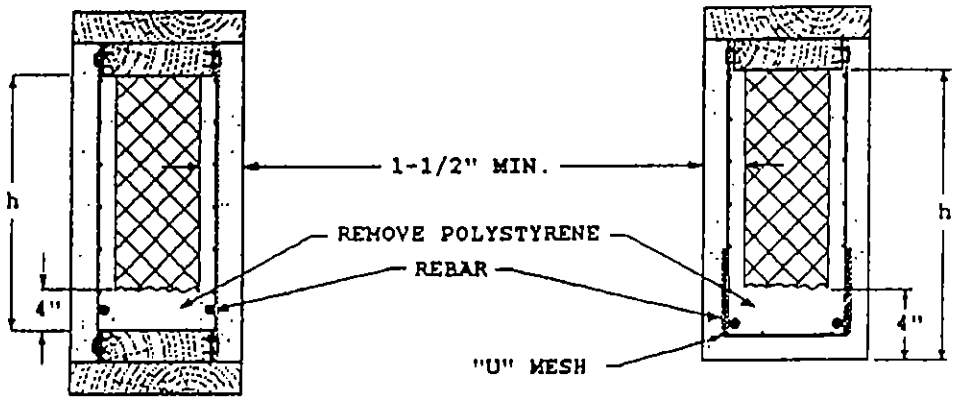


SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c =4000 psi

### UNIFORM LOAD (PLF)

| h, in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 3 | 2 | 284 | 226 | | | | | | | | | | | | | | | |
| 7 | 3 | 2 | 362 | 286 | 232 | | | | | | | | | | | | | | |
| 8 | 3 | 2 | 440 | 347 | 281 | 232 | | | | | | | | | | | | | |
| 9 | 3 | 2 | 517 | 409 | 331 | 274 | 230 | | | | | | | | | | | | |
| 9 | 4 | 2 | 841 | 665 | 538 | 445 | 374 | 319 | 276 | 239 | 210 | | | | | | | | |
| 10 | 3 | 2 | 595 | 470 | 381 | 315 | 264 | 225 | | | | | | | | | | | |
| 10 | 4 | 2 | 979 | 774 | 627 | 518 | 435 | 371 | 320 | 279 | 245 | 217 | | | | | | | |
| 11 | 3 | 2 | 672 | 531 | 430 | 356 | 299 | 255 | 220 | | | | | | | | | | |
| 11 | 4 | 2 | 1117 | 883 | 715 | 591 | 496 | 423 | 365 | 318 | 279 | 247 | 221 | | | | | | |
| 11 | 5 | 2 | 1215 | 1080 | 972 | 842 | 708 | 603 | 520 | 453 | 398 | 353 | 314 | 282 | 255 | 228 | | | |
| 12 | 3 | 2 | 750 | 593 | 480 | 397 | 333 | 284 | 245 | 213 | | | | | | | | | |
| 12 | 4 | 2 | 1255 | 992 | 803 | 664 | 558 | 475 | 410 | 357 | 314 | 278 | 248 | 223 | 201 | | | | |
| 12 | 5 | 2 | 1347 | 1197 | 1078 | 956 | 803 | 685 | 590 | 514 | 452 | 400 | 357 | 320 | 289 | 262 | 239 | 219 | |
| 13 | 3 | 2 | 828 | 654 | 530 | 438 | 368 | 313 | 270 | 235 | 207 | | | | | | | | |
| 13 | 4 | 2 | 1393 | 1101 | 892 | 737 | 619 | 528 | 455 | 396 | 348 | 309 | 275 | 247 | 223 | 202 | | | |
| 13 | 5 | 2 | 1479 | 1315 | 1183 | 1070 | 899 | 766 | 661 | 575 | 506 | 448 | 400 | 359 | 324 | 294 | 268 | 245 | 225 |
| 14 | 3 | 2 | 905 | 715 | 579 | 479 | 402 | 343 | 296 | 258 | 226 | 200 | | | | | | | |
| 14 | 4 | 2 | 1531 | 1210 | 980 | 810 | 680 | 580 | 500 | 436 | 383 | 339 | 302 | 271 | 245 | 222 | 202 | | |
| 14 | 5 | 2 | 1611 | 1432 | 1289 | 1172 | 995 | 848 | 731 | 637 | 560 | 496 | 442 | 397 | 358 | 325 | 296 | 271 | 249 |

(continued)

NOTES:

1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES. AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4 * DEAD LOAD + 1.7 * LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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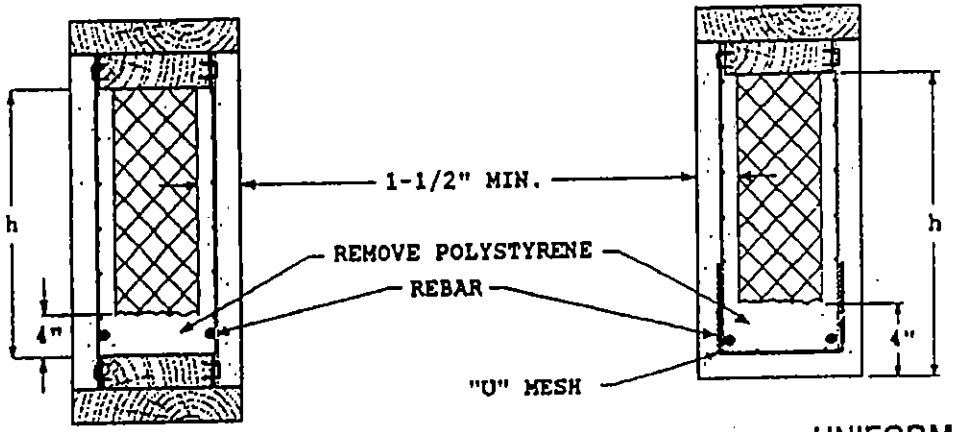
# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 4 | 2 | 4046 | 3348 | 2712 | 2241 | 1883 | 1605 | 1384 | 1205 | 1059 | 938 | 837 | 751 | 678 | 615 | 560 | 513 | 471 |
| 34 | 5 | 2 | 4038 | 3590 | 3231 | 2937 | 2692 | 2432 | 2097 | 1827 | 1606 | 1422 | 1268 | 1138 | 1027 | 932 | 849 | 777 | 713 |
| 34 | 6 | 2 | 4030 | 3583 | 3224 | 2931 | 2687 | 2480 | 2303 | 2150 | 2015 | 1897 | 1758 | 1678 | 1424 | 1291 | 1177 | 1077 | 989 |
| 34 | 7 | 2 | 4023 | 3576 | 3218 | 2926 | 2682 | 2476 | 2299 | 2145 | 2011 | 1893 | 1788 | 1694 | 1609 | 1532 | 1463 | 1398 | 1284 |
| 34 | 8 | 2 | 4015 | 3569 | 3212 | 2920 | 2676 | 2471 | 2294 | 2141 | 2007 | 1889 | 1784 | 1690 | 1606 | 1529 | 1460 | 1396 | 1338 |
| 36 | 3 | 2 | 2696 | 2051 | 1661 | 1373 | 1154 | 983 | 848 | 738 | 649 | 576 | 513 | 460 | 415 | 377 | 343 | 314 | 288 |
| 36 | 4 | 2 | 4297 | 3566 | 2889 | 2387 | 2006 | 1709 | 1474 | 1284 | 1128 | 1000 | 892 | 800 | 722 | 655 | 597 | 546 | 502 |
| 36 | 5 | 2 | 4289 | 3813 | 3431 | 3119 | 2869 | 2595 | 2238 | 1949 | 1713 | 1518 | 1354 | 1215 | 1096 | 994 | 906 | 829 | 761 |
| 36 | 6 | 2 | 4281 | 3806 | 3425 | 3114 | 2854 | 2635 | 2446 | 2283 | 2141 | 2015 | 1880 | 1688 | 1523 | 1382 | 1259 | 1152 | 1058 |
| 36 | 7 | 2 | 4273 | 3799 | 3419 | 3108 | 2849 | 2630 | 2442 | 2279 | 2137 | 2011 | 1899 | 1799 | 1709 | 1628 | 1554 | 1486 | 1378 |
| 36 | 8 | 2 | 4266 | 3792 | 3412 | 3102 | 2844 | 2625 | 2437 | 2275 | 2133 | 2007 | 1896 | 1796 | 1706 | 1625 | 1551 | 1484 | 1422 |

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1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES. AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4 * DEAD LOAD + 1.7 * LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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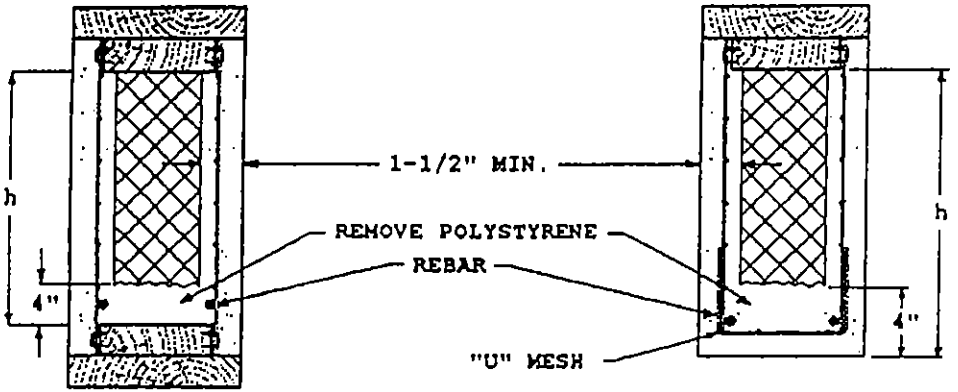
# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c =4000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 15 | 3 | 2 | 983 | 777 | 629 | 520 | 437 | 372 | 321 | 280 | 246 | 218 | | | | | | | |
| 15 | 4 | 2 | 1669 | 1319 | 1068 | 883 | 742 | 632 | 545 | 476 | 417 | 370 | 330 | 296 | 267 | 242 | 221 | 202 | |
| 15 | 5 | 2 | 1744 | 1550 | 1395 | 1268 | 1091 | 929 | 801 | 698 | 614 | 544 | 485 | 435 | 393 | 356 | 325 | 297 | 273 |
| 15 | 6 | 2 | 1735 | 1542 | 1388 | 1262 | 1157 | 1068 | 992 | 925 | 817 | 724 | 646 | 579 | 523 | 474 | 432 | 396 | 363 |
| 16 | 3 | 2 | 1061 | 838 | 679 | 561 | 471 | 402 | 346 | 302 | 265 | 236 | 209 | | | | | | |
| 16 | 4 | 2 | 1807 | 1428 | 1157 | 956 | 803 | 684 | 590 | 514 | 452 | 400 | 357 | 320 | 289 | 262 | 239 | 219 | 201 |
| 16 | 5 | 2 | 1876 | 1667 | 1501 | 1364 | 1187 | 1011 | 872 | 759 | 668 | 591 | 527 | 473 | 427 | 387 | 353 | 323 | 297 |
| 16 | 6 | 2 | 1867 | 1660 | 1494 | 1358 | 1245 | 1149 | 1067 | 996 | 895 | 793 | 707 | 635 | 573 | 519 | 473 | 433 | 398 |
| 17 | 3 | 2 | 1138 | 899 | 728 | 602 | 506 | 431 | 372 | 324 | 285 | 252 | 225 | 202 | | | | | |
| 17 | 4 | 2 | 1945 | 1537 | 1245 | 1029 | 864 | 737 | 635 | 553 | 486 | 431 | 384 | 345 | 311 | 282 | 257 | 235 | 216 |
| 17 | 5 | 2 | 2008 | 1785 | 1606 | 1460 | 1282 | 1093 | 942 | 821 | 721 | 639 | 570 | 512 | 462 | 419 | 382 | 349 | 321 |
| 17 | 6 | 2 | 2000 | 1778 | 1600 | 1454 | 1333 | 1231 | 1143 | 1067 | 972 | 861 | 768 | 690 | 622 | 564 | 514 | 471 | 432 |
| 18 | 3 | 2 | 1216 | 961 | 778 | 643 | 540 | 460 | 397 | 346 | 304 | 269 | 240 | 216 | | | | | |
| 18 | 4 | 2 | 2083 | 1646 | 1333 | 1102 | 926 | 789 | 680 | 593 | 521 | 461 | 411 | 369 | 333 | 302 | 276 | 252 | 231 |
| 18 | 5 | 2 | 2140 | 1902 | 1712 | 1556 | 1378 | 1174 | 1013 | 882 | 776 | 687 | 613 | 550 | 496 | 450 | 410 | 375 | 346 |
| 18 | 6 | 2 | 2132 | 1895 | 1706 | 1550 | 1421 | 1312 | 1218 | 1137 | 1050 | 930 | 830 | 746 | 672 | 610 | 556 | 508 | 467 |

(continued)

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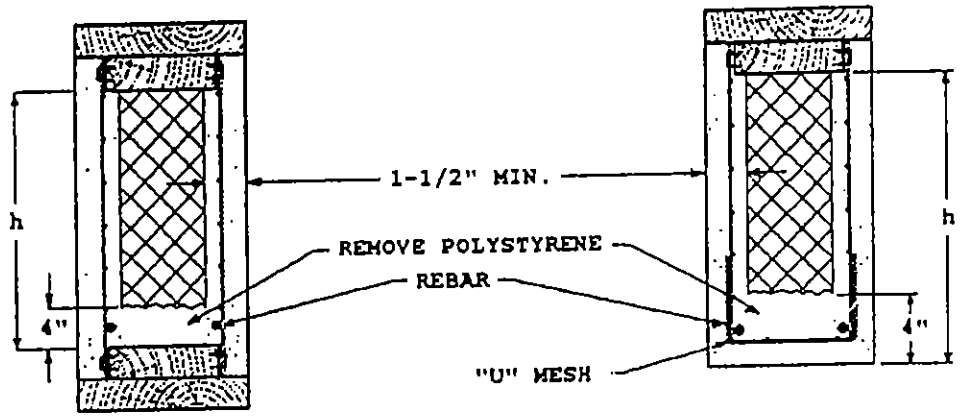
# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c =4000 psi**

### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 3 | 2 | 1293 | 1022 | 828 | 684 | 575 | 490 | 422 | 368 | 323 | 286 | 255 | 229 | 207 | | | | |
| 19 | 4 | 2 | 2221 | 1755 | 1421 | 1175 | 987 | 841 | 725 | 632 | 555 | 492 | 439 | 394 | 355 | 322 | 294 | 269 | 247 |
| 19 | 5 | 2 | 2272 | 2020 | 1818 | 1653 | 1474 | 1256 | 1083 | 943 | 829 | 735 | 655 | 588 | 531 | 481 | 438 | 401 | 369 |
| 19 | 6 | 2 | 2264 | 2013 | 1811 | 1647 | 1509 | 1393 | 1294 | 1208 | 1128 | 999 | 891 | 800 | 722 | 655 | 596 | 546 | 501 |
| 20 | 3 | 2 | 1371 | 1083 | 877 | 725 | 609 | 519 | 448 | 390 | 343 | 304 | 271 | 243 | 219 | | | | |
| 20 | 4 | 2 | 2359 | 1864 | 1510 | 1248 | 1048 | 893 | 770 | 671 | 590 | 522 | 466 | 418 | 377 | 342 | 312 | 285 | 262 |
| 20 | 5 | 2 | 2405 | 2137 | 1924 | 1749 | 1570 | 1338 | 1153 | 1005 | 883 | 782 | 698 | 626 | 565 | 513 | 467 | 427 | 392 |
| 20 | 6 | 2 | 2396 | 2130 | 1917 | 1743 | 1598 | 1475 | 1369 | 1278 | 1198 | 1068 | 952 | 855 | 771 | 700 | 637 | 583 | 536 |
| 20 | 7 | 2 | 2388 | 2123 | 1910 | 1737 | 1592 | 1470 | 1365 | 1274 | 1194 | 1124 | 1061 | 1006 | 955 | 881 | 812 | 743 | 682 |
| 22 | 3 | 2 | 1526 | 1206 | 977 | 807 | 678 | 578 | 498 | 434 | 382 | 338 | 301 | 271 | 244 | 221 | 202 | | |
| 22 | 4 | 2 | 2635 | 2082 | 1686 | 1394 | 1171 | 998 | 860 | 750 | 659 | 584 | 520 | 467 | 422 | 382 | 348 | 319 | 293 |
| 22 | 5 | 2 | 2669 | 2372 | 2135 | 1941 | 1762 | 1501 | 1294 | 1127 | 991 | 878 | 783 | 703 | 634 | 575 | 524 | 480 | 440 |
| 22 | 6 | 2 | 2661 | 2365 | 2129 | 1935 | 1774 | 1637 | 1520 | 1419 | 1330 | 1205 | 1075 | 965 | 871 | 790 | 720 | 658 | 605 |
| 22 | 7 | 2 | 2652 | 2358 | 2122 | 1929 | 1768 | 1632 | 1516 | 1415 | 1326 | 1248 | 1179 | 1117 | 1061 | 1010 | 924 | 845 | 776 |
| 24 | 3 | 2 | 1681 | 1329 | 1076 | 889 | 747 | 637 | 549 | 478 | 420 | 372 | 332 | 298 | 269 | 244 | 222 | 203 | |
| 24 | 4 | 2 | 2911 | 2300 | 1863 | 1540 | 1294 | 1102 | 951 | 828 | 728 | 645 | 575 | 516 | 466 | 422 | 385 | 352 | 323 |
| 24 | 5 | 2 | 2933 | 2608 | 2347 | 2133 | 1953 | 1664 | 1435 | 1250 | 1099 | 973 | 868 | 779 | 703 | 638 | 581 | 532 | 488 |
| 24 | 6 | 2 | 2925 | 2600 | 2340 | 2127 | 1950 | 1800 | 1672 | 1560 | 1463 | 1343 | 1198 | 1075 | 970 | 880 | 802 | 733 | 674 |
| 24 | 7 | 2 | 2917 | 2593 | 2334 | 2121 | 1945 | 1795 | 1667 | 1556 | 1458 | 1373 | 1296 | 1228 | 1167 | 1111 | 1036 | 947 | 870 |

(continued)

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1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES. AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4 * DEAD LOAD + 1.7 * LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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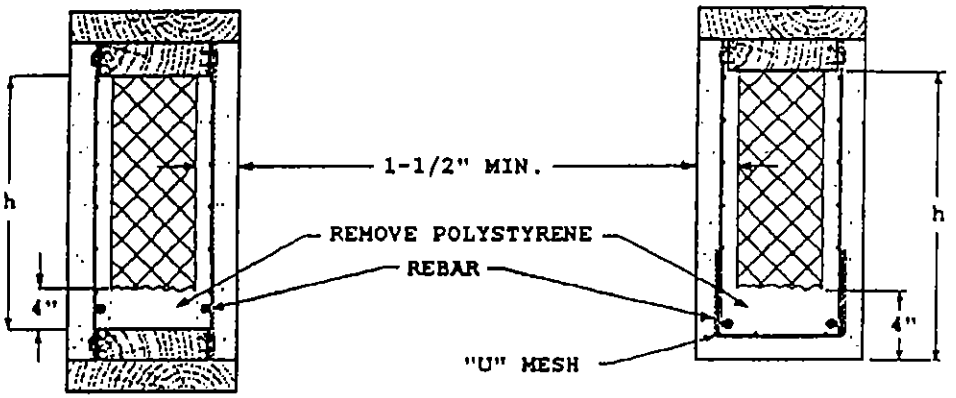


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c =4000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 26 | 3 | 2 | 1837 | 1451 | 1175 | 971 | 816 | 696 | 600 | 522 | 459 | 407 | 363 | 326 | 294 | 267 | 243 | 222 | 204 |
| 26 | 4 | 2 | 3187 | 2518 | 2040 | 1686 | 1416 | 1207 | 1041 | 907 | 797 | 706 | 630 | 565 | 510 | 463 | 421 | 386 | 354 |
| 26 | 5 | 2 | 3198 | 2843 | 2568 | 2326 | 2132 | 1828 | 1576 | 1373 | 1207 | 1069 | 953 | 856 | 772 | 700 | 638 | 584 | 536 |
| 26 | 6 | 2 | 3190 | 2835 | 2552 | 2320 | 2126 | 1963 | 1823 | 1701 | 1595 | 1480 | 1320 | 1186 | 1069 | 970 | 884 | 809 | 743 |
| 26 | 7 | 2 | 3181 | 2828 | 2545 | 2314 | 2121 | 1958 | 1818 | 1697 | 1591 | 1497 | 1414 | 1340 | 1273 | 1212 | 1147 | 1049 | 964 |
| 26 | 8 | 2 | 3173 | 2821 | 2538 | 2308 | 2116 | 1953 | 1813 | 1692 | 1587 | 1493 | 1410 | 1336 | 1269 | 1209 | 1154 | 1104 | 1058 |
| 28 | 3 | 2 | 1992 | 1674 | 1275 | 1054 | 885 | 754 | 650 | 567 | 498 | 441 | 393 | 353 | 319 | 289 | 263 | 241 | 221 |
| 28 | 4 | 2 | 3463 | 2736 | 2216 | 1832 | 1539 | 1311 | 1131 | 985 | 866 | 767 | 684 | 614 | 554 | 503 | 458 | 419 | 385 |
| 28 | 5 | 2 | 3462 | 3078 | 2770 | 2518 | 2308 | 1991 | 1717 | 1495 | 1314 | 1164 | 1038 | 932 | 841 | 763 | 695 | 636 | 584 |
| 28 | 6 | 2 | 3464 | 3070 | 2763 | 2512 | 2303 | 2126 | 1974 | 1842 | 1727 | 1618 | 1443 | 1296 | 1169 | 1060 | 966 | 884 | 812 |
| 28 | 7 | 2 | 3446 | 3063 | 2757 | 2506 | 2297 | 2120 | 1969 | 1838 | 1723 | 1622 | 1531 | 1451 | 1378 | 1313 | 1253 | 1152 | 1058 |
| 28 | 8 | 2 | 3437 | 3056 | 2750 | 2500 | 2292 | 2115 | 1964 | 1833 | 1719 | 1618 | 1528 | 1447 | 1375 | 1310 | 1250 | 1196 | 1146 |
| 30 | 3 | 2 | 2147 | 1697 | 1374 | 1136 | 954 | 813 | 701 | 611 | 537 | 475 | 424 | 381 | 344 | 312 | 284 | 260 | 239 |
| 30 | 4 | 2 | 3735 | 2954 | 2393 | 1978 | 1662 | 1416 | 1221 | 1064 | 935 | 828 | 739 | 663 | 598 | 543 | 494 | 452 | 415 |
| 30 | 5 | 2 | 3727 | 3313 | 2981 | 2710 | 2484 | 2154 | 1857 | 1618 | 1422 | 1260 | 1124 | 1008 | 910 | 826 | 752 | 688 | 632 |
| 30 | 6 | 2 | 3718 | 3305 | 2975 | 2704 | 2479 | 2288 | 2125 | 1983 | 1859 | 1750 | 1566 | 1405 | 1268 | 1150 | 1048 | 959 | 881 |
| 30 | 7 | 2 | 3710 | 3298 | 2968 | 2698 | 2473 | 2283 | 2120 | 1979 | 1855 | 1746 | 1649 | 1562 | 1484 | 1413 | 1349 | 1254 | 1152 |
| 30 | 8 | 2 | 3702 | 3291 | 2962 | 2692 | 2468 | 2278 | 2115 | 1974 | 1851 | 1742 | 1645 | 1559 | 1481 | 1410 | 1346 | 1288 | 1234 |

(continued)

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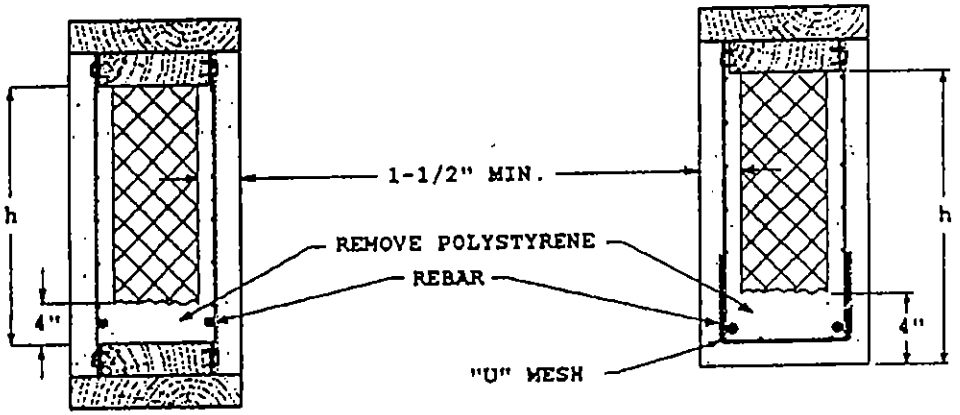


**SIMPLE SPAN - UNIFORM LOAD**

Rebar - fy = 60000 psi
Shotcrete - f'c =4000 psi

### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 3 | 2 | 2302 | 1819 | 1474 | 1218 | 1023 | 872 | 752 | 656 | 576 | 510 | 456 | 408 | 368 | 334 | 304 | 279 | 256 |
| 32 | 4 | 2 | 3999 | 3172 | 2570 | 2124 | 1784 | 1520 | 1311 | 1142 | 1004 | 889 | 793 | 712 | 642 | 583 | 531 | 486 | 446 |
| 32 | 5 | 2 | 3991 | 3548 | 3193 | 2903 | 2661 | 2318 | 1998 | 1741 | 1530 | 1355 | 1209 | 1085 | 979 | 888 | 809 | 740 | 680 |
| 32 | 6 | 2 | 3983 | 3540 | 3186 | 2897 | 2655 | 2451 | 2276 | 2124 | 1991 | 1874 | 1688 | 1515 | 1367 | 1240 | 1130 | 1034 | 950 |
| 32 | 7 | 2 | 3975 | 3533 | 3180 | 2891 | 2650 | 2446 | 2271 | 2120 | 1987 | 1870 | 1766 | 1674 | 1590 | 1514 | 1445 | 1356 | 1246 |
| 32 | 8 | 2 | 3966 | 3526 | 3173 | 2885 | 2644 | 2441 | 2266 | 2115 | 1983 | 1867 | 1763 | 1670 | 1587 | 1511 | 1442 | 1380 | 1322 |
| 34 | 3 | 2 | 2458 | 1942 | 1573 | 1300 | 1092 | 931 | 802 | 699 | 614 | 544 | 485 | 436 | 393 | 357 | 326 | 297 | 273 |
| 34 | 4 | 2 | 4264 | 3390 | 2746 | 2270 | 1907 | 1625 | 1401 | 1221 | 1073 | 950 | 848 | 761 | 687 | 623 | 567 | 519 | 477 |
| 34 | 5 | 2 | 4256 | 3783 | 3404 | 3095 | 2837 | 2481 | 2139 | 1863 | 1638 | 1451 | 1294 | 1161 | 1048 | 951 | 866 | 793 | 728 |
| 34 | 6 | 2 | 4247 | 3775 | 3398 | 3089 | 2832 | 2614 | 2427 | 2265 | 2124 | 1989 | 1811 | 1625 | 1467 | 1330 | 1212 | 1109 | 1019 |
| 34 | 7 | 2 | 4239 | 3768 | 3391 | 3083 | 2826 | 2609 | 2422 | 2261 | 2120 | 1995 | 1884 | 1785 | 1696 | 1615 | 1541 | 1468 | 1339 |
| 34 | 8 | 2 | 4231 | 3761 | 3385 | 3077 | 2821 | 2604 | 2418 | 2256 | 2115 | 1991 | 1880 | 1781 | 1692 | 1612 | 1538 | 1472 | 1410 |
| 36 | 3 | 2 | 2613 | 2064 | 1672 | 1382 | 1161 | 989 | 853 | 743 | 653 | 579 | 516 | 463 | 418 | 379 | 346 | 316 | 290 |
| 36 | 4 | 2 | 4528 | 3608 | 2923 | 2415 | 2030 | 1729 | 1491 | 1299 | 1142 | 1011 | 902 | 810 | 731 | 663 | 604 | 553 | 507 |
| 36 | 5 | 2 | 4520 | 4018 | 3616 | 3287 | 3013 | 2644 | 2280 | 1986 | 1746 | 1546 | 1379 | 1238 | 1117 | 1013 | 923 | 845 | 776 |
| 36 | 6 | 2 | 4512 | 4010 | 3609 | 3281 | 3008 | 2776 | 2578 | 2406 | 2256 | 2123 | 1934 | 1735 | 1566 | 1421 | 1294 | 1184 | 1088 |
| 36 | 7 | 2 | 4503 | 4003 | 3603 | 3275 | 3002 | 2771 | 2573 | 2402 | 2252 | 2119 | 2002 | 1896 | 1801 | 1716 | 1638 | 1561 | 1433 |
| 36 | 8 | 2 | 4495 | 3996 | 3596 | 3269 | 2997 | 2766 | 2569 | 2397 | 2248 | 2115 | 1998 | 1893 | 1798 | 1712 | 1636 | 1564 | 1498 |

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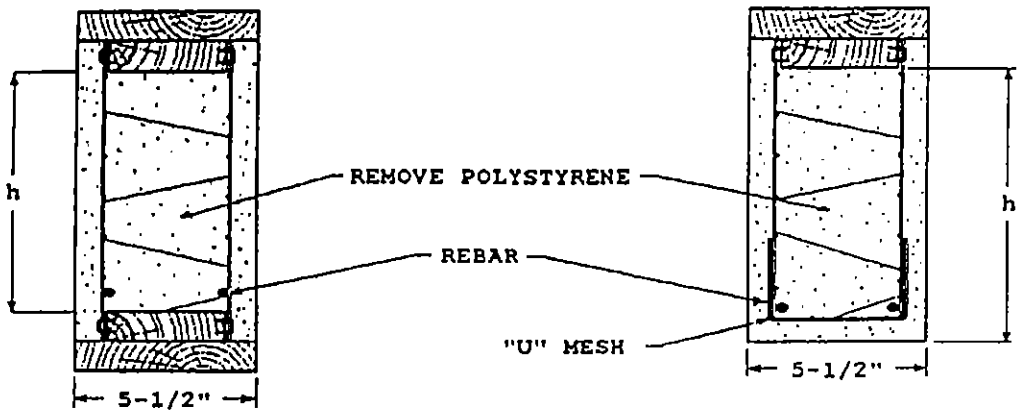


SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
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### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | NO. | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 6 | 3 | 2 | 298 | 236 | | | | | | | | | | | | | | | |
| 6 | 4 | 2 | 471 | 372 | 301 | 240 | | | | | | | | | | | | | |
| 7 | 3 | 2 | 376 | 297 | 240 | | | | | | | | | | | | | | |
| 7 | 4 | 2 | 609 | 481 | 389 | 322 | 270 | 230 | | | | | | | | | | | |
| 8 | 3 | 2 | 453 | 358 | 290 | 240 | 201 | | | | | | | | | | | | |
| 8 | 4 | 2 | 747 | 590 | 478 | 395 | 332 | 283 | 244 | 212 | | | | | | | | | |
| 9 | 3 | 2 | 531 | 419 | 340 | 281 | 236 | 201 | | | | | | | | | | | |
| 9 | 4 | 2 | 885 | 699 | 566 | 468 | 393 | 335 | 289 | 252 | 221 | | | | | | | | |
| 9 | 5 | 2 | 1163 | 1001 | 811 | 670 | 563 | 480 | 414 | 360 | 317 | 281 | 242 | 205 | | | | | |
| 10 | 3 | 2 | 609 | 481 | 389 | 322 | 270 | 230 | | | | | | | | | | | |
| 10 | 4 | 2 | 1023 | 808 | 654 | 541 | 454 | 387 | 334 | 291 | 256 | 226 | 202 | | | | | | |
| 10 | 5 | 2 | 1325 | 1171 | 949 | 784 | 659 | 561 | 484 | 422 | 371 | 328 | 293 | 263 | 237 | 207 | | | |
| 11 | 3 | 2 | 686 | 542 | 439 | 363 | 305 | 260 | 224 | | | | | | | | | | |
| 11 | 4 | 2 | 1161 | 917 | 743 | 614 | 516 | 439 | 379 | 330 | 290 | 257 | 229 | 206 | | | | | |
| 11 | 5 | 2 | 1487 | 1322 | 1087 | 898 | 755 | 643 | 554 | 483 | 425 | 376 | 335 | 301 | 272 | 246 | 225 | 205 | |
| 12 | 3 | 2 | 764 | 603 | 489 | 404 | 339 | 289 | 249 | 217 | | | | | | | | | |
| 12 | 4 | 2 | 1299 | 1026 | 831 | 687 | 577 | 492 | 424 | 369 | 325 | 288 | 256 | 230 | 208 | | | | |
| 12 | 5 | 2 | 1649 | 1465 | 1225 | 1012 | 851 | 725 | 625 | 544 | 478 | 424 | 378 | 339 | 306 | 278 | 253 | 232 | 213 |
| 12 | 6 | 2 | 1639 | 1456 | 1311 | 1192 | 1092 | 968 | 835 | 727 | 639 | 566 | 505 | 453 | 409 | 371 | 338 | 309 | 284 |

(continued)

**NOTES:**

1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4*DEAD LOAD + 1.7*LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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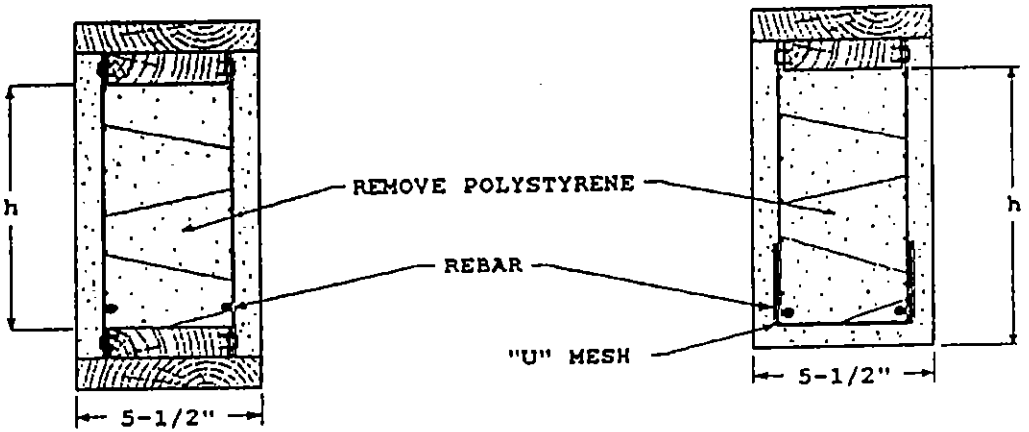
# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

### UNIFORM LOAD (PLF)

| h In. | BAR NO. | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 3 | 2 | 841 | 665 | 538 | 445 | 374 | 319 | 275 | 239 | 210 | | | | | | | | |
| 13 | 4 | 2 | 1437 | 1135 | 919 | 760 | 638 | 544 | 469 | 409 | 359 | 318 | 284 | 255 | 230 | 208 | | | |
| 13 | 5 | 2 | 1810 | 1609 | 1363 | 1126 | 946 | 806 | 695 | 606 | 532 | 472 | 421 | 377 | 341 | 309 | 282 | 256 | 237 |
| 13 | 6 | 2 | 1800 | 1600 | 1440 | 1309 | 1200 | 1086 | 936 | 816 | 717 | 633 | 566 | 508 | 459 | 416 | 379 | 347 | 319 |
| 14 | 3 | 2 | 919 | 726 | 588 | 486 | 408 | 348 | 300 | 261 | 230 | 204 | | | | | | | |
| 14 | 4 | 2 | 1575 | 1244 | 1008 | 833 | 700 | 596 | 514 | 448 | 394 | 349 | 311 | 279 | 252 | 228 | 208 | | |
| 14 | 5 | 2 | 1972 | 1753 | 1501 | 1240 | 1042 | 888 | 766 | 667 | 586 | 519 | 463 | 416 | 375 | 340 | 310 | 284 | 261 |
| 14 | 6 | 2 | 1962 | 1744 | 1570 | 1427 | 1308 | 1204 | 1038 | 904 | 794 | 704 | 628 | 563 | 508 | 461 | 420 | 384 | 353 |
| 15 | 3 | 2 | 997 | 787 | 638 | 527 | 443 | 377 | 325 | 283 | 249 | 221 | | | | | | | |
| 15 | 4 | 2 | 1712 | 1353 | 1096 | 906 | 761 | 649 | 559 | 487 | 428 | 379 | 338 | 304 | 274 | 249 | 226 | 207 | |
| 15 | 5 | 2 | 2134 | 1897 | 1639 | 1354 | 1138 | 970 | 836 | 728 | 640 | 567 | 506 | 454 | 410 | 372 | 339 | 310 | 284 |
| 15 | 6 | 2 | 2124 | 1888 | 1699 | 1545 | 1416 | 1307 | 1139 | 992 | 872 | 773 | 689 | 618 | 558 | 506 | 461 | 422 | 388 |
| 15 | 7 | 2 | 2114 | 1879 | 1691 | 1537 | 1409 | 1301 | 1208 | 1127 | 1057 | 982 | 876 | 786 | 709 | 643 | 586 | 536 | 493 |
| 16 | 3 | 2 | 1074 | 849 | 688 | 568 | 477 | 407 | 351 | 306 | 269 | 238 | 212 | | | | | | |
| 16 | 4 | 2 | 1850 | 1462 | 1184 | 979 | 822 | 701 | 604 | 526 | 463 | 410 | 366 | 328 | 296 | 269 | 245 | 224 | 206 |
| 16 | 5 | 2 | 2296 | 2041 | 1777 | 1468 | 1234 | 1051 | 906 | 790 | 694 | 615 | 548 | 492 | 444 | 403 | 367 | 336 | 309 |
| 16 | 6 | 2 | 2286 | 2032 | 1829 | 1662 | 1524 | 1407 | 1240 | 1081 | 950 | 841 | 750 | 673 | 608 | 551 | 502 | 460 | 422 |
| 16 | 7 | 2 | 2276 | 2023 | 1821 | 1655 | 1517 | 1400 | 1300 | 1214 | 1138 | 1071 | 959 | 861 | 777 | 705 | 642 | 585 | 540 |

(continued)

**NOTES:**

1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4*DEAD LOAD + 1.7*LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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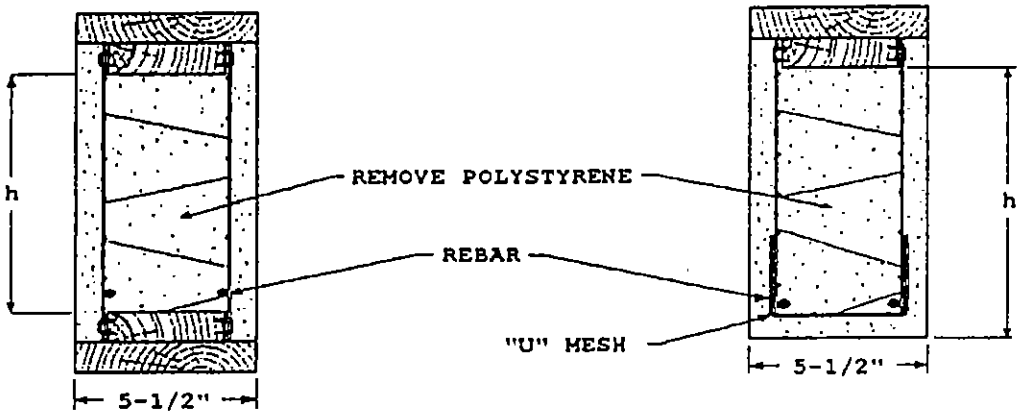
# INSTEEL 3-D BEAM TABLES
# SERVICE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | NO. | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 17 | 3 | 2 | 1152 | 910 | 737 | 609 | 512 | 436 | 376 | 328 | 288 | 255 | 228 | 204 | | | | | |
| 17 | 4 | 2 | 1988 | 1571 | 1273 | 1052 | 884 | 753 | 649 | 566 | 497 | 440 | 393 | 353 | 318 | 289 | 263 | 241 | 221 |
| 17 | 5 | 2 | 2458 | 2185 | 1915 | 1582 | 1330 | 1133 | 977 | 851 | 748 | 663 | 591 | 530 | 479 | 434 | 396 | 362 | 332 |
| 17 | 6 | 2 | 2448 | 2176 | 1958 | 1780 | 1632 | 1506 | 1342 | 1169 | 1027 | 910 | 812 | 729 | 656 | 596 | 543 | 497 | 457 |
| 17 | 7 | 2 | 2438 | 2167 | 1950 | 1773 | 1625 | 1500 | 1393 | 1300 | 1219 | 1147 | 1043 | 936 | 845 | 768 | 698 | 639 | 587 |
| 18 | 3 | 2 | 1229 | 971 | 787 | 650 | 546 | 466 | 401 | 350 | 307 | 272 | 243 | 218 | | | | | |
| 18 | 4 | 2 | 2126 | 1680 | 1361 | 1125 | 945 | 805 | 694 | 605 | 532 | 471 | 420 | 377 | 340 | 309 | 281 | 257 | 236 |
| 18 | 5 | 2 | 2620 | 2329 | 2053 | 1696 | 1425 | 1215 | 1047 | 912 | 802 | 710 | 634 | 569 | 513 | 465 | 424 | 388 | 356 |
| 18 | 6 | 2 | 2610 | 2320 | 2088 | 1898 | 1740 | 1606 | 1443 | 1257 | 1105 | 979 | 873 | 784 | 707 | 641 | 584 | 535 | 491 |
| 18 | 7 | 2 | 2599 | 2311 | 2080 | 1890 | 1733 | 1600 | 1485 | 1386 | 1300 | 1223 | 1126 | 1011 | 912 | 827 | 754 | 690 | 633 |

**NOTES:**

1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4*DEAD LOAD + 1.7*LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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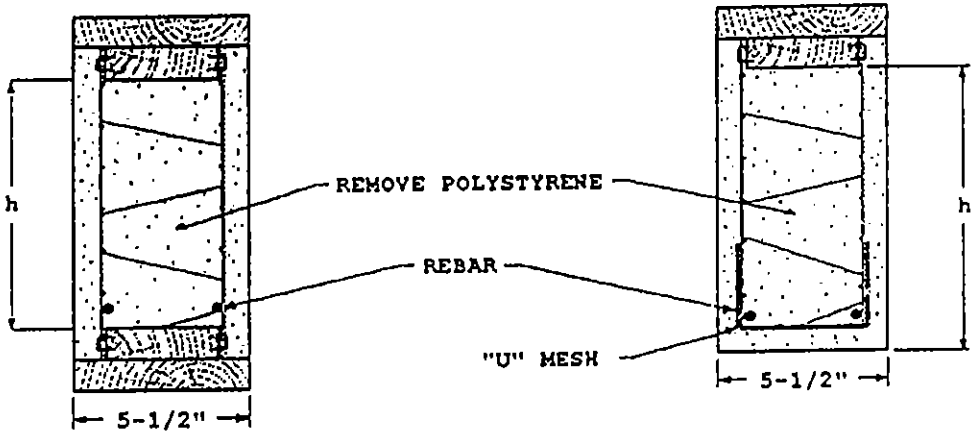
# INSTEEL 3-D BEAM TABLES
## SERVICE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 3 | 2 | 307 | 243 | | | | | | | | | | | | | | | |
| 6 | 4 | 2 | 500 | 396 | 320 | 258 | 202 | | | | | | | | | | | | |
| 7 | 3 | 2 | 385 | 304 | 246 | 204 | | | | | | | | | | | | | |
| 7 | 4 | 2 | 638 | 504 | 408 | 337 | 283 | 241 | 205 | | | | | | | | | | |
| 7 | 5 | 2 | 904 | 716 | 580 | 479 | 401 | 317 | 255 | 209 | | | | | | | | | |
| 8 | 3 | 2 | 462 | 365 | 296 | 245 | 206 | | | | | | | | | | | | |
| 8 | 4 | 2 | 776 | 613 | 496 | 410 | 345 | 294 | 253 | 221 | | | | | | | | | |
| 8 | 5 | 2 | 1078 | 886 | 718 | 593 | 499 | 425 | 366 | 311 | 258 | 216 | | | | | | | |
| 9 | 3 | 2 | 540 | 427 | 346 | 286 | 240 | 205 | | | | | | | | | | | |
| 9 | 4 | 2 | 914 | 722 | 585 | 483 | 406 | 346 | 298 | 260 | 228 | 202 | | | | | | | |
| 9 | 5 | 2 | 1252 | 1057 | 856 | 707 | 594 | 507 | 437 | 380 | 334 | 296 | 256 | 219 | | | | | |
| 10 | 3 | 2 | 618 | 488 | 395 | 327 | 275 | 234 | 202 | | | | | | | | | | |
| 10 | 4 | 2 | 1052 | 831 | 673 | 556 | 467 | 398 | 343 | 299 | 263 | 233 | 208 | | | | | | |
| 10 | 5 | 2 | 1426 | 1227 | 994 | 822 | 690 | 588 | 507 | 442 | 388 | 344 | 307 | 275 | 249 | 219 | | | |
| 10 | 6 | 2 | 1415 | 1258 | 1132 | 1029 | 926 | 789 | 680 | 592 | 521 | 461 | 411 | 363 | 312 | 270 | 236 | 206 | |
| 11 | 3 | 2 | 695 | 549 | 445 | 368 | 309 | 263 | 227 | | | | | | | | | | |
| 11 | 4 | 2 | 1190 | 940 | 761 | 629 | 529 | 450 | 388 | 338 | 297 | 263 | 235 | 211 | | | | | |
| 11 | 5 | 2 | 1601 | 1398 | 1132 | 936 | 786 | 670 | 578 | 503 | 442 | 392 | 349 | 314 | 283 | 257 | 234 | 214 | |
| 11 | 6 | 2 | 1590 | 1413 | 1272 | 1156 | 1060 | 906 | 781 | 681 | 598 | 530 | 473 | 424 | 383 | 347 | 307 | 269 | 237 |

(continued)

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1. LOADS INDICATED ARE INTENDED TO BE USED AS SERVICE LOAD VALUES. AND INCLUDE LOAD FACTORS IN ACCORDANCE WITH w = 1.4 * DEAD LOAD + 1.7 * LIVE LOAD BASED ON AN ASSUMED LIVE LOAD TO DEAD LOAD RATIO OF 2.
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# INSTEEL 3-D BEAM TABLES
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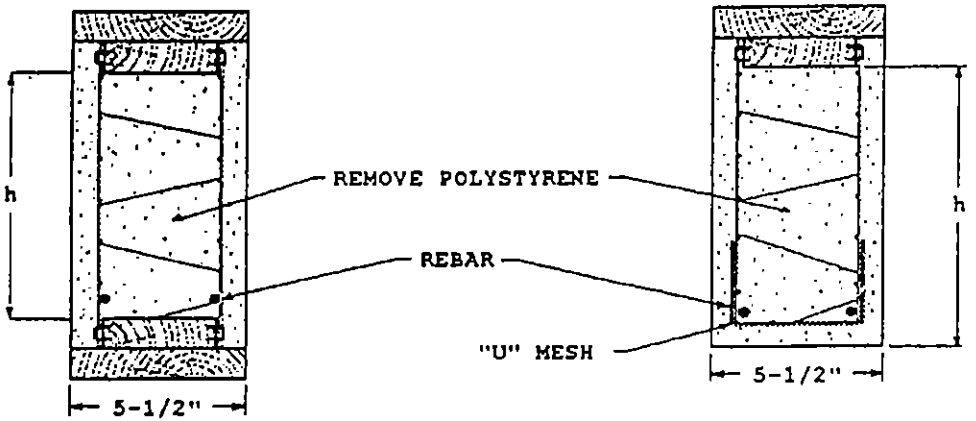


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 12 | 3 | 2 | 773 | 611 | 495 | 409 | 344 | 293 | 252 | 220 | | | | | | | | | |
| 12 | 4 | 2 | 1327 | 1049 | 850 | 702 | 590 | 503 | 433 | 378 | 332 | 294 | 262 | 235 | 212 | | | | |
| 12 | 5 | 2 | 1776 | 1568 | 1270 | 1050 | 882 | 751 | 648 | 564 | 496 | 439 | 392 | 352 | 317 | 288 | 262 | 240 | 220 |
| 12 | 6 | 2 | 1764 | 1568 | 1411 | 1283 | 1176 | 1024 | 883 | 769 | 676 | 598 | 534 | 479 | 433 | 392 | 358 | 327 | 300 |
| 13 | 3 | 2 | 851 | 672 | 544 | 450 | 378 | 322 | 278 | 242 | 213 | | | | | | | | |
| 13 | 4 | 2 | 1465 | 1158 | 938 | 775 | 651 | 555 | 479 | 417 | 366 | 325 | 289 | 260 | 234 | 213 | | | |
| 13 | 5 | 2 | 1949 | 1732 | 1408 | 1164 | 978 | 833 | 718 | 626 | 550 | 487 | 436 | 390 | 352 | 319 | 291 | 266 | 244 |
| 13 | 6 | 2 | 1938 | 1723 | 1550 | 1410 | 1292 | 1141 | 984 | 857 | 754 | 667 | 595 | 534 | 482 | 437 | 399 | 365 | 335 |
| 13 | 7 | 2 | 1927 | 1713 | 1542 | 1402 | 1285 | 1186 | 1101 | 1028 | 964 | 866 | 762 | 684 | 618 | 560 | 510 | 467 | 429 |
| 14 | 3 | 2 | 928 | 733 | 594 | 491 | 413 | 352 | 303 | 264 | 232 | 206 | | | | | | | |
| 14 | 4 | 2 | 1603 | 1267 | 1026 | 848 | 713 | 607 | 524 | 456 | 401 | 355 | 317 | 284 | 257 | 233 | 212 | | |
| 14 | 5 | 2 | 2123 | 1887 | 1546 | 1278 | 1074 | 915 | 789 | 687 | 604 | 535 | 477 | 428 | 386 | 351 | 319 | 292 | 268 |
| 14 | 6 | 2 | 2112 | 1878 | 1690 | 1536 | 1408 | 1259 | 1086 | 946 | 831 | 736 | 657 | 589 | 532 | 482 | 440 | 402 | 369 |
| 14 | 7 | 2 | 2101 | 1868 | 1681 | 1528 | 1401 | 1293 | 1201 | 1121 | 1051 | 948 | 846 | 759 | 685 | 622 | 566 | 518 | 476 |

(continued)

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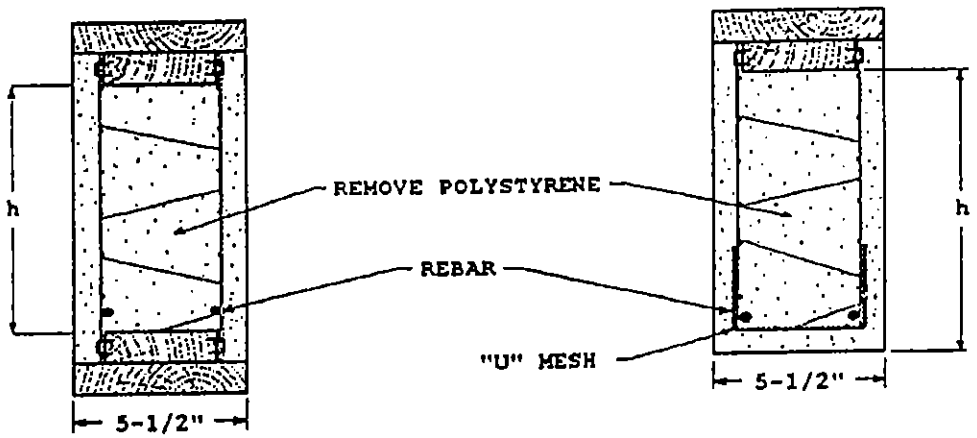


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

### UNIFORM LOAD (PLF)

| ft in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 3 | 2 | 1006 | 795 | 644 | 532 | 447 | 381 | 328 | 286 | 251 | 223 | | | | | | | |
| 15 | 4 | 2 | 1741 | 1376 | 1115 | 921 | 774 | 659 | 569 | 495 | 435 | 386 | 344 | 309 | 279 | 253 | 230 | 211 | |
| 15 | 5 | 2 | 2297 | 2042 | 1684 | 1392 | 1169 | 996 | 859 | 748 | 658 | 583 | 520 | 466 | 421 | 382 | 348 | 318 | 292 |
| 15 | 6 | 2 | 2287 | 2032 | 1829 | 1663 | 1524 | 1377 | 1187 | 1034 | 909 | 806 | 718 | 644 | 582 | 528 | 481 | 440 | 404 |
| 15 | 7 | 2 | 2276 | 2023 | 1820 | 1655 | 1517 | 1400 | 1300 | 1214 | 1138 | 1042 | 929 | 834 | 753 | 683 | 622 | 569 | 523 |
| 15 | 8 | 2 | 2266 | 2013 | 1812 | 1647 | 1510 | 1394 | 1294 | 1208 | 1132 | 1066 | 1007 | 954 | 906 | 840 | 766 | 700 | 643 |
| 16 | 3 | 2 | 1083 | 856 | 693 | 573 | 482 | 410 | 354 | 308 | 271 | 240 | 214 | | | | | | |
| 16 | 4 | 2 | 1879 | 1485 | 1203 | 994 | 835 | 712 | 614 | 535 | 470 | 416 | 371 | 333 | 301 | 273 | 249 | 227 | 209 |
| 16 | 5 | 2 | 2472 | 2197 | 1822 | 1506 | 1265 | 1078 | 930 | 810 | 712 | 630 | 562 | 505 | 456 | 413 | 376 | 344 | 316 |
| 16 | 6 | 2 | 2461 | 2187 | 1969 | 1790 | 1640 | 1494 | 1288 | 1122 | 986 | 874 | 779 | 698 | 631 | 573 | 522 | 477 | 438 |
| 16 | 7 | 2 | 2450 | 2178 | 1960 | 1782 | 1633 | 1508 | 1400 | 1307 | 1225 | 1136 | 1013 | 909 | 820 | 744 | 678 | 620 | 570 |
| 16 | 8 | 2 | 2439 | 2168 | 1951 | 1774 | 1626 | 1501 | 1394 | 1301 | 1219 | 1148 | 1084 | 1027 | 976 | 920 | 838 | 767 | 704 |

(continued)

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# INSTEEL 3-D BEAM TABLES
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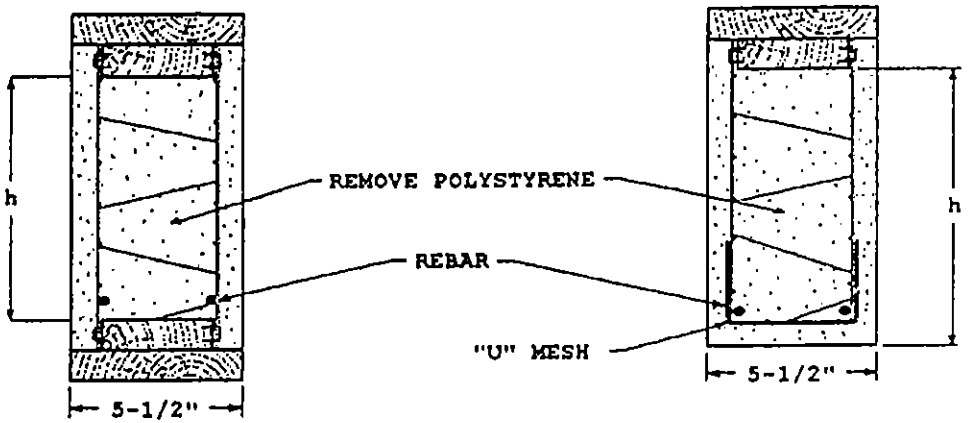


**SIMPLE SPAN - UNIFORM LOAD**

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### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 3 | 2 | 1161 | 917 | 743 | 614 | 516 | 440 | 379 | 330 | 290 | 257 | 229 | 206 | | | | | |
| 17 | 4 | 2 | 2017 | 1594 | 1291 | 1067 | 897 | 764 | 659 | 574 | 504 | 447 | 399 | 358 | 323 | 293 | 267 | 244 | 224 |
| 17 | 5 | 2 | 2646 | 2352 | 1960 | 1620 | 1361 | 1160 | 1000 | 871 | 766 | 678 | 605 | 543 | 490 | 444 | 405 | 370 | 340 |
| 17 | 6 | 2 | 2636 | 2342 | 2108 | 1916 | 1757 | 1612 | 1390 | 1211 | 1064 | 943 | 841 | 755 | 681 | 618 | 563 | 516 | 473 |
| 18 | 7 | 2 | 2798 | 2487 | 2239 | 2035 | 1866 | 1722 | 1599 | 1492 | 1399 | 1317 | 1180 | 1059 | 956 | 867 | 790 | 723 | 664 |
| 17 | 8 | 2 | 2613 | 2323 | 2091 | 1900 | 1742 | 1608 | 1493 | 1394 | 1307 | 1230 | 1161 | 1100 | 1046 | 996 | 911 | 833 | 765 |
| 18 | 3 | 2 | 1239 | 979 | 793 | 655 | 551 | 469 | 404 | 352 | 310 | 274 | 245 | 220 | | | | | |
| 18 | 4 | 2 | 2155 | 1703 | 1379 | 1140 | 958 | 816 | 704 | 613 | 539 | 477 | 426 | 382 | 345 | 313 | 285 | 261 | 239 |
| 18 | 5 | 2 | 2820 | 2507 | 2098 | 1734 | 1457 | 1241 | 1070 | 932 | 820 | 726 | 648 | 581 | 524 | 476 | 433 | 397 | 364 |
| 18 | 6 | 2 | 2809 | 2497 | 2247 | 2043 | 1873 | 1729 | 1491 | 1299 | 1142 | 1011 | 902 | 810 | 731 | 663 | 604 | 552 | 507 |
| 18 | 7 | 2 | 2798 | 2487 | 2239 | 2035 | 1866 | 1722 | 1599 | 1492 | 1399 | 1317 | 1180 | 1059 | 956 | 867 | 790 | 723 | 664 |
| 18 | 8 | 2 | 2787 | 2478 | 2230 | 2027 | 1858 | 1715 | 1593 | 1487 | 1394 | 1312 | 1239 | 1174 | 1115 | 1062 | 984 | 900 | 827 |

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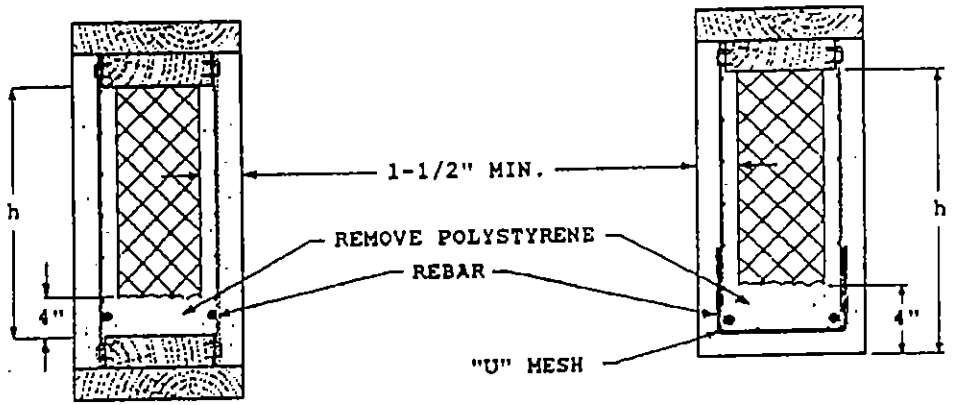
# INSTEEL 3-D BEAM TABLES
## ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

### UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 3 | 2 | 428 | 338 | 274 | 219 | | | | | | | | | | | | | |
| 7 | 3 | 2 | 552 | 436 | 353 | 292 | 245 | 209 | | | | | | | | | | | |
| 8 | 3 | 2 | 676 | 534 | 433 | 358 | 301 | 256 | 221 | | | | | | | | | | |
| 9 | 3 | 2 | 801 | 633 | 512 | 423 | 356 | 303 | 261 | 228 | 200 | | | | | | | | |
| 10 | 3 | 2 | 925 | 731 | 592 | 489 | 411 | 350 | 302 | 263 | 231 | 205 | | | | | | | |
| 10 | 4 | 2 | 1482 | 1171 | 948 | 784 | 658 | 561 | 484 | 421 | 370 | 328 | 293 | 263 | 234 | 203 | | | |
| 11 | 3 | 2 | 1049 | 829 | 671 | 555 | 466 | 397 | 343 | 298 | 262 | 232 | 207 | | | | | | |
| 11 | 4 | 2 | 1702 | 1345 | 1090 | 900 | 757 | 645 | 556 | 484 | 426 | 377 | 336 | 302 | 272 | 247 | 225 | 201 | |
| 12 | 3 | 2 | 1173 | 927 | 751 | 621 | 521 | 444 | 383 | 334 | 293 | 260 | 232 | 208 | | | | | |
| 12 | 4 | 2 | 1923 | 1520 | 1231 | 1017 | 855 | 728 | 628 | 547 | 481 | 426 | 380 | 341 | 308 | 279 | 254 | 233 | 214 |
| 13 | 3 | 2 | 1297 | 1025 | 830 | 686 | 577 | 491 | 424 | 369 | 324 | 287 | 256 | 230 | 208 | | | | |
| 13 | 4 | 2 | 2144 | 1694 | 1372 | 1134 | 953 | 812 | 700 | 610 | 536 | 475 | 423 | 380 | 343 | 311 | 283 | 259 | 238 |
| 14 | 3 | 2 | 1422 | 1123 | 910 | 752 | 632 | 538 | 464 | 404 | 355 | 315 | 281 | 252 | 227 | 206 | | | |
| 14 | 4 | 2 | 2365 | 1868 | 1513 | 1251 | 1051 | 896 | 772 | 673 | 591 | 524 | 467 | 419 | 378 | 343 | 313 | 286 | 263 |
| 14 | 5 | 2 | 2446 | 2175 | 1957 | 1779 | 1500 | 1278 | 1102 | 960 | 844 | 747 | 667 | 598 | 540 | 490 | 446 | 408 | 375 |

(continued)

**NOTES:**

1. LOAD VALUES INDICATED ARE ULTIMATE VALUES FOR SIMPLE SPAN UNIFORM LOAD.
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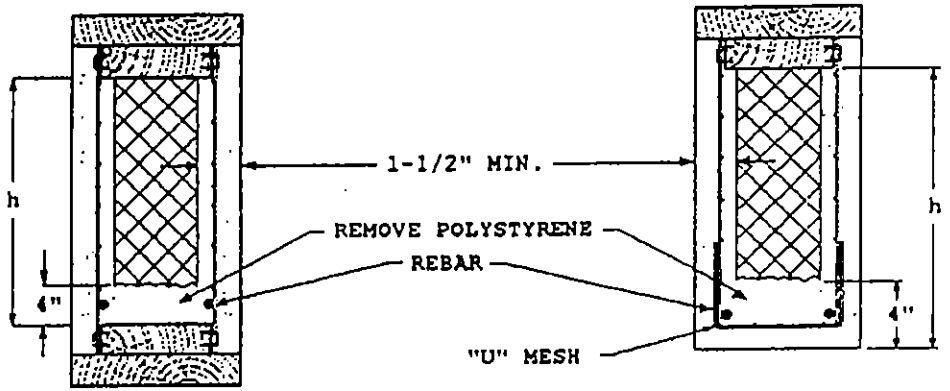
6. ALL BEAMS SHALL BE PROPERLY SHORED UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 15 | 3 | 2 | 1546 | 1221 | 989 | 818 | 687 | 585 | 505 | 440 | 386 | 342 | 305 | 274 | 247 | 224 | 204 | | |
| 15 | 4 | 2 | 2686 | 2043 | 1655 | 1368 | 1149 | 979 | 844 | 735 | 646 | 573 | 511 | 458 | 414 | 375 | 342 | 313 | 287 |
| 15 | 5 | 2 | 2647 | 2353 | 2118 | 1925 | 1653 | 1409 | 1215 | 1058 | 930 | 824 | 736 | 658 | 595 | 540 | 492 | 450 | 413 |
| 16 | 3 | 2 | 1670 | 1319 | 1069 | 883 | 742 | 632 | 545 | 475 | 417 | 370 | 330 | 296 | 267 | 242 | 221 | 202 | |
| 16 | 4 | 2 | 2806 | 2217 | 1796 | 1484 | 1247 | 1063 | 916 | 798 | 702 | 621 | 554 | 499 | 449 | 407 | 371 | 340 | 312 |
| 16 | 5 | 2 | 2848 | 2531 | 2278 | 2071 | 1806 | 1539 | 1327 | 1156 | 1016 | 900 | 803 | 721 | 650 | 590 | 537 | 492 | 452 |
| 17 | 3 | 2 | 1794 | 1418 | 1148 | 949 | 797 | 679 | 586 | 510 | 449 | 397 | 354 | 318 | 287 | 260 | 237 | 217 | |
| 17 | 4 | 2 | 3027 | 2392 | 1937 | 1601 | 1345 | 1146 | 988 | 861 | 757 | 670 | 598 | 537 | 484 | 439 | 400 | 366 | 336 |
| 17 | 5 | 2 | 3049 | 2710 | 2439 | 2217 | 1960 | 1670 | 1440 | 1254 | 1102 | 977 | 871 | 782 | 706 | 640 | 583 | 533 | 490 |
| 18 | 3 | 2 | 1918 | 1516 | 1228 | 1015 | 853 | 726 | 626 | 546 | 480 | 425 | 379 | 340 | 307 | 278 | 254 | 232 | 213 |
| 18 | 4 | 2 | 3248 | 2566 | 2079 | 1718 | 1443 | 1230 | 1061 | 924 | 812 | 719 | 642 | 576 | 520 | 471 | 429 | 393 | 361 |
| 18 | 5 | 2 | 3249 | 2888 | 2600 | 2363 | 2113 | 1801 | 1553 | 1352 | 1189 | 1053 | 939 | 843 | 761 | 690 | 629 | 575 | 528 |
| 19 | 3 | 2 | 2043 | 1614 | 1307 | 1080 | 908 | 773 | 667 | 581 | 511 | 452 | 403 | 362 | 327 | 296 | 270 | 247 | 227 |
| 19 | 4 | 2 | 3463 | 2741 | 2220 | 1835 | 1542 | 1314 | 1133 | 987 | 867 | 768 | 685 | 615 | 555 | 503 | 459 | 420 | 385 |
| 19 | 5 | 2 | 3450 | 3067 | 2760 | 2509 | 2266 | 1931 | 1665 | 1451 | 1276 | 1129 | 1007 | 904 | 816 | 740 | 674 | 617 | 567 |
| 19 | 6 | 2 | 3438 | 3056 | 2750 | 2500 | 2292 | 2115 | 1964 | 1833 | 1697 | 1503 | 1341 | 1203 | 1086 | 985 | 897 | 821 | 754 |

(continued)

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5. DEFLECTION CALCULATIONS WERE BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 2.
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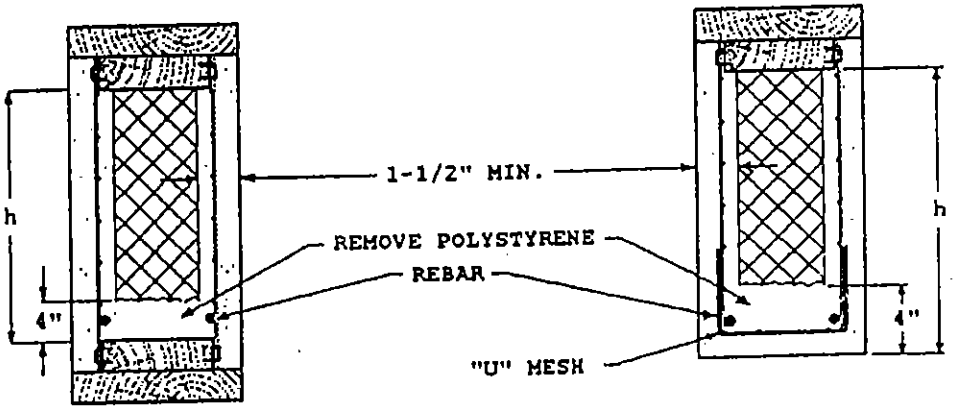
# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

## UNIFORM LOAD (PLF)

| h In. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 3 | 2 | 2167 | 1712 | 1387 | 1146 | 963 | 821 | 707 | 616 | 542 | 480 | 428 | 384 | 347 | 314 | 287 | 262 | 241 |
| 20 | 4 | 2 | 3663 | 2916 | 2361 | 1951 | 1640 | 1397 | 1205 | 1049 | 922 | 817 | 729 | 654 | 590 | 535 | 488 | 446 | 410 |
| 20 | 5 | 2 | 3651 | 3245 | 2921 | 2655 | 2420 | 2062 | 1778 | 1549 | 1361 | 1206 | 1075 | 965 | 871 | 790 | 720 | 659 | 605 |
| 20 | 6 | 2 | 3638 | 3234 | 2911 | 2646 | 2426 | 2239 | 2079 | 1940 | 1819 | 1613 | 1439 | 1291 | 1165 | 1057 | 963 | 881 | 809 |
| 22 | 3 | 2 | 2416 | 1908 | 1546 | 1277 | 1073 | 915 | 789 | 687 | 604 | 535 | 477 | 428 | 386 | 350 | 319 | 292 | 268 |
| 22 | 4 | 2 | 4066 | 3264 | 2644 | 2186 | 1836 | 1564 | 1349 | 1175 | 1033 | 916 | 816 | 732 | 661 | 600 | 546 | 500 | 459 |
| 22 | 5 | 2 | 4052 | 3602 | 3242 | 2947 | 2702 | 2323 | 2003 | 1745 | 1534 | 1358 | 1212 | 1088 | 982 | 890 | 811 | 742 | 682 |
| 22 | 6 | 2 | 4040 | 3591 | 3232 | 2938 | 2693 | 2486 | 2308 | 2155 | 2020 | 1833 | 1635 | 1467 | 1324 | 1201 | 1094 | 1001 | 920 |
| 24 | 3 | 2 | 2663 | 2104 | 1705 | 1409 | 1184 | 1009 | 870 | 758 | 666 | 590 | 526 | 472 | 426 | 387 | 352 | 322 | 296 |
| 24 | 4 | 2 | 4466 | 3613 | 2926 | 2419 | 2032 | 1732 | 1493 | 1301 | 1143 | 1013 | 903 | 811 | 732 | 664 | 605 | 553 | 508 |
| 24 | 5 | 2 | 4454 | 3959 | 3563 | 3239 | 2969 | 2684 | 2228 | 1941 | 1706 | 1511 | 1348 | 1210 | 1092 | 990 | 902 | 826 | 758 |
| 24 | 6 | 2 | 4441 | 3948 | 3553 | 3230 | 2961 | 2733 | 2538 | 2369 | 2221 | 2053 | 1831 | 1644 | 1483 | 1345 | 1226 | 1122 | 1030 |
| 26 | 3 | 2 | 2912 | 2301 | 1864 | 1540 | 1294 | 1103 | 951 | 828 | 728 | 645 | 575 | 516 | 466 | 423 | 385 | 352 | 324 |
| 26 | 4 | 2 | 4868 | 3962 | 3209 | 2652 | 2228 | 1899 | 1637 | 1426 | 1254 | 1110 | 990 | 889 | 802 | 728 | 663 | 607 | 557 |
| 26 | 5 | 2 | 4855 | 4316 | 3884 | 3531 | 3237 | 2846 | 2454 | 2137 | 1879 | 1664 | 1484 | 1332 | 1202 | 1091 | 994 | 909 | 836 |
| 26 | 6 | 2 | 4843 | 4306 | 3874 | 3522 | 3228 | 2980 | 2767 | 2583 | 2421 | 2273 | 2027 | 1820 | 1642. | 1490 | 1357 | 1242 | 1140 |
| 26 | 7 | 2 | 4830 | 4293 | 3864 | 3513 | 3220 | 2972 | 2760 | 2576 | 2415 | 2273 | 2147 | 2034 | 1932 | 1840 | 1730 | 1583 | 1454 |

(continued)

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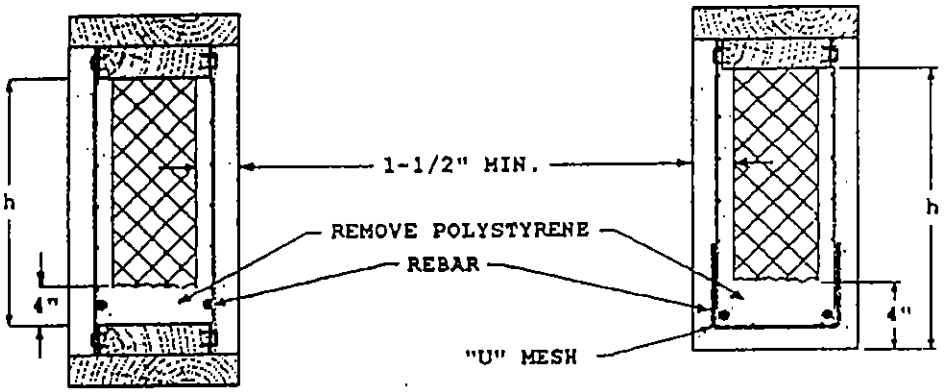
# ULTIMATE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 28 | 3 | 2 | 3160 | 2497 | 2023 | 1672 | 1405 | 1197 | 1032 | 899 | 790 | 700 | 624 | 560 | 506 | 459 | 418 | 382 | 351 |
| 28 | 4 | 2 | 6269 | 4311 | 3492 | 2886 | 2425 | 2066 | 1781 | 1552 | 1364 | 1208 | 1078 | 967 | 873 | 792 | 721 | 660 | 606 |
| 28 | 5 | 2 | 5257 | 4673 | 4205 | 3823 | 3504 | 3107 | 2679 | 2334 | 2051 | 1817 | 1621 | 1454 | 1313 | 1191 | 1085 | 993 | 912 |
| 28 | 6 | 2 | 5244 | 4662 | 4195 | 3814 | 3496 | 3227 | 2997 | 2797 | 2622 | 2468 | 2224 | 1996 | 1801 | 1634 | 1489 | 1362 | 1251 |
| 28 | 7 | 2 | 5232 | 4650 | 4185 | 3805 | 3488 | 3219 | 2990 | 2790 | 2616 | 2462 | 2325 | 2203 | 2093 | 1993 | 1902 | 1746 | 1604 |
| 30 | 3 | 2 | 3409 | 2693 | 2181 | 1803 | 1515 | 1291 | 1113 | 970 | 852 | 755 | 673 | 604 | 546 | 495 | 451 | 412 | 379 |
| 30 | 4 | 2 | 6671 | 4660 | 3774 | 3119 | 2621 | 2233 | 1926 | 1677 | 1474 | 1306 | 1165 | 1045 | 944 | 856 | 780 | 713 | 655 |
| 30 | 5 | 2 | 6658 | 6030 | 4527 | 4115 | 3772 | 3368 | 2904 | 2530 | 2224 | 1970 | 1757 | 1577 | 1423 | 1291 | 1176 | 1076 | 988 |
| 30 | 6 | 2 | 5646 | 5018 | 4517 | 4106 | 3764 | 3474 | 3226 | 3011 | 2823 | 2657 | 2420 | 2172 | 1960 | 1778 | 1620 | 1482 | 1361 |
| 30 | 7 | 2 | 5633 | 5007 | 4506 | 4097 | 3755 | 3467 | 3219 | 3004 | 2817 | 2651 | 2504 | 2372 | 2253 | 2146 | 2048 | 1910 | 1754 |
| 32 | 3 | 2 | 3657 | 2889 | 2340 | 1934 | 1625 | 1385 | 1194 | 1040 | 914 | 810 | 722 | 648 | 585 | 531 | 484 | 442 | 406 |
| 32 | 4 | 2 | 6072 | 5008 | 4057 | 3353 | 2817 | 2400 | 2070 | 1803 | 1585 | 1404 | 1252 | 1124 | 1014 | 920 | 838 | 767 | 704 |
| 32 | 5 | 2 | 6060 | 5386 | 4848 | 4407 | 4040 | 3629 | 3130 | 2726 | 2396 | 2122 | 1893 | 1699 | 1533 | 1391 | 1267 | 1160 | 1065 |
| 32 | 6 | 2 | 6047 | 5375 | 4838 | 4398 | 4031 | 3721 | 3456 | 3225 | 3024 | 2846 | 2616 | 2348 | 2119 | 1922 | 1751 | 1602 | 1472 |
| 32 | 7 | 2 | 6035 | 5364 | 4828 | 4389 | 4023 | 3714 | 3448 | 3218 | 3017 | 2840 | 2682 | 2541 | 2414 | 2299 | 2194 | 2074 | 1904 |
| 32 | 8 | 2 | 6022 | 5353 | 4818 | 4380 | 4015 | 3706 | 3441 | 3212 | 3011 | 2834 | 2676 | 2536 | 2409 | 2294 | 2190 | 2096 | 2007 |

(continued)

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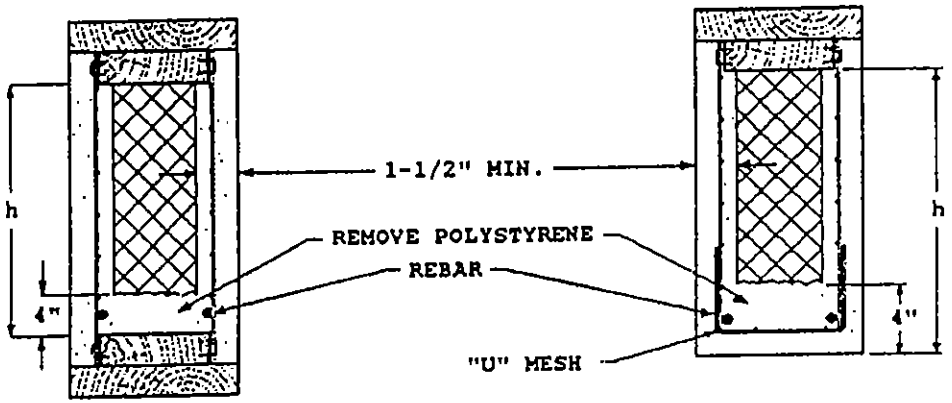
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

## UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 3 | 2 | 3905 | 3086 | 2499 | 2066 | 1736 | 1479 | 1275 | 1111 | 976 | 865 | 771 | 692 | 625 | 567 | 516 | 472 | 434 |
| 34 | 4 | 2 | 6474 | 5357 | 4339 | 3586 | 3013 | 2568 | 2214 | 1929 | 1695 | 1502 | 1339 | 1202 | 1085 | 984 | 897 | 820 | 753 |
| 34 | 5 | 2 | 6461 | 5743 | 5169 | 4699 | 4307 | 3891 | 3355 | 2922 | 2569 | 2275 | 2029 | 1821 | 1644 | 1491 | 1359 | 1243 | 1142 |
| 34 | 6 | 2 | 6449 | 5732 | 5159 | 4690 | 4299 | 3968 | 3685 | 3439 | 3224 | 3035 | 2812 | 2524 | 2278 | 2066 | 1883 | 1723 | 1582 |
| 34 | 7 | 2 | 6436 | 5721 | 5149 | 4681 | 4291 | 3961 | 3678 | 3433 | 3218 | 3029 | 2860 | 2710 | 2574 | 2452 | 2340 | 2237 | 2055 |
| 34 | 8 | 2 | 6424 | 5710 | 5139 | 4672 | 4282 | 3953 | 3671 | 3426 | 3212 | 3023 | 2855 | 2705 | 2569 | 2447 | 2336 | 2234 | 2141 |
| 36 | 3 | 2 | 4154 | 3282 | 2668 | 2197 | 1846 | 1573 | 1356 | 1182 | 1038 | 920 | 820 | 736 | 665 | 603 | 549 | 503 | 462 |
| 36 | 4 | 2 | 6875 | 5706 | 4622 | 3820 | 3210 | 2735 | 2358 | 2054 | 1805 | 1599 | 1427 | 1280 | 1156 | 1048 | 955 | 874 | 802 |
| 36 | 5 | 2 | 6863 | 6100 | 5490 | 4991 | 4576 | 4152 | 3580 | 3119 | 2741 | 2428 | 2166 | 1944 | 1754 | 1591 | 1450 | 1326 | 1218 |
| 36 | 6 | 2 | 6850 | 6089 | 5480 | 4982 | 4567 | 4215 | 3914 | 3653 | 3425 | 3224 | 3009 | 2700 | 2437 | 2210 | 2014 | 1843 | 1692 |
| 36 | 7 | 2 | 6838 | 6078 | 5470 | 4973 | 4558 | 4208 | 3907 | 3647 | 3419 | 3218 | 3039 | 2879 | 2735 | 2605 | 2486 | 2378 | 2205 |
| 36 | 8 | 2 | 6825 | 6067 | 5460 | 4964 | 4550 | 4200 | 3900 | 3640 | 3412 | 3212 | 3033 | 2874 | 2730 | 2600 | 2482 | 2374 | 2275 |

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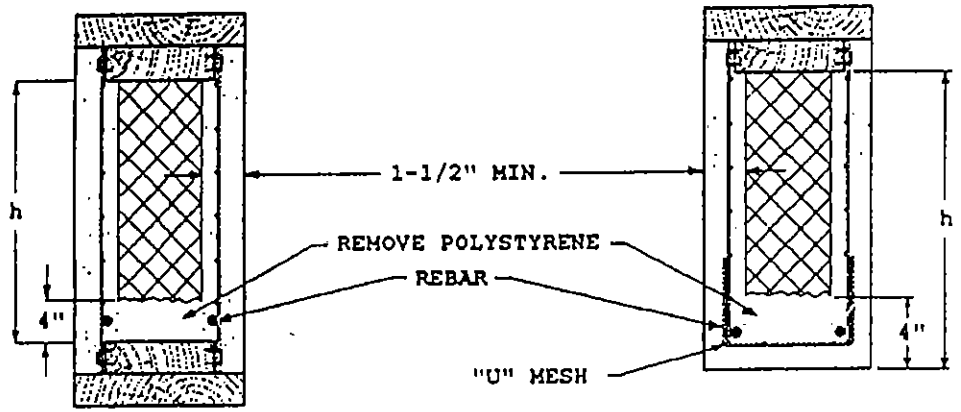


**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 6 | 3 | 2 | 455 | 359 | 291 | 234 | | | | | | | | | | | | | |
| 7 | 3 | 2 | 579 | 458 | 371 | 306 | 257 | 219 | | | | | | | | | | | |
| 8 | 3 | 2 | 703 | 556 | 450 | 372 | 313 | 266 | 230 | 200 | | | | | | | | | |
| 9 | 3 | 2 | 827 | 654 | 530 | 438 | 368 | 313 | 270 | 236 | 207 | | | | | | | | |
| 9 | 4 | 2 | 1346 | 1063 | 861 | 712 | 598 | 510 | 439 | 383 | 336 | 296 | 251 | 214 | | | | | |
| 10 | 3 | 2 | 952 | 752 | 609 | 503 | 423 | 360 | 311 | 271 | 238 | 211 | | | | | | | |
| 10 | 4 | 2 | 1567 | 1238 | 1003 | 829 | 696 | 593 | 512 | 446 | 392 | 347 | 309 | 278 | 246 | 214 | | | |
| 11 | 3 | 2 | 1076 | 850 | 689 | 569 | 478 | 407 | 351 | 306 | 269 | 238 | 213 | | | | | | |
| 11 | 4 | 2 | 1787 | 1412 | 1144 | 945 | 794 | 677 | 584 | 508 | 447 | 396 | 353 | 317 | 286 | 259 | 236 | 212 | |
| 11 | 5 | 2 | 1944 | 1728 | 1555 | 1347 | 1132 | 965 | 832 | 725 | 637 | 564 | 503 | 452 | 408 | 365 | 317 | 278 | 245 |
| 12 | 3 | 2 | 1200 | 948 | 768 | 635 | 533 | 454 | 392 | 341 | 300 | 266 | 237 | 213 | | | | | |
| 12 | 4 | 2 | 2008 | 1587 | 1285 | 1062 | 893 | 760 | 656 | 571 | 502 | 445 | 397 | 356 | 321 | 291 | 266 | 243 | 223 |
| 12 | 5 | 2 | 2155 | 1916 | 1724 | 1530 | 1285 | 1095 | 944 | 823 | 723 | 640 | 571 | 513 | 463 | 420 | 382 | 350 | 311 |
| 13 | 3 | 2 | 1324 | 1046 | 848 | 700 | 589 | 501 | 432 | 377 | 331 | 293 | 262 | 235 | 212 | | | | |
| 13 | 4 | 2 | 2229 | 1761 | 1427 | 1179 | 991 | 844 | 728 | 634 | 557 | 494 | 440 | 396 | 357 | 323 | 295 | 270 | 248 |
| 13 | 5 | 2 | 2367 | 2104 | 1893 | 1712 | 1439 | 1226 | 1057 | 921 | 809 | 717 | 639 | 574 | 518 | 470 | 428 | 392 | 360 |
| 14 | 3 | 2 | 1448 | 1144 | 927 | 766 | 644 | 549 | 473 | 412 | 362 | 321 | 286 | 257 | 232 | 210 | | | |
| 14 | 4 | 2 | 2450 | 1936 | 1568 | 1296 | 1089 | 928 | 800 | 697 | 612 | 542 | 484 | 434 | 392 | 356 | 324 | 296 | 272 |
| 14 | 5 | 2 | 2578 | 2292 | 2062 | 1875 | 1592 | 1357 | 1170 | 1019 | 896 | 793 | 708 | 635 | 573 | 520 | 474 | 433 | 398 |

(continued)

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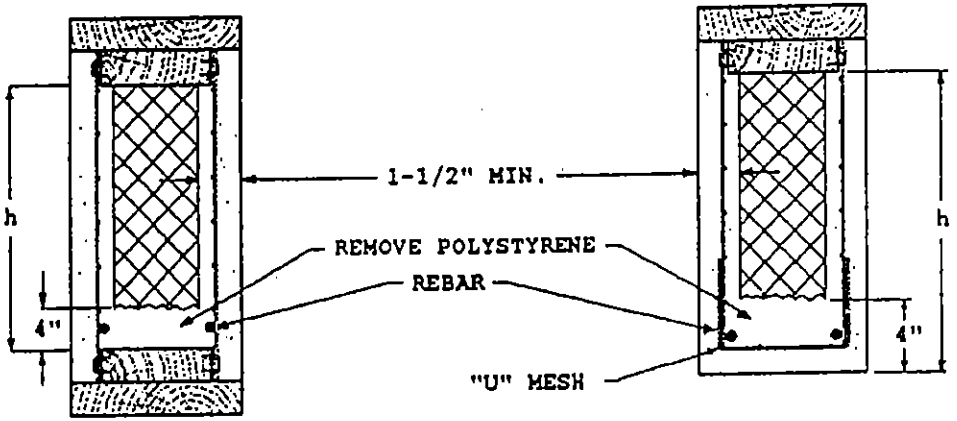


**SIMPLE SPAN - UNIFORM LOAD**

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Shotcrete - f'c = 4000 psi

## UNIFORM LOAD (PLF)

| h in: | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 3 | 2 | 1573 | 1243 | 1006 | 832 | 699 | 596 | 514 | 447 | 393 | 348 | 311 | 279 | 252 | 228 | 208 | | |
| 15 | 4 | 2 | 2670 | 2110 | 1709 | 1412 | 1187 | 1011 | 872 | 760 | 668 | 591 | 528 | 473 | 427 | 388 | 353 | 323 | 297 |
| 15 | 5 | 2 | 2790 | 2480 | 2232 | 2029 | 1745 | 1487 | 1282 | 1117 | 982 | 870 | 776 | 696 | 628 | 570 | 518 | 475 | 436 |
| 15 | 6 | 2 | 2776 | 2468 | 2221 | 2019 | 1861 | 1709 | 1587 | 1481 | 1307 | 1158 | 1033 | 927 | 837 | 759 | 692 | 633 | 581 |
| 16 | 3 | 2 | 1697 | 1341 | 1086 | 897 | 754 | 643 | 554 | 483 | 424 | 376 | 335 | 301 | 271 | 246 | 224 | 205 | |
| 16 | 4 | 2 | 2891 | 2284 | 1850 | 1529 | 1285 | 1095 | 944 | 822 | 723 | 640 | 571 | 513 | 463 | 420 | 382 | 350 | 321 |
| 16 | 5 | 2 | 3001 | 2668 | 2401 | 2183 | 1899 | 1618 | 1395 | 1215 | 1068 | 946 | 844 | 757 | 684 | 620 | 566 | 517 | 475 |
| 16 | 6 | 2 | 2988 | 2656 | 2390 | 2173 | 1992 | 1839 | 1707 | 1594 | 1432 | 1268 | 1131 | 1015 | 916 | 831 | 757 | 693 | 636 |
| 17 | 3 | 2 | 1821 | 1439 | 1165 | 963 | 809 | 690 | 595 | 518 | 455 | 403 | 360 | 323 | 291 | 264 | 241 | 220 | 202 |
| 17 | 4 | 2 | 3112 | 2459 | 1992 | 1646 | 1383 | 1179 | 1016 | 885 | 778 | 689 | 615 | 552 | 498 | 452 | 412 | 377 | 346 |
| 17 | 5 | 2 | 3213 | 2856 | 2570 | 2337 | 2052 | 1748 | 1508 | 1313 | 1154 | 1022 | 912 | 819 | 739 | 670 | 611 | 559 | 513 |
| 17 | 6 | 2 | 3200 | 2844 | 2560 | 2327 | 2133 | 1969 | 1828 | 1706 | 1556 | 1378 | 1229 | 1103 | 996 | 903 | 823 | 753 | 691 |
| 18 | 3 | 2 | 1945 | 1537 | 1245 | 1029 | 865 | 737 | 635 | 553 | 486 | 431 | 384 | 345 | 311 | 282 | 257 | 235 | 216 |
| 18 | 4 | 2 | 3333 | 2633 | 2133 | 1763 | 1481 | 1262 | 1088 | 948 | 833 | 738 | 658 | 591 | 533 | 484 | 441 | 403 | 370 |
| 18 | 5 | 2 | 3424 | 3044 | 2739 | 2490 | 2205 | 1879 | 1620 | 1411 | 1240 | 1099 | 980 | 880 | 794 | 720 | 656 | 600 | 551 |
| 18 | 6 | 2 | 3411 | 3032 | 2729 | 2481 | 2274 | 2099 | 1949 | 1819 | 1680 | 1488 | 1327 | 1191 | 1075 | 975 | 889 | 813 | 747 |
| 19 | 3 | 2 | 2069 | 1635 | 1324 | 1095 | 920 | 784 | 676 | 589 | 517 | 458 | 409 | 367 | 331 | 300 | 274 | 250 | 230 |
| 19 | 4 | 2 | 3554 | 2808 | 2274 | 1880 | 1579 | 1346 | 1160 | 1011 | 888 | 787 | 702 | 630 | 569 | 516 | 470 | 430 | 395 |
| 19 | 5 | 2 | 3636 | 3232 | 2909 | 2644 | 2359 | 2010 | 1733 | 1510 | 1327 | 1176 | 1048 | 941 | 849 | 770 | 702 | 642 | 590 |
| 19 | 6 | 2 | 3623 | 3220 | 2898 | 2635 | 2415 | 2229 | 2070 | 1932 | 1804 | 1598 | 1426 | 1279 | 1155 | 1047 | 954 | 873 | 802 |

(continued)

**NOTES:**

1. LOAD VALUES INDICATED ARE ULTIMATE VALUES FOR SIMPLE SPAN UNIFORM LOAD.
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4. SHADED VALUES INDICATE DEFLECTIONS THAT EXCEED $\ell/360$ BUT ARE LESS THAN $\ell/180$.
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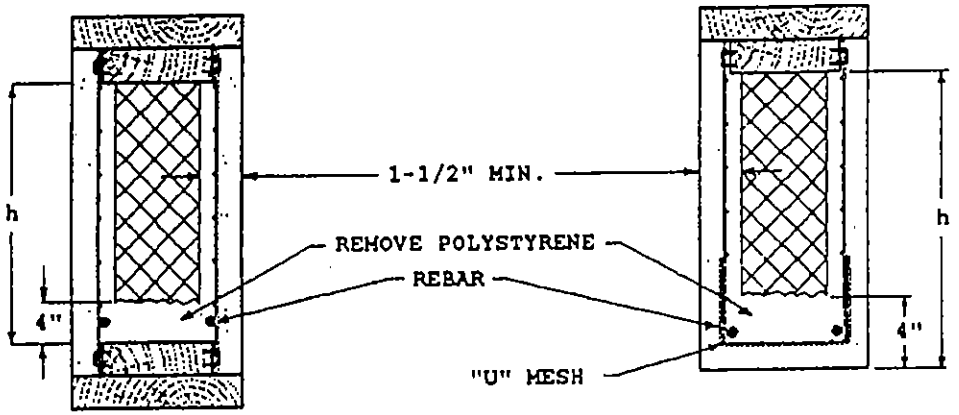
6. ALL BEAMS SHALL BE PROPERLY SHORED UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

## UNIFORM LOAD (PLF)

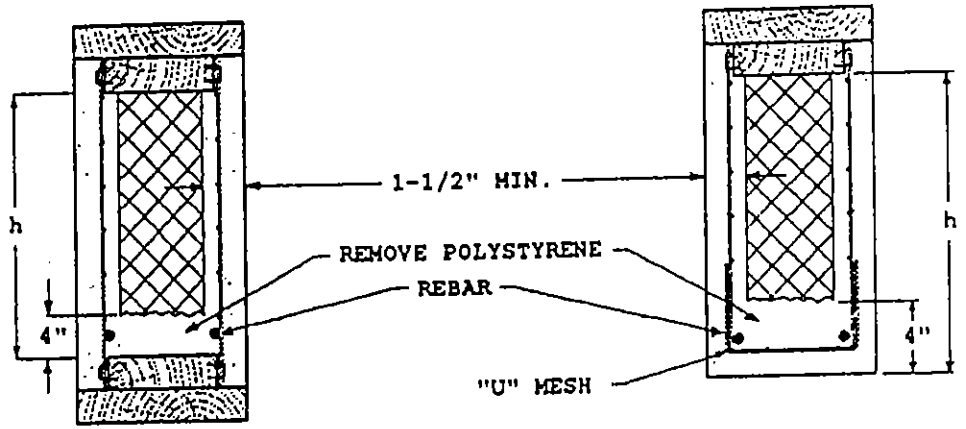
| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 20 | 3 | 2 | 2194 | 1733 | 1404 | 1160 | 976 | 831 | 716 | 624 | 548 | 486 | 433 | 389 | 351 | 318 | 290 | 266 | 244 |
| 20 | 4 | 2 | 3774 | 2982 | 2416 | 1996 | 1678 | 1429 | 1232 | 1074 | 944 | 836 | 746 | 669 | 604 | 548 | 499 | 457 | 419 |
| 20 | 5 | 2 | 3847 | 3420 | 3078 | 2798 | 2512 | 2140 | 1846 | 1608 | 1413 | 1252 | 1116 | 1002 | 904 | 820 | 747 | 684 | 628 |
| 20 | 6 | 2 | 3834 | 3408 | 3067 | 2788 | 2556 | 2359 | 2191 | 2045 | 1917 | 1708 | 1524 | 1367 | 1234 | 1119 | 1020 | 933 | 857 |
| 20 | 7 | 2 | 3821 | 3396 | 3057 | 2779 | 2547 | 2351 | 2183 | 2038 | 1910 | 1798 | 1698 | 1609 | 1528 | 1425 | 1299 | 1188 | 1091 |
| 22 | 3 | 2 | 2442 | 1929 | 1563 | 1292 | 1085 | 925 | 797 | 695 | 610 | 541 | 482 | 433 | 391 | 354 | 323 | 295 | 271 |
| 22 | 4 | 2 | 4216 | 3331 | 2698 | 2230 | 1874 | 1597 | 1377 | 1199 | 1054 | 934 | 833 | 747 | 675 | 612 | 557 | 510 | 468 |
| 22 | 5 | 2 | 4270 | 3796 | 3416 | 3106 | 2819 | 2402 | 2071 | 1804 | 1585 | 1404 | 1253 | 1124 | 1016 | 920 | 839 | 767 | 705 |
| 22 | 6 | 2 | 4257 | 3784 | 3406 | 3096 | 2838 | 2620 | 2433 | 2271 | 2129 | 1928 | 1720 | 1544 | 1393 | 1264 | 1151 | 1053 | 967 |
| 22 | 7 | 2 | 4244 | 3772 | 3395 | 3087 | 2829 | 2612 | 2425 | 2263 | 2122 | 1997 | 1886 | 1787 | 1698 | 1617 | 1478 | 1352 | 1242 |
| 24 | 3 | 2 | 2690 | 2126 | 1722 | 1423 | 1196 | 1019 | 878 | 765 | 673 | 596 | 531 | 477 | 430 | 390 | 356 | 326 | 299 |
| 24 | 4 | 2 | 4658 | 3680 | 2981 | 2463 | 2070 | 1764 | 1521 | 1325 | 1164 | 1031 | 920 | 826 | 745 | 676 | 616 | 563 | 518 |
| 24 | 5 | 2 | 4694 | 4172 | 3755 | 3413 | 3125 | 2663 | 2296 | 2000 | 1758 | 1557 | 1389 | 1247 | 1125 | 1020 | 930 | 851 | 781 |
| 24 | 6 | 2 | 4680 | 4160 | 3744 | 3404 | 3120 | 2880 | 2674 | 2496 | 2340 | 2148 | 1916 | 1720 | 1552 | 1408 | 1283 | 1174 | 1078 |
| 24 | 7 | 2 | 4667 | 4148 | 3734 | 3394 | 3111 | 2872 | 2667 | 2489 | 2334 | 2196 | 2074 | 1965 | 1867 | 1778 | 1656 | 1516 | 1392 |
| 26 | 3 | 2 | 2939 | 2322 | 1881 | 1554 | 1306 | 1113 | 960 | 836 | 735 | 651 | 580 | 521 | 470 | 426 | 389 | 356 | 327 |
| 26 | 4 | 2 | 5099 | 4029 | 3263 | 2697 | 2266 | 1931 | 1665 | 1450 | 1275 | 1129 | 1007 | 904 | 816 | 740 | 674 | 617 | 567 |
| 26 | 5 | 2 | 5117 | 4548 | 4093 | 3721 | 3411 | 2924 | 2521 | 2196 | 1930 | 1710 | 1525 | 1369 | 1236 | 1121 | 1021 | 934 | 858 |
| 26 | 6 | 2 | 5103 | 4536 | 4083 | 3712 | 3402 | 3141 | 2916 | 2722 | 2552 | 2368 | 2112 | 1896 | 1711 | 1552 | 1414 | 1294 | 1188 |
| 26 | 7 | 2 | 5090 | 4525 | 4072 | 3702 | 3393 | 3132 | 2909 | 2715 | 2546 | 2395 | 2262 | 2143 | 2036 | 1939 | 1835 | 1679 | 1542 |
| 26 | 8 | 2 | 5077 | 4513 | 4062 | 3692 | 3385 | 3124 | 2901 | 2708 | 2538 | 2389 | 2256 | 2138 | 2031 | 1934 | 1846 | 1766 | 1692 |

(continued)

**NOTES:**

1. LOAD VALUES INDICATED ARE ULTIMATE VALUES FOR SIMPLE SPAN UNIFORM LOAD.
2. IT SHALL BE THE RESPONSIBILTY OF THE DESIGNER TO APPLY THE APPROPRIATE LOAD FACTORS IN ACCORDANCE WITH ACI 318 TO THE SERVICE LOADS TO DETERMINE ULTIMATE LOAD.
3. STRENGTH REDUCTION FACTORS HAVE BEEN INCORPORATED INTO THE TABLES.
4. SHADED VALUES INDICATE DEFLECTIONS THAT EXCEED L/360 BUT ARE LESS THAN L/180.
5. DEFLECTION CALCULATIONS WERE BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 2.
6. ALL BEAMS SHALL BE PROPERLY SHORED UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

## UNIFORM LOAD (PLF)

| h In. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 3 | 2 | 3187 | 2518 | 2040 | 1686 | 1416 | 1207 | 1041 | 907 | 797 | 706 | 630 | 565 | 510 | 463 | 421 | 386 | 354 |
| 28 | 4 | 2 | 5541 | 4378 | 3546 | 2931 | 2463 | 2098 | 1809 | 1576 | 1385 | 1227 | 1094 | 982 | 887 | 804 | 733 | 670 | 616 |
| 28 | 5 | 2 | 5540 | 4924 | 4432 | 4029 | 3693 | 3185 | 2747 | 2393 | 2103 | 1863 | 1662 | 1491 | 1346 | 1221 | 1112 | 1018 | 936 |
| 28 | 6 | 2 | 5526 | 4912 | 4421 | 4019 | 3684 | 3401 | 3158 | 2947 | 2763 | 2588 | 2309 | 2072 | 1870 | 1696 | 1545 | 1414 | 1299 |
| 28 | 7 | 2 | 5513 | 4901 | 4411 | 4010 | 3675 | 3393 | 3150 | 2940 | 2757 | 2594 | 2450 | 2321 | 2205 | 2100 | 2005 | 1843 | 1692 |
| 28 | 8 | 2 | 5500 | 4889 | 4400 | 4000 | 3667 | 3385 | 3143 | 2933 | 2750 | 2588 | 2444 | 2316 | 2200 | 2095 | 2000 | 1913 | 1833 |
| 30 | 3 | 2 | 3435 | 2714 | 2199 | 1817 | 1527 | 1301 | 1122 | 977 | 859 | 761 | 679 | 609 | 550 | 499 | 454 | 416 | 382 |
| 30 | 4 | 2 | 5976 | 4727 | 3829 | 3164 | 2659 | 2265 | 1953 | 1702 | 1496 | 1325 | 1182 | 1061 | 957 | 868 | 791 | 724 | 665 |
| 30 | 5 | 2 | 5963 | 5300 | 4770 | 4337 | 3976 | 3447 | 2972 | 2589 | 2275 | 2016 | 1798 | 1614 | 1456 | 1321 | 1204 | 1101 | 1011 |
| 30 | 6 | 2 | 5950 | 5288 | 4760 | 4327 | 3966 | 3661 | 3400 | 3173 | 2975 | 2800 | 2505 | 2248 | 2029 | 1840 | 1677 | 1534 | 1409 |
| 30 | 7 | 2 | 5936 | 5277 | 4749 | 4317 | 3958 | 3653 | 3392 | 3166 | 2968 | 2794 | 2638 | 2499 | 2375 | 2261 | 2159 | 2006 | 1843 |
| 30 | 8 | 2 | 5923 | 5265 | 4738 | 4308 | 3949 | 3645 | 3385 | 3159 | 2962 | 2787 | 2632 | 2494 | 2369 | 2256 | 2154 | 2060 | 1974 |
| 32 | 3 | 2 | 3684 | 2911 | 2358 | 1948 | 1637 | 1395 | 1203 | 1048 | 921 | 816 | 728 | 653 | 589 | 535 | 487 | 446 | 409 |
| 32 | 4 | 2 | 6399 | 5076 | 4111 | 3398 | 2855 | 2433 | 2098 | 1827 | 1606 | 1423 | 1269 | 1139 | 1028 | 932 | 849 | 777 | 714 |
| 32 | 5 | 2 | 6386 | 5676 | 5109 | 4644 | 4257 | 3708 | 3197 | 2785 | 2448 | 2168 | 1934 | 1736 | 1567 | 1421 | 1295 | 1185 | 1088 |
| 32 | 6 | 2 | 6373 | 5665 | 5098 | 4635 | 4248 | 3922 | 3641 | 3399 | 3186 | 2999 | 2701 | 2424 | 2188 | 1986 | 1808 | 1654 | 1519 |
| 32 | 7 | 2 | 6359 | 5653 | 5087 | 4625 | 4240 | 3913 | 3634 | 3392 | 3180 | 2993 | 2826 | 2678 | 2544 | 2423 | 2312 | 2170 | 1993 |
| 32 | 8 | 2 | 6346 | 5641 | 5077 | 4615 | 4231 | 3905 | 3626 | 3385 | 3173 | 2986 | 2821 | 2672 | 2538 | 2418 | 2308 | 2207 | 2115 |

(continued)

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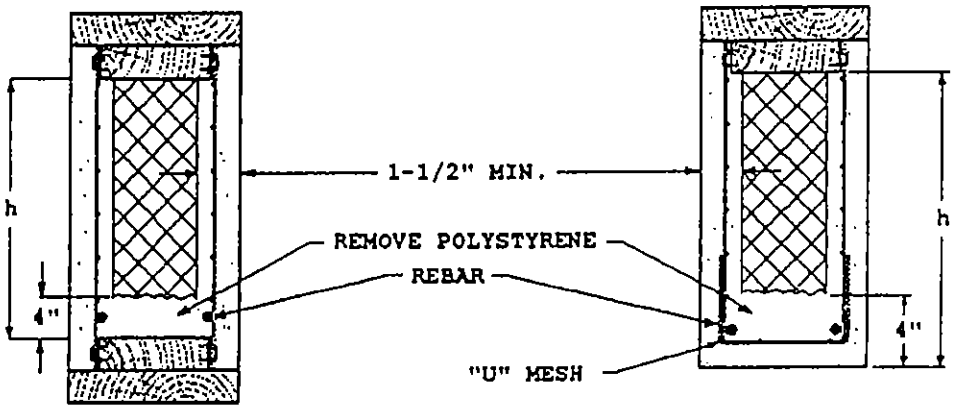
# INSTEEL 3-D BEAM TABLES
## ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 34 | 3 | 2 | 3932 | 3107 | 2517 | 2080 | 1748 | 1489 | 1284 | 1119 | 983 | 871 | 777 | 697 | 629 | 571 | 520 | 476 | 437 |
| 34 | 4 | 2 | 6822 | 5424 | 4394 | 3631 | 3051 | 2600 | 2242 | 1953 | 1716 | 1520 | 1356 | 1217 | 1098 | 996 | 908 | 831 | 763 |
| 34 | 5 | 2 | 6809 | 6052 | 5447 | 4952 | 4539 | 3969 | 3423 | 2981 | 2620 | 2321 | 2070 | 1868 | 1677 | 1521 | 1386 | 1268 | 1166 |
| 34 | 6 | 2 | 6796 | 6041 | 5437 | 4942 | 4530 | 4182 | 3883 | 3624 | 3398 | 3198 | 2897 | 2600 | 2347 | 2129 | 1940 | 1775 | 1630 |
| 34 | 7 | 2 | 6782 | 6029 | 5426 | 4933 | 4522 | 4174 | 3876 | 3617 | 3391 | 3192 | 3014 | 2856 | 2713 | 2584 | 2466 | 2334 | 2143 |
| 34 | 8 | 2 | 6769 | 6017 | 5415 | 4923 | 4513 | 4166 | 3868 | 3610 | 3385 | 3186 | 3009 | 2850 | 2708 | 2579 | 2462 | 2356 | 2266 |
| 36 | 3 | 2 | 4181 | 3303 | 2676 | 2211 | 1858 | 1583 | 1365 | 1189 | 1045 | 926 | 826 | 741 | 669 | 607 | 553 | 506 | 465 |
| 36 | 4 | 2 | 7245 | 5773 | 4676 | 3865 | 3248 | 2767 | 2386 | 2078 | 1827 | 1618 | 1443 | 1295 | 1169 | 1060 | 966 | 884 | 812 |
| 36 | 5 | 2 | 7232 | 6428 | 5786 | 5260 | 4821 | 4231 | 3648 | 3178 | 2793 | 2474 | 2207 | 1981 | 1787 | 1621 | 1477 | 1352 | 1241 |
| 36 | 6 | 2 | 7219 | 6417 | 5776 | 5250 | 4812 | 4442 | 4125 | 3850 | 3609 | 3397 | 3094 | 2777 | 2506 | 2273 | 2071 | 1895 | 1740 |
| 36 | 7 | 2 | 7206 | 6406 | 5764 | 5240 | 4804 | 4434 | 4117 | 3843 | 3603 | 3391 | 3202 | 3034 | 2882 | 2745 | 2620 | 2497 | 2293 |
| 36 | 8 | 2 | 7192 | 6393 | 5754 | 5231 | 4795 | 4426 | 4110 | 3836 | 3596 | 3385 | 3197 | 3028 | 2877 | 2740 | 2615 | 2502 | 2397 |

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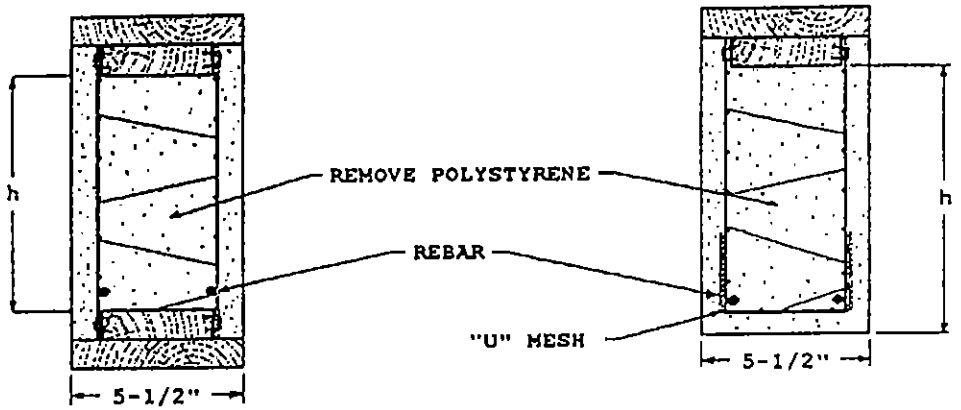
# INSTEEL 3-D BEAM TABLES
## ULTIMATE LOAD VALUES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

### UNIFORM LOAD (PLF)

| h In. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 3 | 2 | 477 | 377 | 305 | 252 | 212 | | | | | | | | | | | | |
| 6 | 4 | 2 | 763 | 596 | 482 | 384 | 300 | 240 | | | | | | | | | | | |
| 7 | 3 | 2 | 601 | 476 | 385 | 318 | 267 | 228 | | | | | | | | | | | |
| 7 | 4 | 2 | 974 | 769 | 623 | 515 | 433 | 369 | 306 | 252 | 210 | | | | | | | | |
| 8 | 3 | 2 | 725 | 573 | 464 | 384 | 322 | 275 | 237 | 206 | | | | | | | | | |
| 8 | 4 | 2 | 1195 | 944 | 764 | 632 | 531 | 452 | 390 | 340 | 299 | 268 | 220 | | | | | | |
| 9 | 3 | 2 | 849 | 671 | 544 | 449 | 378 | 322 | 277 | 242 | 212 | | | | | | | | |
| 9 | 4 | 2 | 1415 | 1118 | 906 | 749 | 629 | 536 | 462 | 403 | 354 | 313 | 280 | 251 | 225 | | | | |
| 9 | 5 | 2 | 1861 | 1602 | 1297 | 1072 | 901 | 768 | 662 | 577 | 507 | 449 | 387 | 329 | 284 | 247 | 216 | | |
| 10 | 3 | 2 | 974 | 769 | 623 | 515 | 433 | 369 | 318 | 277 | 243 | 216 | | | | | | | |
| 10 | 4 | 2 | 1636 | 1293 | 1047 | 866 | 727 | 620 | 534 | 465 | 409 | 362 | 323 | 290 | 262 | 237 | 216 | | |
| 10 | 5 | 2 | 2120 | 1874 | 1518 | 1255 | 1054 | 898 | 774 | 675 | 593 | 526 | 469 | 421 | 380 | 331 | 289 | 254 | 224 |
| 11 | 3 | 2 | 1098 | 867 | 703 | 581 | 488 | 416 | 358 | 312 | 274 | 243 | 217 | | | | | | |
| 11 | 4 | 2 | 1857 | 1467 | 1188 | 982 | 825 | 703 | 606 | 528 | 464 | 411 | 367 | 329 | 297 | 269 | 246 | 225 | 206 |
| 11 | 5 | 2 | 2379 | 2115 | 1739 | 1437 | 1207 | 1029 | 887 | 773 | 679 | 602 | 537 | 482 | 435 | 394 | 359 | 329 | 290 |
| 12 | 3 | 2 | 1222 | 966 | 782 | 646 | 543 | 463 | 399 | 348 | 306 | 271 | 241 | 217 | | | | | |
| 12 | 4 | 2 | 2078 | 1642 | 1330 | 1099 | 923 | 787 | 678 | 591 | 519 | 460 | 410 | 368 | 332 | 302 | 276 | 251 | 231 |
| 12 | 5 | 2 | 2638 | 2346 | 1960 | 1619 | 1361 | 1160 | 1000 | 871 | 765 | 678 | 606 | 543 | 490 | 444 | 406 | 370 | 340 |
| 12 | 6 | 2 | 2622 | 2330 | 2097 | 1907 | 1748 | 1549 | 1336 | 1164 | 1023 | 906 | 808 | 726 | 655 | 594 | 541 | 495 | 465 |

(continued)

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1. LOAD VALUES INDICATED ARE ULTIMATE VALUES FOR SIMPLE SPAN UNIFORM LOAD.
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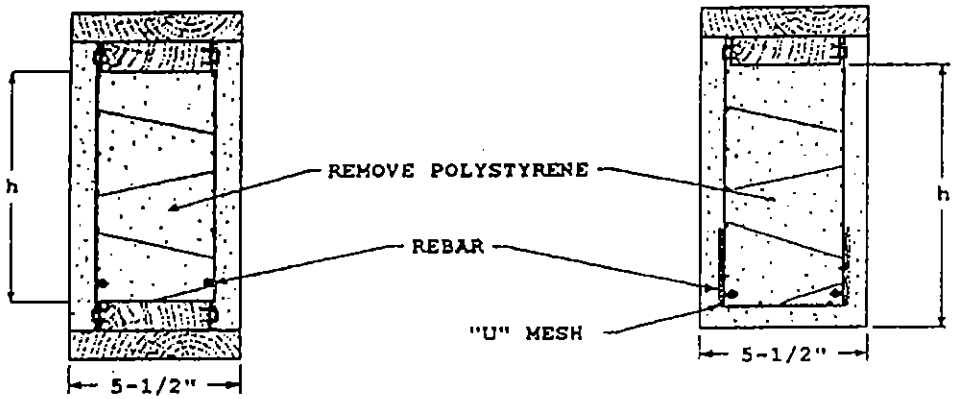
# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 13 | 3 | 2 | 1346 | 1064 | 862 | 712 | 598 | 510 | 440 | 383 | 337 | 298 | 266 | 239 | 215 | | | | |
| 13 | 4 | 2 | 2298 | 1816 | 1471 | 1216 | 1022 | 870 | 751 | 654 | 575 | 509 | 454 | 407 | 368 | 334 | 304 | 278 | 255 |
| 13 | 5 | 2 | 2897 | 2575 | 2180 | 1802 | 1514 | 1290 | 1112 | 969 | 852 | 754 | 673 | 604 | 546 | 494 | 450 | 412 | 378 |
| 13 | 6 | 2 | 2881 | 2561 | 2304 | 2095 | 1920 | 1737 | 1498 | 1306 | 1147 | 1016 | 906 | 813 | 734 | 666 | 607 | 555 | 510 |
| 14 | 3 | 2 | 1470 | 1162 | 941 | 778 | 654 | 557 | 480 | 418 | 368 | 326 | 290 | 261 | 235 | 213 | | | |
| 14 | 4 | 2 | 2519 | 1990 | 1612 | 1332 | 1120 | 954 | 823 | 717 | 630 | 558 | 498 | 447 | 403 | 366 | 333 | 305 | 280 |
| 14 | 5 | 2 | 3166 | 2805 | 2401 | 1984 | 1667 | 1421 | 1225 | 1067 | 938 | 831 | 741 | 665 | 600 | 544 | 496 | 454 | 417 |
| 14 | 6 | 2 | 3140 | 2791 | 2512 | 2283 | 2093 | 1926 | 1660 | 1446 | 1271 | 1126 | 1004 | 901 | 814 | 738 | 672 | 615 | 565 |
| 15 | 3 | 2 | 1595 | 1260 | 1021 | 843 | 709 | 604 | 521 | 454 | 399 | 353 | 316 | 283 | 255 | 231 | 211 | | |
| 15 | 4 | 2 | 2740 | 2165 | 1754 | 1449 | 1218 | 1038 | 895 | 779 | 685 | 607 | 541 | 486 | 438 | 398 | 362 | 331 | 304 |
| 15 | 5 | 2 | 3415 | 3035 | 2622 | 2167 | 1821 | 1551 | 1338 | 1165 | 1024 | 907 | 809 | 726 | 656 | 595 | 542 | 496 | 456 |
| 15 | 6 | 2 | 3398 | 3021 | 2719 | 2472 | 2266 | 2091 | 1823 | 1588 | 1395 | 1236 | 1103 | 990 | 893 | 810 | 738 | 675 | 620 |
| 15 | 7 | 2 | 3382 | 3006 | 2706 | 2460 | 2255 | 2081 | 1933 | 1804 | 1691 | 1571 | 1401 | 1258 | 1135 | 1028 | 938 | 858 | 788 |
| 16 | 3 | 2 | 1719 | 1358 | 1100 | 909 | 764 | 651 | 561 | 489 | 430 | 381 | 340 | 305 | 276 | 249 | 227 | 208 | |
| 16 | 4 | 2 | 2961 | 2339 | 1896 | 1566 | 1316 | 1121 | 967 | 842 | 740 | 656 | 585 | 525 | 474 | 430 | 392 | 358 | 329 |
| 16 | 5 | 2 | 3674 | 3265 | 2843 | 2349 | 1974 | 1682 | 1450 | 1263 | 1110 | 984 | 877 | 787 | 711 | 645 | 587 | 537 | 494 |
| 16 | 6 | 2 | 3657 | 3251 | 2926 | 2660 | 2438 | 2251 | 1985 | 1729 | 1520 | 1346 | 1201 | 1078 | 973 | 882 | 804 | 736 | 676 |
| 16 | 7 | 2 | 3641 | 3237 | 2913 | 2648 | 2427 | 2241 | 2081 | 1942 | 1821 | 1714 | 1636 | 1377 | 1243 | 1128 | 1027 | 940 | 863 |

(continued)

**NOTES:**

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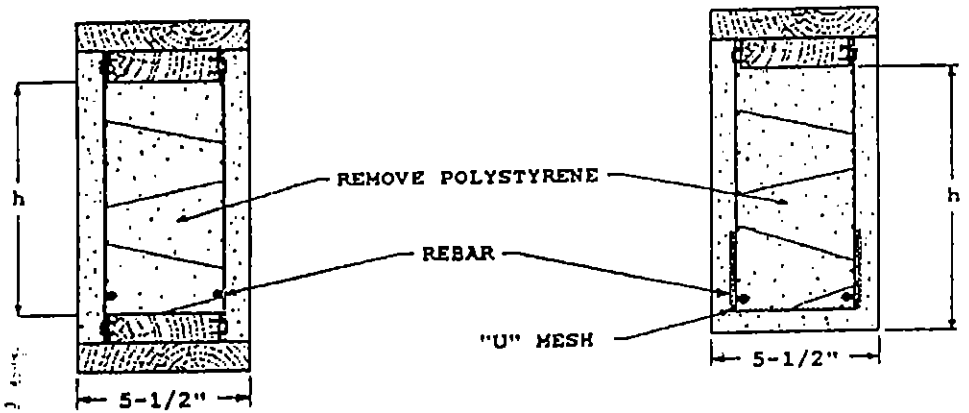
# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

## UNIFORM LOAD (PLF)

| h in. | BAR SIZE # | NO.of BARS | SPAN (FT) 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 3 | 2 | 1843 | 1456 | 1180 | 975 | 819 | 698 | 602 | 524 | 461 | 408 | 364 | 327 | 295 | 267 | 244 | 223 | 205 |
| 17 | 4 | 2 | 3182 | 2514 | 2036 | 1683 | 1414 | 1205 | 1039 | 905 | 795 | 706 | 628 | 564 | 509 | 462 | 421 | 385 | 354 |
| 17 | 5 | 2 | 3933 | 3496 | 3063 | 2532 | 2127 | 1813 | 1563 | 1362 | 1197 | 1060 | 946 | 849 | 766 | 695 | 633 | 579 | 532 |
| 17 | 6 | 2 | 3916 | 3481 | 3133 | 2848 | 2611 | 2410 | 2147 | 1870 | 1644 | 1456 | 1299 | 1166 | 1052 | 954 | 869 | 795 | 731 |
| 17 | 7 | 2 | 3900 | 3467 | 3120 | 2836 | 2600 | 2400 | 2229 | 2080 | 1950 | 1835 | 1668 | 1497 | 1351 | 1226 | 1117 | 1022 | 938 |
| 18 | 3 | 2 | 1967 | 1564 | 1259 | 1040 | 874 | 745 | 642 | 560 | 492 | 436 | 389 | 349 | 315 | 285 | 260 | 238 | 219 |
| 18 | 4 | 2 | 3402 | 2688 | 2177 | 1800 | 1512 | 1288 | 1111 | 968 | 851 | 753 | 672 | 603 | 544 | 494 | 450 | 412 | 378 |
| 18 | 5 | 2 | 4191 | 3726 | 3284 | 2714 | 2281 | 1943 | 1676 | 1460 | 1283 | 1136 | 1014 | 910 | 821 | 746 | 679 | 621 | 570 |
| 18 | 6 | 2 | 4175 | 3711 | 3340 | 3037 | 2783 | 2569 | 2309 | 2012 | 1768 | 1566 | 1397 | 1254 | 1131 | 1026 | 935 | 856 | 786 |
| 18 | 7 | 2 | 4159 | 3697 | 3327 | 3025 | 2773 | 2559 | 2377 | 2218 | 2080 | 1957 | 1802 | 1617 | 1460 | 1324 | 1206 | 1104 | 1014 |

NOTES:

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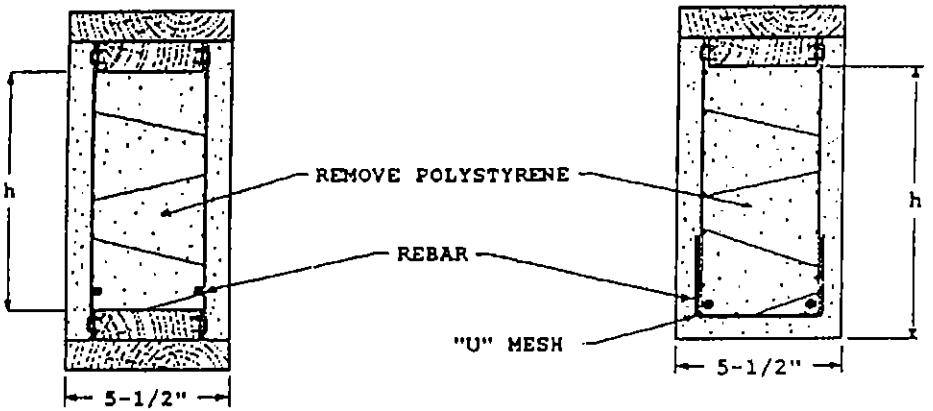
# INSTEEL U-D BEAM TABLES
## ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

### UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 6 | 3 | 2 | 492 | 388 | 315 | 260 | 218 | | | | | | | | | | | | |
| 6 | 4 | 2 | 799 | 632 | 512 | 412 | 324 | 260 | 212 | | | | | | | | | | |
| 7 | 3 | 2 | 616 | 487 | 394 | 326 | 274 | 233 | 201 | | | | | | | | | | |
| 7 | 4 | 2 | 1020 | 806 | 653 | 540 | 453 | 386 | 329 | 271 | 227 | | | | | | | | |
| 7 | 5 | 2 | 1446 | 1146 | 928 | 767 | 641 | 507 | 408 | 334 | 278 | 233 | | | | | | | |
| 8 | 3 | 2 | 740 | 585 | 474 | 391 | 329 | 280 | 242 | 210 | | | | | | | | | |
| 8 | 4 | 2 | 1241 | 980 | 794 | 656 | 551 | 470 | 405 | 353 | 310 | 276 | 237 | 204 | | | | | |
| 8 | 5 | 2 | 1725 | 1418 | 1149 | 949 | 798 | 680 | 586 | 498 | 412 | 345 | 293 | 251 | 216 | | | | |
| 9 | 3 | 2 | 864 | 683 | 553 | 457 | 384 | 327 | 282 | 246 | 216 | | | | | | | | |
| 9 | 4 | 2 | 1462 | 1155 | 935 | 773 | 650 | 554 | 477 | 416 | 365 | 324 | 289 | 259 | 234 | 212 | | | |
| 9 | 5 | 2 | 2003 | 1691 | 1370 | 1132 | 951 | 810 | 699 | 609 | 535 | 474 | 409 | 350 | 302 | 262 | 229 | 202 | |
| 10 | 3 | 2 | 988 | 781 | 633 | 523 | 439 | 374 | 323 | 281 | 247 | 219 | | | | | | | |
| 10 | 4 | 2 | 1682 | 1329 | 1077 | 890 | 748 | 637 | 549 | 479 | 421 | 373 | 332 | 298 | 269 | 244 | 222 | 204 | |
| 10 | 5 | 2 | 2282 | 1963 | 1590 | 1314 | 1104 | 941 | 811 | 707 | 621 | 550 | 491 | 441 | 398 | 360 | 306 | 269 | 238 |
| 10 | 6 | 2 | 2265 | 2013 | 1812 | 1647 | 1481 | 1262 | 1088 | 948 | 833 | 738 | 658 | 581 | 499 | 432 | 376 | 330 | 291 |
| 11 | 3 | 2 | 1113 | 879 | 712 | 588 | 494 | 421 | 363 | 316 | 278 | 246 | 220 | | | | | | |
| 11 | 4 | 2 | 1903 | 1504 | 1218 | 1007 | 846 | 721 | 621 | 541 | 476 | 421 | 376 | 337 | 306 | 276 | 252 | 230 | 211 |
| 11 | 5 | 2 | 2561 | 2236 | 1811 | 1497 | 1258 | 1072 | 924 | 805 | 708 | 627 | 559 | 502 | 453 | 411 | 374 | 342 | 307 |
| 11 | 6 | 2 | 2543 | 2261 | 2035 | 1860 | 1696 | 1450 | 1250 | 1089 | 957 | 848 | 756 | 679 | 613 | 556 | 491 | 430 | 380 |

(continued)

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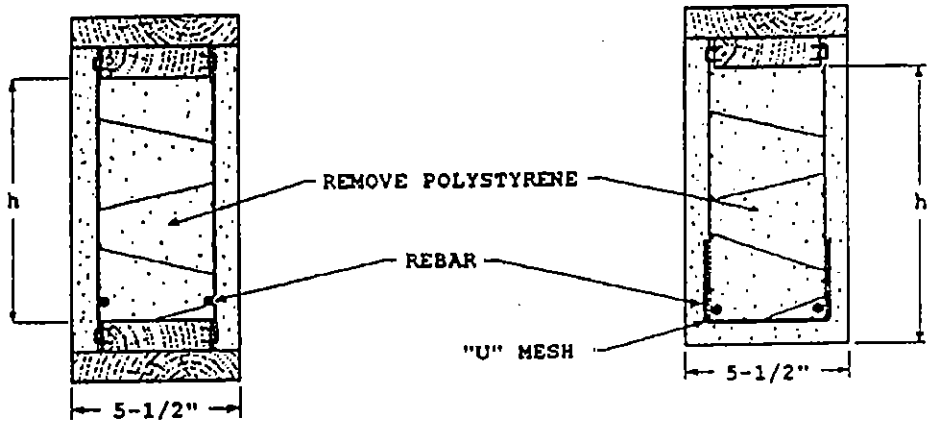
# INSTEEL 3-D BEAM TABLES
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 12 | 3 | 2 | 1237 | 977 | 791 | 654 | 550 | 468 | 404 | 352 | 309 | 274 | 244 | 219 | | | | | |
| 12 | 4 | 2 | 2124 | 1678 | 1359 | 1123 | 944 | 804 | 694 | 604 | 531 | 470 | 420 | 377 | 340 | 308 | 281 | 257 | 236 |
| 12 | 5 | 2 | 2840 | 2509 | 2032 | 1679 | 1411 | 1202 | 1037 | 903 | 794 | 703 | 627 | 563 | 508 | 461 | 420 | 384 | 353 |
| 12 | 6 | 2 | 2822 | 2509 | 2268 | 2063 | 1881 | 1638 | 1413 | 1230 | 1081 | 958 | 854 | 767 | 692 | 628 | 572 | 523 | 481 |
| 13 | 3 | 2 | 1361 | 1076 | 871 | 720 | 606 | 515 | 444 | 387 | 340 | 301 | 269 | 241 | 218 | | | | |
| 13 | 4 | 2 | 2346 | 1853 | 1501 | 1240 | 1042 | 888 | 766 | 667 | 586 | 519 | 463 | 416 | 375 | 340 | 310 | 284 | 261 |
| 13 | 5 | 2 | 3118 | 2772 | 2253 | 1862 | 1564 | 1333 | 1149 | 1001 | 880 | 780 | 696 | 624 | 563 | 511 | 466 | 426 | 391 |
| 13 | 6 | 2 | 3101 | 2756 | 2481 | 2265 | 2067 | 1826 | 1576 | 1372 | 1206 | 1068 | 953 | 855 | 772 | 700 | 639 | 583 | 536 |
| 13 | 7 | 2 | 3084 | 2741 | 2467 | 2243 | 2056 | 1898 | 1762 | 1646 | 1542 | 1368 | 1220 | 1096 | 988 | 896 | 817 | 747 | 686 |
| 14 | 3 | 2 | 1485 | 1173 | 950 | 786 | 660 | 562 | 485 | 422 | 371 | 329 | 293 | 263 | 238 | 216 | | | |
| 14 | 4 | 2 | 2566 | 2027 | 1642 | 1357 | 1140 | 972 | 838 | 730 | 641 | 568 | 507 | 455 | 410 | 372 | 339 | 310 | 286 |
| 14 | 5 | 2 | 3397 | 3020 | 2474 | 2044 | 1718 | 1464 | 1262 | 1099 | 966 | 856 | 763 | 685 | 618 | 561 | 511 | 468 | 429 |
| 14 | 6 | 2 | 3380 | 3004 | 2704 | 2458 | 2253 | 2014 | 1737 | 1513 | 1330 | 1178 | 1051 | 943 | 851 | 772 | 703 | 644 | 591 |
| 14 | 7 | 2 | 3362 | 2989 | 2690 | 2445 | 2242 | 2069 | 1921 | 1793 | 1681 | 1517 | 1354 | 1215 | 1096 | 994 | 906 | 829 | 761 |
| 15 | 3 | 2 | 1609 | 1272 | 1030 | 851 | 715 | 609 | 525 | 458 | 402 | 356 | 318 | 285 | 257 | 234 | 213 | | |
| 15 | 4 | 2 | 2786 | 2202 | 1783 | 1474 | 1238 | 1055 | 910 | 793 | 697 | 617 | 550 | 494 | 446 | 404 | 368 | 337 | 310 |
| 15 | 5 | 2 | 3676 | 3267 | 2694 | 2227 | 1871 | 1594 | 1375 | 1197 | 1052 | 932 | 832 | 746 | 674 | 611 | 557 | 509 | 468 |
| 15 | 6 | 2 | 3658 | 3252 | 2927 | 2661 | 2439 | 2203 | 1899 | 1654 | 1454 | 1288 | 1149 | 1031 | 931 | 844 | 769 | 704 | 646 |
| 15 | 7 | 2 | 3641 | 3236 | 2913 | 2648 | 2427 | 2241 | 2081 | 1942 | 1820 | 1667 | 1487 | 1335 | 1206 | 1093 | 996 | 911 | 836 |
| 15 | 8 | 2 | 3624 | 3221 | 2899 | 2635 | 2416 | 2230 | 2071 | 1933 | 1812 | 1705 | 1610 | 1526 | 1449 | 1343 | 1224 | 1120 | 1028 |

(continued)

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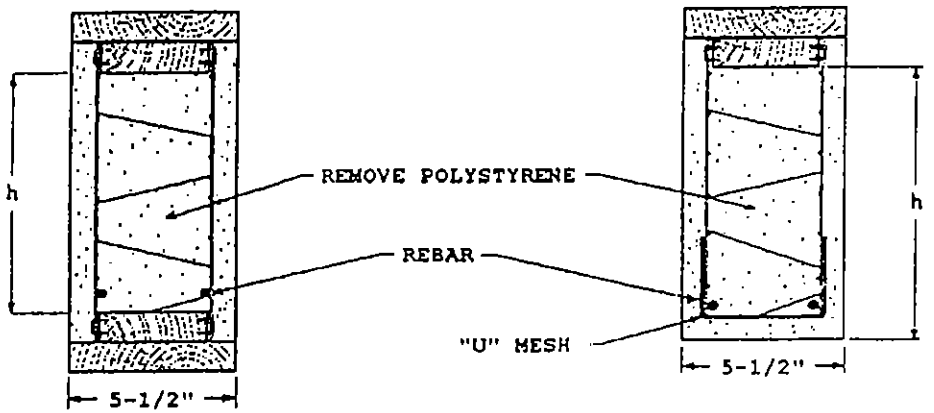
# ULTIMATE LOAD VALUES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

## UNIFORM LOAD (PLF)

| h | BAR | NO.of | SPAN (FT) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In. | SIZE # | BARS | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 16 | 3 | 2 | 1733 | 1370 | 1109 | 917 | 770 | 656 | 566 | 493 | 433 | 384 | 342 | 307 | 277 | 252 | 229 | 210 | |
| 16 | 4 | 2 | 3007 | 2376 | 1925 | 1591 | 1336 | 1139 | 982 | 855 | 752 | 666 | 594 | 533 | 481 | 436 | 398 | 364 | 334 |
| 16 | 5 | 2 | 3955 | 3515 | 2916 | 2409 | 2024 | 1725 | 1487 | 1296 | 1139 | 1009 | 900 | 808 | 729 | 661 | 602 | 551 | 506 |
| 16 | 6 | 2 | 3937 | 3500 | 3150 | 2863 | 2625 | 2391 | 2061 | 1796 | 1578 | 1398 | 1247 | 1119 | 1010 | 916 | 836 | 764 | 701 |
| 16 | 7 | 2 | 3920 | 3484 | 3136 | 2851 | 2613 | 2412 | 2240 | 2091 | 1960 | 1817 | 1621 | 1465 | 1313 | 1191 | 1085 | 993 | 912 |
| 16 | 8 | 2 | 3902 | 3469 | 3122 | 2838 | 2602 | 2401 | 2230 | 2081 | 1951 | 1836 | 1734 | 1643 | 1561 | 1471 | 1341 | 1227 | 1127 |
| 17 | 3 | 2 | 1858 | 1468 | 1189 | 983 | 826 | 703 | 607 | 528 | 464 | 411 | 367 | 329 | 297 | 270 | 246 | 225 | 206 |
| 17 | 4 | 2 | 3228 | 2550 | 2066 | 1707 | 1435 | 1222 | 1054 | 918 | 807 | 715 | 638 | 572 | 516 | 468 | 427 | 391 | 359 |
| 17 | 5 | 2 | 4233 | 3763 | 3136 | 2592 | 2178 | 1856 | 1600 | 1394 | 1225 | 1085 | 968 | 869 | 784 | 711 | 648 | 593 | 544 |
| 17 | 6 | 2 | 4216 | 3747 | 3373 | 3066 | 2811 | 2579 | 2224 | 1937 | 1702 | 1508 | 1345 | 1207 | 1090 | 988 | 900 | 824 | 757 |
| 17 | 7 | 2 | 4198 | 3732 | 3359 | 3053 | 2799 | 2584 | 2399 | 2239 | 2099 | 1967 | 1754 | 1574 | 1421 | 1289 | 1174 | 1074 | 987 |
| 17 | 8 | 2 | 4181 | 3716 | 3345 | 3041 | 2787 | 2573 | 2389 | 2230 | 2091 | 1968 | 1858 | 1760 | 1672 | 1593 | 1468 | 1334 | 1225 |
| 18 | 3 | 2 | 1982 | 1566 | 1268 | 1048 | 881 | 751 | 647 | 564 | 495 | 439 | 391 | 351 | 317 | 288 | 262 | 240 | 220 |
| 18 | 4 | 2 | 3449 | 2726 | 2207 | 1824 | 1533 | 1306 | 1126 | 981 | 862 | 764 | 681 | 611 | 552 | 500 | 456 | 417 | 383 |
| 18 | 5 | 2 | 4512 | 4011 | 3357 | 2774 | 2331 | 1986 | 1713 | 1492 | 1311 | 1161 | 1036 | 930 | 839 | 761 | 694 | 635 | 583 |
| 18 | 6 | 2 | 4495 | 3996 | 3596 | 3269 | 2996 | 2766 | 2386 | 2078 | 1827 | 1618 | 1443 | 1295 | 1169 | 1060 | 966 | 884 | 812 |
| 18 | 7 | 2 | 4477 | 3980 | 3582 | 3256 | 2985 | 2755 | 2558 | 2388 | 2239 | 2107 | 1888 | 1694 | 1529 | 1387 | 1264 | 1156 | 1062 |
| 18 | 8 | 2 | 4460 | 3964 | 3568 | 3243 | 2973 | 2744 | 2548 | 2379 | 2230 | 2099 | 1982 | 1878 | 1784 | 1699 | 1574 | 1440 | 1323 |

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# SECTION 2

# INTERMEDIATE FLOORS

# INSTEEL 3-D FLOOR AND ROOF SLAB LOAD TABLE INSTRUCTIONS

## GENERAL:

The Insteel 3-D slab tables have been developed to aid the designer in selection of additional reinforcement for **floor and roof** applications. Load tables for floors and roofs have been developed based on location of additional reinforcing (see figures) and concrete strengths of 3,000 psi and 4,000 psi. Load values indicated are allowable superimposed loads in psf.

Deflection limitations of $\ell$ /360 and $\ell$ /180 have been incorporated into the tables for floors and roofs respectively.

Load tables are based on simple span with uniform loading. Insteel 3-D panels shall be continuous for span indicated with truss wires in direction of span.

## DESIGN PROCEDURE:

The following method may be used for selecting a reinforced 3-D slab section:

1) Determine slab span. Slab span is the clear span between supporting walls.

2) Determine design load "*W*" in psf based on code requirements for live loads.

3) Refer to appropriate design tables for floors or roofs, concrete strength and location of reinforcing. Find correct span and follow down in chart to select slab section with an allowable load greater than or equal to the design load. Read panel section dimensions, rebar size and spacing from "3-D Panel-Configuration" and "Additional Reinforcing" headings. Note that various configurations of panel thicknesses and reinforcing may be available for a given loading condition.

## EXAMPLE:

Design a slab section for a 2nd story floor of a residence supported by 3-D walls at 16'-0" o.c. for reinforcement placed above or below the W.W.F. of the 3-D panel. Use 4,000 psi concrete.

1) Determine span - Assume standard 3-D wall panel of 5½" thickness. Clear span = 16'-0" - 5½" = 15' - 6½".

2) Design Load - Use 40 psf live load for residential plus 5 psf dead load for floor and ceiling treatments.

3) Select load table for floors and 4,000 psi concrete strength. First check for reinforcing placed between W.W.F. and insulation core (see figure). Find correct span, round up to next longer span in chart - 16'-0" and follow down in column to 48 psf. Read panel configuration of 2" top layer of concrete, 4" insulation core and 1.5" concrete on bottom layer with #3 @ 8" o.c.

Check for reinforcing placed below W.W.F. (see figure). Use same procedure as above. Find 16' span and follow down column to 45 psf for slab configuration of 3.0" top concrete, 2.5" insulation core and 2.1" bottom concrete with #5 @ 16" o.c. Alternatively, continue down to next slab section of 45 psf. Read 1.5" top concrete, 4" insulation core and 1.9" bottom concrete with #3's @ 8" o.c.

# ANALYSIS PROCEDURE: 3-D FLOOR AND ROOF SLABS

The analysis for the 3-D slab load tables was performed in accordance with ACI 318-89 (Rev. '92) and the "Structural Engineering Handbook" for Insteel 3-D wall panels prepared by The Consulting Engineers Group, Inc. (Feb., 1991).

The 3-D slabs have been designed as a simply supported one-way slab with a uniform load. 3-D panels are intended to be continuous panel between supports with the plane of truss wires parallel to the direction of span. Calculations for roof and floor slabs were based on assumed live load to dead load ratios of 0.5 and 1.0 respectively.

Flexural capacity of the 3-D slab system was determined as:

$$\phi M_n = \phi A_s f_y (d - \frac{a}{2})$$

where: $\phi = 0.9$

$A_s$ = W.W.F. + rebar

$f_y$ = weighted average of W.W.F. and rebar

$d$ = weighted average of distance from extreme compression fiber to centroid of W.W.F. and rebar.

$$a = \frac{A_s f_y}{.85\ b\ f\acute{c}}$$

$b$ = width (12" used)

Shear capacity of the 3-D slab system was determined as:

$$\phi V_n = \phi (0.5) (\sqrt{f\acute{c}})\ bd$$

where: $\phi = 0.85$

$b$ = width (12" used)

$d$ = weighted average of distance from extreme compression fiber to centroid of W.W.F. and rebar.

Shear transfer between wythes is accomplished by the 9 ga. diagonal truss wires. Equation for shear per "Structural Engineering Handbook."

Deflections were computed by:

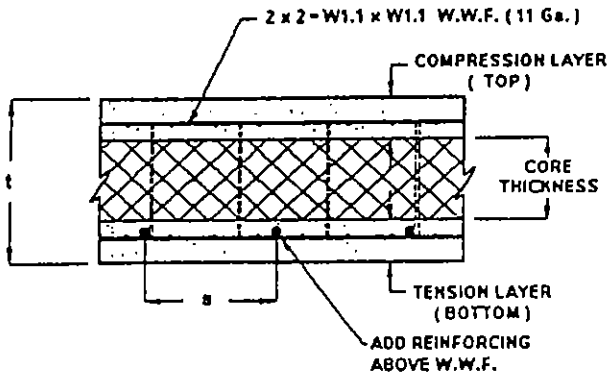
$$\Delta = \frac{5\ w\ \ell^4}{384\ E_c\ I_e}$$

where: $E_c = 57{,}000\ (\sqrt{f'c})$

$$I_e = \frac{I_g}{5}$$

The slab load tables were developed by comparing the maximum uniform load based on flexure, shear and deflection criteria for a given slab configuration and span to determine which condition controlled. Where reinforcement ratios are less than roe minimum allowable load values were reduced by 33% per Section 10.5.2 ACI 318-89 (Rev. '92).

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

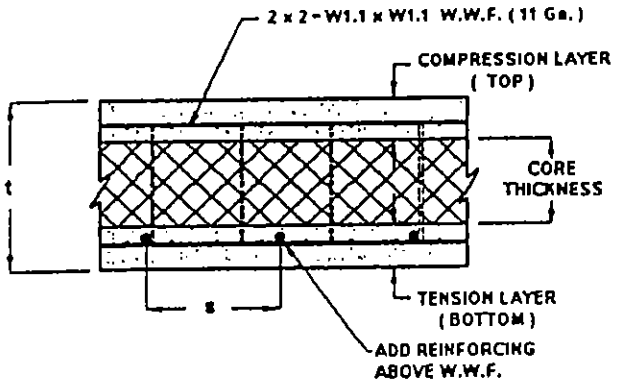
| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 41 | | | | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 24 | 105 | 75 | 54 | 38 | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 16 | 137 | 100 | 74 | 54 | 40 | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 12 | 167 | 125 | 94 | 67 | 43 | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 8 | | 143 | 101 | | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 43 | | | | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 24 | 115 | 82 | 58 | 40 | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 16 | 150 | 110 | 80 | 59 | 42 | 30 | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 12 | 184 | 137 | 103 | 77 | 58 | 39 | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 8 | | 157 | 137 | 93 | 62 | 39 | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 46 | | | | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 24 | 125 | 88 | 62 | 43 | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 16 | 164 | 119 | 87 | 63 | 45 | 31 | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 12 | 200 | 150 | 112 | 84 | 62 | 46 | 33 | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 8 | | 171 | 149 | 122 | 82 | 54 | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 48 | | | | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 24 | 135 | 95 | 66 | 45 | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 16 | 178 | 129 | 94 | 68 | 48 | 33 | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 12 | 217 | 162 | 121 | 90 | 67 | 49 | 34 | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 8 | | 185 | 161 | 141 | 105 | 71 | 46 | | | | | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO *l*/360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

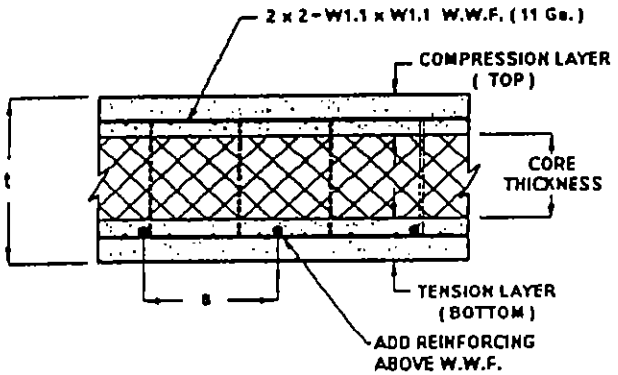
Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 66 | 44 | | | | | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 24 | 153 | 113 | 84 | 63 | 47 | 34 | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 16 | 196 | 147 | 112 | 86 | 66 | 51 | 38 | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 12 | 235 | 180 | 139 | 108 | 85 | 67 | 52 | 38 | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 8 | | 203 | 179 | 152 | 111 | 79 | 56 | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 6 | | | | 156 | | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 68 | 46 | | | | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 24 | 163 | 120 | 88 | 65 | 48 | 34 | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 16 | 210 | 156 | 118 | 90 | 69 | 52 | 39 | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 12 | 251 | 193 | 148 | 115 | 89 | 70 | 54 | 41 | 31 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 8 | | 217 | 191 | 163 | 130 | 104 | 74 | 52 | 35 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 6 | | | | 169 | 144 | | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 71 | 45 | | | | | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 24 | 173 | 126 | 93 | 68 | 49 | 34 | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 16 | 223 | 166 | 125 | 95 | 71 | 53 | 39 | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 12 | 268 | 205 | 157 | 121 | 94 | 72 | 56 | 42 | 31 | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 8 | | 231 | 203 | 173 | 138 | 110 | 88 | 66 | 46 | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 6 | | | | 180 | 161 | 129 | 93 | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 73 | 46 | | | | | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 24 | 183 | 133 | 97 | 70 | 50 | 34 | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 16 | 237 | 176 | 132 | 99 | 74 | 55 | 40 | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 12 | 284 | 218 | 166 | 127 | 98 | 75 | 57 | 43 | 31 | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 8 | | 245 | 215 | 184 | 145 | 116 | 92 | 73 | 57 | 38 | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 6 | | | | 190 | 170 | 152 | 112 | 81 | | | | | |

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO l/360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t In. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 41 | | | | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 24 | 106 | 76 | 54 | 38 | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 16 | 138 | 101 | 75 | 55 | 40 | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 12 | 170 | 126 | 96 | 72 | 54 | 35 | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 8 | 197 | 171 | 123 | 83 | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 43 | | | | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 24 | 116 | 82 | 58 | 41 | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 16 | 152 | 111 | 81 | 60 | 43 | 30 | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 12 | 187 | 139 | 104 | 78 | 59 | 44 | 32 | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 8 | 218 | 188 | 165 | 114 | 78 | 52 | 33 | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 46 | | | | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 24 | 126 | 89 | 63 | 43 | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 16 | 166 | 120 | 88 | 64 | 46 | 32 | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 12 | 205 | 151 | 113 | 85 | 63 | 46 | 33 | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 8 | 238 | 206 | 180 | 148 | 103 | 70 | 46 | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 48 | | | | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 24 | 136 | 96 | 67 | 46 | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 16 | 179 | 130 | 95 | 68 | 49 | 33 | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 12 | 222 | 164 | 122 | 91 | 68 | 49 | 35 | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 8 | 258 | 223 | 177 | 136 | 105 | 82 | 61 | 39 | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 6 | | | 194 | 171 | 130 | 90 | | | | | | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
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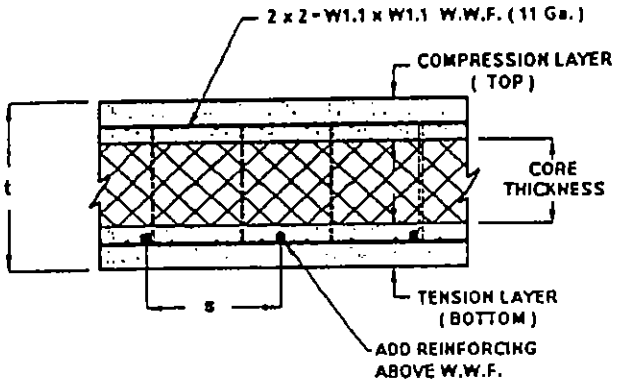
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 66 | 44 | | | | | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 24 | 154 | 114 | 85 | 64 | 47 | 35 | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 16 | 197 | 148 | 113 | 86 | 67 | 51 | 39 | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 12 | 240 | 182 | 140 | 109 | 86 | 67 | 53 | 41 | 32 | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 8 | 276 | 241 | 195 | 154 | 123 | 98 | 71 | 50 | 35 | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 6 | | | 212 | 186 | 134 | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 69 | 45 | | | | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 24 | 164 | 120 | 89 | 66 | 48 | 35 | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 16 | 211 | 157 | 119 | 91 | 69 | 53 | 39 | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 12 | 258 | 194 | 149 | 116 | 90 | 70 | 55 | 42 | 31 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 8 | 296 | 258 | 208 | 165 | 131 | 105 | 85 | 68 | 48 | 32 | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 6 | | | 227 | 202 | 173 | 127 | 93 | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 71 | 46 | | | | | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 24 | 174 | 127 | 93 | 68 | 49 | 35 | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 16 | 225 | 167 | 126 | 95 | 72 | 54 | 40 | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 12 | 275 | 207 | 158 | 122 | 96 | 73 | 56 | 43 | 31 | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 8 | 316 | 275 | 222 | 175 | 139 | 111 | 89 | 71 | 56 | 42 | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 6 | | | 242 | 215 | 193 | 156 | 115 | 84 | 61 | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 74 | 46 | | | | | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 24 | 184 | 133 | 97 | 71 | 51 | 35 | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 16 | 238 | 177 | 132 | 100 | 75 | 55 | 40 | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 12 | 293 | 220 | 167 | 128 | 99 | 76 | 58 | 43 | 31 | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 8 | 336 | 292 | 236 | 185 | 147 | 117 | 93 | 74 | 58 | 46 | 34 | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 6 | | | 257 | 228 | 194 | 157 | 128 | 102 | 74 | 53 | | | |

NOTES:

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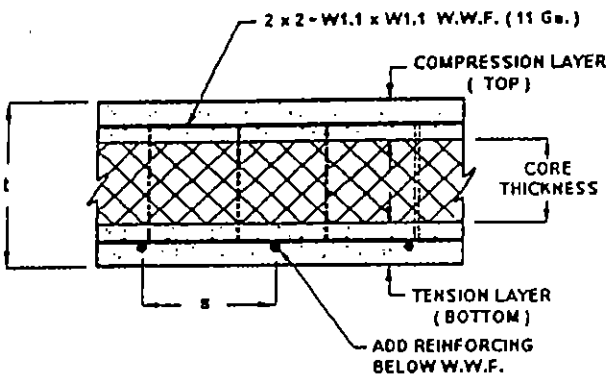
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 41 | | | | | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 24 | 108 | 76 | 54 | 37 | | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 16 | 143 | 104 | 76 | 55 | 40 | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 12 | 176 | 131 | 98 | 74 | 55 | 36 | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 8 | | 153 | 131 | 88 | 58 | 36 | | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 24 | 163 | 119 | 88 | 65 | 48 | 34 | | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 16 | 178 | 153 | 133 | 93 | 62 | 39 | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 43 | | | | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 24 | 118 | 83 | 58 | 39 | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 16 | 157 | 114 | 83 | 60 | 43 | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 12 | 193 | 144 | 107 | 80 | 60 | 44 | 31 | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 8 | | 167 | 145 | 122 | 83 | 55 | 34 | | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 24 | 179 | 131 | 96 | 71 | 62 | 37 | | | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 16 | 194 | 167 | 140 | 107 | 82 | 59 | 37 | | | | | | |
| 6.6 | 2.0 | 2.5 | 2.1 | 5 | 24 | | | 146 | 112 | 86 | 63 | 40 | | | | | | |
| 6.6 | 2.0 | 2.5 | 2.1 | 5 | 16 | | | | 129 | 94 | | | | | | | | |

( continued )

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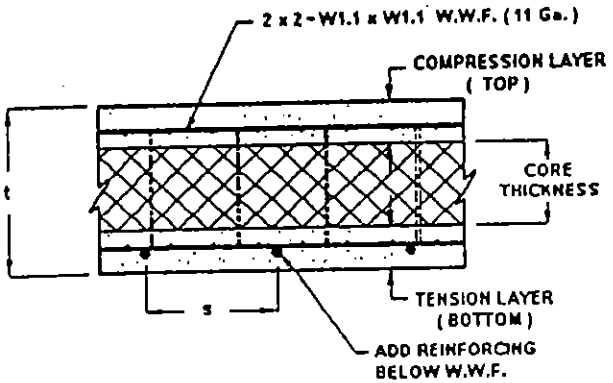
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 46 | | | | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 24 | 128 | 89 | 62 | 42 | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 16 | 170 | 123 | 89 | 64 | 45 | 30 | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 12 | 210 | 157 | 116 | 87 | 64 | 47 | 33 | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 8 | | 181 | 157 | 131 | 101 | 75 | 49 | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 24 | 194 | 142 | 104 | 76 | 55 | 39 | | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 16 | 211 | 181 | 153 | 116 | 89 | 67 | 50 | 33 | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 12 | | | 158 | 139 | 118 | 81 | 53 | | | | | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 24 | 212 | 182 | 158 | 121 | 93 | 71 | 53 | 36 | | | | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 16 | | | | 139 | 123 | 86 | 58 | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 24 | 137 | 96 | 66 | 44 | | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 16 | 184 | 133 | 96 | 69 | 48 | 32 | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 12 | 226 | 169 | 125 | 93 | 69 | 49 | 34 | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 8 | | 195 | 169 | 141 | 109 | 84 | 64 | 42 | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 6 | | | 170 | 149 | 131 | 97 | 66 | 42 | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 48 | | | | | | | | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 24 | 210 | 153 | 112 | 82 | 59 | 41 | | | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 16 | 227 | 195 | 165 | 125 | 95 | 72 | 54 | 39 | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 12 | | | 170 | 149 | 131 | 104 | 71 | 46 | | | | | |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 24 | 228 | 196 | 170 | 131 | 100 | 76 | 57 | 41 | | | | | |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 16 | | | | 150 | 132 | 111 | 76 | 50 | 30 | | | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
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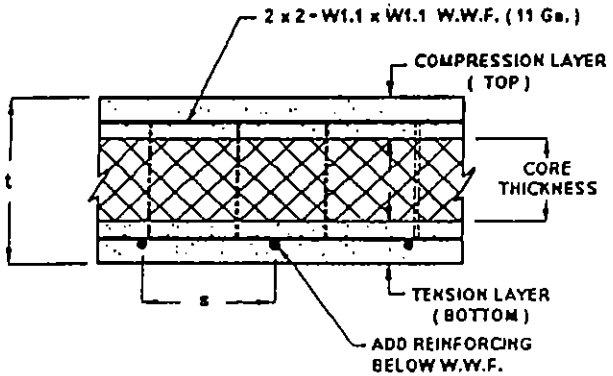
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

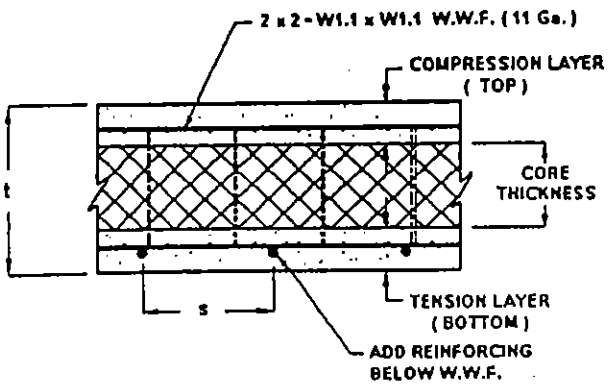
| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 66 | 44 | | | | | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 24 | 155 | 114 | 84 | 62 | 45 | 32 | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 16 | 202 | 151 | 114 | 87 | 66 | 50 | 37 | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 12 | 244 | 187 | 143 | 111 | 87 | 67 | 52 | 40 | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 8 | | 213 | 187 | 159 | 127 | 99 | 71 | 50 | 33 | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 9 | | | | 167 | 138 | | | | | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 24 | 228 | 171 | 130 | 100 | 77 | 59 | 45 | 33 | | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 16 | 245 | 213 | 183 | 143 | 113 | 90 | 72 | 52 | 35 | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 12 | | | 188 | 167 | 144 | 104 | 74 | | | | | | |
| 7.6 | 2.0 | 4.0 | 1.5 | 0 | 0 | 68 | 45 | | | | | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 24 | 165 | 120 | 88 | 65 | 46 | 32 | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 16 | 216 | 160 | 121 | 91 | 69 | 51 | 38 | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 12 | 261 | 200 | 152 | 118 | 91 | 70 | 54 | 41 | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 8 | | 227 | 199 | 170 | 135 | 108 | 86 | 69 | 48 | 32 | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 24 | 244 | 182 | 138 | 105 | 81 | 61 | 46 | 34 | | | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 16 | 262 | 227 | 195 | 152 | 120 | 95 | 75 | 59 | 46 | 34 | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 12 | | | 200 | 177 | 158 | 128 | 101 | 73 | 51 | | | | |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 16 | | | | | | 143 | 106 | 77 | 54 | 37 | | | |

( continued )

**NOTES:**

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO l /360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

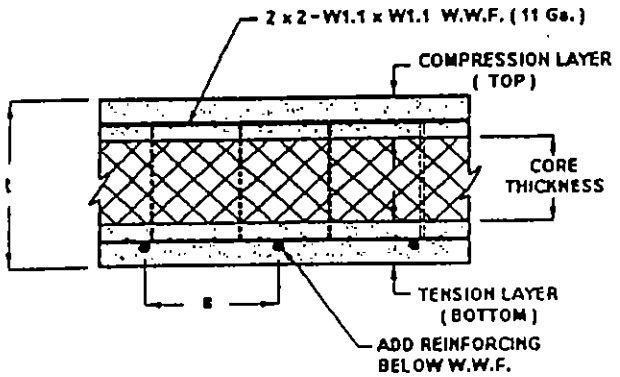
Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 71 | 45 | | | | | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 24 | 175 | 127 | 93 | 67 | 48 | 32 | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 16 | 229 | 170 | 127 | 96 | 72 | 53 | 38 | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 12 | 277 | 212 | 161 | 124 | 95 | 73 | 56 | 41 | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 8 | | 241 | 211 | 180 | 143 | 113 | 90 | 72 | 56 | 43 | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 6 | | | | 187 | 167 | 150 | 121 | 88 | 63 | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 24 | 260 | 193 | 146 | 111 | 84 | 64 | 47 | 34 | | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 16 | 278 | 241 | 207 | 162 | 127 | 100 | 78 | 61 | 47 | 35 | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 12 | | | 212 | 188 | 167 | 135 | 109 | 88 | 67 | 47 | 30 | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 8 | | | | | | 151 | 128 | 93 | | | | | |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 16 | | | | 188 | 168 | 151 | 130 | 99 | 71 | 50 | 33 | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 73 | 46 | | | | | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 24 | 185 | 134 | 97 | 69 | 49 | 32 | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 16 | 243 | 179 | 134 | 100 | 74 | 54 | 38 | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 12 | 294 | 225 | 171 | 130 | 100 | 76 | 57 | 42 | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 8 | | 255 | 223 | 190 | 150 | 119 | 94 | 74 | 58 | 44 | 33 | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 6 | | | | 198 | 176 | 158 | 131 | 106 | 78 | 55 | 37 | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 24 | 276 | 205 | 154 | 117 | 88 | 66 | 48 | 34 | | | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 16 | 295 | 255 | 219 | 171 | 133 | 105 | 82 | 63 | 48 | 35 | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 12 | | | 224 | 198 | 176 | 143 | 116 | 92 | 73 | 58 | 40 | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 8 | | | | | | 159 | 143 | 114 | 83 | | | | |
| 9.1 | 3.0 | 4.0 | 2.1 | 6 | 16 | | | | 199 | 177 | 158 | 137 | 111 | 89 | 63 | 43 | | |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 12 | | | | | | | 143 | 121 | | | | | |

**NOTES:**

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO $l/360$.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

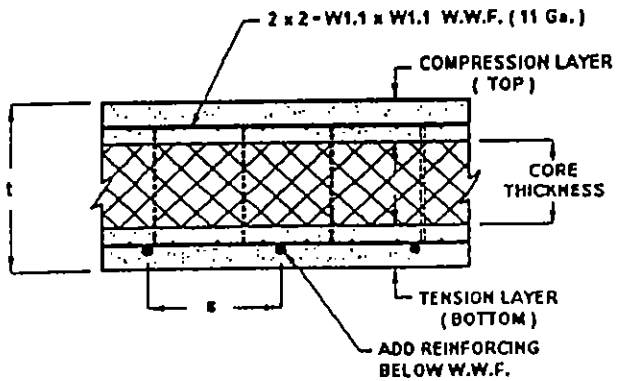
| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 41 | | | | | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 24 | 109 | 77 | 54 | 37 | | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 16 | 144 | 105 | 77 | 56 | 40 | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 12 | 180 | 133 | 100 | 75 | 56 | 41 | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 8 | 211 | 183 | 158 | 108 | 73 | 48 | 30 | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 24 | 164 | 121 | 89 | 66 | 49 | 35 | 33 | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 16 | 212 | 184 | 161 | 114 | 78 | 52 | [illegible] | | | | | | |
| 6.1 | 1.5 | 2.5 | 2.1 | 5 | 24 | 213 | 185 | 162 | 121 | 83 | 55 | 35 | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 43 | | | | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 24 | 119 | 83 | 58 | 40 | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 16 | 158 | 115 | 84 | 61 | 43 | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 12 | 197 | 146 | 109 | 81 | 61 | 44 | 32 | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 8 | 231 | 200 | 175 | 149 | 104 | 71 | 47 | | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 24 | 180 | 132 | 97 | 72 | 52 | 37 | | | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 16 | 232 | 187 | 142 | 109 | 83 | 64 | 48 | 32 | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 12 | [illegible] | 201 | 176 | 156 | 110 | 76 | 51 | [illegible] | | | | | |
| 6.6 | 2.0 | 2.5 | 2.1 | 5 | 24 | 233 | 195 | 148 | 114 | 87 | 67 | 51 | 35 | | | | | |
| 6.6 | 2.0 | 2.5 | 2.1 | 5 | 16 | 235 | 203 | 177 | 157 | 117 | 81 | 55 | [illegible] | | | | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO l /360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 46 | | | | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 24 | 128 | 90 | 62 | 42 | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 16 | 172 | 124 | 90 | 65 | 46 | 31 | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 12 | 215 | 158 | 118 | 88 | 65 | 47 | 33 | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 8 | 261 | 217 | 172 | 133 | 103 | 79 | 61 | 43 | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 6 | | | 191 | 168 | 136 | 95 | 65 | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 24 | 196 | 143 | 105 | 77 | 56 | 39 | | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 16 | 262 | 204 | 154 | 118 | 90 | 69 | 51 | 38 | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 12 | | 219 | 191 | 169 | 145 | 102 | 70 | 47 | | | | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 24 | 253 | 212 | 161 | 123 | 94 | 72 | 54 | 40 | | | | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 16 | 255 | 220 | 192 | 170 | 151 | 108 | 75 | 51 | 32 | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 48 | | | | | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 24 | 138 | 97 | 67 | 45 | | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 16 | 185 | 134 | 97 | 69 | 49 | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 12 | 232 | 171 | 127 | 94 | 69 | 50 | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 8 | 271 | 234 | 186 | 143 | 111 | 85 | 65 | 49 | 36 | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 6 | | | 205 | 181 | 161 | 122 | 86 | 58 | 37 | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 24 | 212 | 154 | 113 | 83 | 60 | 42 | | | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 16 | 272 | 220 | 167 | 127 | 97 | 73 | 56 | 40 | 41 | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 12 | | 236 | 206 | 182 | 161 | 130 | 92 | 63 | | | | | |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 24 | 273 | 229 | 174 | 133 | 101 | 77 | 58 | 42 | | | | | |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 16 | 275 | 237 | 207 | 182 | 162 | 138 | 98 | 68 | 45 | | | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
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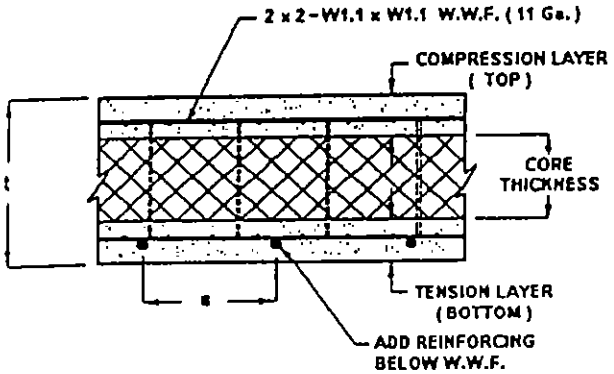
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

## ALLOWABLE UNIFORM LOAD (PSF)

| t In. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 66 | 44 | | | | | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 24 | 156 | 115 | 85 | 63 | 46 | 33 | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 16 | 203 | 152 | 115 | 87 | 67 | 50 | 38 | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 12 | 250 | 189 | 145 | 112 | 87 | 68 | 53 | 41 | 30 | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 8 | 289 | 252 | 204 | 161 | 129 | 103 | 83 | 64 | 45 | 30 | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 24 | 230 | 172 | 131 | 101 | 78 | 60 | 45 | 34 | | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 16 | 290 | 238 | 185 | 145 | 115 | 91 | 73 | 58 | 45 | 32 | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 12 | | 254 | 224 | 200 | 173 | 127 | 93 | 67 | 48 | | | | |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 24 | 291 | 247 | 192 | 151 | 119 | 95 | 76 | 60 | 47 | | | | |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 16 | 293 | 255 | 225 | 200 | 180 | 133 | 97 | 71 | 50 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 69 | 45 | | | | | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 24 | 166 | 121 | 89 | 65 | 47 | 33 | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 16 | 217 | 161 | 121 | 92 | 69 | 52 | 38 | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 12 | 268 | 201 | 154 | 119 | 92 | 71 | 55 | 41 | 30 | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 8 | 309 | 270 | 218 | 172 | 136 | 109 | 87 | 70 | 55 | 43 | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 6 | | | 238 | 212 | 190 | 160 | 118 | 87 | 63 | 44 | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 24 | 246 | 184 | 139 | 106 | 81 | 62 | 47 | 34 | | | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 16 | 310 | 255 | 197 | 154 | 121 | 96 | 76 | 60 | 46 | 35 | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 12 | | 271 | 239 | 201 | 161 | 130 | 105 | 85 | 67 | 47 | 32 | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 8 | | | | 213 | 191 | 168 | 124 | 92 | | | | | |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 24 | 311 | 264 | 204 | 160 | 126 | 100 | 79 | 62 | 49 | 37 | | | |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 16 | 313 | 272 | 240 | 213 | 191 | 173 | 131 | 97 | 71 | 50 | 34 | | |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
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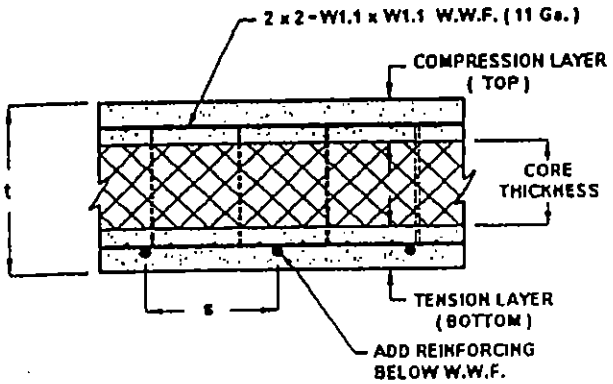
# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

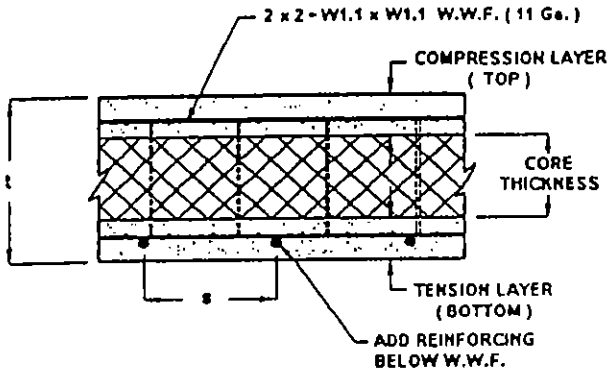
Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 71 | 46 | | | | | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 24 | 176 | 128 | 93 | 67 | 48 | | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 16 | 231 | 171 | 128 | 96 | 72 | 53 | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 12 | 285 | 214 | 163 | 126 | 96 | 74 | 56 | 42 | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 8 | 329 | 287 | 232 | 182 | 144 | 115 | 91 | 73 | 57 | 44 | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 6 | | | 253 | 225 | 191 | 156 | 126 | 103 | 81 | 68 | 41 | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 24 | 261 | 195 | 147 | 112 | 85 | 64 | 48 | | | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 16 | 330 | 271 | 209 | 163 | 128 | 101 | 79 | 62 | 48 | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 12 | | 288 | 254 | 214 | 171 | 137 | 111 | 89 | 72 | 57 | 44 | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 8 | | | | 226 | 203 | 183 | 156 | 116 | 86 | 62 | | | |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 24 | 331 | 282 | 217 | 170 | 133 | 105 | 83 | 65 | 50 | | | | |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 16 | 333 | 289 | 255 | 226 | 200 | 162 | 132 | 108 | 88 | 66 | 47 | | |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 12 | | | | | 203 | 183 | 164 | 123 | 91 | | | | |

**NOTES:**

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO [illegible]/360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADE[illegible] SHO[illegible] [illegible]ND R[illegible] UNT[illegible] CONCRET[illegible] ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D FLOOR PANEL
# LOAD TABLES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 4000 psi**

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 74 | 46 | | | | | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 24 | 186 | 134 | 97 | 70 | 49 | 33 | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 16 | 245 | 180 | 135 | 101 | 75 | 55 | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 12 | 303 | 226 | 172 | 131 | 101 | 77 | 58 | 43 | 30 | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 8 | 349 | 304 | 245 | 192 | 152 | 120 | 95 | 76 | 59 | 45 | 34 | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 6 | | | 268 | 238 | 203 | 164 | 133 | 108 | 87 | 70 | 52 | 35 | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 24 | 277 | 206 | 155 | 117 | 89 | 66 | 49 | | | | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 16 | 350 | 288 | 221 | 172 | 136 | 106 | 83 | 64 | 49 | | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 12 | 351 | 305 | 268 | 226 | 180 | 145 | 116 | 93 | 74 | 59 | 46 | 35 | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 8 | | | | 239 | 214 | 193 | 174 | 142 | 106 | 78 | 56 | 38 | |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 24 | 351 | 299 | 230 | 179 | 140 | 110 | 86 | 67 | 51 | 38 | | | |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 16 | 353 | 306 | 269 | 239 | 212 | 171 | 139 | 113 | 92 | 74 | 59 | 41 | |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 12 | | | | | 215 | 193 | 175 | 150 | 112 | 83 | 60 | | |

**NOTES:**

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR FLOOR SLABS IS LIMITED TO l /360.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 1.0
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# SECTION 3

# ROOFS

# INSTEEL 3-D FLOOR AND ROOF SLAB LOAD TABLE INSTRUCTIONS

## GENERAL:

The Insteel 3-D slab tables have been developed to aid the designer in selection of additional reinforcement for **floor and roof** applications. Load tables for floors and roofs have been developed based on location of additional reinforcing (see figures) and concrete strengths of 3,000 psi and 4,000 psi. Load values indicated are allowable superimposed loads in PSF.

Deflection limitations of $\ell$ /360 and $\ell$ /180 have been incorporated into the tables for floors and roofs respectively.

Load tables are based on simple span with uniform loading. Insteel 3-D panels shall be continuous for span indicated with truss wires in direction of span.

## DESIGN PROCEDURE:

The following method may be used for selecting a reinforced 3-D slab section:

1) Determine slab span. Slab span is the clear span between supporting walls.

2) Determine design load "*W*" in PSF based on code requirements for live loads.

3) Refer to appropriate design tables for floors or roofs, concrete strength and location of reinforcing. Find correct span and follow down in chart to select slab section with an allowable load greater than or equal to the design load. Read panel section dimensions, rebar size and spacing from "3-D Panel-Configuration" and "Additional Reinforcing" headings. Note that various configurations of panel thicknesses and reinforcing may be available for a given loading condition.

## EXAMPLE:

Design a roof slab section for a residence supported by 3-D walls, assume clear span of 18'-0". Reinforcement may be placed above or below the W.W.F. of the 3-D panel. Use 3,000 psi concrete.

1) Determine span - Clear span = 18'-0".

2) Design Load - Use 20 psf live load for residential plus 3 psf dead load for roofing.

3). Select load table for roofs and 3,000 psi concrete strength. First check for reinforcing placed between W.W.F. and insulation core (see figure). Find correct span in chart - 18'-0" and follow down in column to 28 psf. Read panel configuration of 2.5" top layer of concrete, 2.5" insulation core and 1.5" concrete on bottom layer with #3 @ 8" o.c.

Check for reinforcing placed below W.W.F. (see figures). Use same procedure as above. Find 18'-0" span and follow down column to 29 psf for slab configuration of 2.0" top concrete, 2.5" insulation core and 1.9" bottom concrete with #3 @ 8" o.c. Alternatively, continue down to next slab section of 32 psf. Read 2" top concrete, 2.5" insulation core and 2.0" bottom concrete with #4's @ 12" o.c.

# ANALYSIS PROCEDURE: 3-D FLOOR AND ROOF SLABS

The analysis for the 3-D slab load tables was performed in accordance with ACI 318-89 (Rev. '92) and the "Structural Engineering Handbook" for Insteel 3-D wall panels prepared by The Consulting Engineers Group, Inc. (Feb., 1991).

The 3-D slabs have been designed as a simply supported one-way slab with a uniform load. 3-D panels are intended as a continuous panel for span designated with truss wires in the direction of span. Calculations for roof and floor slabs were based on assumed live load to dead load ratios of 0.5 and 1.0 respectively.

Flexural capacity of the 3-D slab system was determined as:

$$\phi M_n = \phi A_s f_y \left(d - \frac{a}{2}\right)$$

where: $\phi = 0.9$

$A_s$ = W.W.F. + rebar

$f_y$ = weighted average of W.W.F. and rebar

$d$ = weighted average of distance from extreme compression fiber to centroid of W.W.F. and rebar.

$$a = \frac{A_s f_y}{.85\ b\ f\acute{c}}$$

$b$ = width (12" used)

Shear capacity of the 3-D slab system was determined as:

$$\phi V_n = \phi (0.5) (\sqrt{f\acute{c}})\ bd$$

where: $\phi = 0.85$

$b$ = width (12" used)

$d$ = weighted average of distance from extreme compression fiber to centroid of W.W.F. and rebar.

Shear transfer between wythes is accomplished by the 9 ga. diagonal truss wires. Equation for shear per "Structural Engineering Handbook."

Deflections were computed by:

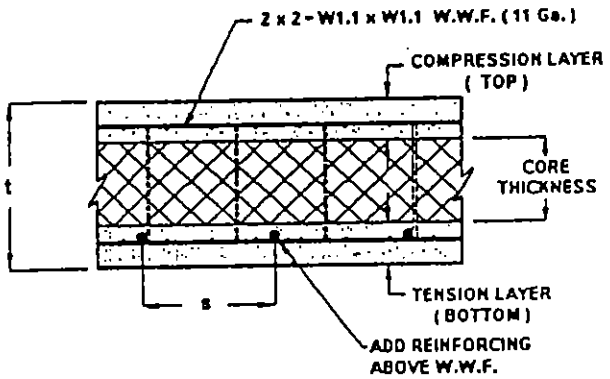
$$\Delta = \frac{5\ w\ \ell^4}{384\ E_c\ I_e}$$

where: $E_c = 57{,}000\ (\sqrt{f'c})$

$$I_e = \frac{I_g}{5}$$

The slab load tables were developed by comparing the maximum uniform load based on flexure, shear and deflection criteria for a given slab configuration and span to determine which condition controlled. Where reinforcement ratios are less than roe minimum allowable load values were reduced by 33% per Section 10.5.2 ACI 318-89 (Rev. '92).

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




**SIMPLE SPAN - UNIFORM LOAD**

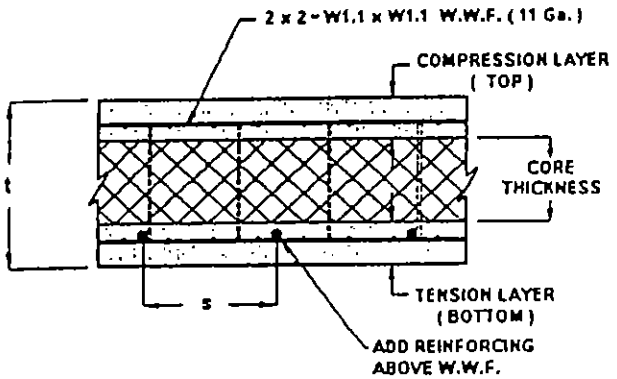
**Rebar - fy = 60000 psi**
**Shotcrete - f'c = 3000 psi**

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 43 | 26 | | | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 24 | 110 | 79 | 57 | 40 | 28 | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 16 | 143 | 105 | 78 | 58 | 42 | 30 | 21 | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 12 | 174 | 130 | 98 | 75 | 57 | 43 | 31 | 23 | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 8 | | 149 | 131 | 115 | 102 | 89 | 64 | 45 | 30 | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 46 | 27 | | | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 24 | 120 | 86 | 61 | 43 | 29 | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 16 | 157 | 115 | 85 | 62 | 45 | 32 | 22 | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 12 | 191 | 143 | 108 | 81 | 61 | 46 | 33 | 23 | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 8 | | 164 | 143 | 126 | 112 | 100 | 89 | 64 | 45 | 30 | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 49 | 28 | | | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 24 | 131 | 93 | 66 | 46 | 30 | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 16 | 171 | 125 | 92 | 67 | 48 | 34 | 22 | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 12 | 209 | 156 | 117 | 88 | 66 | 49 | 35 | 24 | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 8 | | 179 | 156 | 137 | 122 | 108 | 97 | 79 | 62 | 43 | 28 | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 52 | 29 | | | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 24 | 141 | 100 | 70 | 48 | 32 | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 16 | 186 | 135 | 99 | 72 | 51 | 36 | 23 | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 12 | 226 | 170 | 127 | 95 | 71 | 52 | 37 | 25 | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 8 | | 193 | 168 | 148 | 131 | 117 | 104 | 85 | 68 | 54 | 40 | 25 | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 6 | | | | | | | | 93 | 80 | 67 | | | |

( continued )

NOTES:
1. LOADS INDICATED ARE ALLOWABLE SUPER IMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO l/180.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

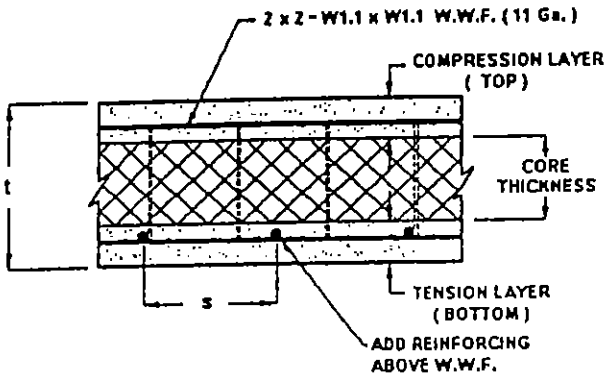
Rebar - fy = 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 70 | 47 | 31 | | | | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 24 | 159 | 118 | 88 | 66 | 50 | 37 | 26 | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 16 | 204 | 153 | 117 | 90 | 69 | 54 | 41 | 31 | 22 | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 12 | 244 | 188 | 145 | 113 | 89 | 70 | 55 | 43 | 33 | 25 | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 8 | | 211 | 186 | 159 | 127 | 103 | 83 | 68 | 55 | 44 | 35 | 28 | 22 |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 6 | | | | 165 | 149 | 134 | 122 | 111 | 88 | 67 | 51 | 37 | 27 |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 72 | 48 | 30 | | | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 24 | 170 | 125 | 93 | 69 | 51 | 37 | 26 | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 16 | 218 | 163 | 124 | 95 | 72 | 55 | 42 | 31 | 22 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 12 | 261 | 201 | 154 | 120 | 94 | 73 | 57 | 44 | 33 | 25 | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 8 | | 226 | 199 | 170 | 136 | 109 | 88 | 71 | 57 | 45 | 36 | 28 | 21 |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 6 | | | | 176 | 158 | 142 | 129 | 118 | 108 | 88 | 67 | 51 | 37 |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 75 | 49 | 30 | | | | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 24 | 180 | 132 | 97 | 72 | 52 | 37 | 26 | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 16 | 232 | 173 | 131 | 99 | 76 | 57 | 42 | 30 | 21 | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 12 | 278 | 214 | 164 | 127 | 98 | 76 | 59 | 45 | 34 | 24 | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 8 | | 241 | 212 | 181 | 144 | 115 | 92 | 74 | 59 | 47 | 36 | 27 | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 6 | | | | 187 | 168 | 151 | 136 | 124 | 113 | 104 | 85 | 64 | 48 |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 78 | 50 | 29 | | | | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 24 | 191 | 139 | 102 | 75 | 54 | 37 | 25 | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 16 | 247 | 183 | 138 | 104 | 79 | 59 | 43 | 30 | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 12 | 296 | 227 | 173 | 134 | 103 | 80 | 61 | 46 | 34 | 23 | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 8 | | 255 | 224 | 192 | 152 | 121 | 97 | 77 | 61 | 48 | 36 | 27 | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 6 | | | | 198 | 177 | 159 | 132 | 108 | 88 | 72 | 58 | 46 | 36 |

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPER IMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO $l/180$.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.5 | 1.5 | 2.5 | 1.5 | 0 | 0 | 44 | 27 | | | | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 24 | 111 | 80 | 57 | 41 | 28 | | | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 16 | 144 | 106 | 79 | 58 | 43 | 31 | 21 | | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 12 | 177 | 132 | 99 | 76 | 57 | 43 | 32 | 23 | | | | | |
| 5.5 | 1.5 | 2.5 | 1.5 | 3 | 8 | 205 | 178 | 157 | 139 | 124 | 103 | 79 | 57 | 41 | 28 | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 46 | 27 | | | | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 24 | 121 | 87 | 62 | 43 | 30 | | | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 16 | 158 | 116 | 86 | 63 | 46 | 33 | 22 | | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 12 | 195 | 145 | 109 | 82 | 62 | 47 | 34 | 24 | | | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 8 | 226 | 196 | 172 | 153 | 136 | 113 | 91 | 74 | 59 | 42 | 28 | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 3 | 6 | | | | | | 122 | 109 | 81 | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 49 | 28 | | | | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 24 | 132 | 94 | 66 | 46 | 31 | | | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 16 | 173 | 126 | 93 | 68 | 49 | 34 | 23 | | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 12 | 213 | 158 | 119 | 89 | 67 | 50 | 36 | 25 | | | | | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 8 | 247 | 214 | 188 | 166 | 148 | 123 | 99 | 80 | 64 | 51 | 40 | 27 | |
| 6.5 | 2.5 | 2.5 | 1.5 | 3 | 6 | | | | | | 132 | 119 | 106 | 79 | 57 | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 52 | 29 | | | | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 24 | 142 | 101 | 71 | 49 | 32 | | | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 16 | 187 | 136 | 100 | 73 | 52 | 36 | 23 | | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 12 | 232 | 171 | 128 | 96 | 72 | 53 | 38 | 26 | | | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 8 | 268 | 232 | 184 | 143 | 111 | 86 | 67 | 51 | 38 | 27 | | | |
| 7.0 | 3.0 | 2.5 | 1.5 | 3 | 6 | | | 202 | 179 | 159 | 143 | 129 | 116 | 98 | 75 | 54 | 38 | 24 |

( continued )

NOTES:

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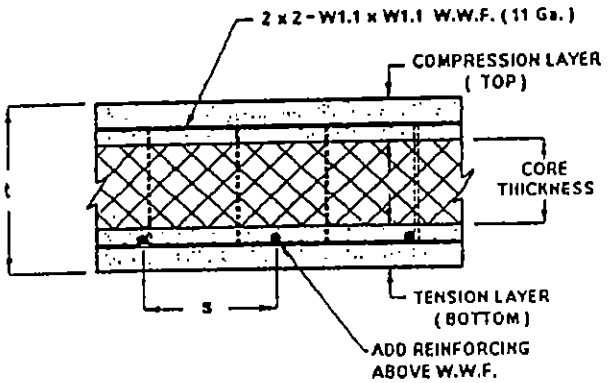
# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

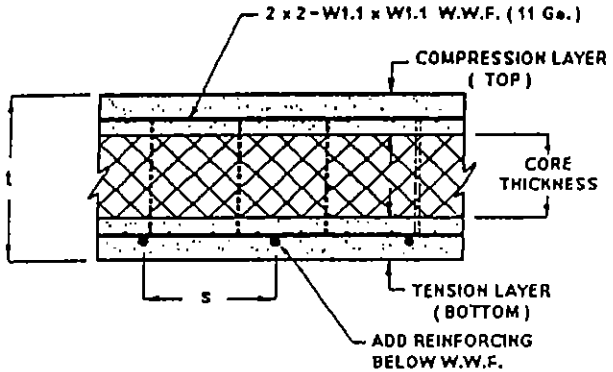
Rebar - fy = 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 70 | 47 | 31 | | | | | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 24 | 160 | 119 | 89 | 67 | 50 | 37 | 27 | | | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 16 | 205 | 154 | 118 | 91 | 70 | 54 | 41 | 31 | 23 | | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 12 | 250 | 189 | 146 | 114 | 90 | 71 | 56 | 44 | 34 | 26 | | | |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 8 | 286 | 250 | 202 | 161 | 129 | 104 | 85 | 69 | 56 | 45 | 36 | 29 | 22 |
| 7.0 | 1.5 | 4.0 | 1.5 | 3 | 6 | | | 220 | 197 | 177 | 161 | 147 | 134 | 108 | 83 | 64 | 49 | 36 |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 72 | 48 | 31 | | | | | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 24 | 171 | 126 | 93 | 70 | 51 | 37 | 26 | | | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 16 | 219 | 164 | 125 | 95 | 73 | 56 | 42 | 31 | 22 | | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 12 | 268 | 202 | 156 | 121 | 95 | 74 | 58 | 45 | 34 | 25 | | | |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 8 | 307 | 268 | 217 | 172 | 137 | 110 | 89 | 72 | 58 | 46 | 36 | 28 | 21 |
| 7.5 | 2.0 | 4.0 | 1.5 | 3 | 6 | | | 236 | 210 | 189 | 171 | 156 | 143 | 123 | 104 | 86 | 65 | 50 |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 75 | 49 | 30 | | | | | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 24 | 181 | 133 | 98 | 72 | 53 | 38 | 26 | | | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 16 | 234 | 174 | 132 | 100 | 76 | 57 | 43 | 31 | 21 | | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 12 | 286 | 216 | 165 | 128 | 99 | 77 | 60 | 46 | 34 | 24 | | | |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 8 | 328 | 286 | 231 | 182 | 145 | 116 | 94 | 75 | 60 | 47 | 37 | 28 | 20 |
| 8.0 | 2.5 | 4.0 | 1.5 | 3 | 6 | | | 251 | 224 | 201 | 182 | 165 | 151 | 130 | 110 | 92 | 78 | 63 |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 78 | 50 | 30 | | | | | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 24 | 192 | 140 | 103 | 75 | 54 | 38 | 25 | | | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 16 | 248 | 184 | 139 | 105 | 79 | 59 | 43 | 31 | 20 | | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 12 | 304 | 229 | 175 | 135 | 104 | 80 | 62 | 46 | 34 | 24 | | | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 8 | 349 | 304 | 246 | 193 | 154 | 123 | 98 | 78 | 62 | 48 | 37 | 28 | |
| 8.5 | 3.0 | 4.0 | 1.5 | 3 | 6 | | | 267 | 238 | 202 | 164 | 134 | 109 | 89 | 73 | 59 | 47 | 37 |

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO l/180.
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL APPROPRIATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

## ALLOWABLE UNIFORM LOAD (PSF)

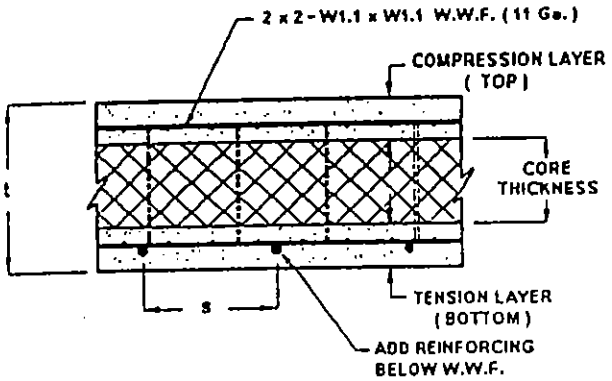
| t In. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.6 | 1.6 | 2.6 | 1.6 | 0 | 0 | 43 | 26 | | | | | | | | | | | |
| 5.9 | 1.6 | 2.6 | 1.9 | 3 | 24 | 113 | 80 | 57 | 39 | 26 | | | | | | | | |
| 5.9 | 1.5 | 2.6 | 1.9 | 3 | 16 | 149 | 109 | 80 | 59 | 42 | 30 | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 12 | 184 | 137 | 103 | 78 | 59 | 44 | 32 | 22 | | | | | |
| 5.9 | 1.5 | 2.6 | 1.9 | 3 | 8 | [illegible] | 159 | 139 | 123 | 109 | 97 | 84 | 60 | 42 | 28 | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 24 | 170 | 125 | 93 | 69 | 51 | 37 | 26 | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 16 | 185 | 160 | 139 | 123 | 109 | 96 | 77 | 61 | 45 | 30 | | | |
| 6.0 | 1.5 | 2.6 | 2.0 | 4 | 12 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 87 | 64 | [illegible] | [illegible] | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 46 | 27 | | | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 24 | 123 | 87 | 61 | 42 | 28 | | | | | | | | |
| 6.4 | 2.0 | 2.6 | 1.9 | 3 | 16 | 163 | 119 | 87 | 63 | 46 | 32 | 21 | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 12 | 201 | 150 | 113 | 85 | 63 | 47 | 34 | 23 | | | | | |
| 6.4 | 2.0 | 2.6 | 1.9 | 3 | 8 | [illegible] | 174 | 152 | 134 | 118 | 105 | 94 | 76 | 61 | 44 | 29 | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 24 | 186 | 137 | 101 | 75 | 55 | 39 | 27 | | | | | | |
| 6.5 | 2.0 | 2.6 | 2.0 | 4 | 16 | 202 | 174 | 147 | 113 | 87 | 66 | 50 | 37 | 27 | | | | |
| 6.5 | 2.0 | 2.6 | 2.0 | 4 | 12 | [illegible] | [illegible] | 153 | 134 | 119 | 106 | 95 | 85 | 67 | 48 | 32 | | |
| 6.6 | 2.0 | 2.6 | 2.1 | 5 | 16 | 205 | 176 | 153 | 135 | 119 | 106 | 95 | 85 | 72 | 51 | 35 | 22 | |

( continued )

**NOTES:**

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO l /180
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

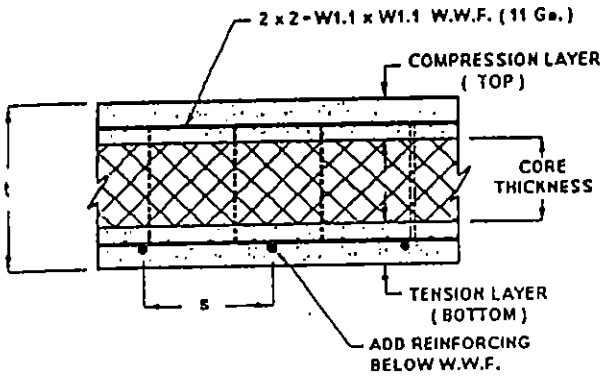
| t In. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 6.6 | 2.5 | 2.5 | 1.6 | 0 | 0 | 49 | 28 | | | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 24 | 134 | 94 | 66 | 45 | 29 | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 16 | 178 | 129 | 94 | 68 | 49 | 33 | 21 | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 12 | 218 | 164 | 122 | 91 | 68 | 50 | 35 | 24 | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 8 | | 189 | 164 | 137 | 106 | 83 | 64 | 48 | 36 | 26 | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 6 | | | | 145 | 128 | 114 | 102 | 92 | 82 | 61 | 43 | 28 | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 24 | 203 | 148 | 110 | 81 | 59 | 42 | 28 | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 16 | 220 | 189 | 160 | 122 | 94 | 72 | 54 | 40 | 28 | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 12 | | | 165 | 146 | 128 | 114 | 102 | 91 | 81 | 66 | 47 | 32 | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 16 | | | | 146 | 129 | 114 | 102 | 92 | 82 | 71 | 51 | 35 | 22 |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 52 | 29 | | | | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 24 | 144 | 101 | 70 | 48 | 30 | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 16 | 192 | 139 | 101 | 73 | 52 | 35 | 22 | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 12 | 236 | 177 | 132 | 98 | 73 | 53 | 37 | 25 | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 8 | | 203 | 177 | 148 | 115 | 89 | 68 | 52 | 38 | 27 | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 6 | | | | 156 | 138 | 122 | 109 | 98 | 88 | 79 | 58 | 41 | 26 |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 24 | 219 | 160 | 118 | 87 | 63 | 45 | 30 | | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 16 | 237 | 204 | 172 | 132 | 101 | 77 | 58 | 42 | 30 | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 12 | | | 178 | 156 | 138 | 122 | 109 | 98 | 88 | 70 | 56 | 44 | 29 |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 16 | | | | 157 | 138 | 123 | 110 | 98 | 88 | 79 | 68 | 49 | 33 |

( continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO l /180
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 70 | 47 | 31 | | | | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 24 | 162 | 119 | 88 | 66 | 48 | 35 | 24 | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 16 | 210 | 157 | 119 | 91 | 70 | 53 | 40 | 29 | 20 | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 12 | 254 | 195 | 150 | 116 | 91 | 71 | 55 | 43 | 32 | 24 | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 8 | | 221 | 195 | 166 | 133 | 107 | 86 | 70 | 56 | 46 | 35 | 27 | 20 |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 6 | | | | 174 | 156 | 140 | 127 | 116 | 106 | 84 | 64 | 48 | 36 |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 24 | 237 | 178 | 136 | 105 | 81 | 63 | 48 | 36 | 26 | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 16 | 255 | 222 | 190 | 150 | 119 | 95 | 76 | 60 | 48 | 37 | 28 | 21 | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 12 | | | 196 | 174 | 156 | 140 | 127 | 116 | 106 | 88 | 67 | 51 | 37 |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 16 | | | | 175 | 156 | 141 | 128 | 116 | 106 | 93 | 71 | 53 | 39 |
| 7.5 | 2.0 | 4.0 | 1.5 | 0 | 0 | 72 | 48 | 30 | | | | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 24 | 173 | 126 | 93 | 68 | 50 | 35 | 23 | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 16 | 225 | 167 | 126 | 96 | 73 | 55 | 40 | 29 | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 12 | 271 | 208 | 159 | 123 | 96 | 74 | 57 | 44 | 32 | 23 | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 8 | | 236 | 208 | 177 | 141 | 113 | 91 | 73 | 58 | 46 | 36 | 27 | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 6 | | | | 185 | 165 | 149 | 135 | 122 | 112 | 102 | 87 | 67 | 50 |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 24 | 264 | 190 | 144 | 111 | 85 | 65 | 49 | 36 | 26 | | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 16 | 272 | 236 | 203 | 159 | 126 | 100 | 79 | 63 | 49 | 38 | 28 | 20 | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 12 | | | 208 | 185 | 165 | 134 | 109 | 88 | 72 | 58 | 46 | 36 | 28 |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 8 | | | | | | 149 | 135 | 123 | 112 | 102 | 92 | 71 | 54 |
| 8.1 | 2.0 | 4.0 | 2.1 | 6 | 16 | | | | 186 | 166 | 149 | 135 | 122 | 112 | 102 | 93 | 76 | 57 |

( continued )

NOTES:
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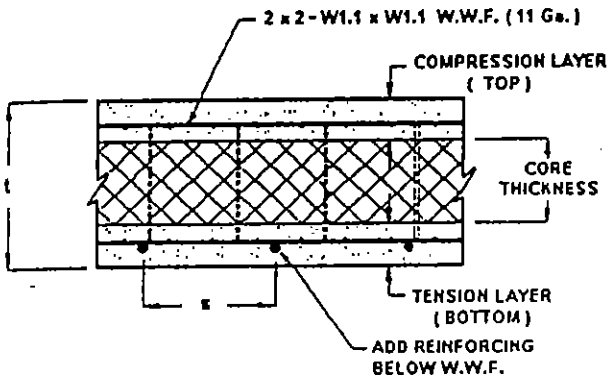
# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 3000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.0 | 2.5 | 4.0 | 1.5 | 0 | 0 | 75 | 49 | 30 | | | | | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 24 | 183 | 133 | 97 | 71 | 51 | 35 | 23 | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 16 | 239 | 177 | 133 | 101 | 76 | 56 | 41 | 29 | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 12 | 288 | 221 | 169 | 130 | 100 | 77 | 59 | 45 | 33 | 23 | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 8 | | 251 | 220 | 188 | 149 | 119 | 95 | 76 | 60 | 47 | 36 | 27 | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 6 | | | | 196 | 175 | 157 | 130 | 106 | 87 | 71 | 57 | 46 | 36 |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 24 | 270 | 202 | 153 | 117 | 89 | 68 | 51 | 37 | 26 | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 16 | 290 | 251 | 216 | 169 | 133 | 105 | 83 | 65 | 50 | 38 | 28 | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 12 | | | 221 | 196 | 175 | 142 | 115 | 93 | 75 | 60 | 47 | 37 | 28 |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 8 | | | | | | 158 | 142 | 129 | 118 | 107 | 98 | 90 | 70 |
| 8.5 | 3.0 | 4.0 | 1.5 | 0 | 0 | 78 | 50 | 29 | | | | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 24 | 194 | 140 | 102 | 74 | 52 | 36 | 22 | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 16 | 253 | 187 | 140 | 105 | 79 | 58 | 42 | 29 | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 12 | 305 | 234 | 178 | 137 | 105 | 81 | 61 | 45 | 33 | 22 | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 8 | | 265 | 233 | 199 | 157 | 125 | 100 | 79 | 62 | 48 | 36 | 26 | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 6 | | | | 206 | 184 | 165 | 137 | 112 | 91 | 74 | 59 | 47 | 36 |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 24 | 287 | 214 | 161 | 122 | 93 | 70 | 52 | 37 | 25 | | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 16 | 307 | 266 | 229 | 178 | 140 | 110 | 86 | 67 | 52 | 39 | 28 | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 12 | | | 234 | 207 | 184 | 150 | 120 | 97 | 78 | 62 | 48 | 37 | 27 |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 8 | | | | | | 166 | 150 | 136 | 123 | 112 | 103 | 94 | 86 |

**NOTES:**

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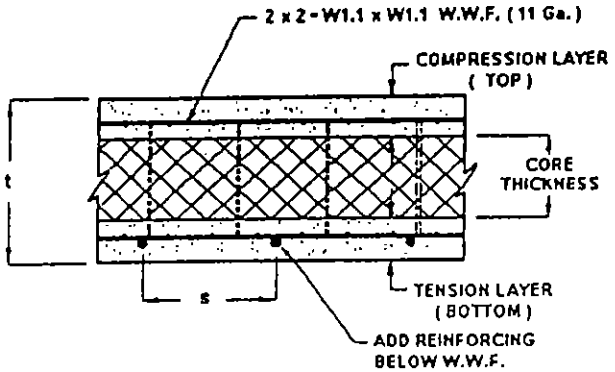
# INSTELL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5.6 | 1.5 | 2.5 | 1.5 | 0 | 0 | 44 | 27 | | | | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 24 | 114 | 81 | 57 | 40 | 27 | | | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 16 | 151 | 110 | 81 | 59 | 43 | 30 | 20 | | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 12 | 187 | 139 | 104 | 78 | 59 | 44 | 32 | 23 | | | | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 8 | 220 | 191 | 167 | 148 | 132 | 109 | 88 | 72 | 55 | 39 | 26 | | |
| 5.9 | 1.5 | 2.5 | 1.9 | 3 | 6 | | | | | | 119 | 103 | 76 | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 24 | 171 | 126 | 94 | 70 | 52 | 38 | 26 | | | | | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 16 | 221 | 191 | 168 | 148 | 122 | 97 | 78 | 62 | 49 | 39 | 28 | | |
| 6.0 | 1.5 | 2.5 | 2.0 | 4 | 12 | | | | | 133 | 119 | 106 | 81 | 59 | 42 | | | |
| 6.0 | 2.0 | 2.5 | 1.5 | 0 | 0 | 46 | 27 | | | | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 24 | 124 | 88 | 62 | 43 | 28 | | | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 16 | 165 | 120 | 88 | 64 | 46 | 32 | 21 | | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 12 | 205 | 152 | 114 | 86 | 64 | 47 | 34 | 24 | | | | | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 8 | 241 | 208 | 183 | 162 | 144 | 120 | 96 | 78 | 62 | 50 | 39 | 28 | |
| 6.4 | 2.0 | 2.5 | 1.9 | 3 | 6 | | | | | | 130 | 117 | 106 | 80 | 58 | 41 | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 24 | 188 | 138 | 102 | 76 | 56 | 40 | 28 | | | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 16 | 242 | 195 | 149 | 114 | 88 | 68 | 51 | 38 | 28 | | | | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 12 | | 210 | 184 | 163 | 145 | 130 | 116 | 94 | 77 | 62 | 45 | 31 | |
| 6.5 | 2.0 | 2.5 | 2.0 | 4 | 8 | | | | | | | | 106 | 85 | | | | |
| 6.6 | 2.0 | 2.5 | 2.1 | 5 | 16 | | 211 | 185 | 164 | 146 | 131 | 118 | 106 | 91 | 67 | 48 | 33 | 21 |

(continued)

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO $l$ /180
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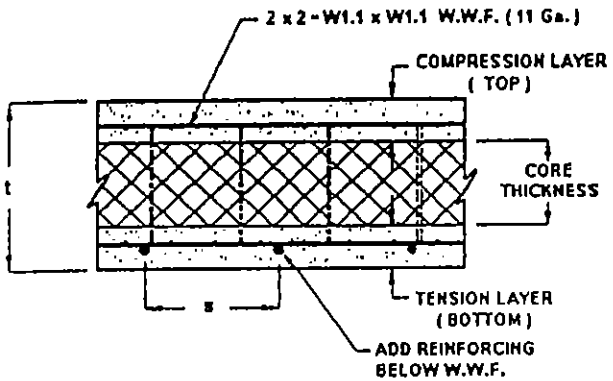
# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

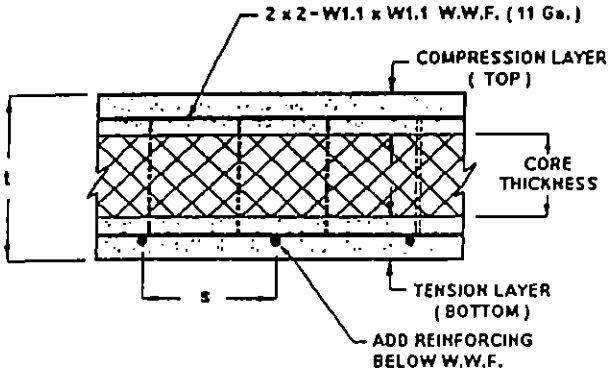
| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 6.5 | 2.5 | 2.5 | 1.5 | 0 | 0 | 49 | 28 | | | | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 24 | 135 | 95 | 66 | 45 | 29 | | | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 16 | 179 | 130 | 95 | 69 | 49 | 34 | 22 | | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 12 | 224 | 165 | 123 | 92 | 69 | 51 | 36 | 24 | | | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 8 | 262 | 226 | 180 | 139 | 108 | 84 | 65 | 49 | 37 | 26 | | | |
| 6.9 | 2.5 | 2.5 | 1.9 | 3 | 6 | | | | 176 | 156 | 140 | 126 | 114 | 96 | 79 | 58 | 41 | 28 |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 24 | 204 | 150 | 111 | 82 | 60 | 43 | 29 | | | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 16 | 262 | 212 | 161 | 124 | 95 | 73 | 55 | 41 | 29 | | | | |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 12 | | 228 | 199 | 176 | 157 | 140 | 126 | 102 | 83 | 67 | 54 | 43 | 31 |
| 7.0 | 2.5 | 2.5 | 2.0 | 4 | 8 | | | | | | | | 115 | 104 | 85 | 63 | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 24 | 264 | 221 | 168 | 129 | 99 | 76 | 58 | 43 | 31 | 21 | | | |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 16 | | 229 | 201 | 177 | 158 | 141 | 127 | 115 | 101 | 83 | 68 | 49 | 34 |
| 7.1 | 2.5 | 2.5 | 2.1 | 5 | 12 | | | | | | | | | 104 | 91 | | | |

(continued )

NOTES:

1. LOADS INDICATED ARE ALLOWABLE SUPERIMPOSED LOADS IN PSF.
2. LOAD FACTORS AND STRENGTH REDUCTION FACTORS HAVE BEEN INCLUDED IN ACCORDANCE WITH ACI 318.
3. DEFLECTION FOR ROOF SLABS IS LIMITED TO l /180
4. DEFLECTION CALCULATIONS HAVE BEEN BASED ON A LIVE LOAD TO DEAD LOAD RATIO OF 0.5
5. IT SHALL BE THE RESPONSIBILITY OF THE DESIGNER TO DETERMINE THE APPROPRIATENESS OF THIS TABLE WITH RESPECT TO ACTUAL LOADS AND LOAD COMBINATIONS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND INSTALL ADEQUATE SHORING AND BRACING UNTIL CONCRETE ATTAINS DESIGN STRENGTH.

# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




**SIMPLE SPAN - UNIFORM LOAD**

**Rebar - 60000 psi**
**Shotcrete - f'c = 4000 psi**

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 3.0 | 2.5 | 1.5 | 0 | 0 | 52 | 29 | | | | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 24 | 145 | 102 | 71 | 48 | 31 | | | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 16 | 194 | 140 | 102 | 74 | 52 | 36 | 22 | | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 12 | 242 | 178 | 133 | 99 | 74 | 54 | 38 | 25 | | | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 8 | 282 | 244 | 194 | 150 | 116 | 90 | 69 | 53 | 39 | 27 | | | |
| 7.4 | 3.0 | 2.5 | 1.9 | 3 | 6 | | | 214 | 189 | 168 | 151 | 136 | 123 | 103 | 84 | 69 | 55 | 40 |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 24 | 221 | 162 | 119 | 88 | 64 | 45 | 30 | | | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 16 | 283 | 230 | 174 | 133 | 102 | 78 | 59 | 43 | 30 | | | | |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 12 | | 246 | 215 | 190 | 169 | 151 | 135 | 110 | 89 | 72 | 57 | 45 | 35 |
| 7.5 | 3.0 | 2.5 | 2.0 | 4 | 8 | | | | | | | | 123 | 111 | 101 | 83 | 61 | 43 |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 24 | 285 | 239 | 182 | 139 | 107 | 82 | 62 | 46 | 32 | 22 | | | |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 16 | | 247 | 216 | 191 | 169 | 152 | 136 | 123 | 108 | 89 | 72 | 59 | 47 |
| 7.6 | 3.0 | 2.5 | 2.1 | 5 | 12 | | | | | | | | | 112 | 101 | 89 | 66 | 47 |

(continued )

NOTES:

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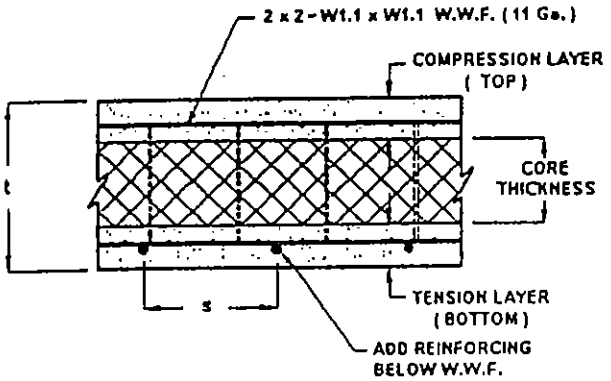
# INSTEEL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.0 | 1.5 | 4.0 | 1.5 | 0 | 0 | 70 | 47 | 31 | | | | | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 24 | 163 | 120 | 89 | 66 | 49 | 35 | 24 | | | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 16 | 212 | 158 | 120 | 92 | 70 | 54 | 40 | 30 | 21 | | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 12 | 260 | 196 | 151 | 117 | 92 | 72 | 56 | 43 | 33 | 24 | | | |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 8 | 300 | 262 | 212 | 168 | 134 | 108 | 87 | 71 | 57 | 45 | 36 | 28 | 21 |
| 7.4 | 1.5 | 4.0 | 1.9 | 3 | 6 | | | 232 | 207 | 186 | 169 | 154 | 141 | 121 | 102 | 81 | 62 | 47 |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 24 | 239 | 180 | 137 | 106 | 82 | 63 | 48 | 36 | 27 | | | | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 16 | 301 | 248 | 192 | 151 | 120 | 96 | 77 | 61 | 48 | 38 | 29 | 21 | |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 12 | | 264 | 233 | 208 | 187 | 169 | 153 | 128 | 107 | 90 | 75 | 63 | 50 |
| 7.5 | 1.5 | 4.0 | 2.0 | 4 | 8 | | | | | | | | 141 | 129 | 109 | 85 | 65 | |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 24 | 303 | 257 | 200 | 157 | 125 | 100 | 80 | 64 | 50 | 40 | 30 | 23 | |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 16 | | 265 | 234 | 209 | 187 | 170 | 154 | 141 | 126 | 107 | 89 | 69 | 52 |
| 7.6 | 1.5 | 4.0 | 2.1 | 5 | 12 | | | | | | | | | 130 | 114 | | | |

(continued )

NOTES:

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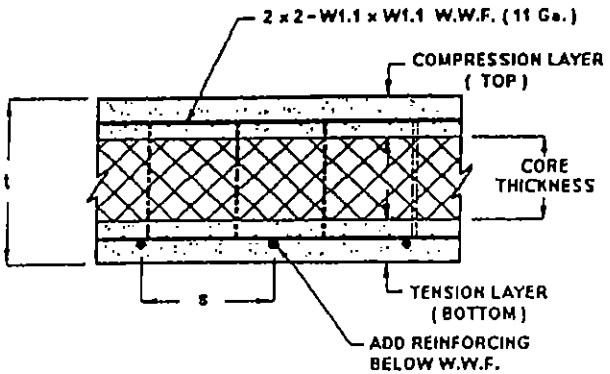
# INSTELL 3-D ROOF PANEL
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

| t In. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | SPAN (FT) | | | | | | | | | | | | |
| | | | | | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7.6 | 2.0 | 4.0 | 1.5 | 0 | 0 | 72 | 48 | 31 | | | | | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 24 | 174 | 127 | 93 | 69 | 60 | 35 | 24 | | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 16 | 226 | 168 | 127 | 97 | 73 | 55 | 41 | 29 | | | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 12 | 278 | 210 | 160 | 124 | 97 | 75 | 58 | 44 | 33 | 24 | | | |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 8 | 321 | 280 | 227 | 179 | 142 | 114 | 92 | 74 | 59 | 47 | 36 | 28 | 20 |
| 7.9 | 2.0 | 4.0 | 1.9 | 3 | 6 | | | 248 | 221 | 198 | 179 | 163 | 149 | 128 | 108 | 91 | 77 | 65 |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 24 | 256 | 191 | 146 | 112 | 86 | 66 | 50 | 37 | 26 | | | | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 16 | 322 | 265 | 205 | 161 | 127 | 101 | 80 | 63 | 50 | 38 | 29 | 21 | |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 12 | | 281 | 248 | 210 | 168 | 136 | 110 | 90 | 73 | 59 | 47 | 37 | 29 |
| 8.0 | 2.0 | 4.0 | 2.0 | 4 | 8 | | | | 222 | 199 | 180 | 164 | 149 | 137 | 126 | 114 | 90 | 70 |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 24 | 323 | 275 | 213 | 167 | 132 | 105 | 84 | 66 | 52 | 40 | 30 | 22 | |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 16 | 325 | 283 | 250 | 222 | 199 | 180 | 164 | 149 | 134 | 113 | 95 | 80 | 67 |
| 8.1 | 2.0 | 4.0 | 2.1 | 5 | 12 | | | | | | | | | | 126 | 116 | 94 | 74 |

(continued )

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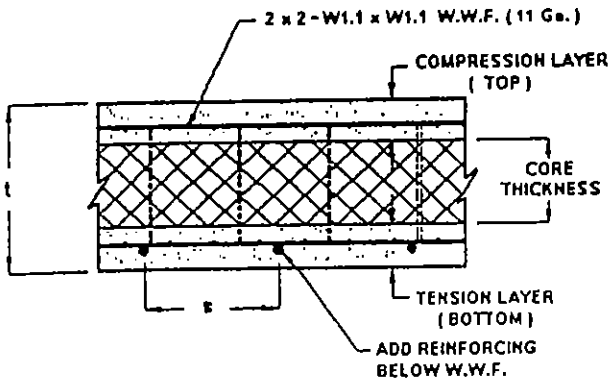
# LOAD TABLES




SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL CONFIGURATION LAYER THICKNESS (in) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) SPAN (FT) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING in | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.0 | 2.6 | 4.0 | 1.6 | 0 | 0 | 75 | 49 | 30 | | | | | | | | | | |
| 8.4 | 2.6 | 4.0 | 1.9 | 3 | 24 | 184 | 134 | 98 | 72 | 51 | 36 | 23 | | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 16 | 240 | 178 | 134 | 101 | 76 | 57 | 42 | 29 | | | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 12 | 296 | 223 | 170 | 131 | 101 | 78 | 60 | 46 | 33 | 23 | | | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 8 | 342 | 298 | 241 | 190 | 151 | 120 | 96 | 77 | 61 | 48 | 37 | 27 | |
| 8.4 | 2.5 | 4.0 | 1.9 | 3 | 6 | | | 263 | 234 | 200 | 162 | 132 | 108 | 88 | 72 | 58 | 47 | 37 |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 24 | 272 | 203 | 154 | 118 | 90 | 68 | 51 | 37 | 26 | | | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 16 | 343 | 282 | 218 | 170 | 134 | 106 | 84 | 66 | 51 | 39 | 29 | | |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 12 | | 299 | 264 | 223 | 178 | 144 | 116 | 94 | 76 | 61 | 48 | 37 | 28 |
| 8.5 | 2.5 | 4.0 | 2.0 | 4 | 8 | | | | 235 | 211 | 191 | 173 | 158 | 144 | 133 | 122 | 113 | 89 |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 24 | 344 | 293 | 226 | 177 | 140 | 111 | 88 | 69 | 54 | 41 | 30 | 21 | |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 16 | | 301 | 265 | 236 | 209 | 169 | 138 | 113 | 92 | 76 | 61 | 49 | 39 |
| 8.6 | 2.5 | 4.0 | 2.1 | 5 | 12 | | | | | 212 | 191 | 173 | 158 | 145 | 133 | 122 | 113 | 95 |

(continued)

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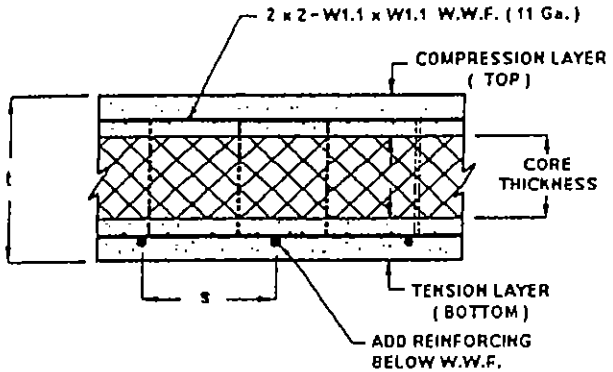


SIMPLE SPAN - UNIFORM LOAD

Rebar - 60000 psi
Shotcrete - f'c = 4000 psi

| t in. | 3-D PANEL-CONFIGURATION LAYER THICKNESS (In) | | | ADDITIONAL REINFORCING | | ALLOWABLE UNIFORM LOAD (PSF) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SPAN (FT) | | | | | | | | | | | | |
| | COMP. (TOP) | INSULATION CORE | TEN. (BOT.) | BAR SIZE NO. | SPACING In | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8.6 | 3.0 | 4.0 | 1.5 | 0 | 0 | 78 | 50 | 30 | | | | | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 24 | 194 | 141 | 103 | 74 | 53 | 36 | 23 | | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 16 | 255 | 189 | 141 | 106 | 79 | 59 | 42 | 29 | | | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 12 | 315 | 236 | 180 | 138 | 106 | 81 | 62 | 46 | 33 | 22 | | | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 8 | 363 | 316 | 266 | 201 | 159 | 126 | 101 | 80 | 63 | 49 | 37 | 27 | |
| 8.9 | 3.0 | 4.0 | 1.9 | 3 | 6 | | | 279 | 248 | 211 | 171 | 139 | 113 | 92 | 75 | 60 | 48 | 37 |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 24 | 289 | 215 | 162 | 123 | 94 | 71 | 52 | 38 | 26 | | | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 16 | 364 | 299 | 231 | 180 | 141 | 111 | 87 | 68 | 52 | 39 | 28 | | |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 12 | | 317 | 279 | 236 | 188 | 151 | 122 | 98 | 79 | 63 | 49 | 38 | 28 |
| 9.0 | 3.0 | 4.0 | 2.0 | 4 | 8 | | | | 249 | 223 | 201 | 182 | 166 | 152 | 139 | 128 | 118 | 102 |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 24 | 365 | 311 | 240 | 187 | 147 | 116 | 91 | 71 | 55 | 42 | 30 | 21 | |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 16 | | 319 | 281 | 249 | 221 | 179 | 146 | 119 | 97 | 78 | 63 | 50 | 39 |
| 9.1 | 3.0 | 4.0 | 2.1 | 5 | 12 | | | | | 224 | 202 | 183 | 166 | 152 | 139 | 128 | 118 | 108 |

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