

DOUBLE TEE TYPE "A" LOAD TABLE

8DT 24

Table of safe superimposed live load (psf) Normal Weight Concrete No Topping 8'-0" x 24" Double Tee

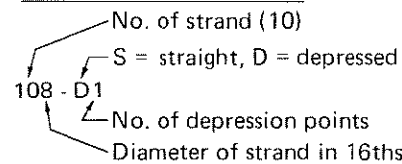
| Strand Pattern | Span, ft | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 | |
| 48-S | 89* | 74* | 61* | 51* | 41* | 34* | 27* | | | | | | | | | | | | | | | | | |
| 68-S | | | 98* | 84* | 71* | 61* | 51* | 43* | 36* | 30* | 24* | | | | | | | | | | | | | |
| 88-S | | | | | 96* | 83* | 72* | 62* | 53* | 46* | 39* | 33* | 28* | | | | | | | | | | | |
| 68-D1 | | | | | 100* | 86* | 75* | 65* | 56* | 48* | 41* | 35* | 30* | 25* | | | | | | | | | | |
| 88-D1 | | | | | | | 109* | 96* | 85* | 75* | 66* | 58* | 51* | 44* | 39* | 33* | 29* | 24* | | | | | | |
| 108-D1 | | | | | | | | | | 98* | 87* | 78* | 69* | 62* | 55* | 48* | 43* | 38* | 33* | 29 | | | | |
| 128-D1 | | | | | | | | | | | | | | 78* | 70* | 63* | 56* | 50 | 44 | 39 | 34 | 29 | | |
| 148-D1 | | | | | | | | | | | | | | | | | | | 54 | 48 | 43 | 37 | 33 | |
| Dead Load | f_t | 209 | 236 | 265 | 295 | 327 | 360 | 395 | 432 | 471 | 511 | 553 | 596 | 641 | 688 | 736 | 786 | 837 | 890 | 945 | 1002 | 1060 | 1119 | 1181 |
| | f_b | -524 | -591 | -663 | -739 | -819 | -903 | -991 | -1083 | -1179 | -1280 | -1384 | -1493 | -1605 | -1722 | -1843 | -1968 | -2097 | -2230 | -2367 | -2509 | -2654 | -2804 | -2957 |
| | a | 0.131 | 0.167 | 0.210 | 0.260 | 0.320 | 0.389 | 0.468 | 0.559 | 0.663 | 0.780 | 0.913 | 1.062 | 1.228 | 1.413 | 1.618 | 1.845 | 2.095 | 2.369 | 2.670 | 2.998 | 3.356 | 3.744 | 4.166 |
| 100 plf Live Load | f_t | 50 | 56 | 63 | 70 | 78 | 86 | 94 | 103 | 112 | 122 | 132 | 142 | 153 | 164 | 176 | 188 | 200 | 213 | 226 | 239 | 253 | 268 | 282 |
| | f_b | -125 | -141 | -158 | -177 | -196 | -216 | -237 | -259 | -282 | -306 | -331 | -357 | -384 | -412 | -441 | -471 | -502 | -533 | -566 | -600 | -635 | -671 | -708 |
| | a | 0.026 | 0.033 | 0.042 | 0.052 | 0.064 | 0.078 | 0.094 | 0.112 | 0.133 | 0.156 | 0.183 | 0.213 | 0.246 | 0.283 | 0.324 | 0.370 | 0.420 | 0.475 | 0.535 | 0.601 | 0.672 | 0.750 | 0.834 |

*Capacity governed by ultimate strength Values below heavy line require release strengths higher than 3500 psi $f'_c = 5000$ psi $f_{pu} = 270,000$ psi

Notation

- f_t = top fiber stress, psi (after assumed 22% loss)
- f_b = bottom fiber stress, psi (after assumed 22% loss)
- a = center deflection, in.
- $0.001 l^2 \alpha$ = initial center camber, in. (after assumed 10% loss)
- l = span (ft)
- M_u = ult. moment capacity, in.-kips

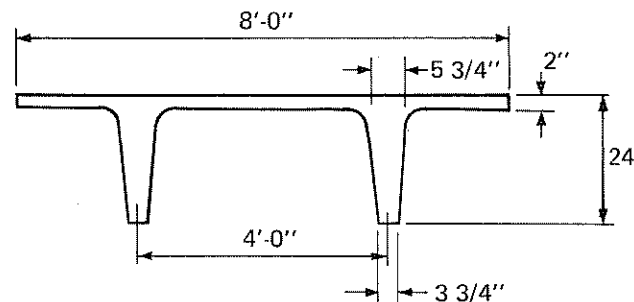
Strand Pattern Designation



Section Properties

- A = 401 in.²
- I = 20,985 in.⁴
- y_b = 17.15 in.
- y_t = 6.85 in.
- Z_b = 1224 in.³
- Z_t = 3064 in.³
- wt = 418 plf
- 52 psf

| Strand Pattern | Eccentricity in. | | Prestress alone | | | | | M_u |
|----------------|------------------|-------|-----------------|-------|--------|-------|----------|-------|
| | | | end | | center | | α | |
| | end | ctr | f_t | f_b | f_t | f_b | | |
| 48-S | 12.15 | 12.15 | -132 | 1121 | -132 | 1121 | 0.303 | 2772 |
| 68-S | 10.48 | 10.48 | -125 | 1497 | -125 | 1497 | 0.392 | 3745 |
| 88-S | 9.15 | 9.15 | -89 | 1800 | -89 | 1800 | 0.449 | 4544 |
| 68-D1 | 10.48 | 14.65 | -125 | 1497 | -309 | 1959 | 0.496 | 4675 |
| 88-D1 | 9.15 | 14.40 | -89 | 1800 | -398 | 2575 | 0.630 | 6034 |
| 108-D1 | 6.75 | 14.15 | 65 | 1807 | -479 | 3172 | 0.728 | 7209 |
| 128-D1 | 5.15 | 13.90 | 220 | 1815 | -553 | 3752 | 0.821 | 8327 |
| 148-D1 | 3.72 | 13.65 | 404 | 1748 | -619 | 4312 | 0.902 | 9357 |



Normal Weight Concrete
No Topping
8'-0" x 24" Double Tee
8DT 24