

HOUSTON



B-DECKING

SECTION PROPERTIES AND FLEXURAL RESISTANCE (BARE DECK)

1.5WR

| Gage | Design Thickness (inches) | Weight (psf) | F _y (ksi) | S _e + (inch ³) per foot | S _e - (inch ³) per foot | ASD (Ω = 1.67) | | I _d + (inch ⁴) per ft. | I _d - (inch ⁴) per ft. |
|-----------|---------------------------|--------------|----------------------|--|--|-------------------------------------|---------------------------------------|---|---|
| | | | | | | M _p /Ω (inch-lbs per ft) | M _n /Ω (inch-lbs per foot) | | |
| 22 | 0.0295 | 1.6 | 60 | 0.163 | 0.173 | 5849 | 6217 | 0.150 | 0.168 |
| 20 | 0.0358 | 2.0 | 60 | 0.215 | 0.215 | 7710 | 8030 | 0.187 | 0.209 |
| 18 | 0.0474 | 2.6 | 60 | 0.311 | 0.311 | 11174 | 11521 | 0.256 | 0.284 |
| 16 | 0.0598 | 3.0 | 60 | 0.396 | 0.396 | 14228 | 14599 | 0.337 | 0.357 |

NOTE

ALL SECTION PROPERTIES AND ASD FLEXURAL STRENGTHS ARE CALCULATED IN ACCORDANCE WITH ANSI/SDI RD-2017, AISI S100-2012 AND AISI S100-2016

SHEAR AND WEB CRIPPLING (BARE DECK) (60 KSI)

1.5WR

| Gage | V _n /Ω (lbs/ft) | Web Crippling (R _n /Ω), lbs/ft One Flange Loading End Bearing | | | Web Crippling (R _n /Ω), lbs/ft One Flange Loading Interior Bearing | | |
|-----------|----------------------------|--|------|------|---|------|------|
| | | 1-1/2" | 2" | 3" | 1-1/2" | 2" | 3" |
| | | 22 | 3537 | 951 | 1045 | 1203 | 1416 |
| 20 | 4266 | 1356 | 1486 | 1703 | 2047 | 2213 | 2492 |
| 18 | 5586 | 2265 | 2470 | 2813 | 3484 | 3748 | 4190 |
| 16 | 6963 | 3463 | 3761 | 4260 | 5404 | 5789 | 6434 |

NOTE

ALL SECTION PROPERTIES AND ASD FLEXURAL STRENGTHS ARE CALCULATED IN ACCORDANCE WITH ANSI/SDI RD-2017, AISI S100-2012 AND AISI S100-2016

1.5WR (60 KSI) ASD UNIFORM DOWNWARD LOADS

1.5WR Deck (Bare Deck – Roof)

| Span | Gage | 5'-0" | 5'-6" | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-6" | 10'-0" |
|---------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Single | 22 | 156 | 129 | 108 | 92 | 80 | 69 | 61 | 54 | 48 | 43 | 39 |
| | 20 | 206 | 170 | 143 | 122 | 105 | 91 | 80 | 71 | 63 | 57 | 51 |
| | 18 | 298 | 246 | 207 | 176 | 152 | 132 | 116 | 103 | 92 | 83 | 74 |
| | 16 | 379 | 314 | 263 | 224 | 194 | 169 | 148 | 131 | 117 | 105 | 95 |
| Double | 22 | 166 | 137 | 115 | 98 | 85 | 74 | 65 | 57 | 51 | 46 | 41 |
| | 20 | 214 | 177 | 149 | 127 | 109 | 95 | 84 | 74 | 66 | 59 | 54 |
| | 18 | 307 | 254 | 213 | 182 | 157 | 137 | 120 | 106 | 95 | 85 | 77 |
| | 16 | 389 | 322 | 270 | 230 | 199 | 173 | 152 | 135 | 120 | 108 | 97 |
| Triple | 22 | 207 | 171 | 144 | 123 | 106 | 92 | 81 | 72 | 64 | 57 | 52 |
| | 20 | 268 | 221 | 186 | 158 | 137 | 119 | 105 | 93 | 83 | 74 | 67 |
| | 18 | 384 | 317 | 267 | 227 | 196 | 171 | 150 | 133 | 119 | 106 | 96 |
| | 16 | 487 | 402 | 338 | 288 | 248 | 216 | 190 | 168 | 150 | 135 | 122 |

1.5WR (60 ksi) ASD UNIFORM UPWARD LOADS

1.5WR (60 ksi)

| Span | Gage | 5'-0" | 5'-6" | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-6" | 10'-0" |
|---------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Single | 22 | 166 | 137 | 115 | 98 | 85 | 74 | 65 | 57 | 51 | 46 | 41 |
| | 20 | 214 | 177 | 149 | 127 | 109 | 95 | 84 | 74 | 66 | 59 | 54 |
| | 18 | 307 | 254 | 213 | 182 | 157 | 137 | 120 | 106 | 95 | 85 | 77 |
| | 16 | 389 | 322 | 270 | 230 | 199 | 173 | 152 | 135 | 120 | 108 | 97 |
| Double | 22 | 156 | 129 | 108 | 92 | 80 | 69 | 61 | 54 | 48 | 43 | 39 |
| | 20 | 206 | 170 | 143 | 122 | 105 | 91 | 80 | 71 | 63 | 57 | 51 |
| | 18 | 298 | 246 | 207 | 176 | 152 | 132 | 116 | 103 | 92 | 83 | 74 |
| | 16 | 379 | 314 | 263 | 224 | 194 | 169 | 148 | 131 | 117 | 105 | 95 |
| Triple | 22 | 195 | 161 | 135 | 115 | 99 | 87 | 76 | 67 | 60 | 54 | 49 |
| | 20 | 257 | 212 | 178 | 152 | 131 | 114 | 100 | 89 | 79 | 71 | 64 |
| | 18 | 372 | 308 | 259 | 220 | 190 | 166 | 145 | 129 | 115 | 103 | 93 |
| | 16 | 474 | 392 | 329 | 281 | 242 | 211 | 185 | 164 | 146 | 131 | 119 |

- ALL SECTION PROPERTIES AND ASD ($\Omega = 1.67$) UNIFORM LOADS ARE CALCULATED IN ACCORDANCE WITH ANSI/SDI RD-2017, AISI S100-2012 AND AISI S100-2016.
- LOADS SHOWN IN TABLES ARE UNIFORMLY DISTRIBUTED SUPERIMPOSED LOADS IN PSF. SPAN LENGTH ASSUMES CENTER-TO-CENTER SPACING OF SUPPORTS. TABULATED LOADS SHALL NOT INCREASE BY ASSUMING CLEAR SPAN DIMENSIONS.
- BENDING MOMENT FORMULAE USED FOR FLEXURAL STRESS LIMITATIONS ARE:

SIMPLE AND TWO SPAN
$$M = \frac{w\ell^2}{8}$$

THREE SPAN OR MORE
$$M = \frac{w\ell^2}{10}$$

- WEB CRIPPLING AND SHEAR HAVE NOT BEEN ACCOUNTED FOR IN THESE TABLES. REQUIRE BEARING SHOULD BE DETERMINED BASED ON SPECIFIC SPAN CONDITIONS.

UNIFORM SERVICE LOAD THAT CAUSES L/240 DEFLECTION (PSF)

1.5WR (60 ksi)

| Span | Gage | 5'-0" | 5'-6" | 6'-0" | 6'-6" | 7'-0" | 7'-6" | 8'-0" | 8'-6" | 9'-0" | 9'-6" | 10'-0" |
|---------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Single | 22 | 79 | 59 | 46 | 36 | 29 | 23 | 19 | 16 | 14 | 11 | 10 |
| | 20 | 98 | 74 | 57 | 45 | 36 | 29 | 24 | 20 | 17 | 14 | 12 |
| | 18 | 134 | 101 | 78 | 61 | 49 | 40 | 33 | 27 | 23 | 20 | 17 |
| | 16 | 177 | 133 | 102 | 80 | 64 | 52 | 43 | 36 | 30 | 26 | 22 |
| Double | 22 | 190 | 143 | 110 | 86 | 69 | 56 | 46 | 39 | 33 | 28 | 24 |
| | 20 | 236 | 177 | 137 | 107 | 86 | 70 | 58 | 48 | 40 | 34 | 30 |
| | 18 | 323 | 243 | 187 | 147 | 118 | 96 | 79 | 66 | 55 | 47 | 40 |
| | 16 | 426 | 320 | 246 | 194 | 155 | 126 | 104 | 87 | 73 | 62 | 53 |
| Triple | 22 | 148 | 112 | 86 | 68 | 54 | 44 | 36 | 30 | 25 | 22 | 19 |
| | 20 | 185 | 139 | 107 | 84 | 67 | 55 | 45 | 38 | 32 | 27 | 23 |
| | 18 | 253 | 190 | 146 | 115 | 92 | 75 | 62 | 51 | 43 | 37 | 32 |
| | 16 | 333 | 250 | 193 | 152 | 121 | 99 | 81 | 68 | 57 | 49 | 42 |

Note

FOR LOADS THAT CAUSE L/120 DEFLECTION, MULTIPLY BY 2.0. FOR LOADS THAT CAUSE L/180 DEFLECTION, MULTIPLY BY 1.5. FOR LOADS THAT CAUSE L/360 DEFLECTION, MULTIPLY BY 0.667.

1.5WR (60 KSI) ROOF DECK CONSTRUCTION SPANS (ANSI/SDI RD-2017 SECTION 2.4.A.3 AND 2.4.A.4)

1.5WR Deck (Bare Deck – Roof)

| Span | Gage | ASD Span | ASD Cantilever Span |
|-------------------------|-----------|----------|---------------------|
| Single | 22 | 9'-09" | 2'-07" |
| | 20 | 12'-10" | 3'-04" |
| | 18 | 18'-07" | 4'-08" |
| | 16 | 23'-09" | 5'-11" |
| Double or Triple | 22 | 12'-00" | |
| | 20 | 15'-10" | |
| | 18 | 22'-11" | |
| | 16 | 29'-02" | |

NOTE

1. ALL CONSTRUCTION LOAD SPANS ARE CALCULATED USING A 200 POUND SERVICE LOAD ON A 1 FOOT WIDTH OF DECK, IN ACCORDANCE WITH ANSI/SDI RD-2017.
2. ALL CANTILEVER CONSTRUCTION LOAD SPANS ARE CALCULATED USING A 200 POUND SERVICE LOAD ON A 1 FOOT WIDTH OF DECK AND A 10 PSF UNIFORM DISTRIBUTED LOAD, IN ACCORDANCE WITH ANSI/SDI RD-2017.