

N614

Restrained Beam

Floor Beams - All Fluted Deck

Normal Weight Concrete

CAFCO® SprayFilm® WB 3 and WB 4 & ISOLATEK® Type WB 3 and WB 4

| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|-------|------|--------|------------|--------|--------|
| W44 x 335 | 2.52 | W1120 x 498 | 148.7 | 53.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 290 | 2.20 | 432 | 129.8 | 60.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 262 | 2.00 | 390 | 118.0 | 67.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 230 | 1.77 | 342 | 104.4 | 75.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| W40 x 593 | 4.56 | W1000 x 883 | 269.0 | 29.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 503 | 3.93 | 748 | 231.9 | 34.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 431 | 3.42 | 641 | 201.8 | 39.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 397 | 3.15 | 591 | 185.9 | 42.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 392 | 3.38 | 583 | 199.4 | 39.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 372 | 2.98 | 554 | 175.8 | 45.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 362 | 2.90 | 539 | 171.1 | 46.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 331 | 2.90 | 493 | 171.1 | 46.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 327 | 2.89 | 487 | 170.5 | 46.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 324 | 2.61 | 482 | 154.0 | 51.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 297 | 2.41 | 442 | 142.2 | 55.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 278 | 2.48 | 414 | 146.3 | 54.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 277 | 2.25 | 412 | 132.8 | 59.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 264 | 2.36 | 393 | 139.2 | 56.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 249 | 2.02 | 371 | 119.2 | 66.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 235 | 2.10 | 350 | 123.9 | 63.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 215 | 1.76 | 321 | 103.8 | 76.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 211 | 1.90 | 314 | 112.1 | 70.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 199 | 1.64 | 296 | 96.8 | 81.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 183 | 1.66 | 272 | 97.9 | 80.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 167 | 1.53 | 249 | 90.3 | 87.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 149 | 1.37 | 222 | 80.8 | 97.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| W36 x 798 | 6.09 | W920 x 1188 | 359.3 | 22.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 650 | 5.08 | 967 | 299.7 | 26.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 527 | 4.22 | 784 | 249.0 | 31.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 439 | 3.57 | 653 | 210.6 | 37.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 393 | 3.25 | 585 | 191.8 | 41.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 359 | 2.97 | 534 | 175.2 | 45.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 328 | 2.73 | 488 | 161.1 | 49.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 300 | 2.50 | 446 | 147.5 | 53.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 280 | 2.35 | 417 | 138.7 | 57.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 260 | 2.18 | 387 | 128.6 | 61.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 256 | 2.37 | 381 | 139.8 | 56.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 245 | 2.08 | 365 | 122.7 | 64.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 232 | 2.15 | 345 | 126.9 | 62.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 230 | 1.95 | 342 | 115.1 | 68.7 | 0.039 | 0.053 | 0.071 | 0.158 |

Note: All thicknesses are expressed in inches. To convert to Mils, multiply by 1000. To convert to mm, multiply by 25.4

N614

Restrained Beam

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Normal Weight Concrete

CAFCE® SprayFilm® WB 3 and WB 4 & ISOLATEK® Type WB 3 and WB 4

| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|-------|-------|--------|------------|--------|--------|
| W36 x 210 | 1.96 | W920 x 313 | 115.6 | 68.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 194 | 1.81 | 289 | 106.8 | 74.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 182 | 1.72 | 271 | 101.5 | 77.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 170 | 1.60 | 253 | 94.4 | 83.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 160 | 1.51 | 238 | 89.1 | 88.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 150 | 1.43 | 223 | 84.4 | 93.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 135 | 1.29 | 201 | 76.1 | 103.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| W33 x 387 | 3.31 | W840 x 576 | 195.3 | 40.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 354 | 3.05 | 527 | 180.0 | 43.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 318 | 2.77 | 473 | 163.4 | 48.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 291 | 2.55 | 433 | 150.5 | 52.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 263 | 2.33 | 392 | 137.5 | 57.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 241 | 2.13 | 359 | 125.7 | 62.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 221 | 1.97 | 329 | 116.2 | 68.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 201 | 1.79 | 299 | 105.6 | 74.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 169 | 1.70 | 251 | 100.3 | 78.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 152 | 1.53 | 226 | 90.3 | 87.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 141 | 1.43 | 210 | 84.4 | 93.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 130 | 1.32 | 193 | 77.9 | 101.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 118 | 1.21 | 176 | 71.4 | 110.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| W30 x 391 | 3.59 | W760 x 582 | 211.8 | 37.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 357 | 3.31 | 531 | 195.3 | 40.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 326 | 3.05 | 484 | 180.0 | 43.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 292 | 2.73 | 434 | 161.1 | 49.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 261 | 2.46 | 389 | 145.1 | 54.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 235 | 2.24 | 350 | 132.2 | 59.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 211 | 2.01 | 314 | 118.6 | 66.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 191 | 1.85 | 284 | 109.2 | 72.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 173 | 1.66 | 257 | 97.9 | 80.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 148 | 1.64 | 220 | 96.8 | 81.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 132 | 1.47 | 196 | 86.7 | 91.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 124 | 1.39 | 185 | 82.0 | 96.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 116 | 1.30 | 173 | 76.7 | 103.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 108 | 1.21 | 161 | 71.4 | 110.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 99 | 1.12 | 147 | 66.1 | 119.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 90 | 1.02 | 134 | 60.2 | 131.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| W27 x 539 | 5.08 | W690 x 802 | 299.7 | 26.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 368 | 3.64 | 548 | 214.8 | 36.8 | 0.039 | 0.053 | 0.071 | 0.158 |

Note: All thicknesses are expressed in inches. To convert to Mils, multiply by 1000. To convert to mm, multiply by 25.4

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| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|-------|-------|--------|------------|--------|--------|
| W27 x 336 | 3.36 | W690 x 500 | 198.2 | 39.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 307 | 3.11 | 457 | 183.5 | 43.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 281 | 2.86 | 418 | 168.7 | 46.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 258 | 2.64 | 384 | 155.8 | 50.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 235 | 2.43 | 350 | 143.4 | 55.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 217 | 2.26 | 323 | 133.3 | 59.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 194 | 2.03 | 289 | 119.8 | 66.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 178 | 1.87 | 265 | 110.3 | 71.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 161 | 1.70 | 240 | 100.3 | 78.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 146 | 1.55 | 217 | 91.5 | 86.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 129 | 1.56 | 192 | 92.0 | 85.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 114 | 1.39 | 170 | 82.0 | 96.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 102 | 1.24 | 152 | 73.2 | 108.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 94 | 1.15 | 140 | 67.9 | 116.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 84 | 1.03 | 125 | 60.8 | 130.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| W24 x 370 | 3.98 | W610 x 551 | 234.8 | 33.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 335 | 3.66 | 498 | 215.9 | 36.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 306 | 3.37 | 455 | 198.8 | 39.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 279 | 3.11 | 415 | 183.5 | 43.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 250 | 2.81 | 372 | 165.8 | 47.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 229 | 2.60 | 341 | 153.4 | 51.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 207 | 2.36 | 307 | 139.2 | 56.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 192 | 2.20 | 285 | 129.8 | 60.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 176 | 2.03 | 262 | 119.8 | 66.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 162 | 1.88 | 241 | 110.9 | 71.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 146 | 1.70 | 217 | 100.3 | 78.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 131 | 1.54 | 195 | 90.9 | 87.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 117 | 1.38 | 174 | 81.4 | 97.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 104 | 1.24 | 155 | 73.2 | 108.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 103 | 1.40 | 153 | 82.6 | 95.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 94 | 1.28 | 140 | 75.5 | 104.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 84 | 1.15 | 125 | 67.9 | 116.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 76 | 1.05 | 113 | 62.0 | 127.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 68 | 0.94 | 101 | 55.5 | 142.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 62 | 0.93 | 92 | 54.9 | 144.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 55 | 0.82 | 82 | 48.4 | 163.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| W21 x 201 | 2.50 | W530 x 300 | 147.5 | 53.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 182 | 2.28 | 272 | 134.5 | 58.8 | 0.039 | 0.053 | 0.071 | 0.158 |

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| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|-------|-------|--------|------------|--------|--------|
| W21 x 166 | 2.09 | W530 x 248 | 123.3 | 64.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 147 | 1.87 | 219 | 110.3 | 71.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 132 | 1.68 | 196 | 99.1 | 79.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 122 | 1.57 | 182 | 92.6 | 85.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 111 | 1.43 | 165 | 84.4 | 93.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 101 | 1.30 | 150 | 76.7 | 103.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 93 | 1.40 | 138 | 82.6 | 95.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 83 | 1.26 | 123 | 74.3 | 106.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 73 | 1.11 | 109 | 65.5 | 120.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 68 | 1.04 | 101 | 61.4 | 128.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 62 | 0.95 | 92 | 56.1 | 141.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 57 | 0.95 | 85 | 56.1 | 141.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 55 | 0.85 | 82 | 50.2 | 157.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 50 | 0.83 | 74 | 49.0 | 161.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 48 | 0.75 | 72 | 44.3 | 178.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 44 | 0.74 | 66 | 43.7 | 181.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| W18 x 175 | 2.46 | W460 x 260 | 145.1 | 54.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 158 | 2.24 | 235 | 132.2 | 59.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 143 | 2.05 | 213 | 121.0 | 65.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 130 | 1.88 | 193 | 110.9 | 71.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 119 | 1.72 | 177 | 101.5 | 77.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 106 | 1.55 | 158 | 91.5 | 86.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 97 | 1.42 | 144 | 83.8 | 94.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 86 | 1.27 | 128 | 74.9 | 105.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 76 | 1.13 | 113 | 66.7 | 118.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 71 | 1.22 | 106 | 72.0 | 109.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 65 | 1.13 | 97 | 66.7 | 118.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 60 | 1.04 | 89 | 61.4 | 128.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 55 | 0.96 | 82 | 56.6 | 139.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 50 | 0.88 | 74 | 51.9 | 152.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 46 | 0.87 | 68 | 51.3 | 154.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 40 | 0.76 | 60 | 44.8 | 176.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 35 | 0.67 | 52 | 39.5 | 200.0 | 0.039 | 0.073 | 0.101 | NR |
| W16 x 100 | 1.59 | W410 x 149 | 93.8 | 84.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 89 | 1.43 | 132 | 84.4 | 93.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 77 | 1.25 | 114 | 73.8 | 107.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 67 | 1.09 | 100 | 64.3 | 122.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 57 | 1.09 | 85 | 64.3 | 122.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 50 | 0.96 | 74 | 56.6 | 139.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 45 | 0.87 | 67 | 51.3 | 154.0 | 0.039 | 0.053 | 0.071 | 0.158 |

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| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|-------|-------|--------|------------|--------|--------|
| W16 x 40 | 0.78 | W410 x 60 | 46.0 | 171.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 36 | 0.70 | 53 | 41.3 | 191.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 31 | 0.66 | 46 | 38.9 | 203.0 | 0.039 | 0.073 | 0.101 | NR |
| 26 | 0.55 | 39 | 32.5 | 243.6 | 0.073 | 0.073 | 0.101 | NR |
| W14 x 808 | 8.75 | W360 x 1202 | 516.3 | 15.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 730 | 8.08 | 1086 | 476.7 | 16.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 665 | 7.49 | 990 | 441.9 | 17.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 605 | 6.96 | 900 | 410.6 | 19.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 550 | 6.43 | 818 | 379.4 | 20.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 500 | 5.95 | 744 | 351.1 | 22.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 455 | 5.53 | 677 | 326.3 | 24.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 426 | 5.21 | 634 | 307.4 | 25.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 398 | 4.93 | 592 | 290.9 | 27.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 370 | 4.63 | 551 | 273.2 | 28.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 342 | 4.32 | 509 | 254.9 | 31.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 311 | 3.98 | 463 | 234.8 | 33.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 283 | 3.66 | 421 | 215.9 | 36.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 257 | 3.36 | 382 | 198.2 | 39.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 233 | 3.08 | 347 | 181.7 | 43.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 211 | 2.81 | 314 | 165.8 | 47.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 193 | 2.60 | 287 | 153.4 | 51.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 176 | 2.38 | 262 | 140.4 | 56.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 159 | 2.16 | 237 | 127.4 | 62.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 145 | 1.99 | 216 | 117.4 | 67.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 132 | 1.89 | 196 | 111.5 | 70.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 120 | 1.71 | 179 | 100.9 | 78.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 109 | 1.57 | 162 | 92.6 | 85.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 99 | 1.43 | 147 | 84.4 | 93.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 90 | 1.31 | 134 | 77.3 | 102.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 82 | 1.45 | 122 | 85.6 | 92.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 74 | 1.32 | 110 | 77.9 | 101.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 68 | 1.22 | 101 | 72.0 | 109.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 61 | 1.10 | 91 | 64.9 | 121.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 53 | 1.06 | 79 | 62.5 | 126.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 48 | 0.97 | 72 | 57.2 | 138.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 43 | 0.87 | 64 | 51.3 | 154.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 38 | 0.80 | 57 | 47.2 | 167.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 34 | 0.72 | 51 | 42.5 | 186.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 30 | 0.64 | 45 | 37.8 | 209.3 | 0.039 | 0.073 | 0.101 | NR |
| 26 | 0.62 | 39 | 36.6 | 216.1 | 0.039 | 0.073 | 0.101 | NR |
| 22 | 0.53 | 33 | 31.3 | 252.8 | 0.073 | 0.073 | 0.101 | NR |

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|-------------|------|---------------|-------|-------|--------|------------|--------|--------|
| W12 x 336 | 4.85 | W310 x 500 | 286.2 | 27.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 305 | 4.49 | 454 | 264.9 | 29.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 279 | 4.19 | 415 | 247.2 | 32.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 252 | 3.84 | 375 | 226.6 | 34.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 230 | 3.55 | 342 | 209.5 | 37.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 210 | 3.27 | 313 | 192.9 | 41.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 190 | 3.00 | 283 | 177.0 | 44.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 170 | 2.72 | 253 | 160.5 | 49.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 152 | 2.45 | 225 | 144.6 | 54.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 136 | 2.23 | 202 | 131.6 | 60.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 120 | 1.99 | 179 | 117.4 | 67.3 | 0.039 | 0.053 | 0.071 | 0.158 |
| 106 | 1.77 | 158 | 104.4 | 75.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 96 | 1.61 | 143 | 95.0 | 83.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 87 | 1.47 | 129 | 86.7 | 91.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 79 | 1.34 | 117 | 79.1 | 100.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 72 | 1.23 | 107 | 72.6 | 108.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 65 | 1.11 | 97 | 65.5 | 120.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 58 | 1.10 | 86 | 64.9 | 121.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 53 | 1.02 | 79 | 60.2 | 131.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 50 | 1.06 | 74 | 62.5 | 126.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 45 | 0.97 | 67 | 57.2 | 138.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 40 | 0.86 | 60 | 50.7 | 155.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 35 | 0.81 | 52 | 47.8 | 165.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 30 | 0.69 | 45 | 40.7 | 194.2 | 0.039 | 0.073 | 0.101 | NR |
| 26 | 0.61 | 39 | 36.0 | 219.6 | 0.039 | 0.073 | 0.101 | NR |
| 22 | 0.62 | 33 | 36.6 | 216.1 | 0.039 | 0.073 | 0.101 | NR |
| 19 | 0.54 | 28 | 31.9 | 248.1 | 0.073 | 0.073 | 0.101 | NR |
| 16 | 0.45 | 24 | 26.6 | 297.7 | NR | NR | NR | NR |
| 14 | 0.40 | 21 | 23.6 | 335.0 | NR | NR | NR | NR |
| | | | | | | | | |
| W10 x 112 | 2.17 | W250 x 167 | 128.0 | 61.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 100 | 1.97 | 149 | 116.2 | 68.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 88 | 1.74 | 131 | 102.7 | 77.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 77 | 1.54 | 115 | 90.9 | 87.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 68 | 1.38 | 101 | 81.4 | 97.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 60 | 1.22 | 89 | 72.0 | 109.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 54 | 1.11 | 80 | 65.5 | 120.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 49 | 1.01 | 73 | 59.6 | 132.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 45 | 1.06 | 67 | 62.5 | 126.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 39 | 0.92 | 58 | 54.3 | 145.6 | 0.039 | 0.053 | 0.071 | 0.158 |
| 33 | 0.78 | 49 | 46.0 | 171.8 | 0.039 | 0.053 | 0.071 | 0.158 |
| 30 | 0.80 | 45 | 47.2 | 167.5 | 0.039 | 0.053 | 0.071 | 0.158 |

Note: All thicknesses are expressed in inches. To convert to Mils, multiply by 1000. To convert to mm, multiply by 25.4

N614

Restrained Beam

Floor Beams - All Fluted Deck

Normal Weight Concrete

CAFCO® SprayFilm® WB 3 and WB 4 & ISOLATEK® Type WB 3 and WB 4

| ASTM Desig. | W/D | Metric Desig. | M/D | Hp/A | 1-Hour | 1-1/2 Hour | 2-Hour | 3-Hour |
|-------------|------|---------------|------|-------|--------|------------|--------|--------|
| W10 x 26 | 0.70 | W10 x 39 | 41.3 | 191.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 22 | 0.60 | 33 | 35.4 | 223.3 | 0.039 | 0.073 | 0.101 | NR |
| 19 | 0.60 | 28 | 35.4 | 223.3 | 0.039 | 0.073 | 0.101 | NR |
| 17 | 0.54 | 25 | 31.9 | 248.1 | 0.073 | 0.073 | 0.101 | NR |
| 15 | 0.48 | 22 | 28.3 | 279.1 | NR | NR | NR | NR |
| 12 | 0.39 | 18 | 23.0 | 343.5 | NR | NR | NR | NR |
| W8 x 67 | 1.65 | W200 x 100 | 97.4 | 81.2 | 0.039 | 0.053 | 0.071 | 0.158 |
| 58 | 1.44 | 86 | 85.0 | 93.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 48 | 1.21 | 71 | 71.4 | 110.7 | 0.039 | 0.053 | 0.071 | 0.158 |
| 40 | 1.03 | 59 | 60.8 | 130.1 | 0.039 | 0.053 | 0.071 | 0.158 |
| 35 | 0.90 | 52 | 53.1 | 148.9 | 0.039 | 0.053 | 0.071 | 0.158 |
| 31 | 0.80 | 46 | 47.2 | 167.5 | 0.039 | 0.053 | 0.071 | 0.158 |
| 28 | 0.81 | 42 | 47.8 | 165.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 24 | 0.70 | 36 | 41.3 | 191.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 21 | 0.67 | 31 | 39.5 | 200.0 | 0.039 | 0.073 | 0.101 | NR |
| 18 | 0.58 | 27 | 34.2 | 231.0 | 0.039 | 0.073 | 0.101 | NR |
| 15 | 0.55 | 22 | 32.5 | 243.6 | 0.073 | 0.073 | 0.101 | NR |
| 13 | 0.48 | 19 | 28.3 | 279.1 | NR | NR | NR | NR |
| 10 | 0.37 | 15 | 21.8 | 362.1 | NR | NR | NR | NR |
| W6 x 25 | 0.83 | W150 x 37 | 49.0 | 161.4 | 0.039 | 0.053 | 0.071 | 0.158 |
| 20 | 0.67 | 30 | 39.5 | 200.0 | 0.039 | 0.073 | 0.101 | NR |
| 16 | 0.68 | 24 | 40.1 | 197.0 | 0.039 | 0.073 | 0.101 | NR |
| 15 | 0.52 | 22 | 30.7 | 257.7 | 0.073 | 0.073 | 0.101 | NR |
| 12 | 0.52 | 18 | 30.7 | 257.7 | 0.073 | 0.073 | 0.101 | NR |
| 9 | 0.39 | 14 | 23.0 | 343.5 | NR | NR | NR | NR |
| 8.5 | 0.37 | 13 | 21.8 | 362.1 | NR | NR | NR | NR |
| W5 x 19 | 0.77 | W130 x 28 | 45.4 | 174.0 | 0.039 | 0.053 | 0.071 | 0.158 |
| 16 | 0.66 | 24 | 38.9 | 203.0 | 0.039 | 0.073 | 0.101 | NR |
| W4 x 13 | 0.67 | W100 x 19 | 39.5 | 200.0 | 0.039 | 0.073 | 0.101 | NR |

Note: All thicknesses are expressed in inches. To convert to Mils, multiply by 1000. To convert to mm, multiply by 25.4