

PWI Joist Floor Loads

ALLOWABLE UNIFORM FLOOR LOAD (PLF)–SIMPLE-SPAN JOIST

| Joist Span (ft) | PWI 20 | | | | | | PWI 47 | | | | | | PWI 70 | | | | | | | | | | | |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 9½" | | 11½" | | 14" | | 9½" | | 11½" | | 14" | | 16" | | 11½" | | 14" | | 16" | | 18" | | 20" | |
| | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% |
| 6 | - | 305 | - | 305 | - | 305 | - | 292 | - | 295 | - | 300 | - | 303 | - | 387 | - | 387 | - | 387 | - | 387 | - | 387 |
| 7 | - | 261 | - | 261 | - | 261 | - | 250 | - | 253 | - | 257 | - | 260 | - | 331 | - | 331 | - | 331 | - | 331 | - | 331 |
| 8 | - | 229 | - | 229 | - | 229 | - | 219 | - | 221 | - | 225 | - | 228 | - | 290 | - | 290 | - | 290 | - | 290 | - | 290 |
| 9 | 198 | 203 | - | 203 | - | 203 | - | 194 | - | 197 | - | 200 | - | 202 | - | 258 | - | 258 | - | 258 | - | 258 | - | 258 |
| 10 | 149 | 183 | - | 183 | - | 183 | - | 175 | - | 177 | - | 180 | - | 182 | - | 232 | - | 232 | - | 232 | - | 232 | - | 232 |
| 11 | 115 | 166 | - | 166 | - | 166 | 146 | 159 | - | 161 | - | 164 | - | 165 | - | 211 | - | 211 | - | 211 | - | 211 | - | 211 |
| 12 | 90 | 140 | 148 | 153 | - | 153 | 115 | 146 | - | 148 | - | 150 | - | 152 | - | 193 | - | 193 | - | 193 | - | 193 | - | 193 |
| 13 | 72 | 119 | 119 | 141 | - | 141 | 92 | 135 | - | 136 | - | 138 | - | 140 | - | 178 | - | 178 | - | 178 | - | 178 | - | 178 |
| 14 | 59 | 103 | 97 | 131 | - | 131 | 75 | 125 | 121 | 126 | - | 129 | - | 130 | 149 | 166 | - | 166 | - | 166 | - | 166 | - | 166 |
| 15 | 48 | 90 | 80 | 116 | 114 | 122 | 62 | 117 | 100 | 118 | - | 120 | - | 121 | 124 | 155 | - | 155 | - | 155 | - | 155 | - | 155 |
| 16 | 40 | 79 | 66 | 102 | 96 | 114 | 52 | 103 | 84 | 111 | - | 113 | - | 114 | 104 | 145 | - | 145 | - | 145 | - | 145 | - | 145 |
| 17 | | | 56 | 90 | 81 | 108 | | | 71 | 104 | 101 | 106 | - | 107 | 88 | 136 | 125 | 136 | - | 136 | - | 136 | - | 136 |
| 18 | | | 47 | 81 | 69 | 96 | | | 60 | 98 | 86 | 100 | - | 101 | 75 | 129 | 107 | 129 | - | 129 | - | 129 | - | 129 |
| 19 | | | 41 | 72 | 59 | 86 | | | 52 | 93 | 74 | 95 | - | 96 | 64 | 122 | 92 | 122 | - | 122 | - | 122 | - | 122 |
| 20 | | | 35 | 65 | 51 | 78 | | | 45 | 89 | 64 | 90 | 84 | 91 | 56 | 112 | 80 | 116 | 106 | 116 | - | 116 | - | 116 |
| 21 | | | | | 44 | 71 | | | | | 55 | 86 | 74 | 87 | | | 70 | 110 | 93 | 110 | - | 110 | - | 110 |
| 22 | | | | | 39 | 64 | | | | | 49 | 82 | 65 | 83 | | | 61 | 105 | 82 | 105 | 105 | 105 | - | 105 |
| 23 | | | | | 34 | 59 | | | | | 43 | 78 | 57 | 79 | | | 54 | 101 | 72 | 101 | 93 | 101 | - | 101 |
| 24 | | | | | 30 | 54 | | | | | 38 | 74 | 50 | 76 | | | 48 | 96 | 64 | 97 | 82 | 97 | - | 97 |
| 25 | | | | | | | | | | | | | 45 | 73 | | | | | 57 | 93 | 73 | 93 | 92 | 93 |
| 26 | | | | | | | | | | | | | 40 | 69 | | | | | 51 | 89 | 66 | 89 | 82 | 89 |
| 27 | | | | | | | | | | | | | 36 | 64 | | | | | 46 | 86 | 59 | 86 | 74 | 86 |
| 28 | | | | | | | | | | | | | 32 | 59 | | | | | 41 | 82 | 53 | 83 | 67 | 83 |
| 29 | | | | | | | | | | | | | | | | | | | | | 48 | 80 | 61 | 80 |
| 30 | | | | | | | | | | | | | | | | | | | | | 44 | 77 | 55 | 77 |
| 31 | | | | | | | | | | | | | | | | | | | | | 40 | 75 | 50 | 75 |
| 32 | | | | | | | | | | | | | | | | | | | | | | | 46 | 73 |
| 33 | | | | | | | | | | | | | | | | | | | | | | | 42 | 70 |
| 34 | | | | | | | | | | | | | | | | | | | | | | | 38 | 68 |
| 35 | | | | | | | | | | | | | | | | | | | | | | | 35 | 66 |
| 36 | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

- Table values apply to uniformly loaded floor joists.
- Span is measured to the center of each support.
- The values in the Total columns are based on an L/240 total load deflection limit. Building codes typically require L/360 for live load. Experience has shown that a live load deflection limit of L/480 at 40 psf for residential floors does a better job than L/360 of meeting most performance expectations.
- Table values do not account for stiffness added by glued or nailed sheathing.
- Provide at least 1¾" of bearing length at end supports and 3½" at intermediate supports.
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. floor sheathing, gypsum board ceiling).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing lengths, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

How to Use Floor Load Tables

- Choose a joist spacing and convert the live and total design loads specified in pounds per square foot (psf) to joist loads in pounds per lineal foot (plf).
Joist Spacing [ft] x Design Load [psf] = Joist Load [plf]

JOIST LOAD (PLF)

| Joist Spacing | | Design Load (psf) | | | | | | | | | |
|---------------|------|-------------------|----|----|-----|-----|-----|-----|-----|-----|--|
| Inches | Feet | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |
| 12 | 1 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |
| 16 | 1.33 | 27 | 40 | 53 | 67 | 80 | 93 | 106 | 120 | 133 | |
| 19.2 | 1.6 | 32 | 48 | 64 | 80 | 96 | 112 | 128 | 144 | 160 | |
| 24 | 2 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | |

- Choose a span and scan across the Span row to find a joist size with sufficient Live and Total load capacities. Both requirements must be satisfied. When no value is shown in a Live column, Total load governs.
- Web stiffeners are required at all supports for 22" and 24" joists. See *Web Stiffener Requirements* at pacificwoodtech.com.

PWI Joist Floor Loads

ALLOWABLE UNIFORM FLOOR LOAD (PLF)–SIMPLE-SPAN JOIST

| Joist Span (ft) | PWI 77 | | | | PWI 90 | | | | | | | | | | | | | |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 22" | | 24" | | 11½" | | 14" | | 16" | | 18" | | 20" | | 22" | | 24" | |
| | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% | Live L/480 | Total 100% |
| 6 | - | 649 | - | 649 | - | 467 | - | 467 | - | 467 | - | 467 | - | 467 | - | 800 | - | 800 |
| 7 | - | 556 | - | 556 | - | 400 | - | 400 | - | 400 | - | 400 | - | 400 | - | 686 | - | 686 |
| 8 | - | 487 | - | 487 | - | 350 | - | 350 | - | 350 | - | 350 | - | 350 | - | 600 | - | 600 |
| 9 | - | 432 | - | 432 | - | 311 | - | 311 | - | 311 | - | 311 | - | 311 | - | 533 | - | 533 |
| 10 | - | 389 | - | 389 | - | 280 | - | 280 | - | 280 | - | 280 | - | 280 | - | 480 | - | 480 |
| 11 | - | 354 | - | 354 | - | 255 | - | 255 | - | 255 | - | 255 | - | 255 | - | 436 | - | 436 |
| 12 | - | 324 | - | 324 | - | 233 | - | 233 | - | 233 | - | 233 | - | 233 | - | 400 | - | 400 |
| 13 | - | 299 | - | 299 | - | 215 | - | 215 | - | 215 | - | 215 | - | 215 | - | 369 | - | 369 |
| 14 | - | 278 | - | 278 | - | 200 | - | 200 | - | 200 | - | 200 | - | 200 | - | 343 | - | 343 |
| 15 | - | 259 | - | 259 | 180 | 187 | - | 187 | - | 187 | - | 187 | - | 187 | - | 320 | - | 320 |
| 16 | - | 243 | - | 243 | 152 | 175 | - | 175 | - | 175 | - | 175 | - | 175 | - | 300 | - | 300 |
| 17 | - | 229 | - | 229 | 129 | 165 | - | 165 | - | 165 | - | 165 | - | 165 | - | 282 | - | 282 |
| 18 | - | 216 | - | 216 | 110 | 156 | - | 156 | - | 156 | - | 156 | - | 156 | - | 267 | - | 267 |
| 19 | - | 205 | - | 205 | 95 | 147 | 135 | 147 | - | 147 | - | 147 | - | 147 | - | 253 | - | 253 |
| 20 | - | 195 | - | 195 | 82 | 140 | 117 | 140 | - | 140 | - | 140 | - | 140 | - | 240 | - | 240 |
| 21 | - | 185 | - | 185 | | | 102 | 133 | - | 133 | - | 133 | - | 133 | - | 229 | - | 229 |
| 22 | 166 | 177 | - | 177 | | | 90 | 127 | 119 | 127 | - | 127 | - | 127 | - | 218 | - | 218 |
| 23 | 147 | 169 | - | 169 | | | 79 | 122 | 106 | 122 | - | 122 | - | 122 | 204 | 209 | - | 209 |
| 24 | 130 | 162 | 157 | 162 | | | 71 | 117 | 94 | 117 | - | 117 | - | 117 | 182 | 200 | - | 200 |
| 25 | 116 | 156 | 140 | 156 | | | | | 84 | 112 | 108 | 112 | - | 112 | 163 | 192 | - | 192 |
| 26 | 104 | 148 | 125 | 150 | | | | | 75 | 108 | 96 | 108 | - | 108 | 147 | 185 | 175 | 185 |
| 27 | 94 | 137 | 113 | 144 | | | | | 67 | 104 | 87 | 104 | - | 104 | 132 | 178 | 158 | 178 |
| 28 | 84 | 128 | 102 | 139 | | | | | 61 | 100 | 78 | 100 | 98 | 100 | 119 | 171 | 143 | 171 |
| 29 | 76 | 119 | 92 | 130 | | | | | | | 71 | 97 | 89 | 97 | 108 | 166 | 130 | 166 |
| 30 | 69 | 111 | 84 | 121 | | | | | | | 64 | 93 | 81 | 93 | 99 | 160 | 118 | 160 |
| 31 | 63 | 104 | 76 | 113 | | | | | | | 59 | 90 | 74 | 90 | 90 | 155 | 108 | 155 |
| 32 | 58 | 98 | 70 | 106 | | | | | | | | | 67 | 88 | 82 | 150 | 99 | 150 |
| 33 | 53 | 92 | 64 | 100 | | | | | | | | | 62 | 85 | 75 | 141 | 91 | 145 |
| 34 | 48 | 87 | 59 | 94 | | | | | | | | | 57 | 82 | 69 | 133 | 83 | 141 |
| 35 | 45 | 82 | 54 | 89 | | | | | | | | | 52 | 80 | 64 | 126 | 77 | 137 |
| 36 | 41 | 77 | 50 | 84 | | | | | | | | | | | 59 | 118 | 71 | 129 |
| 37 | 38 | 73 | 46 | 80 | | | | | | | | | | | 54 | 109 | 66 | 122 |
| 38 | 35 | 69 | 42 | 76 | | | | | | | | | | | 50 | 101 | 61 | 116 |
| 39 | | | 39 | 72 | | | | | | | | | | | | | 56 | 110 |
| 40 | | | 37 | 68 | | | | | | | | | | | | | 52 | 105 |
| 41 | | | 34 | 65 | | | | | | | | | | | | | 49 | 98 |
| 42 | | | 32 | 62 | | | | | | | | | | | | | 46 | 91 |

See notes on previous page

PSF TO PLF CONVERSION - LOAD IN POUNDS PER LINEAL FOOT (PLF)

| O.C. Spacing | | Load in Pounds per Square Foot (psf) | | | | | | | | | | | | | |
|--------------|------|--------------------------------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|--|--|
| Inches | Feet | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | | |
| 12 | 1 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | | |
| 16 | 1.33 | 27 | 33 | 40 | 47 | 53 | 60 | 67 | 73 | 80 | 87 | 93 | 100 | | |
| 19.2 | 1.6 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 | 104 | 112 | 120 | | |
| 24 | 2 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | | |

o.c. spacing (ft) x load (psf) = load (plf)