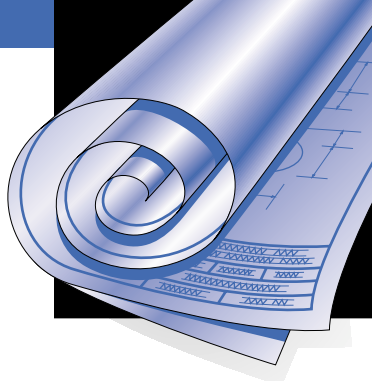

# Load-Span Tables for PS-1 Plywood

*Number Z802K*

*March 1998*

Load-span tables for specific wood structural panel applications are included in several APA publications. Recommended loads for sheathing and flooring applications in these publications directly reflect minimum performance criteria given in Voluntary Product Standard PS 1-95, Voluntary Product Standard PS 2-92 and in APA PRP-108 Performance Standards and Policies for Structural-Use Panels. To qualify for a given Span Rating under these standards, a panel must meet all of the criteria for that rating. As a result, mechanical properties that are characteristic of APA wood structural panels are actually greater than the minimum necessary to pass one criterion.

Because it is sometimes necessary to have engineering design information for PS-1 plywood for conditions not specifically covered in the other APA literature, APA publishes separate design section properties and working stresses for the various grades and thicknesses. These values are listed in APA's Plywood Design Specification (PDS), and are recognized by the model building codes. The uniform loads in the following tables were calculated using these properties and stresses, or resulting section capacities for the various Span Ratings. These loads are recommended when engineering principles are used for design. It is important to remember that structural engineering principles alone do not necessarily take into account other factors, such as moisture and thermal conditions, which may impact design.

The following load-span tables apply to sanded, touch-sanded, and unsanded plywood manufactured in accordance with Voluntary Product Standard PS 1-95, with face grain parallel to supports, and face grain across supports. For each combination of span and thickness (or Span Rating), loads are given for deflections of L/360, L/240 and L/180, and maximum loads controlled by bending and shear capacity. Uniform loads for some applications can be read directly from the tables. In other cases, the values given in the tables should be adjusted for special conditions using the factors listed in the "Table of Adjustment Factors."

Table 1 applies to unsanded plywood and is based on APA RATED SHEATHING (marked PS 1) grade. For touch-sanded grades such as C-D Plugged, C-C Plugged, UNDERLAYMENT and APA RATED STURD-I-FLOOR (marked PS 1), see Table 2. Table 3 applies to sanded grades such as A-D and B-D.

The tables also assume dry conditions, normal duration of load, and untreated plywood with interior glue. For other conditions, the loads should be appropriately adjusted using the factors given. For instance, roof loads based on bending and shear stress may be increased 15% for short duration of snow load. See the examples for proper application of adjustment factors. Further details on plywood stresses and adjustments are given in the PLYWOOD DESIGN SPECIFICATION.

For face grain across supports, and spans of 32" and less, three spans are assumed, and two spans for spans greater than 32". For face grain parallel to supports, tables are based on three spans for spans of 16" and less, and two spans for 24". The tables do not apply directly to plywood having a single span. For one-span conditions, use the span adjustment factors.

Effects of support width have been considered when determining the loads based on shear and deflection. Supports are assumed to be 2x nominal members for spans less than 48", and 4x members for 48" and greater spans. Support-width factors are those established by *APA Laboratory Report 120*.

It is important to note that some plywood applications are not controlled by uniform loads. Residential floors are a good example. They are commonly designed for 40 psf live load. The allowable uniform floor load on plywood applied at maximum span according to APA recommendations is greatly in excess of the typical design loads. This excess does not mean that floor spans for plywood can be increased, but only that there is considerable reserve strength and stiffness for *uniform* loads. Actually, the recommendations for plywood floors are based on performance under concentrated loads, how the floor "feels" to passing foot traffic, and other subjective factors which relate to public acceptance. Always check the maximum floor and roof spans for plywood before making a final plywood selection for these applications.

**A P A**

*The Engineered Wood Association*

**TABLE OF ADJUSTMENT FACTORS**

| | |
|---|---|
| **Duration of Load (Applies to Bending and Shear Only):** | |
| Permanent load (over 10 years) | 0.90 |
| 2 months, as for snow | 1.15 |
| 7 days | 1.25 |
| Wind or earthquake (check local code) | 1.6 or 1.33 |
| Impact | 2.00 |
| **Basic Stresses for Plywood Grades:** | |
| Exposure 1 or exterior glue | 1.10 (shear) |
| STRUCTURAL I | 1.56 (shear) |
| Groups 2 and 3 for sanded or touch sanded (Tables 2 & 3) | 0.73 (bending)<br>0.67 (deflection) |
| Group 4 for sanded or touch sanded (Tables 2 & 3) | 0.67 (bending)<br>0.56 (deflection) |
| **Preservative Treatment:** | |
| No adjustment required | |

| | |
|---|---|
| **Fire-Retardant Treatments:** | |
| Check with company providing the treatment and redrying service for adjustment recommendations. | |
| **Wet or Damp Locations (Moisture Content 16% or more):** | |
| Exterior and Exposure 1 (Interior with exterior glue) only | |
| Deflection | 0.83 |
| Bending | 0.70 |
| Shear | 0.83 |
| **Span Adjustments:** | |
| 2-span to 1-span | |
| Deflection | 0.42 |
| Bending | 1.00 |
| Shear | 1.25 |
| 3-span to 1-span | |
| Deflection | 0.53 |
| Bending | 0.80 |
| Shear | 1.20 |

TABLE 1

**UNIFORM LOADS (PSF) ON UNSANDED (SPAN RATED) PLYWOOD PANELS**
**MULTI-SPAN, NORMAL DURATION OF LOAD, DRY CONDITIONS**

| Span Rating | Load Governed By | Face Grain Across Supports Span, Center-to-Center of Supports (inches) | | | | | | | | | | Face Grain Parallel to Supports Span, Center-to-Center of Supports (inches) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12 | 16 | 19.2 | 24 | 30 | 32 | 36 | 40 | 48 | 60 | 12 | 16 | 24 |
| 12/0 | L/360 | 92 | 37 | 21 | 10 | | | | | | | 8 | 3 | |
| | L/240 | 138 | 55 | 31 | 15 | | | | | | | 11 | 4 | |
| | L/180 | 184 | 73 | 41 | 20 | | | | | | | 15 | 6 | |
| | Bending | 117 | 66 | 46 | 29 | | | | | | | 27 | 15 | |
| | Shear | 234 | 170 | 139 | 109 | | | | | | | 552 | 400 | |
| 16/0 | L/360 | 110 | 44 | 25 | 12 | 6 | | | | | | 8 | 3 | |
| | L/240 | 165 | 66 | 37 | 18 | 8 | | | | | | 12 | 5 | |
| | L/180 | 220 | 88 | 49 | 24 | 12 | | | | | | 16 | 6 | |
| | Bending | 126 | 71 | 49 | 31 | 20 | | | | | | 28 | 16 | |
| | Shear | 234 | 170 | 139 | 109 | 86 | | | | | | 499 | 361 | |
| 20/0 | L/360 | 165 | 66 | 37 | 18 | 9 | 7 | | | | | 10 | 4 | |
| | L/240 | 247 | 99 | 55 | 27 | 14 | 11 | | | | | 15 | 6 | |
| | L/180 | 329 | 132 | 74 | 36 | 18 | 15 | | | | | 20 | 8 | |
| | Bending | 154 | 87 | 60 | 39 | 25 | 22 | | | | | 31 | 17 | |
| | Shear | 234 | 170 | 139 | 109 | 86 | 81 | | | | | 411 | 298 | |
| 24/0 | L/360 | 278 | 114 | 64 | 32 | 16 | 13 | 11 | | | | 17 | 7 | |
| | L240 | 417 | 171 | 96 | 48 | 24 | 20 | 17 | | | | 26 | 10 | |
| | L/180 | 556 | 227 | 129 | 64 | 32 | 26 | 23 | | | | 35 | 14 | |
| | Bending | 208 | 117 | 81 | 52 | 33 | 29 | 19 | | | | 46 | 26 | |
| | Shear | 284 | 206 | 168 | 132 | 105 | 98 | 83 | | | | 236 | 171 | |
| 32/16 | L/360 | 420 | 181 | 105 | 53 | 27 | 22 | 19 | 14 | | | 32 | 13 | 5 |
| | L/240 | 631 | 271 | 157 | 80 | 40 | 33 | 29 | 21 | | | 48 | 19 | 7 |
| | L/180 | 841 | 362 | 209 | 106 | 54 | 44 | 39 | 28 | | | 64 | 26 | 9 |
| | Bending | 293 | 165 | 114 | 73 | 47 | 41 | 26 | 21 | | | 77 | 44 | 15 |
| | Shear | 358 | 259 | 212 | 167 | 132 | 123 | 105 | 94 | | | 225 | 163 | 101 |
| 40/20 | L/360 | 657 | 298 | 176 | 91 | 47 | 39 | 34 | 25 | 16 | | 66 | 28 | 10 |
| | L/240 | 985 | 447 | 265 | 137 | 70 | 58 | 51 | 37 | 25 | | 98 | 41 | 15 |
| | L/180 | 1313 | 596 | 353 | 183 | 94 | 77 | 68 | 49 | 33 | | 131 | 55 | 20 |
| | Bending | 522 | 293 | 204 | 130 | 83 | 73 | 46 | 38 | 26 | | 125 | 70 | 25 |
| | Shear | 457 | 331 | 271 | 213 | 168 | 157 | 134 | 120 | 104 | | 284 | 206 | 127 |
| 48/24 | L/360 | 1073 | 511 | 311 | 165 | 86 | 71 | 62 | 46 | 31 | 15 | 217 | 95 | 35 |
| | L/240 | 1609 | 767 | 466 | 248 | 129 | 107 | 94 | 69 | 46 | 23 | 325 | 142 | 52 |
| | L/180 | 2145 | 1023 | 622 | 330 | 172 | 142 | 125 | 92 | 61 | 30 | 434 | 189 | 70 |
| | Bending | 646 | 363 | 252 | 161 | 103 | 91 | 57 | 47 | 32 | 21 | 319 | 180 | 64 |
| | Shear | 590 | 428 | 350 | 276 | 218 | 203 | 173 | 155 | 134 | 105 | 330 | 239 | 148 |
| 1-1/8" (Groups 1 & 2) | L/360 | 1677 | 904 | 590 | 338 | 186 | 156 | 137 | 102 | 70 | 36 | 1062 | 515 | 206 |
| | L/240 | 2516 | 1357 | 885 | 506 | 280 | 234 | 206 | 154 | 105 | 53 | 1593 | 773 | 309 |
| | L/180 | 3355 | 1809 | 1181 | 675 | 373 | 312 | 274 | 205 | 140 | 71 | 2124 | 1031 | 412 |
| | Bending | 1047 | 589 | 409 | 262 | 168 | 147 | 93 | 75 | 52 | 34 | 768 | 432 | 154 |
| | Shear | 911 | 659 | 540 | 425 | 335 | 313 | 266 | 238 | 206 | 162 | 725 | 525 | 325 |

TABLE 2

**UNIFORM LOADS (PSF) ON TOUCH-SANDED (GROUP 1 OR SPAN RATED) PLYWOOD PANELS MULTI-SPAN, NORMAL DURATION OF LOAD, DRY CONDITIONS**

| Thickness (inches) or Span Rating | Load Governed By | Face Grain Across Supports Span, Center-to-Center of Supports (inches) | | | | | | | | | | Face Grain Parallel to Supports Span, Center-to-Center of Supports (inches) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12 | 16 | 19.2 | 24 | 30 | 32 | 36 | 40 | 48 | 60 | 12 | 16 | 24 |
| 1/2 or 16 oc | L/360 | 433 | 197 | 116 | 60 | 31 | 25 | 22 | 16 | 11 | | 40 | 17 | 6 |
| | L/240 | 650 | 295 | 175 | 91 | 46 | 38 | 34 | 24 | 16 | | 61 | 25 | 9 |
| | L/180 | 867 | 393 | 233 | 121 | 62 | 51 | 45 | 33 | 22 | | 81 | 34 | 12 |
| | Bending | 345 | 194 | 135 | 86 | 55 | 49 | 31 | 25 | 17 | | 84 | 47 | 17 |
| | Shear | 389 | 281 | 231 | 181 | 143 | 134 | 114 | 102 | 88 | | 251 | 182 | 113 |
| 19/32, 5/8 or 20 oc | L/360 | 607 | 275 | 163 | 85 | 43 | 36 | 31 | 23 | 15 | 7 | 109 | 46 | 17 |
| | L/240 | 911 | 413 | 245 | 127 | 65 | 54 | 47 | 34 | 23 | 11 | 164 | 69 | 25 |
| | L/180 | 1214 | 551 | 326 | 169 | 87 | 71 | 63 | 46 | 30 | 15 | 219 | 92 | 33 |
| | Bending | 401 | 225 | 157 | 100 | 64 | 56 | 36 | 29 | 20 | 13 | 186 | 105 | 37 |
| | Shear | 490 | 354 | 290 | 228 | 180 | 169 | 143 | 128 | 111 | 87 | 295 | 214 | 132 |
| 23/32, 3/4 or 24 oc | L/360 | 915 | 436 | 265 | 141 | 73 | 61 | 53 | 39 | 26 | 13 | 197 | 86 | 32 |
| | L/240 | 1373 | 655 | 398 | 211 | 110 | 91 | 80 | 59 | 39 | 19 | 295 | 129 | 47 |
| | L/180 | 1831 | 873 | 531 | 282 | 147 | 121 | 107 | 78 | 52 | 26 | 393 | 171 | 63 |
| | Bending | 535 | 301 | 209 | 134 | 86 | 75 | 48 | 39 | 27 | 17 | 287 | 161 | 57 |
| | Shear | 602 | 436 | 357 | 281 | 222 | 207 | 176 | 158 | 136 | 107 | 333 | 241 | 149 |
| 1-1/8 2-4-1 (Groups 1, 2 or 3) or 48 oc | L/360 | 1884 | 1016 | 663 | 379 | 209 | 175 | 154 | 115 | 78 | 40 | 1202 | 583 | 233 |
| | L/240 | 2826 | 1524 | 995 | 569 | 314 | 263 | 231 | 172 | 118 | 60 | 1803 | 875 | 349 |
| | L/180 | 3768 | 2032 | 1326 | 758 | 419 | 351 | 308 | 230 | 157 | 80 | 2405 | 1167 | 466 |
| | Bending | 1343 | 755 | 524 | 336 | 215 | 189 | 119 | 97 | 67 | 43 | 1022 | 575 | 204 |
| | Shear | 1029 | 745 | 610 | 480 | 379 | 354 | 301 | 269 | 233 | 184 | 781 | 566 | 350 |

TABLE 3

**UNIFORM LOADS (PSF) ON GROUP 1 SANDED PLYWOOD PANELS**
**MULTI-SPAN, NORMAL DURATION OF LOAD, DRY CONDITIONS**

| Thickness (inches) | Load Governed By | Face Grain Across Supports Span, Center-to-Center of Supports (inches) | | | | | | | | | | Face Grain Parallel to Supports Span, Center-to-Center of Supports (inches) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12 | 16 | 19.2 | 24 | 30 | 32 | 36 | 40 | 48 | 60 | 12 | 16 | 24 |
| 11/32 | L/360 | 139 | 56 | 32 | 16 | 8 | 6 | 6 | | | | 8 | 3 | 1 |
| | L/240 | 209 | 84 | 47 | 24 | 12 | 10 | 8 | | | | 12 | 5 | 2 |
| | L/180 | 278 | 112 | 63 | 31 | 16 | 13 | 11 | | | | 16 | 6 | 2 |
| | Bending | 128 | 72 | 50 | 32 | 20 | 18 | 11 | | | | 22 | 12 | 4 |
| | Shear | 253 | 183 | 150 | 118 | 93 | 87 | 74 | | | | 237 | 171 | 106 |
| 3/8 | L/360 | 192 | 79 | 44 | 22 | 11 | 9 | 8 | | | | 12 | 5 | 2 |
| | L/240 | 288 | 118 | 67 | 33 | 17 | 14 | 12 | | | | 18 | 7 | 2 |
| | L/180 | 384 | 157 | 89 | 44 | 22 | 18 | 16 | | | | 23 | 9 | 3 |
| | Bending | 172 | 97 | 67 | 43 | 27 | 24 | 15 | | | | 32 | 18 | 6 |
| | Shear | 282 | 204 | 167 | 132 | 104 | 97 | 82 | | | | 321 | 232 | 144 |
| 15/32 | L/360 | 428 | 182 | 104 | 53 | 27 | 22 | 19 | 14 | 9 | | 45 | 18 | 6 |
| | L/240 | 642 | 273 | 157 | 79 | 40 | 33 | 29 | 21 | 14 | | 68 | 27 | 10 |
| | L/180 | 856 | 363 | 209 | 105 | 53 | 43 | 38 | 28 | 18 | | 90 | 36 | 13 |
| | Bending | 294 | 166 | 115 | 74 | 47 | 41 | 26 | 21 | 15 | | 92 | 52 | 18 |
| | Shear | 376 | 272 | 223 | 175 | 139 | 129 | 110 | 98 | 85 | | 223 | 161 | 100 |
| 1/2 | L/360 | 483 | 208 | 120 | 61 | 31 | 25 | 22 | 16 | 11 | | 63 | 26 | 9 |
| | L/240 | 724 | 312 | 180 | 91 | 46 | 38 | 33 | 24 | 16 | | 95 | 38 | 14 |
| | L/180 | 966 | 415 | 240 | 122 | 62 | 50 | 44 | 32 | 21 | | 126 | 51 | 18 |
| | Bending | 325 | 183 | 127 | 81 | 52 | 46 | 29 | 23 | 16 | | 120 | 67 | 24 |
| | Shear | 408 | 296 | 242 | 191 | 150 | 141 | 119 | 107 | 92 | | 252 | 182 | 113 |
| 19/32 | L/360 | 649 | 290 | 171 | 88 | 45 | 37 | 33 | 24 | 16 | 8 | 143 | 60 | 21 |
| | L/240 | 973 | 435 | 256 | 132 | 67 | 55 | 49 | 35 | 23 | 12 | 215 | 89 | 32 |
| | L/180 | 1297 | 581 | 342 | 176 | 90 | 74 | 65 | 47 | 31 | 15 | 286 | 119 | 43 |
| | Bending | 433 | 244 | 169 | 108 | 69 | 61 | 39 | 31 | 22 | 14 | 188 | 106 | 38 |
| | Shear | 500 | 362 | 297 | 233 | 184 | 172 | 146 | 131 | 113 | 89 | 262 | 189 | 117 |
| 5/8 | L/360 | 701 | 318 | 188 | 98 | 50 | 41 | 36 | 26 | 17 | 9 | 180 | 76 | 27 |
| | L/240 | 1052 | 477 | 283 | 147 | 75 | 62 | 54 | 40 | 26 | 13 | 270 | 113 | 41 |
| | L/180 | 1403 | 636 | 377 | 195 | 100 | 82 | 72 | 53 | 35 | 17 | 360 | 151 | 54 |
| | Bending | 466 | 262 | 182 | 117 | 75 | 66 | 41 | 34 | 23 | 15 | 226 | 127 | 45 |
| | Shear | 532 | 386 | 316 | 248 | 196 | 183 | 156 | 139 | 121 | 95 | 285 | 206 | 128 |
| 23/32 | L/360 | 870 | 410 | 247 | 131 | 68 | 56 | 49 | 36 | 24 | 12 | 311 | 134 | 49 |
| | L/240 | 1305 | 615 | 371 | 196 | 102 | 84 | 74 | 54 | 36 | 18 | 466 | 201 | 74 |
| | L/180 | 1740 | 819 | 495 | 261 | 136 | 112 | 98 | 72 | 48 | 24 | 621 | 268 | 98 |
| | Bending | 535 | 301 | 209 | 134 | 86 | 75 | 48 | 39 | 27 | 17 | 318 | 179 | 64 |
| | Shear | 602 | 436 | 357 | 281 | 222 | 207 | 176 | 158 | 136 | 107 | 349 | 253 | 156 |
| 3/4 | L/360 | 922 | 439 | 267 | 142 | 74 | 61 | 54 | 39 | 26 | 13 | 382 | 166 | 61 |
| | L/240 | 1382 | 659 | 401 | 213 | 111 | 92 | 81 | 59 | 39 | 20 | 573 | 250 | 92 |
| | L/180 | 1843 | 879 | 534 | 284 | 148 | 122 | 107 | 79 | 52 | 26 | 764 | 333 | 123 |
| | Bending | 567 | 319 | 221 | 142 | 91 | 80 | 50 | 41 | 28 | 18 | 392 | 220 | 78 |
| | Shear | 618 | 448 | 367 | 289 | 228 | 213 | 181 | 162 | 140 | 110 | 373 | 270 | 167 |
| 7/8 | L/360 | 1116 | 557 | 347 | 189 | 100 | 83 | 73 | 54 | 36 | 18 | 570 | 258 | 97 |
| | L/240 | 1675 | 836 | 521 | 284 | 151 | 125 | 110 | 81 | 54 | 27 | 855 | 386 | 146 |
| | L/180 | 2233 | 1115 | 695 | 378 | 201 | 167 | 146 | 108 | 72 | 36 | 1139 | 515 | 195 |
| | Bending | 708 | 398 | 277 | 177 | 113 | 100 | 63 | 51 | 35 | 23 | 542 | 305 | 108 |
| | Shear | 736 | 533 | 437 | 343 | 271 | 253 | 215 | 193 | 167 | 131 | 464 | 336 | 208 |
| 1 | L/360 | 1460 | 760 | 485 | 271 | 147 | 122 | 107 | 80 | 54 | 27 | 912 | 427 | 166 |
| | L/240 | 2190 | 1139 | 727 | 406 | 220 | 183 | 161 | 119 | 81 | 41 | 1368 | 641 | 249 |
| | L/180 | 2920 | 1519 | 970 | 541 | 293 | 244 | 215 | 159 | 108 | 54 | 1824 | 855 | 332 |
| | Bending | 913 | 514 | 357 | 228 | 146 | 128 | 81 | 66 | 46 | 29 | 813 | 457 | 163 |
| | Shear | 812 | 588 | 482 | 379 | 299 | 280 | 237 | 213 | 184 | 145 | 643 | 466 | 288 |
| 1-1/8 | L/360 | 1632 | 880 | 574 | 328 | 181 | 152 | 133 | 100 | 68 | 35 | 1199 | 582 | 232 |
| | L/240 | 2448 | 1320 | 861 | 493 | 272 | 228 | 200 | 149 | 102 | 52 | 1799 | 873 | 349 |
| | L/180 | 3264 | 1760 | 1149 | 657 | 363 | 304 | 267 | 199 | 136 | 69 | 2399 | 1164 | 465 |
| | Bending | 1128 | 634 | 440 | 282 | 180 | 159 | 100 | 81 | 56 | 36 | 1023 | 575 | 205 |
| | Shear | 904 | 654 | 536 | 422 | 333 | 311 | 264 | 237 | 205 | 161 | 771 | 558 | 345 |

## Examples Showing Use of Plywood Load-Span Tables

*Example 1:* Find the allowable uniform floor load for APA RATED SHEATHING 32/16 Exposure 1. Assume 10 psf dead load, and face grain across supports 16" o.c. Unless stated otherwise, assume floor deflection criteria to be L/360 under live load only and L/240 under total load.

| Load Governed By | Load (psf) | | Adjustment for Exposure 1 | | Load (psf) |
|---|---|---|---|---|---|
| L/360 | 181 | | | | 181 |
| L/240 | 271 | | | | 271 |
| L/180 | 362 | | | | 362 |
| Bending | 165 | | | | 165 |
| Shear | 259 | x | 1.10 | = | 285 |

From Table 1, for Unsanded Panels with Face Grain Across Supports:

Allowable total load for floors is the least of loads for L/240, bending and shear. Allowable total load is 165 psf.

Live load is the lesser of the load for L/360 and total load as determined above, minus dead load.

L/360 = 181 psf

Total load – dead load = 165 – 10 = 155 psf

Allowable live load is 155 psf.

Note: Do not increase span even though the allowable uniform live load greatly exceeds the 40 psf design live load normally used for floor design. Recommended maximum span reflects performance under concentrated and impact loads in addition to uniform load.

*Example 2:* Find allowable snow loads on APA RATED SHEATHING 48/24 Exposure 1 if face grain is across supports spaced 32" o.c. In question are several panels in the 1-span condition. Deflection criteria are L/240 under live load only and L/180 under total load. Assuming a 2-month duration of load for snow, allowable loads for bending and shear may be increased 15%. Assume 10 psf dead load supported by the plywood.

| Load Governed By | Load (psf) | | Adjustment for Duration of Load | | Adjustment for Span | | Adjustment for Exposure 1 | | Adjusted Load (psf) |
|---|---|---|---|---|---|---|---|---|---|
| L/360 | 71 | | | x | 0.53 | | | = | 38 |
| L/240 | 107 | | | x | 0.53 | | | = | 57 |
| L/180 | 142 | | | x | 0.53 | | | = | 75 |
| Bending | 91 | x | 1.15 | x | 0.80 | | | = | 84 |
| Shear | 203 | x | 1.15 | x | 1.20 | x | 1.10 | = | 308 |

From Table 1, for Unsanded Panels with Face Grain Across Supports:

Allowable total load is the least of loads for L/180, bending and shear. Allowable total load is 75 psf.

Live load is the lesser of total load minus dead load (75 – 10 = 65 psf), and load at L/240 (57 psf).

In this case, live load is controlled by deflection of L/240: Allowable live load = 57 psf, or 55 psf (rounded to nearest 5 psf).

*Example 3:* Find allowable soil pressure on 23/32" APA C-C Plugged Group 1 EXT if supports are 16" o.c. Face grain is across supports. Deflection need not be considered. Assume soil pressure is permanent load.

| Load Governed By | Load (psf) | | Adjustment for Duration of Load | | Adjustment for Moisture | | Adjustment for Exterior Glue | | Adjusted Load (psf) |
|---|---|---|---|---|---|---|---|---|---|
| L/360 | 436 | | | x | .83 | | | = | 362 |
| L/240 | 655 | | | x | .83 | | | = | 544 |
| L/180 | 873 | | | x | .83 | | | = | 725 |
| Bending | 301 | x | 0.90 | x | .70 | | | = | 190 |
| Shear | 436 | x | 0.90 | x | .83 | x | 1.10 | = | 358 |

From Table 2, for Group 1 Touch-Sanded Panels with Face Grain Across Supports:

Allowable load = 190 psf.

We have field representatives in most major U.S. cities and in Canada who can help answer questions involving APA trademarked products. For additional assistance in specifying APA engineered wood products, get in touch with your nearest APA regional office. Call or write:


**WESTERN REGION**
7011 So. 19th St. ▪ P.O. Box 11700
Tacoma, Washington 98411-0700
(253) 565-6600 ▪ Fax: (253) 565-7265

**EASTERN REGION**
2130 Barrett Park Drive, Suite 102
Kennesaw, Georgia 30144-3681
(770) 427-9371 ▪ Fax: (770) 423-1703

**U.S. HEADQUARTERS AND INTERNATIONAL MARKETING DIVISION**
7011 So. 19th St. ▪ P.O. Box 11700
Tacoma, Washington 98411-0700
(253) 565-6600 ▪ Fax: (253) 565-7265

Web Address: @
**www.apawood.org**

**PRODUCT SUPPORT HELP DESK**
(253) 620-7400
E-mail Address: help@apawood.org

(Offices: Antwerp, Belgium; Bournemouth, United Kingdom; Hamburg, Germany; Mexico City, Mexico; Tokyo, Japan.) For Caribbean/Latin America, contact headquarters in Tacoma.


*The product use recommendations in this publication are based on APA – The Engineered Wood Association's continuing programs of laboratory testing, product research, and comprehensive field experience. However, because the Association has no control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility for product performance or designs as actually constructed. Because engineered wood product performance requirements vary geographically, consult your local architect, engineer or design professional to assure compliance with code, construction, and performance requirements.*


Form No. Z802
Revised March 1998/0100


**A P A**

*The Engineered Wood Association*