

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—60 PSF LIVE LOAD – 15 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN       |             |             |                   |             |             |                    |             |             |
|--------------|-------------|-------------------|-------------|-------------|-------------------|-------------|-------------|--------------------|-------------|-------------|
|              |             | Slopes to 4 in 12 |             |             | Slopes to 8 in 12 |             |             | Slopes to 12 in 12 |             |             |
|              |             | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.           | 19.2" o.c.  | 24" o.c.    |
| PWI 20       | 9½"         | 13'-11" (2)       | 12'-8" (2)  | 11'-4" (2)  | 13'-9" (3)        | 12'-6" (3)  | 11'-2" (3)  | 13'-5" (3)         | 12'-3" (3)  | 10'-11" (3) |
|              | 11⅞"        | 15'-11" (2)       | 14'-6" (2)  | 11'-11" (2) | 15'-8" (3)        | 14'-3" (3)  | 11'-6" (3)  | 15'-4" (3)         | 13'-11" (3) | 11'-1" (3)  |
|              | 14"         | 17'-4" (2)        | 14'-11" (2) | 11'-11" (2) | 17'-1" (3)        | 14'-6" (3)  | 11'-6" (3)  | 16'-9" (3)         | 13'-11" (3) | 11'-1" (3)  |
| PWI 30       | 9½"         | 15'-8" (2)        | 14'-5" (2)  | 12'-3" (2)  | 15'-1" (3)        | 14'-1" (3)  | 11'-11" (3) | 14'-3" (3)         | 13'-4" (3)  | 11'-5" (3)  |
|              | 11⅞"        | 18'-0" (2)        | 15'-5" (2)  | 12'-3" (2)  | 17'-9" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-2" (3)         | 14'-4" (3)  | 11'-5" (3)  |
|              | 14"         | 19'-2" (2)        | 16'-0" (2)  | 12'-9" (2)  | 18'-8" (3)        | 15'-6" (3)  | 12'-4" (3)  | 17'-11" (3)        | 14'-11" (3) | 11'-11" (3) |
| PWI 40       | 9½"         | 14'-6" (2)        | 13'-3" (2)  | 11'-10" (2) | 14'-4" (3)        | 13'-1" (3)  | 11'-8" (3)  | 14'-0" (3)         | 12'-9" (3)  | 11'-5" (3)  |
|              | 11⅞"        | 16'-7" (2)        | 15'-1" (2)  | 13'-6" (2)  | 16'-4" (3)        | 14'-11" (3) | 13'-4" (3)  | 16'-0" (3)         | 14'-7" (3)  | 13'-0" (3)  |
|              | 14"         | 18'-2" (2)        | 16'-7" (2)  | 14'-1" (3)  | 17'-11" (3)       | 16'-4" (3)  | 13'-8" (3)  | 17'-7" (3)         | 16'-0" (3)  | 13'-1" (3)  |
| PWI 45       | 9½"         | 16'-1" (2)        | 14'-8" (2)  | 12'-9" (2)  | 15'-10" (3)       | 14'-5" (3)  | 12'-4" (3)  | 15'-1" (3)         | 14'-2" (3)  | 11'-11" (3) |
|              | 11⅞"        | 18'-4" (2)        | 16'-0" (2)  | 12'-9" (2)  | 18'-0" (3)        | 15'-6" (3)  | 12'-4" (3)  | 17'-8" (3)         | 14'-11" (3) | 11'-11" (3) |
|              | 14"         | 19'-2" (2)        | 16'-0" (2)  | 12'-9" (2)  | 18'-8" (3)        | 15'-6" (3)  | 12'-4" (3)  | 17'-11" (3)        | 14'-11" (3) | 11'-11" (3) |
| PWI 47       | 7⅞"         | 14'-5" (2)        | 13'-2" (2)  | 11'-3" (2)  | 14'-1" (3)        | 12'-11" (3) | 10'-11" (3) | 13'-4" (3)         | 12'-6" (3)  | 10'-6" (3)  |
|              | 9½"         | 16'-1" (2)        | 14'-3" (2)  | 11'-4" (2)  | 15'-10" (3)       | 13'-10" (3) | 11'-0" (3)  | 15'-5" (3)         | 13'-3" (3)  | 10'-7" (3)  |
|              | 11⅞"        | 17'-4" (2)        | 14'-5" (2)  | 11'-6" (2)  | 16'-10" (3)       | 14'-0" (3)  | 11'-2" (3)  | 16'-2" (3)         | 13'-5" (3)  | 10'-9" (3)  |
| PWI 50       | 14"         | 17'-7" (2)        | 14'-8" (2)  | 11'-8" (2)  | 17'-1" (3)        | 14'-3" (3)  | 11'-4" (3)  | 16'-5" (3)         | 13'-8" (3)  | 10'-11" (3) |
|              | 16"         | 17'-10" (2)       | 14'-10" (2) | 11'-10" (2) | 17'-4" (3)        | 14'-5" (3)  | 11'-6" (3)  | 16'-7" (3)         | 13'-10" (3) | 11'-0" (3)  |
|              | 18"         | 18'-0" (2)        | 15'-0" (2)  | 11'-11" (2) | 17'-6" (3)        | 14'-7" (3)  | 11'-7" (3)  | 16'-10" (3)        | 14'-0" (3)  | 11'-2" (3)  |
| PWI 60       | 9½"         | 16'-5" (2)        | 15'-5" (2)  | 13'-2" (2)  | 15'-9" (3)        | 14'-10" (3) | 12'-10" (3) | 14'-11" (3)        | 14'-0" (3)  | 12'-4" (3)  |
|              | 11⅞"        | 19'-6" (2)        | 16'-7" (2)  | 13'-2" (2)  | 19'-0" (3)        | 16'-1" (3)  | 12'-10" (3) | 18'-0" (3)         | 15'-5" (3)  | 12'-4" (3)  |
|              | 14"         | 19'-11" (2)       | 16'-7" (2)  | 13'-2" (2)  | 19'-4" (3)        | 16'-1" (3)  | 12'-10" (3) | 18'-7" (3)         | 15'-5" (3)  | 12'-4" (3)  |
| PWI 70       | 9½"         | 17'-1" (2)        | 15'-7" (2)  | 13'-11" (3) | 16'-10" (3)       | 15'-5" (3)  | 13'-8" (3)  | 16'-0" (3)         | 15'-1" (3)  | 13'-1" (3)  |
|              | 11⅞"        | 19'-6" (2)        | 17'-7" (3)  | 14'-1" (3)  | 19'-3" (3)        | 17'-1" (3)  | 13'-8" (3)  | 18'-10" (3)        | 16'-5" (3)  | 13'-1" (3)  |
|              | 14"         | 21'-2" (3)        | 17'-7" (3)  | 14'-1" (3)  | 20'-7" (3)        | 17'-1" (3)  | 13'-8" (3)  | 19'-9" (3)         | 16'-5" (3)  | 13'-1" (3)  |
| PWI 77       | 11⅞"        | 21'-11" (3)       | 18'-11" (3) | 15'-1" (3)  | 21'-1" (3)        | 18'-5" (3)  | 14'-8" (3)  | 19'-11" (3)        | 16'-5" (3)  | 13'-1" (3)  |
|              | 14"         | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 22'-1" (3)        | 18'-5" (3)  | 14'-8" (3)  | 21'-3" (3)         | 17'-8" (3)  | 14'-1" (3)  |
|              | 16"         | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 22'-1" (3)        | 18'-5" (3)  | 14'-8" (3)  | 21'-3" (3)         | 17'-8" (3)  | 14'-1" (3)  |
| PWI 90       | 9½"         | 18'-6" (2)        | 17'-4" (3)  | 16'-0" (3)  | 17'-9" (3)        | 16'-8" (3)  | 15'-5" (3)  | 16'-9" (3)         | 15'-9" (3)  | 14'-7" (3)  |
|              | 11⅞"        | 22'-1" (3)        | 20'-8" (3)  | 16'-9" (3)  | 21'-2" (3)        | 19'-11" (3) | 16'-3" (3)  | 20'-0" (3)         | 18'-9" (3)  | 15'-8" (3)  |
|              | 14"         | 24'-11" (3)       | 21'-0" (3)  | 16'-9" (3)  | 24'-1" (3)        | 20'-5" (3)  | 16'-3" (3)  | 22'-9" (3)         | 19'-7" (3)  | 15'-8" (3)  |
| PWI 90       | 16"         | 25'-3" (3)        | 21'-0" (3)  | 16'-9" (3)  | 24'-6" (3)        | 20'-5" (3)  | 16'-3" (3)  | 23'-7" (3)         | 19'-7" (3)  | 15'-8" (3)  |
|              | 18"         | 25'-3" (3)        | 21'-0" (3)  | 16'-9" (3)  | 24'-6" (3)        | 20'-5" (3)  | 16'-3" (3)  | 23'-7" (3)         | 19'-7" (3)  | 15'-8" (3)  |
|              | 20"         | 25'-3" (3)        | 21'-0" (3)  | 16'-9" (3)  | 24'-6" (3)        | 20'-5" (3)  | 16'-3" (3)  | 23'-7" (3)         | 19'-7" (3)  | 15'-8" (3)  |
| PWI 90       | 22"         | 31'-3" (3)        | 28'-7" (3)  | 25'-6" (3)  | 30'-10" (3)       | 28'-2" (3)  | 24'-9" (3)  | 30'-3" (3)         | 27'-7" (3)  | 23'-9" (4)  |
|              | 24"         | 32'-8" (3)        | 29'-10" (3) | 25'-6" (3)  | 32'-2" (3)        | 29'-4" (3)  | 24'-9" (3)  | 31'-7" (3)         | 28'-9" (4)  | 23'-9" (4)  |
|              | 9½"         | 21'-1" (3)        | 19'-10" (3) | 18'-3" (3)  | 20'-3" (3)        | 19'-0" (3)  | 17'-7" (3)  | 19'-2" (3)         | 18'-0" (3)  | 16'-8" (3)  |
| PWI 90       | 11⅞"        | 25'-2" (3)        | 22'-11" (3) | 18'-3" (3)  | 24'-2" (3)        | 22'-3" (3)  | 17'-9" (3)  | 22'-10" (3)        | 21'-4" (3)  | 17'-1" (3)  |
|              | 14"         | 27'-6" (3)        | 22'-11" (3) | 18'-3" (3)  | 26'-9" (3)        | 22'-3" (3)  | 17'-9" (3)  | 25'-8" (3)         | 21'-4" (3)  | 17'-1" (3)  |
|              | 16"         | 27'-6" (3)        | 22'-11" (3) | 18'-3" (3)  | 26'-9" (3)        | 22'-3" (3)  | 17'-9" (3)  | 25'-8" (3)         | 21'-4" (3)  | 17'-1" (3)  |
| PWI 90       | 18"         | 27'-6" (3)        | 22'-11" (3) | 18'-3" (3)  | 26'-9" (3)        | 22'-3" (3)  | 17'-9" (3)  | 25'-8" (3)         | 21'-4" (3)  | 17'-1" (3)  |
|              | 20"         | 27'-6" (3)        | 22'-11" (3) | 18'-3" (3)  | 26'-9" (3)        | 22'-3" (3)  | 17'-9" (3)  | 25'-8" (3)         | 21'-4" (3)  | 17'-1" (3)  |
|              | 22"         | 38'-10" (3)       | 35'-5" (3)  | 31'-6" (3)  | 38'-3" (3)        | 34'-11" (3) | 30'-7" (4)  | 36'-7" (4)         | 34'-3" (4)  | 28'-4" (4)  |
| 24"          | 40'-6" (3)  | 37'-0" (3)        | 31'-6" (3)  | 39'-11" (3) | 36'-5" (3)        | 30'-7" (4)  | 39'-0" (4)  | 35'-6" (4)         | 28'-4" (4)  |             |

### Notes:

- Table values apply to uniformly loaded roof joists that are sloped at least ¼" in 12".
- Span is measured on the horizontal from face to face of supports.
- Table values do not account for stiffness added by glued or nailed sheathing.
- Provide at least 1¼" of bearing length at end supports and 3½" at intermediate supports.
- The numbers in parentheses refer to the minimum connection required at each support.
  - Beveled plate and two nails (165 lbs. lateral capacity @ 100%), or joist hanger
  - Beveled plate and four nails (330 lbs. lateral capacity @ 100%), or (3)
  - Gussets at high support (1295 lbs. lateral capacity @ 100%), birdsmouth cut at low support, or (4)
  - Strap (1640 lbs. lateral capacity @ 100%) or pair of twist straps (950 lbs. lateral capacity each @ 100%) at high support, birdsmouth cut at low support
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. roof sheathing, gypsum board ceiling).
- Consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads, multiple span joists).

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—80 PSF LIVE LOAD – 15 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN       |             |             |                   |             |             |                    |             |            |
|--------------|-------------|-------------------|-------------|-------------|-------------------|-------------|-------------|--------------------|-------------|------------|
|              |             | Slopes to 4 in 12 |             |             | Slopes to 8 in 12 |             |             | Slopes to 12 in 12 |             |            |
|              |             | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.           | 19.2" o.c.  | 24" o.c.   |
| PWI 20       | 9½"         | 12'-4" (2)        | 11'-3" (2)  | 9'-4" (2)   | 12'-3" (3)        | 11'-2" (3)  | 9'-2" (3)   | 12'-0" (3)         | 11'-0" (3)  | 8'-10" (3) |
|              | 11⅞"        | 14'-1" (2)        | 11'-9" (2)  | 9'-4" (2)   | 13'-10" (3)       | 11'-6" (3)  | 9'-2" (3)   | 13'-4" (3)         | 11'-1" (3)  | 8'-10" (3) |
|              | 14"         | 14'-2" (2)        | 11'-9" (2)  | 9'-4" (2)   | 13'-10" (3)       | 11'-6" (3)  | 9'-2" (3)   | 13'-4" (3)         | 11'-1" (3)  | 8'-10" (3) |
| PWI 30       | 9½"         | 14'-0" (2)        | 12'-2" (2)  | 9'-8" (2)   | 13'-7" (3)        | 11'-10" (3) | 9'-5" (3)   | 12'-11" (3)        | 11'-6" (3)  | 9'-2" (3)  |
|              | 11⅞"        | 14'-7" (2)        | 12'-2" (2)  | 9'-8" (2)   | 14'-3" (3)        | 11'-10" (3) | 9'-5" (3)   | 13'-10" (3)        | 11'-6" (3)  | 9'-2" (3)  |
|              | 14"         | 14'-0" (2)        | 12'-2" (2)  | 9'-8" (2)   | 13'-7" (3)        | 11'-10" (3) | 9'-5" (3)   | 12'-11" (3)        | 11'-6" (3)  | 9'-2" (3)  |
| PWI 40       | 9½"         | 12'-11" (2)       | 11'-9" (2)  | 10'-6" (2)  | 12'-9" (3)        | 11'-7" (3)  | 10'-5" (3)  | 12'-7" (3)         | 11'-5" (3)  | 10'-3" (3) |
|              | 11⅞"        | 14'-9" (2)        | 13'-5" (2)  | 11'-1" (3)  | 14'-7" (3)        | 13'-3" (3)  | 10'-10" (3) | 14'-4" (3)         | 13'-1" (3)  | 10'-6" (3) |
|              | 14"         | 16'-2" (3)        | 13'-11" (3) | 11'-1" (3)  | 16'-0" (3)        | 13'-7" (3)  | 10'-10" (3) | 15'-9" (3)         | 13'-2" (3)  | 10'-6" (3) |
| PWI 45       | 9½"         | 16'-9" (3)        | 13'-11" (3) | 11'-1" (3)  | 16'-4" (3)        | 13'-7" (3)  | 10'-10" (3) | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3) |
|              | 11⅞"        | 14'-3" (2)        | 12'-7" (2)  | 10'-0" (2)  | 14'-10" (3)       | 12'-4" (3)  | 9'-10" (3)  | 13'-9" (3)         | 11'-11" (3) | 9'-6" (3)  |
|              | 14"         | 15'-2" (2)        | 12'-7" (2)  | 10'-0" (2)  | 14'-10" (3)       | 12'-4" (3)  | 9'-10" (3)  | 14'-4" (3)         | 11'-11" (3) | 9'-6" (3)  |
| PWI 47       | 9½"         | 15'-2" (2)        | 12'-7" (2)  | 10'-0" (2)  | 14'-10" (3)       | 12'-4" (3)  | 9'-10" (3)  | 14'-4" (3)         | 11'-11" (3) | 9'-6" (3)  |
|              | 11⅞"        | 15'-2" (2)        | 12'-7" (2)  | 10'-0" (2)  | 14'-10" (3)       | 12'-4" (3)  | 9'-10" (3)  | 14'-4" (3)         | 11'-11" (3) | 9'-6" (3)  |
|              | 14"         | 15'-2" (2)        | 12'-7" (2)  | 10'-0" (2)  | 14'-10" (3)       | 12'-4" (3)  | 9'-10" (3)  | 14'-4" (3)         | 11'-11" (3) | 9'-6" (3)  |
| PWI 50       | 7⅞"         | 12'-9" (2)        | 11'-1" (2)  | 8'-10" (2)  | 12'-8" (3)        | 10'-10" (3) | 8'-8" (3)   | 12'-1" (3)         | 10'-6" (3)  | 8'-4" (3)  |
|              | 9½"         | 13'-6" (2)        | 11'-3" (2)  | 8'-11" (2)  | 13'-2" (3)        | 11'-0" (3)  | 8'-9" (3)   | 12'-9" (3)         | 10'-7" (3)  | 8'-5" (3)  |
|              | 11⅞"        | 13'-8" (2)        | 11'-4" (2)  | 9'-1" (2)   | 13'-4" (3)        | 11'-1" (3)  | 8'-10" (3)  | 12'-11" (3)        | 10'-9" (3)  | 8'-7" (3)  |
| PWI 60       | 14"         | 13'-11" (2)       | 11'-7" (2)  | 9'-2" (2)   | 13'-7" (3)        | 11'-3" (3)  | 9'-0" (3)   | 13'-2" (3)         | 10'-11" (3) | 8'-8" (3)  |
|              | 16"         | 14'-1" (2)        | 11'-8" (2)  | 9'-4" (2)   | 13'-9" (3)        | 11'-5" (3)  | 9'-1" (3)   | 13'-4" (3)         | 11'-1" (3)  | 8'-10" (3) |
|              | 18"         | 14'-3" (2)        | 11'-10" (2) | 9'-5" (2)   | 13'-11" (3)       | 11'-7" (3)  | 9'-2" (3)   | 13'-5" (3)         | 11'-2" (3)  | 8'-11" (3) |
| PWI 70       | 20"         | 14'-4" (2)        | 11'-11" (2) | 9'-6" (2)   | 14'-1" (3)        | 11'-8" (3)  | 9'-4" (3)   | 13'-7" (3)         | 11'-4" (3)  | 9'-0" (3)  |
|              | 9½"         | 14'-10" (2)       | 13'-1" (2)  | 10'-5" (2)  | 14'-3" (3)        | 12'-9" (3)  | 10'-2" (3)  | 13'-7" (3)         | 12'-4" (3)  | 9'-10" (3) |
|              | 11⅞"        | 15'-8" (2)        | 13'-1" (2)  | 10'-5" (2)  | 15'-4" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-10" (3)        | 12'-4" (3)  | 9'-10" (3) |
| PWI 77       | 14"         | 15'-8" (2)        | 13'-1" (2)  | 10'-5" (2)  | 15'-4" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-10" (3)        | 12'-4" (3)  | 9'-10" (3) |
|              | 16"         | 15'-8" (2)        | 13'-1" (2)  | 10'-5" (2)  | 15'-4" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-10" (3)        | 12'-4" (3)  | 9'-10" (3) |
|              | 18"         | 15'-8" (2)        | 13'-1" (2)  | 10'-5" (2)  | 15'-4" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-10" (3)        | 12'-4" (3)  | 9'-10" (3) |
| PWI 90       | 9½"         | 15'-2" (2)        | 13'-10" (3) | 11'-1" (3)  | 15'-0" (3)        | 13'-7" (3)  | 10'-10" (3) | 14'-7" (3)         | 13'-2" (3)  | 10'-6" (3) |
|              | 11⅞"        | 16'-9" (3)        | 13'-11" (3) | 11'-1" (3)  | 16'-4" (3)        | 13'-7" (3)  | 10'-10" (3) | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3) |
|              | 14"         | 16'-9" (3)        | 13'-11" (3) | 11'-1" (3)  | 16'-4" (3)        | 13'-7" (3)  | 10'-10" (3) | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3) |
| PWI 90       | 16"         | 16'-9" (3)        | 13'-11" (3) | 11'-1" (3)  | 16'-4" (3)        | 13'-7" (3)  | 10'-10" (3) | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3) |
|              | 11⅞"        | 18'-0" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-7" (3)        | 14'-7" (3)  | 11'-8" (3)  | 17'-0" (3)         | 14'-2" (3)  | 11'-3" (3) |
|              | 14"         | 18'-0" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-7" (3)        | 14'-7" (3)  | 11'-8" (3)  | 17'-0" (3)         | 14'-2" (3)  | 11'-3" (3) |
| PWI 90       | 16"         | 18'-0" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-7" (3)        | 14'-7" (3)  | 11'-8" (3)  | 17'-0" (3)         | 14'-2" (3)  | 11'-3" (3) |
|              | 18"         | 18'-0" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-7" (3)        | 14'-7" (3)  | 11'-8" (3)  | 17'-0" (3)         | 14'-2" (3)  | 11'-3" (3) |
|              | 20"         | 18'-0" (3)        | 14'-11" (3) | 11'-11" (3) | 17'-7" (3)        | 14'-7" (3)  | 11'-8" (3)  | 17'-0" (3)         | 14'-2" (3)  | 11'-3" (3) |
| PWI 90       | 9½"         | 16'-8" (3)        | 15'-8" (3)  | 13'-3" (3)  | 16'-0" (3)        | 15'-0" (3)  | 12'-11" (3) | 15'-3" (3)         | 14'-4" (3)  | 12'-6" (3) |
|              | 11⅞"        | 19'-11" (3)       | 16'-7" (3)  | 13'-3" (3)  | 19'-2" (3)        | 16'-2" (3)  | 12'-11" (3) | 18'-3" (3)         | 15'-8" (3)  | 12'-6" (3) |
|              | 14"         | 19'-11" (3)       | 16'-7" (3)  | 13'-3" (3)  | 19'-6" (3)        | 16'-2" (3)  | 12'-11" (3) | 18'-10" (3)        | 15'-8" (3)  | 12'-6" (3) |
| PWI 90       | 16"         | 19'-11" (3)       | 16'-7" (3)  | 13'-3" (3)  | 19'-6" (3)        | 16'-2" (3)  | 12'-11" (3) | 18'-10" (3)        | 15'-8" (3)  | 12'-6" (3) |
|              | 18"         | 19'-11" (3)       | 16'-7" (3)  | 13'-3" (3)  | 19'-6" (3)        | 16'-2" (3)  | 12'-11" (3) | 18'-10" (3)        | 15'-8" (3)  | 12'-6" (3) |
|              | 20"         | 19'-11" (3)       | 16'-7" (3)  | 13'-3" (3)  | 19'-6" (3)        | 16'-2" (3)  | 12'-11" (3) | 18'-10" (3)        | 15'-8" (3)  | 12'-6" (3) |
| PWI 90       | 22"         | 27'-10" (3)       | 25'-2" (3)  | 20'-1" (3)  | 27'-6" (3)        | 24'-8" (3)  | 19'-8" (3)  | 27'-1" (4)         | 23'-10" (4) | 19'-0" (4) |
|              | 24"         | 29'-0" (3)        | 25'-2" (3)  | 20'-1" (3)  | 28'-8" (3)        | 24'-8" (3)  | 19'-8" (3)  | 28'-3" (4)         | 23'-10" (4) | 19'-0" (4) |
|              | 9½"         | 19'-1" (3)        | 17'-11" (3) | 14'-5" (3)  | 18'-4" (3)        | 17'-2" (3)  | 14'-1" (3)  | 17'-5" (3)         | 16'-4" (3)  | 13'-8" (3) |
| PWI 90       | 11⅞"        | 21'-9" (3)        | 18'-1" (3)  | 14'-5" (3)  | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-7" (3)         | 17'-1" (3)  | 13'-8" (3) |
|              | 14"         | 21'-9" (3)        | 18'-1" (3)  | 14'-5" (3)  | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-7" (3)         | 17'-1" (3)  | 13'-8" (3) |
|              | 16"         | 21'-9" (3)        | 18'-1" (3)  | 14'-5" (3)  | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-7" (3)         | 17'-1" (3)  | 13'-8" (3) |
| PWI 90       | 18"         | 21'-9" (3)        | 18'-1" (3)  | 14'-5" (3)  | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-7" (3)         | 17'-1" (3)  | 13'-8" (3) |
|              | 20"         | 21'-9" (3)        | 18'-1" (3)  | 14'-5" (3)  | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-7" (3)         | 17'-1" (3)  | 13'-8" (3) |
|              | 22"         | 34'-6" (3)        | 31'-1" (3)  | 24'-10" (3) | 34'-2" (3)        | 30'-5" (4)  | 24'-4" (4)  | 33'-4" (4)         | 28'-5" (4)  | 22'-9" (4) |
| PWI 90       | 24"         | 36'-0" (3)        | 31'-1" (3)  | 24'-10" (3) | 35'-8" (4)        | 30'-5" (4)  | 24'-4" (4)  | 34'-2" (4)         | 28'-5" (4)  | 22'-9" (4) |

### Notes:

- Table values apply to uniformly loaded roof joists that are sloped at least ¼" in 12".
- Span is measured on the horizontal from face to face of supports.
- 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.
- The numbers in parentheses refer to the minimum connection required at each support.
  - Beveled plate and two nails (165 lbs. lateral capacity @ 100%), or joist hanger
  - Beveled plate and four nails (330 lbs. lateral capacity @ 100%), or (3)
  - Gussets at high support (1295 lbs. lateral capacity @ 100%), birdsmouth cut at low support, or (4)
  - Strap (1640 lbs. lateral capacity @ 100%) or pair of twist straps (950 lbs. lateral capacity each @ 100%) at high support, birdsmouth cut at low support
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. roof sheathing, gypsum board ceiling).
- Consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads, multiple span joists).

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—100 PSF LIVE LOAD – 15 PSF DEAD LOAD

| Joist Series | Joist Depth            | SIMPLE SPAN            |                        |                        |                        |                       |                       |                        |                        |                        |
|--------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
|              |                        | Slopes to 4 in 12      |                        |                        | Slopes to 8 in 12      |                       |                       | Slopes to 12 in 12     |                        |                        |
|              |                        | 16" o.c.               | 19.2" o.c.             | 24" o.c.               | 16" o.c.               | 19.2" o.c.            | 24" o.c.              | 16" o.c.               | 19.2" o.c.             | 24" o.c.               |
| PWI 20       | 9½"                    | 11'-3" <sup>(2)</sup>  | 9'-8" <sup>(2)</sup>   | 7'-9" <sup>(2)</sup>   | 11'-2" <sup>(3)</sup>  | 9'-6" <sup>(3)</sup>  | 7'-7" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 9'-3" <sup>(3)</sup>   | 7'-4" <sup>(3)</sup>   |
|              | 11⅞"                   | 11'-8" <sup>(2)</sup>  | 9'-8" <sup>(2)</sup>   | 7'-9" <sup>(2)</sup>   | 11'-5" <sup>(3)</sup>  | 9'-6" <sup>(3)</sup>  | 7'-7" <sup>(3)</sup>  | 11'-2" <sup>(3)</sup>  | 9'-3" <sup>(3)</sup>   | 7'-4" <sup>(3)</sup>   |
|              | 14"                    | 11'-8" <sup>(2)</sup>  | 9'-8" <sup>(2)</sup>   | 7'-9" <sup>(2)</sup>   | 11'-5" <sup>(3)</sup>  | 9'-6" <sup>(3)</sup>  | 7'-7" <sup>(3)</sup>  | 11'-2" <sup>(3)</sup>  | 9'-3" <sup>(3)</sup>   | 7'-4" <sup>(3)</sup>   |
| PWI 30       | 9½"                    | 12'-1" <sup>(2)</sup>  | 10'-0" <sup>(2)</sup>  | 8'-0" <sup>(2)</sup>   | 11'-10" <sup>(3)</sup> | 9'-10" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>   | 7'-7" <sup>(3)</sup>   |
|              | 11⅞"                   | 12'-1" <sup>(2)</sup>  | 10'-0" <sup>(2)</sup>  | 8'-0" <sup>(2)</sup>   | 11'-10" <sup>(3)</sup> | 9'-10" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>   | 7'-7" <sup>(3)</sup>   |
| PWI 40       | 9½"                    | 11'-9" <sup>(2)</sup>  | 10'-8" <sup>(2)</sup>  | 9'-2" <sup>(3)</sup>   | 11'-7" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 11'-5" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   |
|              | 11⅞"                   | 13'-4" <sup>(3)</sup>  | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 13'-3" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   |
|              | 14"                    | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 13'-6" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   |
| PWI 45       | 9½"                    | 12'-6" <sup>(2)</sup>  | 10'-5" <sup>(2)</sup>  | 8'-3" <sup>(2)</sup>   | 12'-3" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 8'-1" <sup>(3)</sup>  | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup>  | 7'-11" <sup>(3)</sup>  |
|              | 11⅞"                   | 12'-6" <sup>(2)</sup>  | 10'-5" <sup>(2)</sup>  | 8'-3" <sup>(2)</sup>   | 12'-3" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 8'-1" <sup>(3)</sup>  | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup>  | 7'-11" <sup>(3)</sup>  |
|              | 14"                    | 12'-6" <sup>(2)</sup>  | 10'-5" <sup>(2)</sup>  | 8'-3" <sup>(2)</sup>   | 12'-3" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 8'-1" <sup>(3)</sup>  | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup>  | 7'-11" <sup>(3)</sup>  |
| PWI 47       | 7⅞"                    | 11'-0" <sup>(2)</sup>  | 9'-2" <sup>(2)</sup>   | 7'-3" <sup>(2)</sup>   | 10'-10" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 7'-2" <sup>(3)</sup>  | 10'-6" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 6'-11" <sup>(3)</sup>  |
|              | 9½"                    | 11'-2" <sup>(2)</sup>  | 9'-3" <sup>(2)</sup>   | 7'-4" <sup>(2)</sup>   | 10'-11" <sup>(3)</sup> | 9'-1" <sup>(3)</sup>  | 7'-3" <sup>(3)</sup>  | 10'-8" <sup>(3)</sup>  | 8'-10" <sup>(3)</sup>  | 7'-0" <sup>(3)</sup>   |
|              | 11⅞"                   | 11'-3" <sup>(2)</sup>  | 9'-4" <sup>(2)</sup>   | 7'-5" <sup>(2)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup>  | 7'-1" <sup>(3)</sup>   |
|              | 14"                    | 11'-6" <sup>(2)</sup>  | 9'-6" <sup>(2)</sup>   | 7'-7" <sup>(2)</sup>   | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 9'-1" <sup>(3)</sup>   | 7'-3" <sup>(3)</sup>   |
|              | 16"                    | 11'-7" <sup>(2)</sup>  | 9'-8" <sup>(2)</sup>   | 7'-8" <sup>(2)</sup>   | 11'-5" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 7'-4" <sup>(3)</sup>   |
|              | 18"                    | 11'-9" <sup>(2)</sup>  | 9'-9" <sup>(2)</sup>   | 7'-9" <sup>(2)</sup>   | 11'-6" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-7" <sup>(3)</sup>  | 11'-2" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-5" <sup>(3)</sup>   |
| PWI 50       | 9½"                    | 13'-0" <sup>(2)</sup>  | 10'-9" <sup>(2)</sup>  | 8'-7" <sup>(2)</sup>   | 12'-9" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup> | 8'-5" <sup>(3)</sup>  | 12'-4" <sup>(3)</sup>  | 10'-3" <sup>(3)</sup>  | 8'-2" <sup>(3)</sup>   |
|              | 11⅞"                   | 13'-0" <sup>(2)</sup>  | 10'-9" <sup>(2)</sup>  | 8'-7" <sup>(2)</sup>   | 12'-9" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup> | 8'-5" <sup>(3)</sup>  | 12'-4" <sup>(3)</sup>  | 10'-3" <sup>(3)</sup>  | 8'-2" <sup>(3)</sup>   |
|              | 14"                    | 13'-0" <sup>(2)</sup>  | 10'-9" <sup>(2)</sup>  | 8'-7" <sup>(2)</sup>   | 12'-9" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup> | 8'-5" <sup>(3)</sup>  | 12'-4" <sup>(3)</sup>  | 10'-3" <sup>(3)</sup>  | 8'-2" <sup>(3)</sup>   |
|              | 16"                    | 13'-0" <sup>(2)</sup>  | 10'-9" <sup>(2)</sup>  | 8'-7" <sup>(2)</sup>   | 12'-9" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup> | 8'-5" <sup>(3)</sup>  | 12'-4" <sup>(3)</sup>  | 10'-3" <sup>(3)</sup>  | 8'-2" <sup>(3)</sup>   |
| PWI 60       | 9½"                    | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 13'-6" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   |
|              | 11⅞"                   | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 13'-6" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   |
|              | 14"                    | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>   | 13'-6" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   |
| PWI 70       | 11⅞"                   | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup>  | 9'-10" <sup>(3)</sup>  | 14'-7" <sup>(3)</sup>  | 12'-1" <sup>(3)</sup> | 9'-8" <sup>(3)</sup>  | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   |
|              | 14"                    | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup>  | 9'-10" <sup>(3)</sup>  | 14'-7" <sup>(3)</sup>  | 12'-1" <sup>(3)</sup> | 9'-8" <sup>(3)</sup>  | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   |
|              | 16"                    | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup>  | 9'-10" <sup>(3)</sup>  | 14'-7" <sup>(3)</sup>  | 12'-1" <sup>(3)</sup> | 9'-8" <sup>(3)</sup>  | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   |
|              | 18"                    | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup>  | 9'-10" <sup>(3)</sup>  | 14'-7" <sup>(3)</sup>  | 12'-1" <sup>(3)</sup> | 9'-8" <sup>(3)</sup>  | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   |
| PWI 77       | 9½"                    | 15'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 14'-1" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 11⅞"                   | 16'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 14"                    | 16'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 16"                    | 16'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 18"                    | 16'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 20"                    | 16'-5" <sup>(3)</sup>  | 13'-8" <sup>(3)</sup>  | 10'-11" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  |
|              | 22"                    | 25'-0" <sup>(3)</sup>  | 20'-10" <sup>(3)</sup> | 16'-7" <sup>(3)</sup>  | 24'-7" <sup>(3)</sup>  | 20'-5" <sup>(3)</sup> | 16'-4" <sup>(3)</sup> | 23'-11" <sup>(4)</sup> | 19'-11" <sup>(4)</sup> | 15'-10" <sup>(4)</sup> |
| PWI 90       | 9½"                    | 17'-7" <sup>(3)</sup>  | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 16'-11" <sup>(3)</sup> | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 16'-1" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 11⅞"                   | 17'-11" <sup>(3)</sup> | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 17'-7" <sup>(3)</sup>  | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 14"                    | 17'-11" <sup>(3)</sup> | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 17'-7" <sup>(3)</sup>  | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 16"                    | 17'-11" <sup>(3)</sup> | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 17'-7" <sup>(3)</sup>  | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 18"                    | 17'-11" <sup>(3)</sup> | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 17'-7" <sup>(3)</sup>  | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 20"                    | 17'-11" <sup>(3)</sup> | 14'-11" <sup>(3)</sup> | 11'-11" <sup>(3)</sup> | 17'-7" <sup>(3)</sup>  | 14'-8" <sup>(3)</sup> | 11'-8" <sup>(3)</sup> | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  |
|              | 22"                    | 30'-11" <sup>(3)</sup> | 25'-9" <sup>(3)</sup>  | 20'-6" <sup>(3)</sup>  | 30'-4" <sup>(4)</sup>  | 25'-3" <sup>(4)</sup> | 20'-2" <sup>(4)</sup> | 28'-6" <sup>(4)</sup>  | 23'-9" <sup>(4)</sup>  | 18'-11" <sup>(4)</sup> |
| 24"          | 30'-11" <sup>(3)</sup> | 25'-9" <sup>(3)</sup>  | 20'-6" <sup>(3)</sup>  | 30'-4" <sup>(4)</sup>  | 25'-3" <sup>(4)</sup>  | 20'-2" <sup>(4)</sup> | 28'-6" <sup>(4)</sup> | 23'-9" <sup>(4)</sup>  | 18'-11" <sup>(4)</sup> |                        |

See notes on page 52

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—120 PSF LIVE LOAD – 15 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN       |             |            |                   |            |             |                    |            |            |
|--------------|-------------|-------------------|-------------|------------|-------------------|------------|-------------|--------------------|------------|------------|
|              |             | Slopes to 4 in 12 |             |            | Slopes to 8 in 12 |            |             | Slopes to 12 in 12 |            |            |
|              |             | 16" o.c.          | 19.2" o.c.  | 24" o.c.   | 16" o.c.          | 19.2" o.c. | 24" o.c.    | 16" o.c.           | 19.2" o.c. | 24" o.c.   |
| PWI 20       | 9½"         | 9'-11" (2)        | 8'-3" (2)   | 6'-7" (2)  | 9'-9" (3)         | 8'-1" (3)  | 6'-5" (3)   | 9'-6" (3)          | 7'-11" (3) | 6'-4" (3)  |
|              | 11⅞"        | 9'-11" (2)        | 8'-3" (2)   | 6'-7" (2)  | 9'-9" (3)         | 8'-1" (3)  | 6'-5" (3)   | 9'-6" (3)          | 7'-11" (3) | 6'-4" (3)  |
|              | 14"         | 9'-11" (2)        | 8'-3" (2)   | 6'-7" (2)  | 9'-9" (3)         | 8'-1" (3)  | 6'-5" (3)   | 9'-6" (3)          | 7'-11" (3) | 6'-4" (3)  |
| PWI 30       | 9½"         | 10'-3" (2)        | 8'-6" (2)   | 6'-9" (2)  | 10'-1" (3)        | 8'-4" (3)  | 6'-8" (3)   | 9'-10" (3)         | 8'-2" (3)  | 6'-6" (3)  |
|              | 11⅞"        | 10'-3" (2)        | 8'-6" (2)   | 6'-9" (2)  | 10'-1" (3)        | 8'-4" (3)  | 6'-8" (3)   | 9'-10" (3)         | 8'-2" (3)  | 6'-6" (3)  |
|              | 14"         | 10'-3" (2)        | 8'-6" (2)   | 6'-9" (2)  | 10'-1" (3)        | 8'-4" (3)  | 6'-8" (3)   | 9'-10" (3)         | 8'-2" (3)  | 6'-6" (3)  |
| PWI 40       | 9½"         | 10'-10" (2)       | 9'-9" (3)   | 7'-9" (3)  | 10'-9" (3)        | 9'-7" (3)  | 7'-8" (3)   | 10'-7" (3)         | 9'-4" (3)  | 7'-6" (3)  |
|              | 11⅞"        | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
|              | 14"         | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
| PWI 45       | 9½"         | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
|              | 11⅞"        | 10'-8" (2)        | 8'-10" (2)  | 7'-0" (2)  | 10'-6" (3)        | 8'-8" (3)  | 6'-11" (3)  | 10'-3" (3)         | 8'-6" (3)  | 6'-9" (3)  |
|              | 14"         | 10'-8" (2)        | 8'-10" (2)  | 7'-0" (2)  | 10'-6" (3)        | 8'-8" (3)  | 6'-11" (3)  | 10'-3" (3)         | 8'-6" (3)  | 6'-9" (3)  |
| PWI 47       | 9½"         | 10'-8" (2)        | 8'-10" (2)  | 7'-0" (2)  | 10'-6" (3)        | 8'-8" (3)  | 6'-11" (3)  | 10'-3" (3)         | 8'-6" (3)  | 6'-9" (3)  |
|              | 11⅞"        | 9'-4" (2)         | 7'-9" (2)   | 6'-2" (2)  | 9'-3" (3)         | 7'-8" (3)  | 6'-1" (3)   | 9'-0" (3)          | 7'-6" (3)  | 5'-11" (3) |
|              | 14"         | 9'-4" (2)         | 7'-9" (2)   | 6'-2" (2)  | 9'-3" (3)         | 7'-8" (3)  | 6'-1" (3)   | 9'-0" (3)          | 7'-6" (3)  | 5'-11" (3) |
| PWI 50       | 9½"         | 9'-6" (2)         | 7'-10" (2)  | 6'-3" (2)  | 9'-4" (3)         | 7'-9" (3)  | 6'-2" (3)   | 9'-1" (3)          | 7'-7" (3)  | 6'-0" (3)  |
|              | 11⅞"        | 9'-7" (2)         | 7'-11" (2)  | 6'-4" (2)  | 9'-5" (3)         | 7'-10" (3) | 6'-3" (3)   | 9'-3" (3)          | 7'-8" (3)  | 6'-1" (3)  |
|              | 14"         | 9'-9" (2)         | 8'-1" (2)   | 6'-5" (2)  | 9'-7" (3)         | 8'-0" (3)  | 6'-4" (3)   | 9'-4" (3)          | 7'-9" (3)  | 6'-2" (3)  |
| PWI 60       | 9½"         | 9'-10" (2)        | 8'-2" (2)   | 6'-6" (2)  | 9'-8" (3)         | 8'-1" (3)  | 6'-5" (3)   | 9'-6" (3)          | 7'-10" (3) | 6'-3" (3)  |
|              | 11⅞"        | 10'-0" (2)        | 8'-3" (2)   | 6'-7" (2)  | 9'-10" (3)        | 8'-2" (3)  | 6'-6" (3)   | 9'-7" (3)          | 7'-11" (3) | 6'-4" (3)  |
|              | 14"         | 10'-1" (2)        | 8'-4" (2)   | 6'-8" (2)  | 9'-11" (3)        | 8'-3" (3)  | 6'-7" (3)   | 9'-8" (3)          | 8'-1" (3)  | 6'-5" (3)  |
| PWI 70       | 9½"         | 11'-0" (2)        | 9'-2" (2)   | 7'-3" (2)  | 10'-10" (3)       | 9'-0" (3)  | 7'-2" (3)   | 10'-7" (3)         | 8'-10" (3) | 7'-0" (3)  |
|              | 11⅞"        | 11'-0" (2)        | 9'-2" (2)   | 7'-3" (2)  | 10'-10" (3)       | 9'-0" (3)  | 7'-2" (3)   | 10'-7" (3)         | 8'-10" (3) | 7'-0" (3)  |
|              | 14"         | 11'-0" (2)        | 9'-2" (2)   | 7'-3" (2)  | 10'-10" (3)       | 9'-0" (3)  | 7'-2" (3)   | 10'-7" (3)         | 8'-10" (3) | 7'-0" (3)  |
| PWI 77       | 9½"         | 11'-0" (2)        | 9'-2" (2)   | 7'-3" (2)  | 10'-10" (3)       | 9'-0" (3)  | 7'-2" (3)   | 10'-7" (3)         | 8'-10" (3) | 7'-0" (3)  |
|              | 11⅞"        | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
|              | 14"         | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
| PWI 90       | 9½"         | 11'-9" (3)        | 9'-9" (3)   | 7'-9" (3)  | 11'-7" (3)        | 9'-7" (3)  | 7'-8" (3)   | 11'-3" (3)         | 9'-4" (3)  | 7'-6" (3)  |
|              | 11⅞"        | 12'-7" (3)        | 10'-6" (3)  | 8'-4" (3)  | 12'-5" (3)        | 10'-4" (3) | 8'-3" (3)   | 12'-2" (3)         | 10'-1" (3) | 8'-0" (3)  |
|              | 14"         | 12'-7" (3)        | 10'-6" (3)  | 8'-4" (3)  | 12'-5" (3)        | 10'-4" (3) | 8'-3" (3)   | 12'-2" (3)         | 10'-1" (3) | 8'-0" (3)  |
| PWI 99       | 9½"         | 12'-7" (3)        | 10'-6" (3)  | 8'-4" (3)  | 12'-5" (3)        | 10'-4" (3) | 8'-3" (3)   | 12'-2" (3)         | 10'-1" (3) | 8'-0" (3)  |
|              | 11⅞"        | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
|              | 14"         | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
| PWI 100      | 9½"         | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
|              | 11⅞"        | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
|              | 14"         | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
| PWI 110      | 9½"         | 14'-0" (3)        | 11'-8" (3)  | 9'-3" (3)  | 13'-9" (3)        | 11'-5" (3) | 9'-1" (3)   | 13'-3" (3)         | 11'-2" (3) | 8'-11" (3) |
|              | 11⅞"        | 21'-4" (3)        | 17'-9" (3)  | 14'-2" (3) | 21'-0" (3)        | 17'-5" (3) | 13'-11" (3) | 20'-6" (4)         | 17'-0" (4) | 13'-7" (4) |
|              | 14"         | 21'-4" (3)        | 17'-9" (3)  | 14'-2" (3) | 21'-0" (3)        | 17'-5" (3) | 13'-11" (3) | 20'-6" (4)         | 17'-0" (4) | 13'-7" (4) |
| PWI 120      | 9½"         | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
|              | 11⅞"        | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
|              | 14"         | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
| PWI 130      | 9½"         | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
|              | 11⅞"        | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
|              | 14"         | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
| PWI 140      | 9½"         | 15'-3" (3)        | 12'-8" (3)  | 10'-1" (3) | 15'-0" (3)        | 12'-6" (3) | 9'-11" (3)  | 14'-8" (3)         | 12'-2" (3) | 9'-9" (3)  |
|              | 11⅞"        | 26'-4" (3)        | 21'-11" (3) | 17'-6" (3) | 25'-11" (4)       | 21'-7" (4) | 17'-2" (4)  | 24'-5" (4)         | 20'-4" (4) | 16'-3" (4) |
|              | 14"         | 26'-4" (3)        | 21'-11" (3) | 17'-6" (3) | 25'-11" (4)       | 21'-7" (4) | 17'-2" (4)  | 24'-5" (4)         | 20'-4" (4) | 16'-3" (4) |

### Notes:

- Table values apply to uniformly loaded roof joists that are sloped at least ¼" in 12".
- Span is measured on the horizontal from face to face of supports.
- 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.
- The numbers in parentheses refer to the minimum connection required at each support.
  - Beveled plate and two nails (165 lbs. lateral capacity @ 100%), or joist hanger
  - Beveled plate and four nails (330 lbs. lateral capacity @ 100%), or (3)
  - Gussets at high support (1295 lbs. lateral capacity @ 100%), birdsmouth cut at low support, or (4)
  - Strap (1640 lbs. lateral capacity @ 100%) or pair of twist straps (950 lbs. lateral capacity each @ 100%) at high support, birdsmouth cut at low support
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. roof sheathing, gypsum board ceiling).
- Consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads, multiple span joists).

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—60 PSF LIVE LOAD – 20 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN       |             |             |                   |             |             |                    |             |             |
|--------------|-------------|-------------------|-------------|-------------|-------------------|-------------|-------------|--------------------|-------------|-------------|
|              |             | Slopes to 4 in 12 |             |             | Slopes to 8 in 12 |             |             | Slopes to 12 in 12 |             |             |
|              |             | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.           | 19.2" o.c.  | 24" o.c.    |
| PWI 20       | 9½"         | 13'-6" (2)        | 12'-3" (2)  | 11'-0" (2)  | 13'-3" (3)        | 12'-1" (3)  | 10'-8" (3)  | 12'-11" (3)        | 11'-9" (3)  | 10'-2" (3)  |
|              | 11½"        | 15'-4" (2)        | 13'-11" (2) | 11'-1" (2)  | 15'-1" (3)        | 13'-5" (3)  | 10'-8" (3)  | 14'-9" (3)         | 12'-9" (3)  | 10'-2" (3)  |
|              | 14"         | 16'-9" (2)        | 13'-11" (2) | 11'-1" (2)  | 16'-2" (3)        | 13'-5" (3)  | 10'-8" (3)  | 15'-4" (3)         | 12'-9" (3)  | 10'-2" (3)  |
| PWI 30       | 9½"         | 15'-3" (2)        | 13'-11" (2) | 11'-6" (2)  | 14'-10" (3)       | 13'-8" (3)  | 11'-1" (3)  | 13'-10" (3)        | 13'-0" (3)  | 10'-6" (3)  |
|              | 11½"        | 17'-4" (2)        | 14'-5" (2)  | 11'-6" (2)  | 16'-8" (3)        | 13'-10" (3) | 11'-1" (3)  | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3)  |
|              | 14"         | 17'-7" (2)        | 14'-5" (2)  | 11'-6" (2)  | 16'-8" (3)        | 13'-10" (3) | 11'-1" (3)  | 15'-10" (3)        | 13'-2" (3)  | 10'-6" (3)  |
| PWI 40       | 9½"         | 14'-0" (2)        | 12'-10" (2) | 11'-5" (2)  | 13'-9" (3)        | 12'-7" (3)  | 11'-3" (3)  | 13'-5" (3)         | 12'-3" (3)  | 10'-11" (3) |
|              | 11½"        | 16'-0" (2)        | 14'-7" (2)  | 13'-0" (3)  | 15'-9" (3)        | 14'-4" (3)  | 12'-8" (3)  | 15'-4" (3)         | 14'-0" (3)  | 12'-1" (3)  |
|              | 14"         | 17'-7" (2)        | 16'-0" (3)  | 13'-2" (3)  | 17'-3" (3)        | 15'-9" (3)  | 12'-8" (3)  | 16'-10" (3)        | 15'-1" (3)  | 12'-1" (3)  |
| PWI 45       | 9½"         | 18'-11" (2)       | 16'-6" (3)  | 13'-2" (3)  | 18'-7" (3)        | 15'-11" (3) | 12'-8" (3)  | 18'-2" (3)         | 15'-1" (3)  | 12'-1" (3)  |
|              | 11½"        | 15'-7" (2)        | 14'-2" (2)  | 11'-11" (2) | 15'-3" (3)        | 13'-11" (3) | 11'-6" (3)  | 14'-8" (3)         | 13'-7" (3)  | 10'-11" (3) |
|              | 14"         | 17'-8" (2)        | 14'-11" (2) | 11'-11" (2) | 17'-4" (3)        | 14'-5" (3)  | 11'-6" (3)  | 16'-6" (3)         | 13'-8" (3)  | 10'-11" (3) |
| PWI 47       | 7½"         | 13'-11" (2)       | 12'-8" (2)  | 10'-6" (2)  | 13'-8" (3)        | 12'-6" (3)  | 10'-1" (3)  | 12'-11" (3)        | 12'-1" (3)  | 9'-7" (3)   |
|              | 9½"         | 15'-6" (2)        | 13'-4" (2)  | 10'-7" (2)  | 15'-3" (3)        | 12'-10" (3) | 10'-3" (3)  | 14'-8" (3)         | 12'-2" (3)  | 9'-9" (3)   |
|              | 11½"        | 16'-2" (2)        | 13'-5" (2)  | 10'-9" (2)  | 15'-7" (3)        | 13'-9" (3)  | 10'-4" (3)  | 14'-10" (3)        | 12'-4" (3)  | 9'-10" (3)  |
| PWI 50       | 14"         | 16'-6" (2)        | 13'-8" (2)  | 10'-11" (2) | 15'-11" (3)       | 13'-2" (3)  | 10'-6" (3)  | 15'-1" (3)         | 12'-7" (3)  | 10'-0" (3)  |
|              | 16"         | 16'-8" (2)        | 13'-10" (2) | 11'-0" (2)  | 16'-1" (3)        | 13'-4" (3)  | 10'-8" (3)  | 15'-3" (3)         | 12'-8" (3)  | 10'-1" (3)  |
|              | 18"         | 16'-10" (2)       | 14'-0" (2)  | 11'-2" (2)  | 16'-3" (3)        | 13'-6" (3)  | 10'-9" (3)  | 15'-5" (3)         | 12'-10" (3) | 10'-3" (3)  |
| PWI 60       | 9½"         | 17'-0" (2)        | 14'-2" (2)  | 11'-3" (2)  | 16'-5" (3)        | 13'-8" (3)  | 10'-11" (3) | 15'-7" (3)         | 13'-0" (3)  | 10'-4" (3)  |
|              | 11½"        | 16'-4" (2)        | 15'-1" (2)  | 12'-4" (2)  | 15'-6" (3)        | 14'-7" (3)  | 11'-11" (3) | 14'-6" (3)         | 13'-7" (3)  | 11'-4" (3)  |
|              | 14"         | 18'-7" (2)        | 15'-6" (2)  | 12'-4" (2)  | 17'-11" (3)       | 14'-11" (3) | 11'-11" (3) | 17'-1" (3)         | 14'-2" (3)  | 11'-4" (3)  |
| PWI 70       | 9½"         | 18'-7" (2)        | 15'-6" (2)  | 12'-4" (2)  | 17'-11" (3)       | 14'-11" (3) | 11'-11" (3) | 17'-1" (3)         | 14'-2" (3)  | 11'-4" (3)  |
|              | 11½"        | 18'-7" (2)        | 15'-6" (2)  | 12'-4" (2)  | 17'-11" (3)       | 14'-11" (3) | 11'-11" (3) | 17'-1" (3)         | 14'-2" (3)  | 11'-4" (3)  |
|              | 14"         | 18'-7" (2)        | 15'-6" (2)  | 12'-4" (2)  | 17'-11" (3)       | 14'-11" (3) | 11'-11" (3) | 17'-1" (3)         | 14'-2" (3)  | 11'-4" (3)  |
| PWI 77       | 9½"         | 16'-6" (2)        | 15'-1" (2)  | 13'-2" (3)  | 16'-3" (3)        | 14'-10" (3) | 12'-8" (3)  | 15'-7" (3)         | 14'-5" (3)  | 12'-1" (3)  |
|              | 11½"        | 18'-10" (2)       | 16'-6" (3)  | 13'-2" (3)  | 18'-9" (3)        | 15'-11" (3) | 12'-8" (3)  | 18'-1" (3)         | 15'-1" (3)  | 12'-1" (3)  |
|              | 14"         | 19'-10" (3)       | 16'-6" (3)  | 13'-2" (3)  | 19'-1" (3)        | 15'-11" (3) | 12'-8" (3)  | 18'-2" (3)         | 15'-1" (3)  | 12'-1" (3)  |
| PWI 90       | 11½"        | 19'-10" (3)       | 16'-6" (3)  | 13'-2" (3)  | 19'-1" (3)        | 15'-11" (3) | 12'-8" (3)  | 18'-2" (3)         | 15'-1" (3)  | 12'-1" (3)  |
|              | 14"         | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-6" (3)        | 17'-1" (3)  | 13'-7" (3)  | 19'-6" (3)         | 16'-3" (3)  | 12'-11" (3) |
|              | 16"         | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-6" (3)        | 17'-1" (3)  | 13'-7" (3)  | 19'-6" (3)         | 16'-3" (3)  | 12'-11" (3) |
| PWI 99       | 18"         | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-6" (3)        | 17'-1" (3)  | 13'-7" (3)  | 19'-6" (3)         | 16'-3" (3)  | 12'-11" (3) |
|              | 20"         | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-6" (3)        | 17'-1" (3)  | 13'-7" (3)  | 19'-6" (3)         | 16'-3" (3)  | 12'-11" (3) |
|              | 22"         | 21'-3" (3)        | 17'-8" (3)  | 14'-1" (3)  | 20'-6" (3)        | 17'-1" (3)  | 13'-7" (3)  | 19'-6" (3)         | 16'-3" (3)  | 12'-11" (3) |
| PWI 100      | 9½"         | 18'-5" (2)        | 17'-3" (3)  | 15'-8" (3)  | 17'-5" (3)        | 16'-4" (3)  | 15'-1" (3)  | 16'-3" (3)         | 15'-3" (3)  | 14'-2" (3)  |
|              | 11½"        | 22'-0" (3)        | 19'-7" (3)  | 15'-8" (3)  | 20'-10" (3)       | 18'-11" (3) | 15'-1" (3)  | 19'-5" (3)         | 18'-0" (3)  | 14'-4" (3)  |
|              | 14"         | 23'-7" (3)        | 19'-7" (3)  | 15'-8" (3)  | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 21'-8" (3)         | 18'-0" (3)  | 14'-4" (3)  |
| PWI 110      | 16"         | 23'-7" (3)        | 19'-7" (3)  | 15'-8" (3)  | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 21'-8" (3)         | 18'-0" (3)  | 14'-4" (3)  |
|              | 18"         | 23'-7" (3)        | 19'-7" (3)  | 15'-8" (3)  | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 21'-8" (3)         | 18'-0" (3)  | 14'-4" (3)  |
|              | 20"         | 23'-7" (3)        | 19'-7" (3)  | 15'-8" (3)  | 22'-9" (3)        | 18'-11" (3) | 15'-1" (3)  | 21'-8" (3)         | 18'-0" (3)  | 14'-4" (3)  |
| PWI 120      | 22"         | 30'-3" (3)        | 27'-7" (3)  | 23'-10" (3) | 29'-9" (3)        | 27'-1" (3)  | 23'-0" (3)  | 29'-0" (3)         | 26'-5" (4)  | 21'-10" (4) |
|              | 24"         | 31'-7" (3)        | 28'-10" (3) | 23'-10" (3) | 31'-0" (3)        | 28'-3" (3)  | 23'-0" (3)  | 30'-3" (3)         | 27'-4" (4)  | 21'-10" (4) |
|              | 26"         | 31'-7" (3)        | 28'-10" (3) | 23'-10" (3) | 31'-0" (3)        | 28'-3" (3)  | 23'-0" (3)  | 30'-3" (3)         | 27'-4" (4)  | 21'-10" (4) |
| PWI 130      | 9½"         | 21'-0" (3)        | 19'-9" (3)  | 17'-1" (3)  | 19'-11" (3)       | 18'-8" (3)  | 16'-6" (3)  | 18'-7" (3)         | 17'-6" (3)  | 15'-8" (3)  |
|              | 11½"        | 25'-1" (3)        | 21'-5" (3)  | 17'-1" (3)  | 23'-9" (3)        | 20'-8" (3)  | 16'-6" (3)  | 22'-3" (3)         | 19'-8" (3)  | 15'-8" (3)  |
|              | 14"         | 25'-9" (3)        | 21'-5" (3)  | 17'-1" (3)  | 24'-10" (3)       | 20'-8" (3)  | 16'-6" (3)  | 23'-7" (3)         | 19'-8" (3)  | 15'-8" (3)  |
| PWI 140      | 16"         | 25'-9" (3)        | 21'-5" (3)  | 17'-1" (3)  | 24'-10" (3)       | 20'-8" (3)  | 16'-6" (3)  | 23'-7" (3)         | 19'-8" (3)  | 15'-8" (3)  |
|              | 18"         | 25'-9" (3)        | 21'-5" (3)  | 17'-1" (3)  | 24'-10" (3)       | 20'-8" (3)  | 16'-6" (3)  | 23'-7" (3)         | 19'-8" (3)  | 15'-8" (3)  |
|              | 20"         | 25'-9" (3)        | 21'-5" (3)  | 17'-1" (3)  | 24'-10" (3)       | 20'-8" (3)  | 16'-6" (3)  | 23'-7" (3)         | 19'-8" (3)  | 15'-8" (3)  |
| PWI 150      | 22"         | 37'-7" (3)        | 34'-3" (3)  | 29'-5" (3)  | 36'-11" (3)       | 33'-8" (3)  | 28'-4" (4)  | 35'-7" (4)         | 32'-8" (4)  | 26'-1" (4)  |
|              | 24"         | 39'-2" (3)        | 35'-9" (3)  | 29'-5" (3)  | 38'-6" (3)        | 35'-1" (4)  | 28'-4" (4)  | 37'-7" (4)         | 32'-8" (4)  | 26'-1" (4)  |
|              | 26"         | 39'-2" (3)        | 35'-9" (3)  | 29'-5" (3)  | 38'-6" (3)        | 35'-1" (4)  | 28'-4" (4)  | 37'-7" (4)         | 32'-8" (4)  | 26'-1" (4)  |

See notes on page 54

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—80 PSF LIVE LOAD – 20 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN       |             |            |                   |             |             |                    |            |            |
|--------------|-------------|-------------------|-------------|------------|-------------------|-------------|-------------|--------------------|------------|------------|
|              |             | Slopes to 4 in 12 |             |            | Slopes to 8 in 12 |             |             | Slopes to 12 in 12 |            |            |
|              |             | 16" o.c.          | 19.2" o.c.  | 24" o.c.   | 16" o.c.          | 19.2" o.c.  | 24" o.c.    | 16" o.c.           | 19.2" o.c. | 24" o.c.   |
| PWI 20       | 9½"         | 12'-1" (2)        | 11'-0" (2)  | 8'-10" (2) | 11'-10" (3)       | 10'-10" (3) | 8'-7" (3)   | 11'-8" (3)         | 10'-4" (3) | 8'-3" (3)  |
|              | 11⅞"        | 13'-5" (2)        | 11'-2" (2)  | 8'-10" (2) | 13'-0" (3)        | 10'-10" (3) | 8'-7" (3)   | 12'-6" (3)         | 10'-4" (3) | 8'-3" (3)  |
|              | 14"         | 13'-5" (2)        | 11'-2" (2)  | 8'-10" (2) | 13'-0" (3)        | 10'-10" (3) | 8'-7" (3)   | 12'-6" (3)         | 10'-4" (3) | 8'-3" (3)  |
| PWI 30       | 9½"         | 13'-8" (2)        | 11'-6" (2)  | 9'-2" (2)  | 13'-5" (3)        | 11'-2" (3)  | 8'-11" (3)  | 12'-10" (3)        | 10'-9" (3) | 8'-6" (3)  |
|              | 11⅞"        | 13'-10" (2)       | 11'-6" (2)  | 9'-2" (2)  | 13'-5" (3)        | 11'-2" (3)  | 8'-11" (3)  | 12'-11" (3)        | 10'-9" (3) | 8'-6" (3)  |
|              | 14"         | 13'-8" (2)        | 11'-6" (2)  | 9'-2" (2)  | 13'-5" (3)        | 11'-2" (3)  | 8'-11" (3)  | 12'-10" (3)        | 10'-9" (3) | 8'-6" (3)  |
| PWI 40       | 9½"         | 12'-7" (2)        | 11'-5" (2)  | 10'-3" (3) | 12'-4" (3)        | 11'-3" (3)  | 10'-1" (3)  | 12'-1" (3)         | 11'-1" (3) | 9'-9" (3)  |
|              | 11⅞"        | 14'-4" (2)        | 13'-1" (3)  | 10'-6" (3) | 14'-1" (3)        | 12'-9" (3)  | 10'-2" (3)  | 13'-10" (3)        | 12'-3" (3) | 9'-9" (3)  |
|              | 14"         | 15'-9" (3)        | 13'-2" (3)  | 10'-6" (3) | 15'-5" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-9" (3)         | 12'-3" (3) | 9'-9" (3)  |
| PWI 45       | 9½"         | 15'-10" (3)       | 13'-2" (3)  | 10'-6" (3) | 15'-5" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-9" (3)         | 12'-3" (3) | 9'-9" (3)  |
|              | 11⅞"        | 13'-11" (2)       | 11'-11" (2) | 9'-6" (2)  | 13'-11" (3)       | 11'-7" (3)  | 9'-3" (3)   | 13'-5" (3)         | 11'-2" (3) | 8'-10" (3) |
|              | 14"         | 14'-4" (2)        | 11'-11" (2) | 9'-6" (2)  | 13'-11" (3)       | 11'-7" (3)  | 9'-3" (3)   | 13'-5" (3)         | 11'-2" (3) | 8'-10" (3) |
| PWI 47       | 7⅞"         | 12'-5" (2)        | 10'-6" (2)  | 8'-4" (2)  | 12'-3" (3)        | 10'-2" (3)  | 8'-2" (3)   | 11'-10" (3)        | 9'-10" (3) | 7'-10" (3) |
|              | 9½"         | 12'-10" (2)       | 10'-8" (2)  | 8'-6" (2)  | 12'-5" (3)        | 10'-4" (3)  | 8'-3" (3)   | 11'-11" (3)        | 9'-11" (3) | 7'-11" (3) |
|              | 11⅞"        | 12'-11" (2)       | 10'-8" (2)  | 8'-7" (2)  | 12'-7" (3)        | 10'-5" (3)  | 8'-4" (3)   | 12'-1" (3)         | 10'-0" (3) | 8'-0" (3)  |
| PWI 50       | 14"         | 13'-2" (2)        | 10'-11" (2) | 8'-9" (2)  | 12'-9" (3)        | 10'-8" (3)  | 8'-6" (3)   | 12'-3" (3)         | 10'-2" (3) | 8'-1" (3)  |
|              | 16"         | 13'-4" (2)        | 11'-1" (2)  | 8'-10" (2) | 12'-11" (3)       | 10'-9" (3)  | 8'-7" (3)   | 12'-5" (3)         | 10'-4" (3) | 8'-3" (3)  |
|              | 18"         | 13'-6" (2)        | 11'-2" (2)  | 8'-11" (2) | 13'-1" (3)        | 10'-10" (3) | 8'-8" (3)   | 12'-7" (3)         | 10'-5" (3) | 8'-4" (3)  |
| PWI 60       | 9½"         | 14'-10" (2)       | 12'-4" (2)  | 9'-10" (2) | 14'-3" (3)        | 12'-0" (3)  | 9'-7" (3)   | 13'-6" (3)         | 11'-6" (3) | 9'-2" (3)  |
|              | 11⅞"        | 14'-10" (2)       | 12'-4" (2)  | 9'-10" (2) | 14'-5" (3)        | 12'-0" (3)  | 9'-7" (3)   | 13'-10" (3)        | 11'-6" (3) | 9'-2" (3)  |
|              | 14"         | 14'-10" (2)       | 12'-4" (2)  | 9'-10" (2) | 14'-5" (3)        | 12'-0" (3)  | 9'-7" (3)   | 13'-10" (3)        | 11'-6" (3) | 9'-2" (3)  |
| PWI 70       | 9½"         | 14'-9" (2)        | 13'-2" (3)  | 10'-6" (3) | 14'-7" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-3" (3)         | 12'-3" (3) | 9'-9" (3)  |
|              | 11⅞"        | 15'-10" (3)       | 13'-2" (3)  | 10'-6" (3) | 15'-5" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-9" (3)         | 12'-3" (3) | 9'-9" (3)  |
|              | 14"         | 15'-10" (3)       | 13'-2" (3)  | 10'-6" (3) | 15'-5" (3)        | 12'-9" (3)  | 10'-2" (3)  | 14'-9" (3)         | 12'-3" (3) | 9'-9" (3)  |
| PWI 77       | 11⅞"        | 17'-0" (3)        | 14'-2" (3)  | 11'-3" (3) | 16'-6" (3)        | 13'-9" (3)  | 11'-0" (3)  | 15'-11" (3)        | 13'-2" (3) | 10'-6" (3) |
|              | 14"         | 17'-0" (3)        | 14'-2" (3)  | 11'-3" (3) | 16'-6" (3)        | 13'-9" (3)  | 11'-0" (3)  | 15'-11" (3)        | 13'-2" (3) | 10'-6" (3) |
|              | 16"         | 17'-0" (3)        | 14'-2" (3)  | 11'-3" (3) | 16'-6" (3)        | 13'-9" (3)  | 11'-0" (3)  | 15'-11" (3)        | 13'-2" (3) | 10'-6" (3) |
| PWI 90       | 9½"         | 16'-8" (3)        | 15'-8" (3)  | 12'-6" (3) | 16'-0" (3)        | 15'-0" (3)  | 12'-2" (3)  | 15'-2" (3)         | 14'-3" (3) | 11'-8" (3) |
|              | 11⅞"        | 18'-11" (3)       | 15'-8" (3)  | 12'-6" (3) | 18'-4" (3)        | 15'-3" (3)  | 12'-2" (3)  | 17'-7" (3)         | 14'-8" (3) | 11'-8" (3) |
|              | 14"         | 18'-11" (3)       | 15'-8" (3)  | 12'-6" (3) | 18'-4" (3)        | 15'-3" (3)  | 12'-2" (3)  | 17'-7" (3)         | 14'-8" (3) | 11'-8" (3) |
| PWI 100      | 16"         | 18'-11" (3)       | 15'-8" (3)  | 12'-6" (3) | 18'-4" (3)        | 15'-3" (3)  | 12'-2" (3)  | 17'-7" (3)         | 14'-8" (3) | 11'-8" (3) |
|              | 18"         | 18'-11" (3)       | 15'-8" (3)  | 12'-6" (3) | 18'-4" (3)        | 15'-3" (3)  | 12'-2" (3)  | 17'-7" (3)         | 14'-8" (3) | 11'-8" (3) |
|              | 20"         | 18'-11" (3)       | 15'-8" (3)  | 12'-6" (3) | 18'-4" (3)        | 15'-3" (3)  | 12'-2" (3)  | 17'-7" (3)         | 14'-8" (3) | 11'-8" (3) |
| PWI 110      | 22"         | 27'-1" (3)        | 23'-11" (3) | 19'-1" (3) | 26'-8" (3)        | 23'-2" (3)  | 18'-6" (3)  | 26'-2" (4)         | 22'-3" (4) | 17'-9" (4) |
|              | 24"         | 28'-3" (3)        | 23'-11" (3) | 19'-1" (3) | 27'-10" (3)       | 23'-2" (3)  | 18'-6" (3)  | 26'-9" (4)         | 22'-3" (4) | 17'-9" (4) |
|              | 9½"         | 19'-1" (3)        | 17'-2" (3)  | 13'-8" (3) | 18'-4" (3)        | 16'-8" (3)  | 13'-3" (3)  | 17'-4" (3)         | 16'-0" (3) | 12'-9" (3) |
| PWI 120      | 11⅞"        | 20'-7" (3)        | 17'-2" (3)  | 13'-8" (3) | 20'-0" (3)        | 16'-8" (3)  | 13'-3" (3)  | 19'-2" (3)         | 16'-0" (3) | 12'-9" (3) |
|              | 14"         | 20'-7" (3)        | 17'-2" (3)  | 13'-8" (3) | 20'-0" (3)        | 16'-8" (3)  | 13'-3" (3)  | 19'-2" (3)         | 16'-0" (3) | 12'-9" (3) |
|              | 16"         | 20'-7" (3)        | 17'-2" (3)  | 13'-8" (3) | 20'-0" (3)        | 16'-8" (3)  | 13'-3" (3)  | 19'-2" (3)         | 16'-0" (3) | 12'-9" (3) |
| PWI 130      | 18"         | 20'-7" (3)        | 17'-2" (3)  | 13'-8" (3) | 20'-0" (3)        | 16'-8" (3)  | 13'-3" (3)  | 19'-2" (3)         | 16'-0" (3) | 12'-9" (3) |
|              | 20"         | 20'-7" (3)        | 17'-2" (3)  | 13'-8" (3) | 20'-0" (3)        | 16'-8" (3)  | 13'-3" (3)  | 19'-2" (3)         | 16'-0" (3) | 12'-9" (3) |
|              | 22"         | 33'-7" (3)        | 29'-6" (3)  | 23'-7" (3) | 33'-2" (3)        | 28'-8" (4)  | 22'-11" (4) | 31'-11" (4)        | 26'-7" (4) | 21'-3" (4) |
| PWI 140      | 24"         | 35'-1" (3)        | 29'-6" (3)  | 23'-7" (3) | 34'-5" (4)        | 28'-8" (4)  | 22'-11" (4) | 31'-11" (4)        | 26'-7" (4) | 21'-3" (4) |

### Notes:

- Table values apply to uniformly loaded roof joists that are sloped at least ¼" in 12".
- Span is measured on the horizontal from face to face of supports.
- 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.
- The numbers in parentheses refer to the minimum connection required at each support.
  - Beveled plate and two nails (165 lbs. lateral capacity @ 100%), or joist hanger
  - Beveled plate and four nails (330 lbs. lateral capacity @ 100%), or (3)
  - Gussets at high support (1295 lbs. lateral capacity @ 100%), birdsmouth cut at low support, or (4)
  - Strap (1640 lbs. lateral capacity @ 100%) or pair of twist straps (950 lbs. lateral capacity each @ 100%) at high support, birdsmouth cut at low support
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. roof sheathing, gypsum board ceiling).
- Consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads, multiple span joists).

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—100 PSF LIVE LOAD – 20 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN            |                        |                        |                        |                        |                       |                        |                       |                        |
|--------------|-------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
|              |             | Slopes to 4 in 12      |                        |                        | Slopes to 8 in 12      |                        |                       | Slopes to 12 in 12     |                       |                        |
|              |             | 16" o.c.               | 19.2" o.c.             | 24" o.c.               | 16" o.c.               | 19.2" o.c.             | 24" o.c.              | 16" o.c.               | 19.2" o.c.            | 24" o.c.               |
| PWI 20       | 9½"         | 11'-0" <sup>(2)</sup>  | 9'-3" <sup>(2)</sup>   | 7'-4" <sup>(2)</sup>   | 10'-10" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>   | 7'-2" <sup>(3)</sup>  | 10'-6" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>  | 6'-11" <sup>(3)</sup>  |
|              | 11⅞"        | 11'-2" <sup>(2)</sup>  | 9'-3" <sup>(2)</sup>   | 7'-4" <sup>(2)</sup>   | 10'-11" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>   | 7'-2" <sup>(3)</sup>  | 10'-6" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>  | 6'-11" <sup>(3)</sup>  |
|              | 14"         | 11'-2" <sup>(2)</sup>  | 9'-3" <sup>(2)</sup>   | 7'-4" <sup>(2)</sup>   | 10'-11" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>   | 7'-2" <sup>(3)</sup>  | 10'-6" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>  | 6'-11" <sup>(3)</sup>  |
| PWI 30       | 9½"         | 11'-6" <sup>(2)</sup>  | 9'-7" <sup>(2)</sup>   | 7'-7" <sup>(2)</sup>   | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-5" <sup>(3)</sup>  | 10'-10" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 7'-2" <sup>(3)</sup>   |
|              | 11⅞"        | 11'-6" <sup>(2)</sup>  | 9'-7" <sup>(2)</sup>   | 7'-7" <sup>(2)</sup>   | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-5" <sup>(3)</sup>  | 10'-10" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>  | 7'-2" <sup>(3)</sup>   |
| PWI 40       | 9½"         | 11'-5" <sup>(2)</sup>  | 10'-5" <sup>(2)</sup>  | 8'-9" <sup>(3)</sup>   | 11'-4" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
|              | 11⅞"        | 13'-1" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 12'-5" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
|              | 14"         | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 12'-5" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
| PWI 45       | 9½"         | 11'-11" <sup>(2)</sup> | 9'-11" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>   |
|              | 11⅞"        | 11'-11" <sup>(2)</sup> | 9'-11" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>   |
|              | 14"         | 11'-11" <sup>(2)</sup> | 9'-11" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 11'-3" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>   |
| PWI 47       | 7⅞"         | 10'-6" <sup>(2)</sup>  | 8'-9" <sup>(2)</sup>   | 6'-11" <sup>(2)</sup>  | 10'-3" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>   | 6'-9" <sup>(3)</sup>  | 9'-11" <sup>(3)</sup>  | 8'-3" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>   |
|              | 9½"         | 10'-8" <sup>(2)</sup>  | 8'-10" <sup>(2)</sup>  | 7'-0" <sup>(2)</sup>   | 10'-5" <sup>(3)</sup>  | 8'-8" <sup>(3)</sup>   | 6'-10" <sup>(3)</sup> | 10'-1" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-8" <sup>(3)</sup>   |
|              | 11⅞"        | 10'-9" <sup>(2)</sup>  | 8'-11" <sup>(2)</sup>  | 7'-1" <sup>(2)</sup>   | 10'-6" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 6'-11" <sup>(3)</sup> | 10'-2" <sup>(3)</sup>  | 8'-5" <sup>(3)</sup>  | 6'-9" <sup>(3)</sup>   |
|              | 14"         | 11'-0" <sup>(2)</sup>  | 9'-1" <sup>(2)</sup>   | 7'-3" <sup>(2)</sup>   | 10'-8" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup>  | 7'-1" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup>  | 8'-7" <sup>(3)</sup>  | 6'-10" <sup>(3)</sup>  |
|              | 16"         | 11'-1" <sup>(2)</sup>  | 9'-2" <sup>(2)</sup>   | 7'-4" <sup>(2)</sup>   | 10'-10" <sup>(3)</sup> | 9'-0" <sup>(3)</sup>   | 7'-2" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 8'-8" <sup>(3)</sup>  | 6'-11" <sup>(3)</sup>  |
|              | 18"         | 11'-3" <sup>(2)</sup>  | 9'-4" <sup>(2)</sup>   | 7'-5" <sup>(2)</sup>   | 10'-11" <sup>(3)</sup> | 9'-1" <sup>(3)</sup>   | 7'-3" <sup>(3)</sup>  | 10'-7" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>  | 7'-0" <sup>(3)</sup>   |
| PWI 50       | 9½"         | 12'-5" <sup>(2)</sup>  | 10'-3" <sup>(2)</sup>  | 8'-2" <sup>(2)</sup>   | 12'-1" <sup>(3)</sup>  | 10'-0" <sup>(3)</sup>  | 8'-0" <sup>(3)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>  | 7'-9" <sup>(3)</sup>   |
|              | 11⅞"        | 12'-5" <sup>(2)</sup>  | 10'-3" <sup>(2)</sup>  | 8'-2" <sup>(2)</sup>   | 12'-1" <sup>(3)</sup>  | 10'-0" <sup>(3)</sup>  | 8'-0" <sup>(3)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>  | 7'-9" <sup>(3)</sup>   |
|              | 14"         | 12'-5" <sup>(2)</sup>  | 10'-3" <sup>(2)</sup>  | 8'-2" <sup>(2)</sup>   | 12'-1" <sup>(3)</sup>  | 10'-0" <sup>(3)</sup>  | 8'-0" <sup>(3)</sup>  | 11'-8" <sup>(3)</sup>  | 9'-8" <sup>(3)</sup>  | 7'-9" <sup>(3)</sup>   |
| PWI 60       | 9½"         | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 12'-5" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
|              | 11⅞"        | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 12'-5" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
|              | 14"         | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup>  | 8'-9" <sup>(3)</sup>   | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup>  | 8'-6" <sup>(3)</sup>  | 12'-5" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup> | 8'-3" <sup>(3)</sup>   |
| PWI 70       | 11⅞"        | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup> | 8'-10" <sup>(3)</sup>  |
|              | 14"         | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup> | 8'-10" <sup>(3)</sup>  |
|              | 16"         | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup> | 8'-10" <sup>(3)</sup>  |
|              | 18"         | 14'-2" <sup>(3)</sup>  | 11'-9" <sup>(3)</sup>  | 9'-5" <sup>(3)</sup>   | 13'-10" <sup>(3)</sup> | 11'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup>  | 11'-1" <sup>(3)</sup> | 8'-10" <sup>(3)</sup>  |
| PWI 77       | 9½"         | 15'-5" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 14'-10" <sup>(3)</sup> | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-1" <sup>(3)</sup>  | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 11⅞"        | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 15'-4" <sup>(3)</sup>  | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 14"         | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 15'-4" <sup>(3)</sup>  | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 16"         | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 15'-4" <sup>(3)</sup>  | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 18"         | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 15'-4" <sup>(3)</sup>  | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 20"         | 15'-9" <sup>(3)</sup>  | 13'-1" <sup>(3)</sup>  | 10'-5" <sup>(3)</sup>  | 15'-4" <sup>(3)</sup>  | 12'-9" <sup>(3)</sup>  | 10'-2" <sup>(3)</sup> | 14'-10" <sup>(3)</sup> | 12'-4" <sup>(3)</sup> | 9'-10" <sup>(3)</sup>  |
|              | 22"         | 23'-11" <sup>(3)</sup> | 19'-11" <sup>(3)</sup> | 15'-11" <sup>(3)</sup> | 23'-4" <sup>(3)</sup>  | 19'-5" <sup>(3)</sup>  | 15'-6" <sup>(3)</sup> | 22'-7" <sup>(4)</sup>  | 18'-9" <sup>(4)</sup> | 15'-0" <sup>(4)</sup>  |
| PWI 90       | 9½"         | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
|              | 11⅞"        | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
|              | 14"         | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
|              | 16"         | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
|              | 18"         | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
|              | 20"         | 17'-2" <sup>(3)</sup>  | 14'-3" <sup>(3)</sup>  | 11'-4" <sup>(3)</sup>  | 16'-9" <sup>(3)</sup>  | 13'-11" <sup>(3)</sup> | 11'-1" <sup>(3)</sup> | 16'-2" <sup>(3)</sup>  | 13'-5" <sup>(3)</sup> | 10'-9" <sup>(3)</sup>  |
| PWI 90       | 22"         | 29'-7" <sup>(3)</sup>  | 24'-7" <sup>(3)</sup>  | 19'-8" <sup>(3)</sup>  | 28'-10" <sup>(4)</sup> | 24'-0" <sup>(4)</sup>  | 19'-2" <sup>(4)</sup> | 26'-11" <sup>(4)</sup> | 22'-5" <sup>(4)</sup> | 17'-11" <sup>(4)</sup> |
|              | 24"         | 29'-7" <sup>(3)</sup>  | 24'-7" <sup>(3)</sup>  | 19'-8" <sup>(3)</sup>  | 28'-10" <sup>(4)</sup> | 24'-0" <sup>(4)</sup>  | 19'-2" <sup>(4)</sup> | 26'-11" <sup>(4)</sup> | 22'-5" <sup>(4)</sup> | 17'-11" <sup>(4)</sup> |

See notes on page 56

# ROOF SPANS 100% HEAVY SNOW

## ALLOWABLE ROOF SPANS—120 PSF LIVE LOAD – 20 PSF DEAD LOAD

| Joist Series | Joist Depth | SIMPLE SPAN           |                       |                        |                        |                       |                       |                        |                       |                        |
|--------------|-------------|-----------------------|-----------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|-----------------------|------------------------|
|              |             | Slopes to 4 in 12     |                       |                        | Slopes to 8 in 12      |                       |                       | Slopes to 12 in 12     |                       |                        |
|              |             | 16" o.c.              | 19.2" o.c.            | 24" o.c.               | 16" o.c.               | 19.2" o.c.            | 24" o.c.              | 16" o.c.               | 19.2" o.c.            | 24" o.c.               |
| PWI 20       | 9½"         | 9'-6" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup> | 6'-4" <sup>(2)</sup>   | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>  | 9'-1" <sup>(3)</sup>   | 7'-6" <sup>(3)</sup>  | 6'-0" <sup>(3)</sup>   |
|              | 11¾"        | 9'-6" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup> | 6'-4" <sup>(2)</sup>   | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>  | 9'-1" <sup>(3)</sup>   | 7'-6" <sup>(3)</sup>  | 6'-0" <sup>(3)</sup>   |
|              | 14"         | 9'-6" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup> | 6'-4" <sup>(2)</sup>   | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>  | 9'-1" <sup>(3)</sup>   | 7'-6" <sup>(3)</sup>  | 6'-0" <sup>(3)</sup>   |
| PWI 30       | 9½"         | 9'-10" <sup>(2)</sup> | 8'-2" <sup>(2)</sup>  | 6'-6" <sup>(2)</sup>   | 9'-8" <sup>(3)</sup>   | 8'-0" <sup>(3)</sup>  | 6'-4" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>   |
|              | 11¾"        | 9'-10" <sup>(2)</sup> | 8'-2" <sup>(2)</sup>  | 6'-6" <sup>(2)</sup>   | 9'-8" <sup>(3)</sup>   | 8'-0" <sup>(3)</sup>  | 6'-4" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>   |
|              | 14"         | 9'-10" <sup>(2)</sup> | 8'-2" <sup>(2)</sup>  | 6'-6" <sup>(2)</sup>   | 9'-8" <sup>(3)</sup>   | 8'-0" <sup>(3)</sup>  | 6'-4" <sup>(3)</sup>  | 9'-4" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>   |
| PWI 40       | 9½"         | 10'-7" <sup>(2)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 10'-6" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-4" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 11¾"        | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 14"         | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
| PWI 45       | 16"         | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 9½"         | 10'-3" <sup>(2)</sup> | 8'-6" <sup>(2)</sup>  | 6'-9" <sup>(2)</sup>   | 10'-0" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>  | 9'-9" <sup>(3)</sup>   | 8'-1" <sup>(3)</sup>  | 6'-5" <sup>(3)</sup>   |
|              | 11¾"        | 10'-3" <sup>(2)</sup> | 8'-6" <sup>(2)</sup>  | 6'-9" <sup>(2)</sup>   | 10'-0" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>  | 9'-9" <sup>(3)</sup>   | 8'-1" <sup>(3)</sup>  | 6'-5" <sup>(3)</sup>   |
| PWI 47       | 14"         | 10'-3" <sup>(2)</sup> | 8'-6" <sup>(2)</sup>  | 6'-9" <sup>(2)</sup>   | 10'-0" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>  | 9'-9" <sup>(3)</sup>   | 8'-1" <sup>(3)</sup>  | 6'-5" <sup>(3)</sup>   |
|              | 16"         | 10'-3" <sup>(2)</sup> | 8'-6" <sup>(2)</sup>  | 6'-9" <sup>(2)</sup>   | 10'-0" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>  | 9'-9" <sup>(3)</sup>   | 8'-1" <sup>(3)</sup>  | 6'-5" <sup>(3)</sup>   |
|              | 18"         | 10'-3" <sup>(2)</sup> | 8'-6" <sup>(2)</sup>  | 6'-9" <sup>(2)</sup>   | 10'-0" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-7" <sup>(3)</sup>  | 9'-9" <sup>(3)</sup>   | 8'-1" <sup>(3)</sup>  | 6'-5" <sup>(3)</sup>   |
| PWI 50       | 7½"         | 9'-0" <sup>(2)</sup>  | 7'-6" <sup>(2)</sup>  | 5'-11" <sup>(2)</sup>  | 8'-10" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 5'-10" <sup>(3)</sup> | 8'-7" <sup>(3)</sup>   | 7'-1" <sup>(3)</sup>  | 5'-8" <sup>(3)</sup>   |
|              | 9½"         | 9'-1" <sup>(2)</sup>  | 7'-7" <sup>(2)</sup>  | 6'-0" <sup>(2)</sup>   | 8'-11" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>  | 5'-11" <sup>(3)</sup> | 8'-8" <sup>(3)</sup>   | 7'-2" <sup>(3)</sup>  | 5'-9" <sup>(3)</sup>   |
|              | 11¾"        | 9'-3" <sup>(2)</sup>  | 7'-8" <sup>(2)</sup>  | 6'-1" <sup>(2)</sup>   | 9'-0" <sup>(3)</sup>   | 7'-6" <sup>(3)</sup>  | 5'-11" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>   | 7'-3" <sup>(3)</sup>  | 5'-9" <sup>(3)</sup>   |
|              | 14"         | 9'-5" <sup>(2)</sup>  | 7'-9" <sup>(2)</sup>  | 6'-2" <sup>(2)</sup>   | 9'-2" <sup>(3)</sup>   | 7'-7" <sup>(3)</sup>  | 6'-1" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup>  | 7'-5" <sup>(3)</sup>  | 5'-11" <sup>(3)</sup>  |
|              | 16"         | 9'-6" <sup>(2)</sup>  | 7'-11" <sup>(2)</sup> | 6'-3" <sup>(2)</sup>   | 9'-3" <sup>(3)</sup>   | 7'-9" <sup>(3)</sup>  | 6'-2" <sup>(3)</sup>  | 9'-0" <sup>(3)</sup>   | 7'-6" <sup>(3)</sup>  | 5'-11" <sup>(3)</sup>  |
|              | 18"         | 9'-7" <sup>(2)</sup>  | 8'-0" <sup>(2)</sup>  | 6'-4" <sup>(2)</sup>   | 9'-5" <sup>(3)</sup>   | 7'-10" <sup>(3)</sup> | 6'-2" <sup>(3)</sup>  | 9'-1" <sup>(3)</sup>   | 7'-7" <sup>(3)</sup>  | 6'-0" <sup>(3)</sup>   |
|              | 20"         | 9'-8" <sup>(2)</sup>  | 8'-1" <sup>(2)</sup>  | 6'-5" <sup>(2)</sup>   | 9'-6" <sup>(3)</sup>   | 7'-11" <sup>(3)</sup> | 6'-3" <sup>(3)</sup>  | 9'-3" <sup>(3)</sup>   | 7'-8" <sup>(3)</sup>  | 6'-1" <sup>(3)</sup>   |
| PWI 60       | 9½"         | 10'-7" <sup>(2)</sup> | 8'-10" <sup>(2)</sup> | 7'-0" <sup>(2)</sup>   | 10'-5" <sup>(3)</sup>  | 8'-7" <sup>(3)</sup>  | 6'-10" <sup>(3)</sup> | 10'-1" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-8" <sup>(3)</sup>   |
|              | 11¾"        | 10'-7" <sup>(2)</sup> | 8'-10" <sup>(2)</sup> | 7'-0" <sup>(2)</sup>   | 10'-5" <sup>(3)</sup>  | 8'-7" <sup>(3)</sup>  | 6'-10" <sup>(3)</sup> | 10'-1" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-8" <sup>(3)</sup>   |
|              | 14"         | 10'-7" <sup>(2)</sup> | 8'-10" <sup>(2)</sup> | 7'-0" <sup>(2)</sup>   | 10'-5" <sup>(3)</sup>  | 8'-7" <sup>(3)</sup>  | 6'-10" <sup>(3)</sup> | 10'-1" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-8" <sup>(3)</sup>   |
|              | 16"         | 10'-7" <sup>(2)</sup> | 8'-10" <sup>(2)</sup> | 7'-0" <sup>(2)</sup>   | 10'-5" <sup>(3)</sup>  | 8'-7" <sup>(3)</sup>  | 6'-10" <sup>(3)</sup> | 10'-1" <sup>(3)</sup>  | 8'-4" <sup>(3)</sup>  | 6'-8" <sup>(3)</sup>   |
| PWI 70       | 9½"         | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 11¾"        | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 14"         | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
|              | 16"         | 11'-4" <sup>(3)</sup> | 9'-5" <sup>(3)</sup>  | 7'-6" <sup>(3)</sup>   | 11'-1" <sup>(3)</sup>  | 9'-2" <sup>(3)</sup>  | 7'-4" <sup>(3)</sup>  | 10'-9" <sup>(3)</sup>  | 8'-11" <sup>(3)</sup> | 7'-1" <sup>(3)</sup>   |
| PWI 77       | 11¾"        | 12'-2" <sup>(3)</sup> | 10'-1" <sup>(3)</sup> | 8'-0" <sup>(3)</sup>   | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-7" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-8" <sup>(3)</sup>   |
|              | 14"         | 12'-2" <sup>(3)</sup> | 10'-1" <sup>(3)</sup> | 8'-0" <sup>(3)</sup>   | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-7" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-8" <sup>(3)</sup>   |
|              | 16"         | 12'-2" <sup>(3)</sup> | 10'-1" <sup>(3)</sup> | 8'-0" <sup>(3)</sup>   | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-7" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-8" <sup>(3)</sup>   |
|              | 18"         | 12'-2" <sup>(3)</sup> | 10'-1" <sup>(3)</sup> | 8'-0" <sup>(3)</sup>   | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-7" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-8" <sup>(3)</sup>   |
|              | 20"         | 12'-2" <sup>(3)</sup> | 10'-1" <sup>(3)</sup> | 8'-0" <sup>(3)</sup>   | 11'-11" <sup>(3)</sup> | 9'-11" <sup>(3)</sup> | 7'-10" <sup>(3)</sup> | 11'-7" <sup>(3)</sup>  | 9'-7" <sup>(3)</sup>  | 7'-8" <sup>(3)</sup>   |
|              | 9½"         | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
|              | 11¾"        | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
| PWI 90       | 14"         | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
|              | 16"         | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
|              | 18"         | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
|              | 20"         | 13'-6" <sup>(3)</sup> | 11'-2" <sup>(3)</sup> | 8'-11" <sup>(3)</sup>  | 13'-2" <sup>(3)</sup>  | 11'-0" <sup>(3)</sup> | 8'-9" <sup>(3)</sup>  | 12'-10" <sup>(3)</sup> | 10'-8" <sup>(3)</sup> | 8'-6" <sup>(3)</sup>   |
|              | 22"         | 20'-6" <sup>(3)</sup> | 17'-1" <sup>(3)</sup> | 13'-7" <sup>(3)</sup>  | 20'-1" <sup>(3)</sup>  | 16'-8" <sup>(3)</sup> | 13'-4" <sup>(3)</sup> | 19'-6" <sup>(4)</sup>  | 16'-3" <sup>(4)</sup> | 12'-11" <sup>(4)</sup> |
|              | 24"         | 20'-6" <sup>(3)</sup> | 17'-1" <sup>(3)</sup> | 13'-7" <sup>(3)</sup>  | 20'-1" <sup>(3)</sup>  | 16'-8" <sup>(3)</sup> | 13'-4" <sup>(3)</sup> | 19'-6" <sup>(4)</sup>  | 16'-3" <sup>(4)</sup> | 12'-11" <sup>(4)</sup> |
|              | 9½"         | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
|              | 11¾"        | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
|              | 14"         | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
|              | 16"         | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
|              | 18"         | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
| PWI 90       | 20"         | 14'-8" <sup>(3)</sup> | 12'-3" <sup>(3)</sup> | 9'-9" <sup>(3)</sup>   | 14'-5" <sup>(3)</sup>  | 12'-0" <sup>(3)</sup> | 9'-6" <sup>(3)</sup>  | 14'-0" <sup>(3)</sup>  | 11'-7" <sup>(3)</sup> | 9'-3" <sup>(3)</sup>   |
|              | 22"         | 25'-4" <sup>(3)</sup> | 21'-1" <sup>(3)</sup> | 16'-10" <sup>(3)</sup> | 24'-10" <sup>(4)</sup> | 20'-8" <sup>(4)</sup> | 16'-6" <sup>(4)</sup> | 23'-3" <sup>(4)</sup>  | 19'-4" <sup>(4)</sup> | 15'-5" <sup>(4)</sup>  |
|              | 24"         | 25'-4" <sup>(3)</sup> | 21'-1" <sup>(3)</sup> | 16'-10" <sup>(3)</sup> | 24'-10" <sup>(4)</sup> | 20'-8" <sup>(4)</sup> | 16'-6" <sup>(4)</sup> | 23'-3" <sup>(4)</sup>  | 19'-4" <sup>(4)</sup> | 15'-5" <sup>(4)</sup>  |

### Notes:

- Table values apply to uniformly loaded roof joists that are sloped at least ¼" in 12".
- Span is measured on the horizontal from face to face of supports.
- 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.
- The numbers in parentheses refer to the minimum connection required at each support.
  - Beveled plate and two nails (165 lbs. lateral capacity @ 100%), or joist hanger
  - Beveled plate and four nails (330 lbs. lateral capacity @ 100%), or (3)
  - Gussets at high support (1295 lbs. lateral capacity @ 100%), birdsmouth cut at low support, or (4)
  - Strap (1640 lbs. lateral capacity @ 100%) or pair of twist straps (950 lbs. lateral capacity each @ 100%) at high support, birdsmouth cut at low support
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. roof sheathing, gypsum board ceiling).
- Consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads, multiple span joists).

PWI JOIST ROOF S P A N S