

Low-Slope Roof Spans 115% Snow

ALLOWABLE ROOF SPANS—25 PSF LIVE LOAD - 15 PSF DEAD LOAD

| Joist Series | Joist Depth | Simple Span Slopes to 1 in 12 | | | Multiple Spans Slopes to 1 in 12 | | |
|--------------|-------------|----------------------------------|-------------------------|-------------------------|-------------------------------------|-------------------------|-------------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| PWI 20 | 9½" | 19'- 7" ⁽¹⁾ | 18'- 4" ⁽¹⁾ | 16'- 10" ⁽¹⁾ | 20'- 7" ⁽¹⁾ | 18'- 9" ⁽¹⁾ | 16'- 9" ⁽¹⁾ |
| | 11¾" | 23'- 6" ⁽¹⁾ | 21'- 6" ⁽¹⁾ | 19'- 2" ⁽¹⁾ | 23'- 5" ⁽¹⁾ | 21'- 5" ⁽¹⁾ | 19'- 1" ⁽¹⁾ |
| | 14" | 25'- 8" ⁽¹⁾ | 23'- 5" ⁽¹⁾ | 20'- 11" ⁽¹⁾ | 25'- 8" ⁽¹⁾ | 23'- 4" ⁽¹⁾ | 20'- 11" ⁽¹⁾ |
| PWI 45 | 9½" | 21'- 6" ⁽¹⁾ | 20'- 2" ⁽¹⁾ | 18'- 8" ⁽¹⁾ | 23'- 9" ⁽¹⁾ | 21'- 8" ⁽¹⁾ | 19'- 4" ⁽¹⁾ |
| | 11¾" | 25'- 5" ⁽¹⁾ | 24'- 2" ⁽¹⁾ | 22'- 1" ⁽¹⁾ | 27'- 0" ⁽¹⁾ | 24'- 8" ⁽¹⁾ | 22'- 0" ⁽¹⁾ |
| | 14" | 29'- 4" ⁽¹⁾ | 27'- 0" ⁽¹⁾ | 24'- 1" ⁽¹⁾ | 29'- 6" ⁽¹⁾ | 26'- 11" ⁽¹⁾ | 24'- 0" ⁽²⁾ |
| PWI 47 | 9½" | 22'- 0" ⁽¹⁾ | 20'- 8" ⁽¹⁾ | 19'- 1" ⁽¹⁾ | 23'- 9" ⁽¹⁾ | 21'- 7" ⁽¹⁾ | 19'- 4" ⁽¹⁾ |
| | 11¾" | 26'- 2" ⁽¹⁾ | 24'- 6" ⁽¹⁾ | 22'- 0" ⁽¹⁾ | 26'- 11" ⁽¹⁾ | 24'- 6" ⁽¹⁾ | 21'- 11" ⁽¹⁾ |
| | 14" | 29'- 5" ⁽¹⁾ | 26'- 10" ⁽¹⁾ | 23'- 11" ⁽¹⁾ | 29'- 4" ⁽¹⁾ | 26'- 9" ⁽¹⁾ | 22'- 8" ⁽²⁾ |
| PWI 50 | 9½" | 21'- 3" ⁽¹⁾ | 19'- 11" ⁽¹⁾ | 18'- 6" ⁽¹⁾ | 23'- 9" ⁽¹⁾ | 22'- 3" ⁽¹⁾ | 20'- 7" ⁽¹⁾ |
| | 11¾" | 25'- 7" ⁽¹⁾ | 24'- 0" ⁽¹⁾ | 22'- 3" ⁽¹⁾ | 28'- 7" ⁽¹⁾ | 26'- 4" ⁽¹⁾ | 23'- 2" ⁽²⁾ |
| | 14" | 29'- 3" ⁽¹⁾ | 27'- 6" ⁽¹⁾ | 25'- 5" ⁽¹⁾ | 31'- 6" ⁽¹⁾ | 28'- 9" ⁽²⁾ | 23'- 2" ⁽²⁾ |
| PWI 60 | 9½" | 22'- 10" ⁽¹⁾ | 21'- 5" ⁽¹⁾ | 19'- 10" ⁽¹⁾ | 25'- 3" ⁽¹⁾ | 23'- 0" ⁽¹⁾ | 20'- 7" ⁽¹⁾ |
| | 11¾" | 27'- 5" ⁽¹⁾ | 25'- 9" ⁽¹⁾ | 23'- 6" ⁽¹⁾ | 28'- 10" ⁽¹⁾ | 26'- 3" ⁽¹⁾ | 23'- 6" ⁽²⁾ |
| | 14" | 31'- 3" ⁽¹⁾ | 28'- 11" ⁽¹⁾ | 25'- 10" ⁽¹⁾ | 31'- 7" ⁽¹⁾ | 28'- 10" ⁽²⁾ | 25'- 9" ⁽²⁾ |
| PWI 70 | 9½" | 28'- 4" ⁽¹⁾ | 26'- 7" ⁽¹⁾ | 24'- 8" ⁽¹⁾ | 31'- 8" ⁽¹⁾ | 29'- 9" ⁽¹⁾ | 27'- 6" ⁽¹⁾ |
| | 11¾" | 32'- 3" ⁽¹⁾ | 30'- 3" ⁽¹⁾ | 28'- 0" ⁽¹⁾ | 36'- 0" ⁽²⁾ | 33'- 8" ⁽²⁾ | 28'- 0" ⁽²⁾ |
| | 14" | 35'- 9" ⁽¹⁾ | 33'- 6" ⁽¹⁾ | 31'- 0" ⁽¹⁾ | 39'- 7" ⁽²⁾ | 35'- 1" ⁽²⁾ | 28'- 0" ⁽²⁾ |
| PWI 77 | 9½" | 23'- 10" ⁽¹⁾ | 22'- 5" ⁽¹⁾ | 20'- 9" ⁽¹⁾ | 26'- 8" ⁽¹⁾ | 25'- 0" ⁽¹⁾ | 23'- 2" ⁽²⁾ |
| | 11¾" | 28'- 6" ⁽¹⁾ | 26'- 9" ⁽¹⁾ | 24'- 9" ⁽¹⁾ | 31'- 10" ⁽¹⁾ | 29'- 11" ⁽²⁾ | 27'- 5" ⁽²⁾ |
| | 14" | 32'- 5" ⁽¹⁾ | 30'- 5" ⁽¹⁾ | 28'- 2" ⁽¹⁾ | 36'- 3" ⁽²⁾ | 33'- 7" ⁽²⁾ | 30'- 0" ⁽²⁾ |
| PWI 90 | 9½" | 27'- 3" ⁽¹⁾ | 25'- 7" ⁽¹⁾ | 23'- 8" ⁽¹⁾ | 30'- 6" ⁽¹⁾ | 28'- 7" ⁽²⁾ | 26'- 5" ⁽²⁾ |
| | 11¾" | 32'- 6" ⁽¹⁾ | 30'- 7" ⁽¹⁾ | 28'- 3" ⁽¹⁾ | 36'- 4" ⁽²⁾ | 34'- 2" ⁽²⁾ | 31'- 7" ⁽²⁾ |
| | 14" | 36'- 11" ⁽¹⁾ | 34'- 8" ⁽¹⁾ | 32'- 1" ⁽¹⁾ | 41'- 4" ⁽²⁾ | 38'- 9" ⁽²⁾ | 35'- 10" ⁽²⁾ |
| PWI 20 | 16" | 40'- 11" ⁽¹⁾ | 38'- 5" ⁽¹⁾ | 35'- 7" ⁽¹⁾ | 45'- 9" ⁽²⁾ | 42'- 11" ⁽²⁾ | 38'- 3" ⁽²⁾ |
| | 18" | 44'- 9" ⁽¹⁾ | 42'- 0" ⁽¹⁾ | 38'- 11" ⁽¹⁾ | 50'- 0" ⁽²⁾ | 47'- 0" ⁽²⁾ | 38'- 3" ⁽²⁾ |
| | 20" | 48'- 5" ⁽¹⁾ | 45'- 6" ⁽¹⁾ | 40'- 0" ⁽¹⁾ | 54'- 2" ⁽²⁾ | 47'- 11" ⁽²⁾ | 38'- 3" ⁽²⁾ |
| PWI 45 | 16" | 52'- 0" ⁽¹⁾ | 48'- 10" ⁽¹⁾ | 45'- 3" ⁽¹⁾ | 57'- 4" ⁽²⁾ | 52'- 4" ⁽²⁾ | 45'- 5" ⁽²⁾ |
| | 18" | 55'- 6" ⁽¹⁾ | 52'- 1" ⁽¹⁾ | 48'- 3" ⁽¹⁾ | 59'- 10" ⁽²⁾ | 54'- 7" ⁽²⁾ | 45'- 5" ⁽²⁾ |

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 (190 lbs. lateral capacity @ 115%), or joist hangers at end supports
 - Beveled plate and four nails (380 lbs. lateral capacity @ 115%) at intermediate supports, two nails or joist hangers at end supports
- 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).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

Low-Slope Roof Spans 115% Snow

ALLOWABLE ROOF SPANS—30 PSF LIVE LOAD - 15 PSF DEAD LOAD

| Joist Series | Joist Depth | Simple Span Slopes to 1 in 12 | | | Multiple Spans Slopes to 1 in 12 | | |
|--------------|-----------------------|----------------------------------|------------------------|------------------------|-------------------------------------|------------------------|------------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| PWI 20 | 9½" | 18'-9" ⁽¹⁾ | 17'-8" ⁽¹⁾ | 15'-10" ⁽¹⁾ | 19'-5" ⁽¹⁾ | 17'-8" ⁽¹⁾ | 15'-9" ⁽¹⁾ |
| | 11¾" | 22'-2" ⁽¹⁾ | 20'-3" ⁽¹⁾ | 18'-1" ⁽¹⁾ | 22'-1" ⁽¹⁾ | 20'-2" ⁽¹⁾ | 18'-0" ⁽¹⁾ |
| | 14" | 24'-3" ⁽¹⁾ | 22'-1" ⁽¹⁾ | 19'-9" ⁽¹⁾ | 24'-2" ⁽¹⁾ | 22'-0" ⁽¹⁾ | 19'-8" ⁽¹⁾ |
| PWI 45 | 9½" | 20'-8" ⁽¹⁾ | 19'-5" ⁽¹⁾ | 17'-11" ⁽¹⁾ | 22'-4" ⁽¹⁾ | 20'-5" ⁽¹⁾ | 18'-3" ⁽¹⁾ |
| | 11¾" | 24'-9" ⁽¹⁾ | 23'-3" ⁽¹⁾ | 20'-10" ⁽¹⁾ | 25'-5" ⁽¹⁾ | 23'-2" ⁽¹⁾ | 20'-9" ⁽²⁾ |
| | 14" | 27'-10" ⁽¹⁾ | 25'-5" ⁽¹⁾ | 22'-9" ⁽¹⁾ | 27'-10" ⁽¹⁾ | 25'-4" ⁽²⁾ | 22'-8" ⁽²⁾ |
| PWI 47 | 9½" | 21'-1" ⁽¹⁾ | 19'-10" ⁽¹⁾ | 18'-3" ⁽¹⁾ | 22'-4" ⁽¹⁾ | 20'-4" ⁽¹⁾ | 18'-2" ⁽¹⁾ |
| | 11¾" | 25'-1" ⁽¹⁾ | 23'-2" ⁽¹⁾ | 20'-9" ⁽¹⁾ | 25'-4" ⁽¹⁾ | 23'-1" ⁽¹⁾ | 19'-5" ⁽¹⁾ |
| | 14" | 27'-8" ⁽¹⁾ | 25'-3" ⁽¹⁾ | 22'-7" ⁽¹⁾ | 27'-7" ⁽¹⁾ | 25'-2" ⁽²⁾ | 20'-1" ⁽²⁾ |
| PWI 50 | 9½" | 20'-5" ⁽¹⁾ | 19'-2" ⁽¹⁾ | 17'-9" ⁽¹⁾ | 22'-9" ⁽¹⁾ | 21'-4" ⁽¹⁾ | 19'-5" ⁽¹⁾ |
| | 11¾" | 24'-7" ⁽¹⁾ | 23'-1" ⁽¹⁾ | 21'-4" ⁽¹⁾ | 27'-2" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 20'-7" ⁽²⁾ |
| | 14" | 28'-1" ⁽¹⁾ | 26'-4" ⁽¹⁾ | 24'-3" ⁽¹⁾ | 29'-8" ⁽¹⁾ | 25'-9" ⁽²⁾ | 20'-7" ⁽²⁾ |
| PWI 60 | 9½" | 21'-11" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 19'-0" ⁽¹⁾ | 23'-10" ⁽¹⁾ | 21'-8" ⁽¹⁾ | 19'-5" ⁽¹⁾ |
| | 11¾" | 26'-4" ⁽¹⁾ | 24'-8" ⁽¹⁾ | 22'-2" ⁽¹⁾ | 27'-2" ⁽¹⁾ | 24'-9" ⁽¹⁾ | 22'-1" ⁽²⁾ |
| | 14" | 29'-10" ⁽¹⁾ | 27'-3" ⁽¹⁾ | 24'-4" ⁽¹⁾ | 29'-9" ⁽¹⁾ | 27'-2" ⁽²⁾ | 23'-6" ⁽²⁾ |
| PWI 70 | 9½" | 32'-2" ⁽¹⁾ | 29'-4" ⁽¹⁾ | 26'-3" ⁽¹⁾ | 32'-1" ⁽²⁾ | 29'-3" ⁽²⁾ | 23'-6" ⁽²⁾ |
| | 11¾" | 27'-3" ⁽¹⁾ | 25'-7" ⁽¹⁾ | 23'-8" ⁽¹⁾ | 30'-5" ⁽²⁾ | 28'-6" ⁽²⁾ | 24'-10" ⁽²⁾ |
| | 14" | 30'-11" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 26'-11" ⁽¹⁾ | 34'-7" ⁽²⁾ | 31'-2" ⁽²⁾ | 24'-10" ⁽²⁾ |
| PWI 77 | 9½" | 34'-4" ⁽¹⁾ | 32'-2" ⁽¹⁾ | 29'-5" ⁽¹⁾ | 37'-3" ⁽²⁾ | 31'-2" ⁽²⁾ | 24'-10" ⁽²⁾ |
| | 11¾" | 37'-6" ⁽¹⁾ | 35'-3" ⁽¹⁾ | 29'-5" ⁽¹⁾ | 37'-5" ⁽²⁾ | 31'-2" ⁽²⁾ | 24'-10" ⁽²⁾ |
| | 14" | 40'-8" ⁽¹⁾ | 36'-10" ⁽¹⁾ | 29'-5" ⁽¹⁾ | 37'-5" ⁽²⁾ | 31'-2" ⁽²⁾ | 24'-10" ⁽²⁾ |
| PWI 90 | 9½" | 22'-11" ⁽¹⁾ | 21'-6" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 25'-7" ⁽¹⁾ | 24'-0" ⁽¹⁾ | 22'-2" ⁽²⁾ |
| | 11¾" | 27'-4" ⁽¹⁾ | 25'-8" ⁽¹⁾ | 23'-9" ⁽¹⁾ | 30'-7" ⁽²⁾ | 28'-8" ⁽²⁾ | 25'-10" ⁽²⁾ |
| | 14" | 31'-1" ⁽¹⁾ | 29'-3" ⁽¹⁾ | 27'-1" ⁽¹⁾ | 34'-8" ⁽²⁾ | 31'-7" ⁽²⁾ | 27'-3" ⁽²⁾ |
| PWI 90 | 16" | 34'-6" ⁽¹⁾ | 32'-5" ⁽¹⁾ | 30'-0" ⁽¹⁾ | 37'-1" ⁽²⁾ | 33'-10" ⁽²⁾ | 27'-3" ⁽²⁾ |
| | 18" | 37'-9" ⁽¹⁾ | 35'-6" ⁽¹⁾ | 32'-2" ⁽¹⁾ | 39'-5" ⁽²⁾ | 34'-2" ⁽²⁾ | 27'-3" ⁽²⁾ |
| | 20" | 40'-11" ⁽¹⁾ | 37'-11" ⁽¹⁾ | 32'-7" ⁽¹⁾ | 41'-0" ⁽²⁾ | 34'-2" ⁽²⁾ | 27'-3" ⁽²⁾ |
| PWI 90 | 22" | 43'-7" ⁽¹⁾ | 39'-9" ⁽¹⁾ | 35'-7" ⁽¹⁾ | 43'-6" ⁽²⁾ | 39'-9" ⁽²⁾ | 35'-6" ⁽²⁾ |
| | 24" | 45'-6" ⁽¹⁾ | 41'-6" ⁽¹⁾ | 37'-1" ⁽¹⁾ | 45'-5" ⁽²⁾ | 41'-5" ⁽²⁾ | 37'-1" ⁽²⁾ |
| | 9½" | 26'-2" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 22'-9" ⁽¹⁾ | 29'-3" ⁽¹⁾ | 27'-5" ⁽²⁾ | 25'-4" ⁽²⁾ |
| PWI 90 | 11¾" | 31'-3" ⁽¹⁾ | 29'-4" ⁽¹⁾ | 27'-2" ⁽¹⁾ | 34'-11" ⁽²⁾ | 32'-9" ⁽²⁾ | 30'-3" ⁽²⁾ |
| | 14" | 35'-6" ⁽¹⁾ | 33'-4" ⁽¹⁾ | 30'-10" ⁽¹⁾ | 39'-8" ⁽²⁾ | 37'-3" ⁽²⁾ | 34'-0" ⁽²⁾ |
| | 16" | 39'-3" ⁽¹⁾ | 36'-11" ⁽¹⁾ | 34'-2" ⁽¹⁾ | 43'-11" ⁽²⁾ | 41'-3" ⁽²⁾ | 34'-0" ⁽²⁾ |
| PWI 90 | 18" | 43'-0" ⁽¹⁾ | 40'-4" ⁽¹⁾ | 35'-7" ⁽¹⁾ | 48'-0" ⁽²⁾ | 42'-7" ⁽²⁾ | 34'-0" ⁽²⁾ |
| | 20" | 46'-6" ⁽¹⁾ | 43'-8" ⁽¹⁾ | 35'-7" ⁽¹⁾ | 51'-1" ⁽²⁾ | 42'-7" ⁽²⁾ | 34'-0" ⁽²⁾ |
| | 22" | 49'-11" ⁽¹⁾ | 46'-11" ⁽¹⁾ | 43'-5" ⁽¹⁾ | 54'-0" ⁽²⁾ | 49'-4" ⁽²⁾ | 40'-4" ⁽²⁾ |
| 24" | 53'-3" ⁽¹⁾ | 50'-1" ⁽¹⁾ | 46'-1" ⁽¹⁾ | 56'-5" ⁽²⁾ | 50'-6" ⁽²⁾ | 40'-4" ⁽²⁾ | |

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 (190 lbs. lateral capacity @ 115%), or joist hangers at end supports
 - Beveled plate and four nails (380 lbs. lateral capacity @ 115%) at intermediate supports, two nails or joist hangers at end supports
- 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).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

Low-Slope Roof Spans 115% Snow

ALLOWABLE ROOF SPANS—40 PSF LIVE LOAD - 15 PSF DEAD LOAD

| Joist Series | Joist Depth | Simple Span Slopes to 1 in 12 | | | Multiple Spans Slopes to 1 in 12 | | |
|--------------|-------------|----------------------------------|------------------------|------------------------|-------------------------------------|------------------------|------------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| PWI 20 | 9½" | 17'-6" ⁽¹⁾ | 16'-0" ⁽¹⁾ | 14'-4" ⁽¹⁾ | 17'-6" ⁽¹⁾ | 16'-0" ⁽¹⁾ | 14'-3" ⁽¹⁾ |
| | 11¾" | 20'-1" ⁽¹⁾ | 18'-3" ⁽¹⁾ | 16'-4" ⁽¹⁾ | 20'-0" ⁽¹⁾ | 18'-2" ⁽¹⁾ | 16'-3" ⁽¹⁾ |
| | 14" | 21'-11" ⁽¹⁾ | 20'-0" ⁽¹⁾ | 17'-10" ⁽¹⁾ | 21'-10" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 16'-4" ⁽²⁾ |
| PWI 45 | 9½" | 19'-3" ⁽¹⁾ | 18'-1" ⁽¹⁾ | 16'-6" ⁽¹⁾ | 20'-3" ⁽¹⁾ | 18'-5" ⁽¹⁾ | 16'-5" ⁽²⁾ |
| | 11¾" | 23'-1" ⁽¹⁾ | 21'-1" ⁽¹⁾ | 18'-10" ⁽¹⁾ | 23'-0" ⁽¹⁾ | 21'-0" ⁽²⁾ | 18'-6" ⁽²⁾ |
| | 14" | 25'-2" ⁽¹⁾ | 23'-0" ⁽¹⁾ | 20'-3" ⁽¹⁾ | 25'-1" ⁽²⁾ | 22'-11" ⁽²⁾ | 18'-6" ⁽²⁾ |
| PWI 47 | 9½" | 19'-8" ⁽¹⁾ | 18'-6" ⁽¹⁾ | 16'-6" ⁽¹⁾ | 20'-2" ⁽¹⁾ | 18'-5" ⁽¹⁾ | 15'-3" ⁽¹⁾ |
| | 11¾" | 23'-0" ⁽¹⁾ | 20'-11" ⁽¹⁾ | 18'-4" ⁽¹⁾ | 22'-11" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 15'-10" ⁽¹⁾ |
| | 14" | 25'-0" ⁽¹⁾ | 22'-10" ⁽¹⁾ | 18'-7" ⁽¹⁾ | 24'-9" ⁽²⁾ | 20'-7" ⁽²⁾ | 16'-5" ⁽²⁾ |
| PWI 50 | 9½" | 19'-0" ⁽¹⁾ | 17'-10" ⁽¹⁾ | 16'-6" ⁽¹⁾ | 21'-3" ⁽¹⁾ | 19'-8" ⁽¹⁾ | 16'-9" ⁽²⁾ |
| | 11¾" | 22'-11" ⁽¹⁾ | 21'-6" ⁽¹⁾ | 19'-11" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 21'-1" ⁽²⁾ | 16'-9" ⁽²⁾ |
| | 14" | 26'-2" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 21'-0" ⁽¹⁾ | 25'-4" ⁽²⁾ | 21'-1" ⁽²⁾ | 16'-9" ⁽²⁾ |
| PWI 60 | 9½" | 20'-5" ⁽¹⁾ | 19'-2" ⁽¹⁾ | 17'-7" ⁽¹⁾ | 21'-6" ⁽¹⁾ | 19'-7" ⁽¹⁾ | 17'-6" ⁽²⁾ |
| | 11¾" | 24'-6" ⁽¹⁾ | 22'-5" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 24'-6" ⁽¹⁾ | 22'-4" ⁽²⁾ | 19'-3" ⁽²⁾ |
| | 14" | 27'-0" ⁽¹⁾ | 24'-8" ⁽¹⁾ | 22'-0" ⁽¹⁾ | 26'-11" ⁽²⁾ | 24'-1" ⁽²⁾ | 19'-3" ⁽²⁾ |
| PWI 70 | 9½" | 20'-5" ⁽¹⁾ | 19'-2" ⁽¹⁾ | 17'-7" ⁽¹⁾ | 21'-6" ⁽¹⁾ | 19'-7" ⁽¹⁾ | 17'-6" ⁽²⁾ |
| | 11¾" | 24'-6" ⁽¹⁾ | 22'-5" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 24'-6" ⁽¹⁾ | 22'-4" ⁽²⁾ | 19'-3" ⁽²⁾ |
| | 14" | 27'-0" ⁽¹⁾ | 24'-8" ⁽¹⁾ | 22'-0" ⁽¹⁾ | 26'-11" ⁽²⁾ | 24'-1" ⁽²⁾ | 19'-3" ⁽²⁾ |
| PWI 77 | 9½" | 21'-4" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 18'-7" ⁽¹⁾ | 23'-10" ⁽¹⁾ | 22'-4" ⁽²⁾ | 20'-6" ⁽²⁾ |
| | 11¾" | 25'-6" ⁽¹⁾ | 23'-11" ⁽¹⁾ | 22'-2" ⁽¹⁾ | 28'-6" ⁽²⁾ | 26'-2" ⁽²⁾ | 22'-3" ⁽²⁾ |
| | 14" | 29'-0" ⁽¹⁾ | 27'-3" ⁽¹⁾ | 25'-3" ⁽¹⁾ | 31'-4" ⁽²⁾ | 27'-11" ⁽²⁾ | 22'-3" ⁽²⁾ |
| PWI 90 | 9½" | 24'-5" ⁽¹⁾ | 22'-11" ⁽¹⁾ | 21'-2" ⁽¹⁾ | 27'-3" ⁽²⁾ | 25'-7" ⁽²⁾ | 23'-7" ⁽²⁾ |
| | 11¾" | 29'-2" ⁽¹⁾ | 27'-4" ⁽¹⁾ | 25'-4" ⁽¹⁾ | 32'-7" ⁽²⁾ | 30'-6" ⁽²⁾ | 27'-9" ⁽²⁾ |
| | 14" | 33'-1" ⁽¹⁾ | 31'-1" ⁽¹⁾ | 28'-9" ⁽¹⁾ | 37'-0" ⁽²⁾ | 34'-8" ⁽²⁾ | 27'-9" ⁽²⁾ |
| PWI 90 | 16" | 36'-8" ⁽¹⁾ | 34'-5" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 41'-0" ⁽²⁾ | 34'-9" ⁽²⁾ | 27'-9" ⁽²⁾ |
| | 18" | 40'-1" ⁽¹⁾ | 36'-4" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 41'-9" ⁽²⁾ | 34'-9" ⁽²⁾ | 27'-9" ⁽²⁾ |
| | 20" | 43'-5" ⁽¹⁾ | 36'-4" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 41'-9" ⁽²⁾ | 34'-9" ⁽²⁾ | 27'-9" ⁽²⁾ |
| PWI 90 | 22" | 46'-7" ⁽¹⁾ | 43'-9" ⁽¹⁾ | 39'-11" ⁽¹⁾ | 48'-10" ⁽²⁾ | 41'-4" ⁽²⁾ | 33'-0" ⁽²⁾ |
| | 24" | 49'-9" ⁽¹⁾ | 46'-7" ⁽¹⁾ | 41'-8" ⁽²⁾ | 49'-7" ⁽²⁾ | 41'-4" ⁽²⁾ | 33'-0" ⁽²⁾ |

See notes on page 60

Low-Slope Roof Spans 115% Snow

ALLOWABLE ROOF SPANS—50 PSF LIVE LOAD - 15 PSF DEAD LOAD

| Joist Series | Joist Depth | Simple Span Slopes to 1 in 12 | | | Multiple Spans Slopes to 1 in 12 | | |
|--------------|-------------|----------------------------------|------------------------|------------------------|-------------------------------------|------------------------|------------------------|
| | | 16" o.c. | 19.2" o.c. | 24" o.c. | 16" o.c. | 19.2" o.c. | 24" o.c. |
| PWI 20 | 9½" | 16'-2" ⁽¹⁾ | 14'-9" ⁽¹⁾ | 13'-2" ⁽¹⁾ | 16'-1" ⁽¹⁾ | 14'-8" ⁽¹⁾ | 13'-1" ⁽¹⁾ |
| | 11¾" | 18'-5" ⁽¹⁾ | 16'-10" ⁽¹⁾ | 15'-0" ⁽¹⁾ | 18'-4" ⁽¹⁾ | 16'-9" ⁽¹⁾ | 13'-10" ⁽²⁾ |
| | 14" | 20'-2" ⁽¹⁾ | 18'-4" ⁽¹⁾ | 16'-0" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 17'-4" ⁽²⁾ | 13'-10" ⁽²⁾ |
| PWI 45 | 9½" | 18'-0" ⁽¹⁾ | 16'-11" ⁽¹⁾ | 15'-2" ⁽¹⁾ | 18'-7" ⁽¹⁾ | 16'-11" ⁽¹⁾ | 15'-1" ⁽²⁾ |
| | 11¾" | 21'-2" ⁽¹⁾ | 19'-4" ⁽¹⁾ | 17'-2" ⁽¹⁾ | 21'-2" ⁽²⁾ | 19'-3" ⁽²⁾ | 15'-8" ⁽²⁾ |
| | 14" | 23'-2" ⁽¹⁾ | 21'-2" ⁽¹⁾ | 17'-2" ⁽¹⁾ | 23'-1" ⁽²⁾ | 19'-8" ⁽²⁾ | 15'-8" ⁽²⁾ |
| PWI 47 | 9½" | 18'-5" ⁽¹⁾ | 17'-0" ⁽¹⁾ | 15'-2" ⁽¹⁾ | 18'-7" ⁽¹⁾ | 16'-2" ⁽¹⁾ | 12'-11" ⁽¹⁾ |
| | 11¾" | 21'-1" ⁽¹⁾ | 19'-3" ⁽¹⁾ | 15'-5" ⁽¹⁾ | 20'-3" ⁽¹⁾ | 16'-10" ⁽¹⁾ | 13'-5" ⁽¹⁾ |
| | 14" | 23'-0" ⁽¹⁾ | 19'-8" ⁽¹⁾ | 15'-9" ⁽¹⁾ | 20'-11" ⁽²⁾ | 17'-4" ⁽²⁾ | 13'-10" ⁽²⁾ |
| PWI 50 | 9½" | 17'-10" ⁽¹⁾ | 16'-8" ⁽¹⁾ | 15'-5" ⁽¹⁾ | 19'-10" ⁽¹⁾ | 17'-9" ⁽²⁾ | 14'-2" ⁽²⁾ |
| | 11¾" | 21'-5" ⁽¹⁾ | 20'-1" ⁽¹⁾ | 17'-9" ⁽¹⁾ | 21'-5" ⁽²⁾ | 17'-9" ⁽²⁾ | 14'-2" ⁽²⁾ |
| | 14" | 24'-6" ⁽¹⁾ | 22'-3" ⁽¹⁾ | 17'-9" ⁽¹⁾ | 21'-5" ⁽²⁾ | 17'-9" ⁽²⁾ | 14'-2" ⁽²⁾ |
| PWI 60 | 9½" | 19'-1" ⁽¹⁾ | 17'-11" ⁽¹⁾ | 16'-2" ⁽¹⁾ | 19'-9" ⁽¹⁾ | 18'-0" ⁽²⁾ | 15'-7" ⁽²⁾ |
| | 11¾" | 22'-7" ⁽¹⁾ | 20'-7" ⁽¹⁾ | 18'-5" ⁽¹⁾ | 22'-6" ⁽²⁾ | 20'-4" ⁽²⁾ | 16'-3" ⁽²⁾ |
| | 14" | 24'-10" ⁽¹⁾ | 22'-8" ⁽¹⁾ | 18'-11" ⁽¹⁾ | 24'-5" ⁽²⁾ | 20'-4" ⁽²⁾ | 16'-3" ⁽²⁾ |
| PWI 70 | 9½" | 23'-9" ⁽¹⁾ | 22'-3" ⁽¹⁾ | 20'-4" ⁽¹⁾ | 25'-10" ⁽²⁾ | 21'-6" ⁽²⁾ | 17'-2" ⁽²⁾ |
| | 11¾" | 27'-0" ⁽¹⁾ | 25'-4" ⁽¹⁾ | 20'-4" ⁽¹⁾ | 25'-10" ⁽²⁾ | 21'-6" ⁽²⁾ | 17'-2" ⁽²⁾ |
| | 14" | 29'-11" ⁽¹⁾ | 25'-5" ⁽¹⁾ | 20'-4" ⁽¹⁾ | 25'-10" ⁽²⁾ | 21'-6" ⁽²⁾ | 17'-2" ⁽²⁾ |
| PWI 77 | 9½" | 20'-0" ⁽¹⁾ | 18'-9" ⁽¹⁾ | 17'-4" ⁽¹⁾ | 22'-4" ⁽²⁾ | 20'-11" ⁽²⁾ | 18'-10" ⁽²⁾ |
| | 11¾" | 23'-11" ⁽¹⁾ | 22'-5" ⁽¹⁾ | 20'-9" ⁽¹⁾ | 26'-4" ⁽²⁾ | 23'-7" ⁽²⁾ | 18'-10" ⁽²⁾ |
| | 14" | 27'-2" ⁽¹⁾ | 25'-6" ⁽¹⁾ | 22'-6" ⁽¹⁾ | 28'-4" ⁽²⁾ | 23'-7" ⁽²⁾ | 18'-10" ⁽²⁾ |
| PWI 90 | 9½" | 30'-2" ⁽¹⁾ | 28'-2" ⁽¹⁾ | 22'-6" ⁽¹⁾ | 28'-4" ⁽²⁾ | 23'-7" ⁽²⁾ | 18'-10" ⁽²⁾ |
| | 11¾" | 32'-10" ⁽¹⁾ | 28'-2" ⁽¹⁾ | 22'-6" ⁽¹⁾ | 28'-4" ⁽²⁾ | 23'-7" ⁽²⁾ | 18'-10" ⁽²⁾ |
| | 14" | 33'-11" ⁽¹⁾ | 28'-2" ⁽¹⁾ | 22'-6" ⁽¹⁾ | 28'-4" ⁽²⁾ | 23'-7" ⁽²⁾ | 18'-10" ⁽²⁾ |
| PWI 90 | 16" | 36'-3" ⁽¹⁾ | 33'-1" ⁽¹⁾ | 29'-7" ⁽¹⁾ | 36'-2" ⁽²⁾ | 32'-10" ⁽²⁾ | 26'-3" ⁽²⁾ |
| | 18" | 37'-10" ⁽¹⁾ | 34'-6" ⁽¹⁾ | 29'-9" ⁽¹⁾ | 37'-9" ⁽²⁾ | 32'-10" ⁽²⁾ | 26'-3" ⁽²⁾ |
| | 20" | 37'-10" ⁽¹⁾ | 34'-6" ⁽¹⁾ | 29'-9" ⁽¹⁾ | 37'-9" ⁽²⁾ | 32'-10" ⁽²⁾ | 26'-3" ⁽²⁾ |
| PWI 90 | 9½" | 22'-10" ⁽¹⁾ | 21'-5" ⁽¹⁾ | 19'-10" ⁽¹⁾ | 25'-6" ⁽²⁾ | 23'-11" ⁽²⁾ | 20'-0" ⁽²⁾ |
| | 11¾" | 27'-3" ⁽¹⁾ | 25'-7" ⁽¹⁾ | 23'-8" ⁽¹⁾ | 30'-5" ⁽²⁾ | 28'-6" ⁽²⁾ | 23'-6" ⁽²⁾ |
| | 14" | 31'-0" ⁽¹⁾ | 29'-1" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 34'-7" ⁽²⁾ | 29'-5" ⁽²⁾ | 23'-6" ⁽²⁾ |
| PWI 90 | 16" | 34'-4" ⁽¹⁾ | 30'-9" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 35'-4" ⁽²⁾ | 29'-5" ⁽²⁾ | 23'-6" ⁽²⁾ |
| | 18" | 36'-11" ⁽¹⁾ | 30'-9" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 35'-4" ⁽²⁾ | 29'-5" ⁽²⁾ | 23'-6" ⁽²⁾ |
| | 20" | 36'-11" ⁽¹⁾ | 30'-9" ⁽¹⁾ | 24'-7" ⁽¹⁾ | 35'-4" ⁽²⁾ | 29'-5" ⁽²⁾ | 23'-6" ⁽²⁾ |
| PWI 90 | 22" | 43'-8" ⁽¹⁾ | 40'-11" ⁽¹⁾ | 36'-8" ⁽²⁾ | 41'-11" ⁽²⁾ | 34'-11" ⁽²⁾ | 27'-11" ⁽²⁾ |
| | 24" | 46'-7" ⁽¹⁾ | 42'-10" ⁽¹⁾ | 38'-4" ⁽²⁾ | 41'-11" ⁽²⁾ | 34'-11" ⁽²⁾ | 27'-11" ⁽²⁾ |

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 (190 lbs. lateral capacity @ 115%), or joist hangers at end supports
 - Beveled plate and four nails (380 lbs. lateral capacity @ 115%) at intermediate supports, two nails or joist hangers at end supports
- 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).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing conditions, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.