

ROOF SPANS 125% NON-SNOW

ALLOWABLE ROOF SPANS—20 PSF LIVE LOAD – 10 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"	21'-2" ⁽¹⁾	19'-10" ⁽¹⁾	18'-5" ⁽¹⁾	19'-11" ⁽²⁾	18'-9" ⁽²⁾	17'-4" ⁽²⁾	18'-6" ⁽²⁾	17'-5" ⁽²⁾	16'-1" ⁽²⁾
	11⅞"	25'-6" ⁽¹⁾	24'-0" ⁽¹⁾	22'-2" ⁽²⁾	24'-1" ⁽²⁾	22'-7" ⁽²⁾	20'-11" ⁽²⁾	22'-4" ⁽²⁾	21'-0" ⁽²⁾	19'-5" ⁽²⁾
	14"	29'-1" ⁽¹⁾	27'-4" ⁽²⁾	25'-1" ⁽²⁾	27'-5" ⁽²⁾	25'-9" ⁽²⁾	23'-10" ⁽³⁾	25'-5" ⁽³⁾	23'-11" ⁽³⁾	22'-2" ⁽³⁾
PWI 30	9½"	21'-11" ⁽¹⁾	20'-7" ⁽¹⁾	19'-0" ⁽¹⁾	20'-8" ⁽²⁾	19'-5" ⁽²⁾	18'-0" ⁽²⁾	19'-2" ⁽²⁾	18'-0" ⁽²⁾	16'-8" ⁽²⁾
	11⅞"	26'-5" ⁽¹⁾	24'-9" ⁽¹⁾	22'-11" ⁽²⁾	24'-11" ⁽²⁾	23'-4" ⁽²⁾	21'-8" ⁽²⁾	23'-1" ⁽²⁾	21'-8" ⁽³⁾	20'-1" ⁽³⁾
	14"	23'-3" ⁽¹⁾	21'-10" ⁽¹⁾	20'-3" ⁽¹⁾	21'-11" ⁽²⁾	20'-7" ⁽²⁾	19'-1" ⁽²⁾	20'-4" ⁽²⁾	19'-1" ⁽²⁾	17'-9" ⁽³⁾
PWI 40	9½"	27'-10" ⁽¹⁾	26'-2" ⁽¹⁾	23'-11" ⁽²⁾	26'-3" ⁽²⁾	24'-8" ⁽²⁾	22'-10" ⁽²⁾	24'-5" ⁽²⁾	22'-11" ⁽³⁾	21'-3" ⁽³⁾
	11⅞"	31'-8" ⁽¹⁾	29'-4" ⁽²⁾	26'-3" ⁽²⁾	29'-10" ⁽²⁾	28'-1" ⁽²⁾	25'-8" ⁽³⁾	27'-8" ⁽³⁾	26'-0" ⁽³⁾	24'-1" ⁽³⁾
	14"	34'-8" ⁽²⁾	31'-8" ⁽²⁾	28'-3" ⁽²⁾	33'-2" ⁽²⁾	30'-11" ⁽³⁾	27'-7" ⁽³⁾	30'-9" ⁽³⁾	28'-11" ⁽³⁾	26'-9" ⁽³⁾
PWI 45	9½"	23'-3" ⁽¹⁾	21'-10" ⁽¹⁾	20'-3" ⁽¹⁾	21'-11" ⁽²⁾	20'-7" ⁽²⁾	19'-1" ⁽²⁾	20'-4" ⁽²⁾	19'-1" ⁽²⁾	17'-9" ⁽³⁾
	11⅞"	27'-10" ⁽¹⁾	26'-2" ⁽¹⁾	23'-11" ⁽²⁾	26'-3" ⁽²⁾	24'-8" ⁽²⁾	22'-10" ⁽²⁾	24'-5" ⁽²⁾	22'-11" ⁽³⁾	21'-3" ⁽³⁾
	14"	31'-9" ⁽²⁾	29'-10" ⁽²⁾	27'-7" ⁽²⁾	29'-11" ⁽²⁾	28'-1" ⁽²⁾	26'-1" ⁽³⁾	27'-9" ⁽³⁾	26'-1" ⁽³⁾	24'-2" ⁽³⁾
PWI 47	7⅞"	20'-6" ⁽¹⁾	19'-3" ⁽¹⁾	17'-10" ⁽¹⁾	19'-4" ⁽²⁾	18'-2" ⁽²⁾	16'-10" ⁽²⁾	17'-11" ⁽²⁾	16'-10" ⁽²⁾	15'-7" ⁽²⁾
	9½"	23'-9" ⁽¹⁾	22'-4" ⁽¹⁾	20'-8" ⁽¹⁾	22'-5" ⁽²⁾	21'-1" ⁽²⁾	19'-6" ⁽²⁾	20'-10" ⁽²⁾	19'-7" ⁽²⁾	18'-1" ⁽³⁾
	11⅞"	28'-3" ⁽¹⁾	26'-6" ⁽¹⁾	24'-7" ⁽²⁾	26'-8" ⁽²⁾	25'-0" ⁽²⁾	23'-2" ⁽³⁾	24'-9" ⁽²⁾	23'-3" ⁽³⁾	21'-6" ⁽³⁾
PWI 50	14"	32'-0" ⁽²⁾	30'-1" ⁽²⁾	27'-10" ⁽²⁾	30'-2" ⁽²⁾	28'-4" ⁽²⁾	26'-3" ⁽³⁾	28'-0" ⁽³⁾	26'-4" ⁽³⁾	24'-5" ⁽³⁾
	16"	35'-5" ⁽²⁾	33'-3" ⁽²⁾	30'-7" ⁽²⁾	33'-5" ⁽²⁾	31'-5" ⁽³⁾	29'-1" ⁽³⁾	31'-0" ⁽³⁾	29'-2" ⁽³⁾	27'-0" ⁽³⁾
	18"	38'-9" ⁽²⁾	36'-3" ⁽²⁾	32'-5" ⁽²⁾	36'-6" ⁽³⁾	34'-4" ⁽³⁾	31'-8" ⁽³⁾	33'-11" ⁽³⁾	31'-10" ⁽³⁾	29'-6" ⁽³⁾
PWI 60	9½"	23'-0" ⁽¹⁾	21'-7" ⁽¹⁾	20'-0" ⁽¹⁾	21'-8" ⁽²⁾	20'-4" ⁽²⁾	18'-10" ⁽²⁾	20'-1" ⁽²⁾	18'-11" ⁽²⁾	17'-6" ⁽³⁾
	11⅞"	27'-8" ⁽¹⁾	25'-11" ⁽¹⁾	24'-0" ⁽¹⁾	26'-1" ⁽²⁾	24'-6" ⁽²⁾	22'-8" ⁽²⁾	24'-2" ⁽²⁾	22'-9" ⁽³⁾	21'-1" ⁽³⁾
	14"	31'-7" ⁽¹⁾	29'-8" ⁽²⁾	27'-6" ⁽²⁾	29'-10" ⁽²⁾	28'-0" ⁽²⁾	25'-11" ⁽³⁾	27'-8" ⁽³⁾	26'-0" ⁽³⁾	24'-1" ⁽³⁾
PWI 70	9½"	24'-8" ⁽¹⁾	23'-2" ⁽¹⁾	21'-6" ⁽²⁾	23'-3" ⁽²⁾	21'-10" ⁽²⁾	20'-3" ⁽²⁾	21'-7" ⁽²⁾	20'-4" ⁽²⁾	18'-10" ⁽³⁾
	11⅞"	29'-7" ⁽¹⁾	27'-10" ⁽²⁾	25'-9" ⁽²⁾	27'-11" ⁽²⁾	26'-3" ⁽²⁾	24'-3" ⁽³⁾	25'-11" ⁽³⁾	24'-4" ⁽³⁾	22'-7" ⁽³⁾
	14"	33'-9" ⁽²⁾	31'-8" ⁽²⁾	29'-4" ⁽²⁾	31'-10" ⁽²⁾	29'-11" ⁽³⁾	27'-8" ⁽³⁾	29'-6" ⁽³⁾	27'-9" ⁽³⁾	25'-8" ⁽³⁾
PWI 77	9½"	29'-11" ⁽¹⁾	28'-11" ⁽²⁾	26'-9" ⁽²⁾	29'-10" ⁽²⁾	27'-2" ⁽²⁾	25'-2" ⁽³⁾	26'-10" ⁽³⁾	25'-3" ⁽³⁾	23'-5" ⁽³⁾
	11⅞"	34'-10" ⁽²⁾	32'-9" ⁽²⁾	30'-4" ⁽²⁾	32'-10" ⁽²⁾	30'-11" ⁽³⁾	28'-7" ⁽³⁾	30'-6" ⁽³⁾	28'-8" ⁽³⁾	26'-7" ⁽³⁾
	14"	38'-7" ⁽²⁾	36'-3" ⁽²⁾	33'-7" ⁽²⁾	36'-5" ⁽³⁾	34'-2" ⁽³⁾	31'-8" ⁽³⁾	33'-9" ⁽³⁾	31'-9" ⁽³⁾	29'-5" ⁽³⁾
PWI 90	9½"	42'-3" ⁽²⁾	39'-8" ⁽²⁾	36'-9" ⁽²⁾	39'-10" ⁽³⁾	37'-5" ⁽³⁾	34'-8" ⁽³⁾	37'-0" ⁽³⁾	34'-9" ⁽³⁾	32'-2" ⁽³⁾
	11⅞"	45'-9" ⁽²⁾	43'-0" ⁽²⁾	39'-10" ⁽²⁾	43'-2" ⁽³⁾	40'-6" ⁽³⁾	37'-7" ⁽³⁾	40'-0" ⁽³⁾	37'-8" ⁽³⁾	34'-10" ⁽³⁾
	14"	49'-9" ⁽²⁾	46'-6" ⁽²⁾	43'-1" ⁽³⁾	46'-7" ⁽³⁾	43'-10" ⁽³⁾	40'-7" ⁽³⁾	43'-3" ⁽³⁾	40'-8" ⁽³⁾	37'-8" ⁽³⁾
PWI 20	9½"	25'-9" ⁽¹⁾	24'-2" ⁽¹⁾	22'-5" ⁽²⁾	24'-4" ⁽²⁾	22'-10" ⁽²⁾	21'-2" ⁽²⁾	22'-7" ⁽²⁾	21'-2" ⁽²⁾	19'-8" ⁽³⁾
	11⅞"	30'-9" ⁽¹⁾	28'-11" ⁽²⁾	26'-9" ⁽²⁾	29'-0" ⁽²⁾	27'-3" ⁽²⁾	25'-3" ⁽³⁾	26'-11" ⁽³⁾	25'-4" ⁽³⁾	23'-5" ⁽³⁾
	14"	35'-0" ⁽²⁾	32'-10" ⁽²⁾	30'-5" ⁽²⁾	33'-0" ⁽²⁾	31'-0" ⁽³⁾	28'-9" ⁽³⁾	30'-7" ⁽³⁾	28'-9" ⁽³⁾	26'-8" ⁽³⁾
PWI 30	9½"	38'-9" ⁽²⁾	36'-5" ⁽²⁾	33'-9" ⁽²⁾	36'-7" ⁽³⁾	34'-5" ⁽³⁾	31'-10" ⁽³⁾	33'-11" ⁽³⁾	31'-11" ⁽³⁾	29'-7" ⁽³⁾
	11⅞"	42'-5" ⁽²⁾	39'-11" ⁽²⁾	36'-11" ⁽²⁾	40'-0" ⁽³⁾	37'-7" ⁽³⁾	34'-10" ⁽³⁾	37'-2" ⁽³⁾	34'-11" ⁽³⁾	32'-4" ⁽³⁾
	14"	46'-0" ⁽²⁾	43'-3" ⁽²⁾	40'-1" ⁽²⁾	43'-4" ⁽³⁾	40'-9" ⁽³⁾	37'-9" ⁽³⁾	40'-3" ⁽³⁾	37'-10" ⁽³⁾	35'-1" ⁽³⁾
PWI 40	9½"	49'-5" ⁽²⁾	46'-6" ⁽²⁾	43'-1" ⁽³⁾	46'-7" ⁽³⁾	43'-10" ⁽³⁾	40'-7" ⁽³⁾	43'-3" ⁽³⁾	40'-8" ⁽³⁾	37'-8" ⁽³⁾
	11⅞"	52'-10" ⁽²⁾	49'-8" ⁽²⁾	46'-0" ⁽³⁾	49'-10" ⁽³⁾	46'-10" ⁽³⁾	43'-5" ⁽³⁾	46'-3" ⁽³⁾	43'-5" ⁽³⁾	40'-3" ⁽³⁾
	14"	56'-2" ⁽²⁾	52'-9" ⁽²⁾	48'-11" ⁽³⁾	53'-0" ⁽³⁾	49'-9" ⁽³⁾	46'-1" ⁽³⁾	49'-2" ⁽³⁾	46'-2" ⁽³⁾	42'-10" ⁽³⁾
PWI 45	9½"	29'-6" ⁽¹⁾	27'-8" ⁽²⁾	25'-8" ⁽²⁾	27'-10" ⁽²⁾	26'-2" ⁽²⁾	24'-2" ⁽³⁾	25'-10" ⁽³⁾	24'-3" ⁽³⁾	22'-6" ⁽³⁾
	11⅞"	35'-2" ⁽²⁾	33'-0" ⁽²⁾	30'-7" ⁽²⁾	33'-2" ⁽²⁾	31'-2" ⁽³⁾	28'-10" ⁽³⁾	30'-9" ⁽³⁾	28'-11" ⁽³⁾	26'-10" ⁽³⁾
	14"	39'-11" ⁽²⁾	37'-6" ⁽²⁾	34'-9" ⁽²⁾	37'-8" ⁽³⁾	35'-5" ⁽³⁾	32'-9" ⁽³⁾	34'-11" ⁽³⁾	32'-10" ⁽³⁾	30'-5" ⁽³⁾
PWI 50	9½"	44'-2" ⁽²⁾	41'-6" ⁽²⁾	38'-6" ⁽²⁾	41'-8" ⁽³⁾	39'-2" ⁽³⁾	36'-4" ⁽³⁾	38'-8" ⁽³⁾	36'-4" ⁽³⁾	33'-8" ⁽³⁾
	11⅞"	48'-4" ⁽²⁾	45'-5" ⁽²⁾	42'-1" ⁽²⁾	45'-7" ⁽³⁾	42'-10" ⁽³⁾	39'-8" ⁽³⁾	42'-4" ⁽³⁾	39'-9" ⁽³⁾	36'-10" ⁽³⁾
	14"	52'-3" ⁽²⁾	49'-2" ⁽²⁾	45'-6" ⁽³⁾	49'-4" ⁽³⁾	46'-4" ⁽³⁾	42'-11" ⁽³⁾	45'-9" ⁽³⁾	43'-0" ⁽³⁾	39'-11" ⁽³⁾
PWI 60	9½"	56'-2" ⁽²⁾	52'-9" ⁽²⁾	48'-11" ⁽³⁾	53'-0" ⁽³⁾	49'-9" ⁽³⁾	46'-1" ⁽³⁾	49'-2" ⁽³⁾	46'-2" ⁽³⁾	42'-10" ⁽³⁾
	11⅞"	59'-11" ⁽²⁾	56'-4" ⁽³⁾	52'-2" ⁽³⁾	56'-6" ⁽³⁾	53'-1" ⁽³⁾	49'-3" ⁽³⁾	52'-5" ⁽³⁾	49'-4" ⁽³⁾	45'-8" ⁽³⁾
	14"									

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 (205 lbs. lateral capacity @ 125%), or joist hanger
 - Beveled plate and four nails (410 lbs. lateral capacity @ 125%), or (3)
 - Gussets at high support (1620 lbs. lateral capacity @ 125%), birdsmouth cut at low support, or (4)
 - Strap (1640 lbs. lateral capacity @ 125%) or pair of twist straps (950 lbs. lateral capacity each @ 125%) 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 125% NON-SNOW

ALLOWABLE ROOF SPANS—20 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"	20'-0" ⁽¹⁾	18'-10" ⁽¹⁾	17'-5" ⁽¹⁾	18'-10" ⁽²⁾	17'-8" ⁽²⁾	16'-4" ⁽²⁾	17'-4" ⁽²⁾	16'-4" ⁽²⁾	15'-1" ⁽³⁾
	11½"	24'-2" ⁽¹⁾	22'-8" ⁽²⁾	21'-0" ⁽²⁾	22'-8" ⁽²⁾	21'-4" ⁽²⁾	19'-9" ⁽³⁾	20'-11" ⁽³⁾	19'-8" ⁽³⁾	18'-3" ⁽³⁾
	14"	27'-6" ⁽²⁾	25'-10" ⁽²⁾	23'-1" ⁽²⁾	25'-10" ⁽²⁾	24'-3" ⁽³⁾	22'-5" ⁽³⁾	23'-10" ⁽³⁾	22'-5" ⁽³⁾	20'-9" ⁽³⁾
PWI 30	9½"	20'-9" ⁽¹⁾	19'-6" ⁽¹⁾	18'-0" ⁽²⁾	19'-6" ⁽²⁾	18'-3" ⁽²⁾	16'-11" ⁽²⁾	18'-0" ⁽²⁾	16'-10" ⁽²⁾	15'-8" ⁽³⁾
	11½"	25'-0" ⁽¹⁾	23'-6" ⁽²⁾	21'-9" ⁽²⁾	23'-5" ⁽²⁾	22'-0" ⁽²⁾	20'-5" ⁽³⁾	21'-8" ⁽³⁾	20'-4" ⁽³⁾	18'-10" ⁽³⁾
	14"	29'-9" ⁽²⁾	27'-1" ⁽²⁾	24'-3" ⁽²⁾	28'-2" ⁽²⁾	26'-4" ⁽³⁾	23'-6" ⁽³⁾	26'-0" ⁽³⁾	24'-5" ⁽³⁾	22'-7" ⁽³⁾
PWI 40	9½"	22'-0" ⁽¹⁾	20'-8" ⁽¹⁾	19'-2" ⁽²⁾	20'-8" ⁽²⁾	19'-5" ⁽²⁾	18'-0" ⁽²⁾	19'-1" ⁽²⁾	17'-11" ⁽³⁾	16'-7" ⁽³⁾
	11½"	26'-5" ⁽¹⁾	24'-8" ⁽²⁾	22'-1" ⁽²⁾	24'-9" ⁽²⁾	23'-3" ⁽²⁾	21'-5" ⁽³⁾	22'-10" ⁽³⁾	21'-6" ⁽³⁾	19'-11" ⁽³⁾
	14"	29'-9" ⁽²⁾	27'-1" ⁽²⁾	24'-3" ⁽²⁾	28'-2" ⁽²⁾	26'-4" ⁽³⁾	23'-6" ⁽³⁾	26'-0" ⁽³⁾	24'-5" ⁽³⁾	22'-7" ⁽³⁾
PWI 45	9½"	22'-0" ⁽¹⁾	20'-8" ⁽¹⁾	19'-2" ⁽²⁾	20'-8" ⁽²⁾	19'-5" ⁽²⁾	18'-0" ⁽²⁾	19'-1" ⁽²⁾	17'-11" ⁽³⁾	16'-7" ⁽³⁾
	11½"	26'-5" ⁽¹⁾	24'-8" ⁽²⁾	22'-1" ⁽²⁾	24'-9" ⁽²⁾	23'-3" ⁽²⁾	21'-5" ⁽³⁾	22'-10" ⁽³⁾	21'-6" ⁽³⁾	19'-11" ⁽³⁾
	14"	30'-1" ⁽²⁾	28'-3" ⁽²⁾	26'-2" ⁽²⁾	28'-3" ⁽²⁾	26'-6" ⁽³⁾	24'-7" ⁽³⁾	26'-1" ⁽³⁾	24'-6" ⁽³⁾	22'-8" ⁽³⁾
PWI 47	9½"	22'-0" ⁽¹⁾	20'-8" ⁽¹⁾	19'-2" ⁽²⁾	20'-8" ⁽²⁾	19'-5" ⁽²⁾	18'-0" ⁽²⁾	19'-1" ⁽²⁾	17'-11" ⁽³⁾	16'-7" ⁽³⁾
	11½"	26'-5" ⁽¹⁾	24'-8" ⁽²⁾	22'-1" ⁽²⁾	24'-9" ⁽²⁾	23'-3" ⁽²⁾	21'-5" ⁽³⁾	22'-10" ⁽³⁾	21'-6" ⁽³⁾	19'-11" ⁽³⁾
	14"	30'-1" ⁽²⁾	28'-3" ⁽²⁾	26'-2" ⁽²⁾	28'-3" ⁽²⁾	26'-6" ⁽³⁾	24'-7" ⁽³⁾	26'-1" ⁽³⁾	24'-6" ⁽³⁾	22'-8" ⁽³⁾
PWI 50	9½"	21'-9" ⁽¹⁾	20'-5" ⁽¹⁾	18'-11" ⁽²⁾	20'-5" ⁽²⁾	19'-2" ⁽²⁾	17'-9" ⁽²⁾	18'-10" ⁽²⁾	17'-8" ⁽³⁾	16'-5" ⁽³⁾
	11½"	26'-2" ⁽¹⁾	24'-7" ⁽²⁾	22'-9" ⁽²⁾	24'-7" ⁽²⁾	23'-1" ⁽²⁾	21'-4" ⁽³⁾	22'-8" ⁽³⁾	21'-4" ⁽³⁾	19'-9" ⁽³⁾
	14"	29'-11" ⁽²⁾	28'-1" ⁽²⁾	26'-0" ⁽²⁾	28'-1" ⁽²⁾	26'-5" ⁽³⁾	24'-5" ⁽³⁾	25'-11" ⁽³⁾	24'-5" ⁽³⁾	22'-7" ⁽³⁾
PWI 60	9½"	23'-4" ⁽¹⁾	21'-11" ⁽¹⁾	20'-4" ⁽²⁾	21'-11" ⁽²⁾	20'-7" ⁽²⁾	19'-1" ⁽²⁾	20'-3" ⁽²⁾	19'-0" ⁽³⁾	17'-7" ⁽³⁾
	11½"	28'-0" ⁽²⁾	26'-4" ⁽²⁾	24'-4" ⁽²⁾	26'-4" ⁽²⁾	24'-9" ⁽³⁾	22'-11" ⁽³⁾	24'-4" ⁽³⁾	22'-10" ⁽³⁾	21'-2" ⁽³⁾
	14"	31'-11" ⁽²⁾	30'-0" ⁽²⁾	27'-9" ⁽²⁾	30'-0" ⁽³⁾	28'-2" ⁽³⁾	26'-1" ⁽³⁾	27'-8" ⁽³⁾	26'-0" ⁽³⁾	24'-1" ⁽³⁾
PWI 70	9½"	29'-0" ⁽²⁾	27'-3" ⁽²⁾	25'-3" ⁽²⁾	27'-3" ⁽²⁾	25'-7" ⁽³⁾	23'-8" ⁽³⁾	25'-2" ⁽³⁾	23'-8" ⁽³⁾	21'-11" ⁽³⁾
	11½"	33'-0" ⁽²⁾	31'-0" ⁽²⁾	28'-8" ⁽²⁾	31'-0" ⁽³⁾	29'-1" ⁽³⁾	26'-11" ⁽³⁾	28'-7" ⁽³⁾	26'-11" ⁽³⁾	24'-11" ⁽³⁾
	14"	36'-6" ⁽²⁾	34'-4" ⁽²⁾	31'-9" ⁽²⁾	34'-4" ⁽³⁾	32'-3" ⁽³⁾	29'-10" ⁽³⁾	31'-8" ⁽³⁾	29'-9" ⁽³⁾	27'-7" ⁽³⁾
PWI 77	9½"	24'-5" ⁽¹⁾	22'-11" ⁽²⁾	21'-3" ⁽²⁾	22'-11" ⁽²⁾	21'-6" ⁽²⁾	19'-11" ⁽³⁾	21'-2" ⁽³⁾	19'-10" ⁽³⁾	18'-5" ⁽³⁾
	11½"	29'-2" ⁽²⁾	27'-4" ⁽²⁾	25'-4" ⁽²⁾	27'-4" ⁽²⁾	25'-8" ⁽³⁾	23'-10" ⁽³⁾	25'-3" ⁽³⁾	23'-9" ⁽³⁾	22'-0" ⁽³⁾
	14"	33'-2" ⁽²⁾	31'-2" ⁽²⁾	28'-10" ⁽²⁾	31'-1" ⁽³⁾	29'-3" ⁽³⁾	27'-1" ⁽³⁾	28'-9" ⁽³⁾	27'-0" ⁽³⁾	25'-0" ⁽³⁾
PWI 90	9½"	27'-11" ⁽²⁾	26'-3" ⁽²⁾	24'-3" ⁽²⁾	26'-3" ⁽²⁾	24'-8" ⁽³⁾	22'-10" ⁽³⁾	24'-3" ⁽³⁾	22'-9" ⁽³⁾	21'-1" ⁽³⁾
	11½"	33'-3" ⁽²⁾	31'-3" ⁽²⁾	28'-11" ⁽²⁾	31'-3" ⁽³⁾	29'-4" ⁽³⁾	27'-2" ⁽³⁾	28'-10" ⁽³⁾	27'-1" ⁽³⁾	25'-1" ⁽³⁾
	14"	37'-10" ⁽²⁾	35'-6" ⁽²⁾	32'-11" ⁽²⁾	35'-6" ⁽³⁾	33'-4" ⁽³⁾	30'-11" ⁽³⁾	32'-9" ⁽³⁾	30'-10" ⁽³⁾	28'-6" ⁽³⁾

See notes on page 48

HOW TO USE ROOF SPAN TABLES

1. Check the local building code for deflection requirements. Table values are limited to L/180 at total load and L/240 at live load.
2. Choose the appropriate load duration category – 100% for heavy snow, 115% for snow or 125% for non-snow. When in doubt, consult the local building department.
3. Choose the appropriate live and dead load combination, roof slope and a joist spacing.
4. Scan down the spacing column to find a span that exceeds the horizontal design span and the minimum connection required at each support.
5. Scan to the left from that span to determine the joist size required.
6. Web stiffeners are required at all supports for 22" and 24" joists. See *Web Stiffener Requirements* on page 93 for more details.

ROOF SPANS 125% NON-SNOW

ALLOWABLE ROOF SPANS—20 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"	19'-1" (1)	17'-11" (1)	16'-7" (2)	17'-10" (2)	16'-9" (2)	15'-6" (2)	16'-5" (2)	15'-5" (3)	14'-3" (3)
	11⅞"	23'-0" (1)	21'-8" (2)	19'-9" (2)	21'-7" (2)	20'-3" (2)	18'-9" (3)	19'-10" (3)	18'-7" (3)	17'-3" (3)
	14"	26'-3" (2)	24'-2" (2)	21'-7" (2)	24'-7" (2)	23'-1" (3)	20'-10" (3)	22'-7" (3)	21'-3" (3)	19'-8" (3)
PWI 30	9½"	19'-9" (1)	18'-7" (1)	17'-2" (2)	18'-6" (2)	17'-5" (2)	16'-1" (2)	17'-0" (2)	16'-0" (3)	14'-10" (3)
	11⅞"	23'-10" (2)	22'-4" (2)	20'-9" (2)	22'-4" (2)	20'-11" (3)	19'-5" (3)	20'-6" (3)	19'-3" (3)	17'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 40	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 45	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 50	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 60	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 70	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 77	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)
PWI 90	9½"	21'-0" (1)	19'-9" (2)	18'-1" (2)	19'-8" (2)	18'-6" (2)	17'-1" (3)	18'-1" (3)	17'-0" (3)	15'-9" (3)
	11⅞"	25'-2" (2)	23'-0" (2)	20'-7" (2)	23'-7" (2)	22'-1" (3)	19'-10" (3)	21'-8" (3)	20'-4" (3)	18'-10" (3)
	14"	27'-9" (2)	25'-4" (2)	22'-7" (2)	26'-9" (3)	24'-5" (3)	21'-10" (3)	24'-7" (3)	23'-1" (3)	20'-10" (3)

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 (205 lbs. lateral capacity @ 125%), or joist hanger
 - Beveled plate and four nails (410 lbs. lateral capacity @ 125%), or (3)
 - Gussets at high support (1620 lbs. lateral capacity @ 125%), birdsmouth cut at low support, or (4)
 - Strap (1640 lbs. lateral capacity @ 125%) or pair of twist straps (950 lbs. lateral capacity each @ 125%) 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).