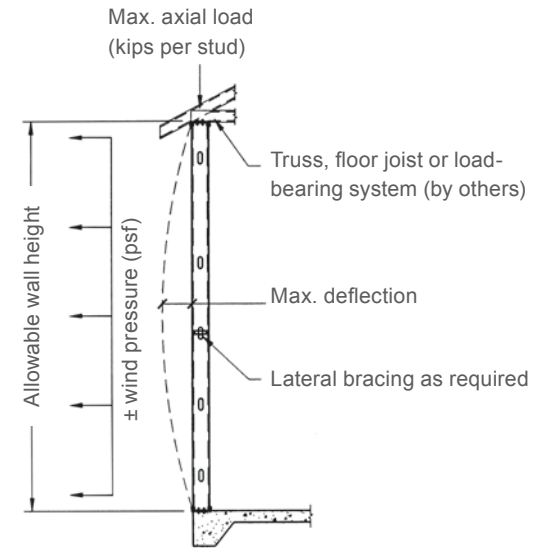


## Allowable combined axial & lateral loads.

Load-bearing walls must be capable of handling vertical loads even when subjected to lateral loads from wind or another force. The following tables identify the axial (vertical) load that can be supported by each member under given lateral load conditions.

### General Notes:

- 1 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 2 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 3 Listed lateral pressures and axial loads have not been modified for 1/3 stress increase based on wind/earthquake or multiple transient loads.
- 4 For material thickness of 33mil and 43mil,  $F_y = 33\text{ksi}$ , for 54mil and thicker,  $F_y = 50\text{ksi}$ .
- 5 Allowable loads based on weak axis and torsional horizontal mechanical bracing at 48" o.c. maximum for axial load calculations and continuous support for each flange for flexural calculations.
- 6 With the exception of 5psf interior walls, wind pressures have been multiplied by 0.7 for deflection determination, in accordance with footnote 1 of IBC table 1604.3.
- 7 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 8 Listed tables are based on simple (single) span.
- 9 Stud distortional buckling based on an assumed  $K\phi = 0$ .
- 10 The strength increase due to cold work of forming was incorporated for flexural strength as applicable per AISI S100-16.
- 11 The allowable axial loads do not include the effects of the gypsum board.
- 12 Cells marked with an a, b, c, d, e, or f meet  $L/720$ ,  $L/600$ ,  $L/480$ ,  $L/360$ ,  $L/240$ , or  $L/120$  respectively. Blank cells do not meet  $L/120$ . For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 13 Cells marked with an "\*" have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .



**ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)**

Wind = 5psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	1.87 a	2.64 a	4.15 a	5.38 a	7.86 a	2.25 a	3.28 a	5.18 a	6.68 a	9.53 a	3.71 a	5.82 a	7.76 a	11.03 a
		16	1.79 a	2.57 a	4.07 a	5.31 a	7.78 a	2.17 a	3.20 a	5.10 a	6.60 a	9.45 a	3.62 a	5.73 a	7.67 a	10.95 a
		24	1.64 a	2.42 a	3.93 a	5.16 a	7.62 a	2.01 a	3.03 a	4.94 a	6.44 a	9.29 a	3.45 a	5.56 a	7.50 a	10.80 a
	9	12	1.73 a	2.48 a	3.85 a	4.98 a	7.27 a	2.10 a	3.07 a	4.79 a	6.16 a	8.80 a	3.52 a	5.46 a	7.17 a	10.21 a
		16	1.64 a	2.38 a	3.76 a	4.89 a	7.17 a	2.00 a	2.96 a	4.69 a	6.06 a	8.70 a	3.40 a	5.35 a	7.06 a	10.11 a
		24	1.45 a	2.19 a	3.58 a	4.71 a	6.97 a	1.80 a	2.76 a	4.49 a	5.87 a	8.50 a	3.18 a	5.14 a	6.85 a	9.91 a
	10	12	1.58 a	2.29 a	3.52 a	4.54 a	6.62 a	1.93 a	2.84 a	4.37 a	5.61 a	8.01 a	3.29 a	5.08 a	6.54 a	9.33 a
		16	1.46 a	2.17 a	3.41 a	4.43 a	6.49 a	1.81 a	2.71 a	4.25 a	5.49 a	7.89 a	3.15 a	4.95 a	6.40 a	9.21 a
		24	1.25 a	1.95 a	3.20 a	4.22 a	6.26 a	1.57 a	2.47 a	4.01 a	5.26 a	7.65 a	2.89 a	4.69 a	6.15 a	8.97 a
	12	12	1.25 a	1.86 a	2.78 a	3.59 a	5.22 a	1.56 a	2.32 a	3.45 a	4.44 a	6.36 a	2.74 a	4.06 a	5.21 a	7.49 a
		16	1.11 a	1.71 a	2.65 a	3.46 a	5.07 a	1.40 a	2.16 a	3.30 a	4.29 a	6.20 a	2.55 a	3.90 a	5.05 a	7.34 a
		24	0.85 c	1.44 b	2.40 a	3.21 a	4.79 a	1.11 c	1.86 a	3.03 a	4.02 a	5.91 a	2.22 a	3.59 a	4.74 a	7.04 a
14	12	0.92 b	1.44 a	2.13 a	2.77 a	4.02 a	1.18 a	1.81 a	2.64 a	3.43 a	4.93 a	2.15 a	3.12 a	4.05 a	5.87 a	
	16	0.77 d	1.27 b	1.99 a	2.63 a	3.86 a	1.01 c	1.63 b	2.48 a	3.27 a	4.76 a	1.95 a	2.94 a	3.87 a	5.70 a	
	24	0.51 e	0.98 d	1.73 c	2.37 b	3.56 a	0.70 d	1.31 d	2.19 c	2.98 a	4.45 a	1.59 c	2.62 b	3.54 a	5.37 a	
16	12	0.65 d	1.06 c	1.62 b	2.14 a	3.11 a	0.84 c	1.36 b	2.01 a	2.65 a	3.84 a	1.63 a	2.40 a	3.15 a	4.62 a	
	16	0.50 e	0.90 d	1.48 c	1.99 b	2.94 a	0.67 d	1.18 c	1.86 c	2.49 a	3.67 a	1.42 c	2.22 b	2.96 a	4.44 a	
	24	0.24 f	0.61 e	1.23 e	1.73 d	2.65 c	0.38 e	0.86 e	1.58 d	2.21 c	3.36 b	1.06 d	1.90 d	2.64 c	4.11 a	
4" Stud	8	12	2.03 a	2.87 a	4.61 a	6.18 a	9.08 a	2.42 a	3.55 a	5.77 a	7.63 a	11.03 a	3.97 a	6.28 a	8.68 a	12.76 a
		16	1.96 a	2.80 a	4.54 a	6.11 a	9.00 a	2.34 a	3.47 a	5.70 a	7.55 a	10.95 a	3.89 a	6.20 a	8.60 a	12.69 a
		24	1.81 a	2.65 a	4.41 a	5.97 a	8.85 a	2.19 a	3.32 a	5.54 a	7.40 a	10.79 a	3.73 a	6.05 a	8.44 a	12.53 a
	9	12	1.91 a	2.72 a	4.36 a	5.85 a	8.55 a	2.28 a	3.37 a	5.43 a	7.19 a	10.35 a	3.80 a	6.04 a	8.29 a	12.00 a
		16	1.82 a	2.63 a	4.27 a	5.76 a	8.45 a	2.19 a	3.27 a	5.33 a	7.09 a	10.25 a	3.69 a	5.94 a	8.18 a	11.89 a
		24	1.64 a	2.45 a	4.10 a	5.58 a	8.26 a	2.00 a	3.08 a	5.14 a	6.90 a	10.05 a	3.49 a	5.75 a	7.98 a	11.69 a
	10	12	1.77 a	2.56 a	4.07 a	5.47 a	7.95 a	2.13 a	3.16 a	5.04 a	6.69 a	9.60 a	3.60 a	5.71 a	7.79 a	11.15 a
		16	1.66 a	2.44 a	3.96 a	5.36 a	7.82 a	2.01 a	3.04 a	4.92 a	6.57 a	9.48 a	3.48 a	5.59 a	7.66 a	11.02 a
		24	1.45 a	2.23 a	3.75 a	5.14 a	7.58 a	1.79 a	2.81 a	4.69 a	6.34 a	9.23 a	3.23 a	5.35 a	7.40 a	10.78 a
	12	12	1.46 a	2.17 a	3.40 a	4.54 a	6.57 a	1.79 a	2.69 a	4.19 a	5.56 a	7.96 a	3.15 a	4.93 a	6.51 a	9.32 a
		16	1.32 a	2.02 a	3.25 a	4.39 a	6.41 a	1.63 a	2.53 a	4.03 a	5.40 a	7.79 a	2.97 a	4.76 a	6.34 a	9.15 a
		24	1.05 b	1.74 a	2.99 a	4.11 a	6.10 a	1.35 a	2.22 a	3.74 a	5.09 a	7.47 a	2.64 a	4.44 a	6.00 a	8.82 a
	14	12	1.13 a	1.75 a	2.70 a	3.57 a	5.17 a	1.43 a	2.19 a	3.32 a	4.38 a	6.30 a	2.59 a	3.93 a	5.17 a	7.46 a
		16	0.97 c	1.57 a	2.54 a	3.40 a	4.98 a	1.25 b	1.99 a	3.14 a	4.20 a	6.11 a	2.38 a	3.74 a	4.97 a	7.26 a
		24	0.69 d	1.26 c	2.25 b	3.10 a	4.65 a	0.92 d	1.65 b	2.82 a	3.86 a	5.75 a	2.00 b	3.38 a	4.60 a	6.89 a
	16	12	0.84 c	1.35 b	2.11 a	2.78 a	4.03 a	1.07 b	1.71 a	2.60 a	3.42 a	4.94 a	2.05 a	3.09 a	4.05 a	5.91 a
		16	0.67 d	1.17 c	1.94 b	2.61 a	3.84 a	0.89 d	1.51 b	2.41 a	3.23 a	4.75 a	1.82 b	2.88 a	3.85 a	5.70 a
		24	0.38 e	0.85 e	1.65 d	2.30 c	3.51 b	0.56 e	1.15 d	2.09 c	2.89 b	4.39 a	1.43 d	2.52 c	3.47 b	5.32 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

# ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 5psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	2.41 a	3.38 a	5.59 a	7.43 a	11.38 a	2.86 a	4.30 a	7.46 a	9.96 a	15.63 a	4.65 a	7.64 a	11.05 a	18.26 a
		16	2.36 a	3.33 a	5.55 a	7.39 a	11.33 a	2.81 a	4.25 a	7.40 a	9.90 a	15.57 a	4.59 a	7.59 a	10.99 a	18.20 a
		24	2.27 a	3.24 a	5.46 a	7.30 a	11.24 a	2.71 a	4.15 a	7.30 a	9.80 a	15.46 a	4.49 a	7.49 a	10.88 a	18.08 a
	9	12	2.37 a	3.34 a	5.55 a	7.39 a	11.34 a	2.79 a	4.22 a	7.31 a	9.77 a	15.36 a	4.56 a	7.50 a	10.84 a	17.89 a
		16	2.31 a	3.28 a	5.50 a	7.33 a	11.28 a	2.73 a	4.15 a	7.24 a	9.71 a	15.29 a	4.49 a	7.44 a	10.77 a	17.82 a
		24	2.18 a	3.16 a	5.38 a	7.22 a	11.16 a	2.61 a	4.02 a	7.10 a	9.57 a	15.15 a	4.36 a	7.31 a	10.63 a	17.66 a
	10	12	2.32 a	3.29 a	5.50 a	7.34 a	11.28 a	2.72 a	4.12 a	7.13 a	9.55 a	15.03 a	4.47 a	7.34 a	10.60 a	17.46 a
		16	2.24 a	3.21 a	5.43 a	7.27 a	11.21 a	2.64 a	4.04 a	7.04 a	9.46 a	14.94 a	4.38 a	7.26 a	10.51 a	17.36 a
		24	2.09 a	3.06 a	5.28 a	7.12 a	11.06 a	2.49 a	3.87 a	6.87 a	9.29 a	14.76 a	4.21 a	7.09 a	10.33 a	17.17 a
	12	12	2.15 a	3.12 a	5.31 a	7.21 a	11.14 a	2.54 a	3.86 a	6.66 a	8.96 a	14.15 a	4.23 a	6.93 a	9.99 a	16.36 a
		16	2.04 a	3.01 a	5.20 a	7.09 a	11.02 a	2.42 a	3.74 a	6.53 a	8.84 a	14.02 a	4.10 a	6.81 a	9.85 a	16.21 a
		24	1.82 a	2.79 a	4.98 a	6.87 a	10.78 a	2.20 a	3.50 a	6.29 a	8.58 a	13.75 a	3.86 a	6.57 a	9.59 a	15.92 a
14	12	1.94 a	2.87 a	4.88 a	6.71 a	10.87 a	2.31 a	3.54 a	6.06 a	8.20 a	13.00 a	3.92 a	6.44 a	9.24 a	15.00 a	
	16	1.79 a	2.72 a	4.73 a	6.55 a	10.68 a	2.15 a	3.38 a	5.89 a	8.03 a	12.81 a	3.75 a	6.27 a	9.06 a	14.79 a	
	24	1.51 a	2.43 a	4.44 a	6.24 a	10.32 a	1.86 a	3.06 a	5.56 a	7.68 a	12.43 a	3.43 a	5.95 a	8.69 a	14.38 a	
16	12	1.69 a	2.56 a	4.35 a	6.02 a	9.77 a	2.04 a	3.16 a	5.36 a	7.31 a	11.64 a	3.57 a	5.93 a	8.41 a	13.44 a	
	16	1.50 a	2.37 a	4.16 a	5.81 a	9.52 a	1.85 a	2.96 a	5.15 a	7.08 a	11.39 a	3.35 a	5.72 a	8.17 a	13.17 a	
	24	1.17 b	2.02 a	3.80 a	5.42 a	9.07 a	1.50 a	2.57 a	4.75 a	6.66 a	10.91 a	2.94 a	5.30 a	7.71 a	12.65 a	
8" Stud	8	12	2.39 a*	3.35 a	5.43 a	7.24 a	11.26 a	2.96 a*	4.47 a	7.74 a	10.28 a	15.97 a	4.89 a	8.17 a	11.80 a	19.76 a
		16	2.36 a*	3.32 a	5.40 a	7.21 a	11.23 a	2.93 a*	4.43 a	7.70 a	10.24 a	15.93 a	4.85 a	8.13 a	11.76 a	19.72 a
		24	2.29 a*	3.25 a	5.34 a	7.16 a	11.18 a	2.85 a*	4.36 a	7.63 a	10.17 a	15.86 a	4.77 a	8.06 a	11.68 a	19.63 a
	9	12	2.36 a*	3.32 a	5.40 a	7.22 a	11.24 a	2.93 a*	4.44 a	7.71 a	10.24 a	15.94 a	4.84 a	8.10 a	11.72 a	19.64 a
		16	2.32 a*	3.28 a	5.37 a	7.18 a	11.20 a	2.89 a*	4.39 a	7.66 a	10.20 a	15.89 a	4.79 a	8.05 a	11.67 a	19.58 a
		24	2.23 a*	3.20 a	5.29 a	7.11 a	11.13 a	2.79 a*	4.29 a	7.56 a	10.10 a	15.80 a	4.69 a	7.96 a	11.57 a	19.47 a
	10	12	2.33 a*	3.29 a	5.38 a	7.19 a	11.21 a	2.90 a*	4.40 a	7.67 a	10.21 a	15.90 a	4.79 a	8.02 a	11.63 a	19.49 a
		16	2.28 a*	3.24 a	5.33 a	7.14 a	11.16 a	2.84 a*	4.34 a	7.61 a	10.15 a	15.84 a	4.73 a	7.96 a	11.56 a	19.42 a
		24	2.17 a*	3.14 a	5.23 a	7.05 a	11.07 a	2.73 a*	4.22 a	7.49 a	10.03 a	15.72 a	4.60 a	7.84 a	11.43 a	19.28 a
	12	12	2.25 a*	3.22 a	5.30 a	7.12 a	11.14 a	2.81 a*	4.31 a	7.58 a	10.11 a	15.81 a	4.65 a	7.80 a	11.38 a	19.09 a
		16	2.17 a*	3.14 a	5.23 a	7.05 a	11.07 a	2.73 a*	4.22 a	7.49 a	10.02 a	15.72 a	4.56 a	7.72 a	11.28 a	18.98 a
		24	2.02 a*	2.99 a	5.09 a	6.91 a	10.93 a	2.56 a*	4.04 a	7.31 a	9.85 a	15.54 a	4.38 a	7.54 a	11.09 a	18.78 a
	14	12	2.16 a*	3.12 a	5.21 a	7.03 a	11.04 a	2.68 a*	4.15 a	7.35 a	9.92 a	15.68 a	4.47 a	7.51 a	10.97 a	18.42 a
		16	2.05 a*	3.02 a	5.11 a	6.93 a	10.94 a	2.56 a*	4.02 a	7.22 a	9.79 a	15.55 a	4.34 a	7.39 a	10.84 a	18.28 a
		24	1.83 a*	2.81 a	4.91 a	6.73 a	10.75 a	2.34 a*	3.78 a	6.97 a	9.54 a	15.28 a	4.10 a	7.15 a	10.57 a	17.98 a
	16	12	2.04 a*	3.01 a	5.10 a	6.91 a	10.92 a	2.51 a*	3.91 a	6.93 a	9.41 a	15.08 a	4.24 a	7.13 a	10.41 a	17.43 a
		16	1.90 a*	2.87 a	4.96 a	6.78 a	10.78 a	2.36 a*	3.75 a	6.76 a	9.23 a	14.90 a	4.08 a	6.97 a	10.23 a	17.23 a
		24	1.62 a*	2.59 a	4.69 a	6.51 a	10.51 a	2.07 a*	3.44 a	6.43 a	8.90 a	14.55 a	3.76 a	6.66 a	9.88 a	16.85 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- Cells marked with an "a," "b," "c," "d," "e," or "F" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

## ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 15psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	1.43 a	2.20 a	3.73 a	4.96 a	7.39 a	1.77 a	2.79 a	4.71 a	6.22 a	9.06 a	3.19 a	5.32 a	7.25 a	10.56 a
		16	1.22 a	1.98 a	3.53 a	4.75 a	7.17 a	1.55 a	2.56 a	4.49 a	5.99 a	8.83 a	2.95 a	5.08 a	7.01 a	10.34 a
		24	0.84 a	1.58 a	3.14 a	4.36 a	6.73 a	1.13 a	2.13 a	4.06 a	5.57 a	8.38 a	2.48 a	4.62 a	6.53 a	9.89 a
	9	12	1.19 a	1.92 a	3.33 a	4.46 a	6.69 a	1.51 a	2.47 a	4.21 a	5.59 a	8.21 a	2.87 a	4.84 a	6.54 a	9.62 a
		16	0.95 a	1.67 a	3.09 a	4.21 a	6.41 a	1.25 a	2.19 a	3.94 a	5.32 a	7.92 a	2.57 a	4.54 a	6.24 a	9.34 a
		24	0.51 c	1.20 a	2.64 a	3.75 a	5.89 a	0.76 b	1.68 a	3.44 a	4.82 a	7.38 a	2.01 a	4 a	5.68 a	8.8 a
	10	12	0.96 a	1.64 a	2.91 a	3.92 a	5.93 a	1.25 a	2.13 a	3.69 a	4.94 a	7.3 a	2.51 a	4.33 a	5.79 a	8.63 a
		16	0.69 b	1.35 a	2.64 a	3.65 a	5.61 a	0.95 a	1.82 a	3.38 a	4.63 a	6.98 a	2.17 a	3.99 a	5.45 a	8.3 a
		24	0.21 d	0.84 c	2.15 b	3.13 a	5.03 a	0.42 c	1.25 b	2.83 a	4.07 a	6.37 a	1.54 a	3.37 a	4.82 a	7.68 a
	12	12	0.52 d	1.08 b	2.07 a	2.87 a	4.40 a	0.74 c	1.46 a	2.66 a	3.64 a	5.5 a	1.77 a	3.17 a	4.32 a	6.62 a
		16	0.22 e	0.76 d	1.78 c	2.56 b	4.05 a	0.41 d	1.11 c	2.32 b	3.3 a	5.13 a	1.37 b	2.79 a	3.93 a	6.24 a
		24	—	0.20 e	1.25 d	2.01 d	3.42 b	—	0.49 d	1.73 d	2.7 c	4.46 a	0.67 d	2.12 c	3.25 b	5.54 a
14	12	0.17 e	0.61 d	1.40 d	2.02 c	3.17 a	0.32 e	0.9 d	1.82 c	2.6 b	4.03 a	1.12 c	2.19 b	3.11 a	4.94 a	
	16	—	0.28 e	1.11 e	1.71 d	2.82 c	—	0.54 e	1.49 d	2.26 c	3.65 b	0.71 d	1.82 c	2.72 b	4.54 a	
	24	—	—	0.60 f	1.17 e	2.21 d	—	0.92 e	1.67 e	3 d	0.01 e	1.17 e	2.05 d	3.84 c		
16	12	—	0.25 e	0.91 e	1.39 d	2.27 c	0.01 f	0.46 e	1.22 d	1.84 d	2.95 b	0.61 e	1.49 d	2.22 c	3.68 a	
	16	—	—	0.63 f	1.10 e	1.94 d	—	0.12 f	0.91 e	1.51 e	2.59 d	0.22 e	1.13 e	1.85 d	3.29 c	
	24	—	—	0.16 f	0.60 f	1.36 e	—	—	0.38 f	0.96 f	1.96 e	—	0.53 f	1.21 e	2.62 d	
4" Stud	8	12	1.61 a	2.45 a	4.21 a	5.77 a	8.63 a	1.97 a	3.10 a	5.32 a	7.18 a	10.56 a	3.49 a	5.83 a	8.20 a	12.30 a
		16	1.41 a	2.24 a	4.02 a	5.56 a	8.40 a	1.76 a	2.88 a	5.10 a	6.96 a	10.33 a	3.27 a	5.61 a	7.97 a	12.07 a
		24	1.04 a	1.86 a	3.64 a	5.17 a	7.97 a	1.35 a	2.46 a	4.68 a	6.53 a	9.89 a	2.83 a	5.19 a	7.52 a	11.62 a
	9	12	1.39 a	2.20 a	3.85 a	5.32 a	7.97 a	1.73 a	2.80 a	4.86 a	6.61 a	9.76 a	3.20 a	5.46 a	7.68 a	11.40 a
		16	1.15 a	1.95 a	3.61 a	5.07 a	7.70 a	1.47 a	2.53 a	4.59 a	6.34 a	9.47 a	2.92 a	5.19 a	7.38 a	11.11 a
		24	0.71 b	1.49 a	3.16 a	4.59 a	7.17 a	0.99 a	2.03 a	4.09 a	5.82 a	8.92 a	2.39 a	4.67 a	6.82 a	10.56 a
	10	12	1.16 a	1.93 a	3.46 a	4.82 a	7.24 a	1.47 a	2.47 a	4.36 a	6.00 a	8.88 a	2.88 a	5.00 a	7.04 a	10.42 a
		16	0.89 a	1.64 a	3.18 a	4.53 a	6.91 a	1.18 a	2.16 a	4.05 a	5.67 a	8.54 a	2.55 a	4.68 a	6.69 a	10.08 a
		24	0.40 c	1.12 b	2.66 a	3.98 a	6.30 a	0.64 b	1.59 a	3.47 a	5.07 a	7.90 a	1.93 a	4.07 a	6.03 a	9.42 a
	12	12	0.71 b	1.36 a	2.63 a	3.72 a	5.67 a	0.96 b	1.81 a	3.33 a	4.67 a	7.02 a	2.19 a	3.99 a	5.54 a	8.36 a
		16	0.39 d	1.03 c	2.30 b	3.37 a	5.28 a	0.61 c	1.44 b	2.96 a	4.28 a	6.61 a	1.78 a	3.58 a	5.11 a	7.93 a
		24	—	0.43 d	1.71 d	2.74 c	4.56 a	—	0.78 d	2.31 c	3.59 b	5.85 a	1.05 c	2.86 b	4.34 a	7.14 a
	14	12	0.31 d	0.85 c	1.86 c	2.70 a	4.19 a	0.50 d	1.20 c	2.39 b	3.42 a	5.27 a	1.50 b	2.90 a	4.11 a	6.38 a
		16	—	0.50 d	1.53 d	2.34 c	3.79 a	0.14 e	0.81 d	2.02 c	3.03 b	4.84 a	1.06 c	2.48 b	3.67 a	5.93 a
		24	—	—	0.94 e	1.71 d	3.08 c	—	0.13 e	1.36 e	2.33 d	4.08 c	0.30 e	1.75 d	2.89 c	5.11 b
	16	12	0.01 e	0.44 e	1.27 d	1.91 c	3.06 b	0.14 e	0.70 d	1.67 d	2.46 c	3.91 a	0.92 d	2.05 c	2.99 b	4.81 a
		16	—	0.09 e	0.94 e	1.56 d	2.67 c	—	0.32 e	1.30 e	2.08 d	3.49 c	0.48 e	1.64 d	2.56 c	4.36 b
		24	—	—	0.38 f	0.97 e	2.00 e	—	—	0.68 f	1.43 e	2.77 d	—	0.94 e	1.82 e	3.57 d

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

# ALLOWABLE COMBINED AXIAL & LATERAL LOADS

(Kips/Stud)

Wind = 15psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	2.12 a	3.10 a	5.33 a	7.17 a	11.11 a	2.56 a	3.99 a	7.14 a	9.64 a	15.30 a	4.33 a	7.34 a	10.72 a	17.90 a
		16	1.98 a	2.96 a	5.20 a	7.04 a	10.98 a	2.42 a	3.84 a	6.99 a	9.49 a	15.14 a	4.17 a	7.19 a	10.56 a	17.73 a
		24	1.70 a	2.69 a	4.94 a	6.78 a	10.71 a	2.13 a	3.53 a	6.68 a	9.18 a	14.82 a	3.86 a	6.89 a	10.24 a	17.38 a
	9	12	2.00 a	2.98 a	5.21 a	7.05 a	10.99 a	2.42 a	3.82 a	6.90 a	9.37 a	14.94 a	4.16 a	7.11 a	10.42 a	17.44 a
		16	1.82 a	2.80 a	5.04 a	6.88 a	10.81 a	2.23 a	3.63 a	6.70 a	9.17 a	14.73 a	3.96 a	6.92 a	10.21 a	17.21 a
		24	1.47 a	2.46 a	4.71 a	6.55 a	10.47 a	1.87 a	3.24 a	6.31 a	8.77 a	14.31 a	3.56 a	6.54 a	9.80 a	16.76 a
	10	12	1.86 a	2.84 a	5.07 a	6.90 a	10.83 a	2.26 a	3.62 a	6.62 a	9.04 a	14.49 a	3.96 a	6.85 a	10.07 a	16.88 a
		16	1.64 a	2.62 a	4.85 a	6.69 a	10.61 a	2.03 a	3.38 a	6.37 a	8.79 a	14.23 a	3.72 a	6.62 a	9.80 a	16.59 a
		24	1.22 a	2.20 a	4.44 a	6.27 a	10.17 a	1.59 a	2.91 a	5.89 a	8.30 a	13.71 a	3.23 a	6.15 a	9.29 a	16.03 a
	12	12	1.51 a	2.47 a	4.66 a	6.54 a	10.43 a	1.88 a	3.16 a	5.93 a	8.21 a	13.35 a	3.50 a	6.22 a	9.20 a	15.49 a
		16	1.21 a	2.16 a	4.35 a	6.21 a	10.08 a	1.57 a	2.82 a	5.58 a	7.86 a	12.96 a	3.15 a	5.88 a	8.83 a	15.07 a
		24	0.64 a	1.58 a	3.75 a	5.60 a	9.42 a	0.98 a	2.19 a	4.91 a	7.17 a	12.21 a	2.49 a	5.23 a	8.10 a	14.26 a
14	12	1.11 a	2.02 a	4.02 a	5.79 a	9.80 a	1.45 a	2.61 a	5.09 a	7.20 a	11.89 a	2.96 a	5.49 a	8.18 a	13.80 a	
	16	0.74 a	1.63 a	3.62 a	5.37 a	9.31 a	1.07 a	2.19 a	4.65 a	6.73 a	11.37 a	2.52 a	5.04 a	7.68 a	13.24 a	
	24	0.07 c	0.92 b	2.89 a	4.58 a	8.40 a	0.36 c	1.42 a	3.84 a	5.87 a	10.40 a	1.70 a	4.22 a	6.76 a	12.19 a	
16	12	0.71 b	1.53 a	3.30 a	4.89 a	8.43 a	1.01 a	2.05 a	4.20 a	6.08 a	10.24 a	2.38 a	4.73 a	7.07 a	11.93 a	
	16	0.29 c	1.09 b	2.85 a	4.40 a	7.85 a	0.58 c	1.56 a	3.70 a	5.54 a	9.62 a	1.86 a	4.19 a	6.48 a	11.26 a	
	24	—	0.29 d	2.03 c	3.50 b	6.79 a	—	0.69 c	2.79 b	4.56 a	8.50 a	0.92 c	3.23 b	5.40 a	10.03 a	
8" Stud	8	12	2.19 a*	3.16 a	5.25 a	7.07 a	11.09 a	2.75 a*	4.24 a	7.52 a	10.06 a	15.75 a	4.66 a	7.95 a	11.56 a	19.51 a
		16	2.09 a*	3.06 a	5.16 a	6.99 a	11.01 a	2.64 a*	4.13 a	7.41 a	9.95 a	15.65 a	4.54 a	7.83 a	11.44 a	19.38 a
		24	1.89 a*	2.87 a	4.99 a	6.81 a	10.84 a	2.42 a*	3.91 a	7.19 a	9.73 a	15.43 a	4.31 a	7.61 a	11.21 a	19.13 a
	9	12	2.10 a*	3.07 a	5.18 a	7.00 a	11.02 a	2.66 a*	4.15 a	7.42 a	9.96 a	15.66 a	4.55 a	7.82 a	11.42 a	19.31 a
		16	1.98 a*	2.95 a	5.06 a	6.89 a	10.91 a	2.52 a*	4.01 a	7.28 a	9.82 a	15.52 a	4.40 a	7.67 a	11.26 a	19.15 a
		24	1.72 a*	2.71 a	4.84 a	6.67 a	10.69 a	2.25 a*	3.72 a	7.00 a	9.55 a	15.25 a	4.10 a	7.39 a	10.96 a	18.83 a
	10	12	2.01 a*	2.98 a	5.09 a	6.91 a	10.93 a	2.55 a*	4.04 a	7.31 a	9.85 a	15.55 a	4.42 a	7.66 a	11.24 a	19.08 a
		16	1.85 a*	2.83 a	4.95 a	6.77 a	10.80 a	2.38 a*	3.86 a	7.13 a	9.68 a	15.37 a	4.23 a	7.49 a	11.05 a	18.87 a
		24	1.54 a*	2.53 a	4.67 a	6.5 a	10.53 a	2.05 a*	3.51 a	6.78 a	9.33 a	15.03 a	3.87 a	7.13 a	10.68 a	18.47 a
	12	12	1.79 a*	2.76 a	4.88 a	6.71 a	10.72 a	2.31 a*	3.78 a	7.04 a	9.58 a	15.27 a	4.11 a	7.28 a	10.81 a	18.47 a
		16	1.56 a*	2.54 a	4.67 a	6.50 a	10.52 a	2.07 a*	3.52 a	6.77 a	9.32 a	15.01 a	3.85 a	7.02 a	10.53 a	18.17 a
		24	1.12 a*	2.11 a	4.26 a	6.10 a	10.11 a	1.59 a*	3.01 a	6.25 a	8.80 a	14.48 a	3.33 a	6.52 a	9.98 a	17.57 a
	14	12	1.52 a*	2.50 a	4.62 a	6.44 a	10.45 a	2.00 a*	3.42 a	6.60 a	9.17 a	14.90 a	3.73 a	6.79 a	10.18 a	17.55 a
		16	1.22 a*	2.20 a	4.33 a	6.16 a	10.16 a	1.68 a*	3.07 a	6.23 a	8.80 a	14.52 a	3.38 a	6.44 a	9.80 a	17.13 a
		24	0.64 a*	1.62 a	3.77 a	5.60 a	9.59 a	1.06 a*	2.40 a	5.53 a	8.08 a	13.77 a	2.69 a	5.76 a	9.05 a	16.30 a
	16	12	1.22 a*	2.19 a	4.30 a	6.11 a	10.1 a	1.64 a*	2.98 a	5.95 a	8.41 a	14.03 a	3.29 a	6.20 a	9.37 a	16.28 a
		16	0.84 a*	1.81 a	3.93 a	5.73 a	9.71 a	1.24 a*	2.55 a	5.50 a	7.94 a	13.52 a	2.85 a	5.75 a	8.88 a	15.73 a
		24	0.12 b*	1.08 a	3.21 a	5.00 a	8.95 a	0.49 a*	1.72 a	4.62 a	7.04 a	12.55 a	1.99 a	4.90 a	7.94 a	14.66 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_n$ .
- Cells marked with an "a," "b," "c," "d," "e," or "F" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

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## ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 20psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	1.22 a	1.98 a	3.53 a	4.75 a	7.17 a	1.55 a	2.56 a	4.49 a	5.99 a	8.83 a	2.95 a	5.08 a	7.01 a	10.34 a
		16	0.96 a	1.71 a	3.27 a	4.49 a	6.88 a	1.27 a	2.27 a	4.20 a	5.71 a	8.52 a	2.63 a	4.77 a	6.69 a	10.04 a
		24	0.48 b	1.21 a	2.78 a	3.99 a	6.32 a	0.74 b	1.71 a	3.65 a	5.16 a	7.95 a	2.03 a	4.19 a	6.08 a	9.46 a
	9	12	0.95 a	1.67 a	3.09 a	4.21 a	6.41 a	1.25 a	2.19 a	3.94 a	5.32 a	7.92 a	2.57 a	4.54 a	6.24 a	9.34 a
		16	0.65 b	1.36 a	2.79 a	3.90 a	6.06 a	0.92 a	1.85 a	3.60 a	4.98 a	7.56 a	2.19 a	4.18 a	5.86 a	8.98 a
		24	0.11 d	0.78 c	2.23 b	3.32 a	5.41 a	0.32 c	1.21 b	2.97 a	4.35 a	6.88 a	1.49 a	3.49 a	5.15 a	8.29 a
	10	12	0.69 b	1.35 a	2.64 a	3.65 a	5.61 a	0.95 a	1.82 a	3.38 a	4.63 a	6.98 a	2.17 a	3.99 a	5.45 a	8.30 a
		16	0.36 d	1.00 c	2.31 a	3.30 a	5.22 a	0.59 c	1.43 b	3.00 a	4.25 a	6.57 a	1.74 a	3.57 a	5.02 a	7.88 a
		24	—	0.37 d	1.70 c	2.66 b	4.49 a	—	0.74 d	2.32 c	3.55 b	5.80 a	0.97 c	2.81 b	4.24 a	7.10 a
	12	12	0.22 e	0.76 d	1.78 c	2.56 b	4.05 a	0.41 d	1.11 c	2.32 b	3.30 a	5.13 a	1.37 b	2.79 a	3.93 a	6.24 a
		16	—	0.37 e	1.42 d	2.18 c	3.62 b	0.01 e	0.69 d	1.92 c	2.89 b	4.68 a	0.90 d	2.33 c	3.47 a	5.76 a
		24	—	—	0.79 e	1.52 e	2.86 d	—	—	1.21 e	2.16 d	3.86 c	0.06 e	1.53 d	2.64 c	4.91 b
14	12	—	0.28 e	1.11 e	1.71 d	2.82 c	—	0.54 e	1.49 d	2.26 c	3.65 b	0.71 d	1.82 c	2.72 b	4.54 a	
	16	—	—	0.76 e	1.34 e	2.40 d	—	0.12 e	1.10 e	1.86 d	3.20 c	0.23 e	1.38 d	2.26 d	4.06 b	
	24	—	—	0.16 f	1.07 f	1.67 e	—	—	0.43 f	1.16 e	2.42 e	—	0.61 e	1.46 e	3.22 d	
16	12	—	—	0.63 f	1.10 e	1.94 d	—	0.12 f	0.91 e	1.51 e	2.59 d	0.22 e	1.13 e	1.85 d	3.29 c	
	16	—	—	0.31 f	0.75 f	1.54 e	—	—	0.54 f	1.13 e	2.16 e	—	0.72 e	1.41 e	2.83 d	
	24	—	—	—	0.16 f	0.87 f	—	—	—	0.48 f	1.42 f	—	—	0.66 f	2.04 e	
4" Stud	8	12	1.41 a	2.24 a	4.02 a	5.56 a	8.40 a	1.76 a	2.88 a	5.10 a	6.96 a	10.33 a	3.27 a	5.61 a	7.97 a	12.07 a
		16	1.16 a	1.99 a	3.76 a	5.30 a	8.12 a	1.48 a	2.59 a	4.82 a	6.67 a	10.03 a	2.97 a	5.33 a	7.67 a	11.77 a
		24	0.68 a	1.49 a	3.28 a	4.80 a	7.56 a	0.97 a	2.05 a	4.28 a	6.12 a	9.45 a	2.41 a	4.79 a	7.09 a	11.19 a
	9	12	1.15 a	1.95 a	3.61 a	5.07 a	7.70 a	1.47 a	2.53 a	4.59 a	6.34 a	9.47 a	2.92 a	5.19 a	7.38 a	11.11 a
		16	0.86 a	1.64 a	3.31 a	4.75 a	7.34 a	1.15 a	2.19 a	4.25 a	5.99 a	9.10 a	2.56 a	4.84 a	7.01 a	10.74 a
		24	0.31 c	1.06 b	2.74 a	4.14 a	6.67 a	0.55 b	1.55 a	3.61 a	5.33 a	8.40 a	1.89 a	4.18 a	6.29 a	10.02 a
	10	12	0.89 a	1.64 a	3.18 a	4.53 a	6.91 a	1.18 a	2.16 a	4.05 a	5.67 a	8.54 a	2.55 a	4.68 a	6.69 a	10.08 a
		16	0.55 c	1.29 a	2.83 a	4.16 a	6.50 a	0.81 b	1.77 a	3.66 a	5.27 a	8.10 a	2.13 a	4.27 a	6.24 a	9.64 a
		24	—	0.64 c	2.19 b	3.47 a	5.73 a	0.15 d	1.07 c	2.94 a	4.51 a	7.30 a	1.36 b	3.50 a	5.42 a	8.81 a
	12	12	0.39 d	1.03 c	2.30 b	3.37 a	5.28 a	0.61 c	1.44 b	2.96 a	4.28 a	6.61 a	1.78 a	3.58 a	5.11 a	7.93 a
		16	0.02 e	0.62 d	1.90 c	2.94 b	4.79 a	0.20 d	0.99 c	2.52 b	3.81 a	6.09 a	1.28 c	3.09 a	4.59 a	7.39 a
		24	—	—	1.20 e	2.18 d	3.93 c	—	0.20 e	1.73 d	2.97 c	5.17 b	0.40 d	2.21 c	3.66 b	6.43 a
	14	12	—	0.50 d	1.53 d	2.34 c	3.79 a	0.14 e	0.81 d	2.02 c	3.03 b	4.84 a	1.06 c	2.48 b	3.67 a	5.93 a
		16	—	0.07 e	1.12 e	1.91 d	3.30 c	—	0.34 e	1.57 d	2.55 c	4.32 b	0.54 d	1.98 d	3.14 c	5.37 a
		24	—	—	0.43 f	1.17 e	2.46 d	—	—	0.79 e	1.73 e	3.41 d	—	1.11 e	2.22 d	4.39 c
	16	12	—	0.09 e	0.94 e	1.56 d	2.67 c	—	0.32 e	1.30 e	2.08 d	3.49 c	0.48 e	1.64 d	2.56 c	4.36 b
		16	—	—	0.56 f	1.16 e	2.21 d	—	—	0.87 e	1.63 e	3.00 d	—	1.16 e	2.05 d	3.82 c
		24	—	—	—	0.46 f	1.42 e	—	—	0.14 f	0.86 f	2.13 e	—	0.34 f	1.19 e	2.89 e

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

# ALLOWABLE COMBINED AXIAL & LATERAL LOADS

(Kips/Stud)

Wind = 20psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	1.98 a	2.96 a	5.20 a	7.04 a	10.98 a	2.42 a	3.84 a	6.99 a	9.49 a	15.14 a	4.17 a	7.19 a	10.56 a	17.73 a
		16	1.80 a	2.78 a	5.02 a	6.87 a	10.80 a	2.22 a	3.63 a	6.78 a	9.28 a	14.93 a	3.96 a	6.99 a	10.34 a	17.50 a
		24	1.43 a	2.42 a	4.68 a	6.52 a	10.45 a	1.84 a	3.23 a	6.37 a	8.87 a	14.50 a	3.55 a	6.59 a	9.92 a	17.03 a
	9	12	1.82 a	2.80 a	5.04 a	6.88 a	10.81 a	2.23 a	3.63 a	6.70 a	9.17 a	14.73 a	3.96 a	6.92 a	10.21 a	17.21 a
		16	1.59 a	2.57 a	4.82 a	6.66 a	10.58 a	1.99 a	3.37 a	6.44 a	8.90 a	14.45 a	3.69 a	6.67 a	9.93 a	16.91 a
		24	1.13 a	2.12 a	4.38 a	6.22 a	10.13 a	1.52 a	2.86 a	5.93 a	8.38 a	13.91 a	3.18 a	6.17 a	9.39 a	16.31 a
	10	12	1.64 a	2.62 a	4.85 a	6.69 a	10.61 a	2.03 a	3.38 a	6.37 a	8.79 a	14.23 a	3.72 a	6.62 a	9.80 a	16.59 a
		16	1.36 a	2.34 a	4.57 a	6.41 a	10.32 a	1.74 a	3.07 a	6.05 a	8.46 a	13.88 a	3.39 a	6.30 a	9.46 a	16.22 a
		24	0.81 a	1.79 a	4.03 a	5.86 a	9.74 a	1.17 a	2.46 a	5.42 a	7.82 a	13.20 a	2.77 a	5.69 a	8.79 a	15.48 a
	12	12	1.21 a	2.16 a	4.35 a	6.21 a	10.08 a	1.57 a	2.82 a	5.58 a	7.86 a	12.96 a	3.15 a	5.88 a	8.83 a	15.07 a
		16	0.83 a	1.77 a	3.95 a	5.80 a	9.64 a	1.17 a	2.39 a	5.13 a	7.39 a	12.45 a	2.71 a	5.44 a	8.34 a	14.53 a
		24	0.12 c	1.03 a	3.20 a	5.01 a	8.78 a	0.44 b	1.59 a	4.29 a	6.51 a	11.49 a	1.87 a	4.61 a	7.41 a	13.48 a
14	12	0.74 a	1.63 a	3.62 a	5.37 a	9.31 a	1.07 a	2.19 a	4.65 a	6.73 a	11.37 a	2.52 a	5.04 a	7.68 a	13.24 a	
	16	0.28 c	1.15 b	3.13 a	4.84 a	8.69 a	0.59 b	1.67 a	4.10 a	6.15 a	10.71 a	1.96 a	4.49 a	7.06 a	12.53 a	
	24	—	0.27 d	2.22 c	3.86 a	7.55 a	—	0.71 c	3.09 b	5.07 a	9.50 a	0.94 b	3.46 a	5.90 a	11.21 a	
16	12	0.29 c	1.09 b	2.85 a	4.40 a	7.85 a	0.58 c	1.56 a	3.70 a	5.54 a	9.62 a	1.86 a	4.19 a	6.48 a	11.26 a	
	16	—	0.55 d	2.29 c	3.79 a	7.13 a	0.04 d	0.97 c	3.08 b	4.87 a	8.86 a	1.22 b	3.54 a	5.75 a	10.42 a	
	24	—	—	1.30 d	2.71 c	5.84 b	—	—	1.98 d	3.68 c	7.49 a	0.08 d	2.36 c	4.43 b	8.92 a	
8" Stud	8	12	2.09 a*	3.06 a	5.16 a	6.99 a	11.01 a	2.64 a*	4.13 a	7.41 a	9.95 a	15.65 a	4.54 a	7.83 a	11.44 a	19.38 a
		16	1.95 a*	2.93 a	5.05 a	6.87 a	10.90 a	2.50 a*	3.98 a	7.26 a	9.81 a	15.51 a	4.39 a	7.69 a	11.29 a	19.21 a
		24	1.69 a*	2.67 a	4.81 a	6.64 a	10.67 a	2.21 a*	3.68 a	6.97 a	9.52 a	15.22 a	4.08 a	7.39 a	10.97 a	18.88 a
	9	12	1.98 a*	2.95 a	5.06 a	6.89 a	10.91 a	2.52 a*	4.01 a	7.28 a	9.82 a	15.52 a	4.40 a	7.67 a	11.26 a	19.15 a
		16	1.81 a*	2.79 a	4.91 a	6.74 a	10.77 a	2.34 a*	3.81 a	7.09 a	9.64 a	15.34 a	4.20 a	7.48 a	11.06 a	18.94 a
		24	1.47 a*	2.46 a	4.62 a	6.45 a	10.48 a	1.98 a*	3.44 a	6.71 a	9.27 a	14.97 a	3.81 a	7.11 a	10.66 a	18.51 a
	10	12	1.85 a*	2.83 a	4.95 a	6.77 a	10.80 a	2.38 a*	3.86 a	7.13 a	9.68 a	15.37 a	4.23 a	7.49 a	11.05 a	18.87 a
		16	1.64 a*	2.63 a	4.76 a	6.59 a	10.62 a	2.16 a*	3.63 a	6.89 a	9.45 a	15.14 a	3.99 a	7.25 a	10.80 a	18.60 a
		24	1.23 a*	2.23 a	4.39 a	6.23 a	10.26 a	1.72 a*	3.16 a	6.43 a	8.99 a	14.68 a	3.51 a	6.79 a	10.30 a	18.07 a
	12	12	1.56 a*	2.54 a	4.67 a	6.50 a	10.52 a	2.07 a*	3.52 a	6.77 a	9.32 a	15.01 a	3.85 a	7.02 a	10.53 a	18.17 a
		16	1.26 a*	2.25 a	4.40 a	6.23 a	10.25 a	1.75 a*	3.18 a	6.42 a	8.97 a	14.66 a	3.50 a	6.68 a	10.16 a	17.77 a
		24	0.69 a*	1.68 a	3.86 a	5.70 a	9.71 a	1.13 a*	2.52 a	5.74 a	8.29 a	13.97 a	2.82 a	6.02 a	9.43 a	16.97 a
	14	12	1.22 a*	2.20 a	4.33 a	6.16 a	10.16 a	1.68 a*	3.07 a	6.23 a	8.80 a	14.52 a	3.38 a	6.44 a	9.80 a	17.13 a
		16	0.83 a*	1.81 a	3.96 a	5.78 a	9.78 a	1.26 a*	2.62 a	5.76 a	8.32 a	14.02 a	2.92 a	5.99 a	9.30 a	16.57 a
		24	0.08 b*	1.06 a	3.24 a	5.05 a	9.03 a	0.46 a*	1.76 a	4.85 a	7.39 a	13.05 a	2.03 a	5.11 a	8.33 a	15.49 a
	16	12	0.84 a*	1.81 a	3.93 a	5.73 a	9.71 a	1.24 a*	2.55 a	5.50 a	7.94 a	13.52 a	2.85 a	5.75 a	8.88 a	15.73 a
		16	0.36 b*	1.32 a	3.44 a	5.24 a	9.20 a	0.73 a*	1.99 a	4.91 a	7.34 a	12.87 a	2.27 a	5.18 a	8.25 a	15.01 a
		24	—	0.40 b	2.53 a	4.31 a	8.21 a	—	0.95 a	3.81 a	6.19 a	11.62 a	1.19 a	4.10 a	7.04 a	13.64 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

## ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 25psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	1.02 a	1.78 a	3.33 a	4.55 a	6.95 a	1.34 a	2.34 a	4.27 a	5.78 a	8.60 a	2.71 a	4.85 a	6.77 a	10.11 a
		16	0.71 a	1.46 a	3.02 a	4.24 a	6.59 a	1.00 a	1.99 a	3.92 a	5.43 a	8.23 a	2.33 a	4.48 a	6.38 a	9.74 a
		24	0.14 c	0.85 b	2.44 a	3.63 a	5.92 a	0.37 c	1.32 a	3.26 a	4.77 a	7.53 a	1.61 a	3.77 a	5.65 a	9.04 a
	9	12	0.73 b	1.43 a	2.86 a	3.98 a	6.15 a	1.00 a	1.93 a	3.68 a	5.07 a	7.65 a	2.28 a	4.27 a	5.96 a	9.07 a
		16	0.37 c	1.06 b	2.50 a	3.60 a	5.73 a	0.61 c	1.52 a	3.28 a	4.66 a	7.21 a	1.83 a	3.82 a	5.50 a	8.63 a
		24	—	0.38 d	1.84 c	2.92 b	4.94 a	—	0.77 c	2.54 b	3.91 a	6.39 a	1.01 b	3.01 a	4.66 a	7.80 a
	10	12	0.44 c	1.09 b	2.39 a	3.38 a	5.31 a	0.68 c	1.52 a	3.10 a	4.34 a	6.67 a	1.84 a	3.67 a	5.13 a	7.99 a
		16	0.06 d	0.68 d	1.99 c	2.97 a	4.85 a	0.25 d	1.07 c	2.65 b	3.89 a	6.18 a	1.34 b	3.18 a	4.62 a	7.49 a
		24	—	—	1.29 d	2.23 c	4.00 b	—	0.27 d	1.86 d	3.08 c	5.28 a	0.45 d	2.28 c	3.71 b	6.56 a
	12	12	—	0.47 d	1.50 d	2.27 c	3.73 a	0.11 e	0.79 d	2.01 c	2.99 b	4.79 a	1.01 c	2.44 b	3.58 a	5.88 a
		16	—	0.03 e	1.09 e	1.84 d	3.23 c	—	0.30 e	1.55 d	2.51 c	4.26 b	0.46 d	1.92 d	3.04 c	5.32 a
		24	—	—	0.38 f	1.08 e	2.35 d	—	—	0.74 e	1.68 e	3.32 d	—	1.00 e	2.09 d	4.33 c
14	12	—	—	0.84 e	1.43 e	2.50 d	—	0.22 e	1.20 e	1.95 d	3.31 c	0.35 e	1.48 d	2.37 c	4.18 b	
	16	—	—	0.45 f	1.01 e	2.02 e	—	—	0.75 e	1.49 e	2.80 d	—	0.98 e	1.85 d	3.63 c	
	24	—	—	—	0.29 f	1.19 f	—	—	—	0.70 f	1.90 e	—	0.11 f	0.94 e	2.66 e	
16	12	—	—	0.38 f	0.84 f	1.64 e	—	—	0.63 f	1.22 e	2.26 d	—	0.82 e	1.51 e	2.94 d	
	16	—	—	0.01 f	0.45 f	1.19 f	—	—	0.22 f	0.79 f	1.78 e	—	0.34 f	1.02 e	2.42 e	
	24	—	—	—	—	0.42 f	—	—	—	0.05 f	0.94 f	—	—	0.17 f	1.51 f	
4" Stud	8	12	1.22 a	2.05 a	3.83 a	5.37 a	8.19 a	1.55 a	2.66 a	4.89 a	6.74 a	10.11 a	3.05 a	5.40 a	7.75 a	11.84 a
		16	0.91 a	1.73 a	3.52 a	5.05 a	7.83 a	1.22 a	2.32 a	4.55 a	6.39 a	9.74 a	2.69 a	5.06 a	7.38 a	11.47 a
		24	0.34 b	1.14 a	2.94 a	4.43 a	7.16 a	0.60 b	1.67 a	3.89 a	5.72 a	9.04 a	2.00 a	4.40 a	6.67 a	10.76 a
	9	12	0.93 a	1.72 a	3.38 a	4.83 a	7.43 a	1.23 a	2.27 a	4.34 a	6.08 a	9.19 a	2.65 a	4.93 a	7.10 a	10.83 a
		16	0.57 b	1.34 a	3.02 a	4.44 a	7.00 a	0.84 a	1.87 a	3.92 a	5.65 a	8.75 a	2.22 a	4.50 a	6.64 a	10.38 a
		24	—	0.66 c	2.34 b	3.72 a	6.19 a	0.14 c	1.11 b	3.16 a	4.86 a	7.90 a	1.41 a	3.71 a	5.78 a	9.51 a
	10	12	0.64 b	1.37 a	2.92 a	4.25 a	6.60 a	0.90 a	1.87 a	3.75 a	5.37 a	8.21 a	2.23 a	4.37 a	6.35 a	9.75 a
		16	0.24 d	0.95 b	2.50 a	3.80 a	6.10 a	0.47 c	1.41 b	3.29 a	4.88 a	7.69 a	1.74 a	3.87 a	5.82 a	9.21 a
		24	—	0.20 d	1.75 c	3.00 b	5.19 a	—	0.58 d	2.45 c	3.99 b	6.73 a	0.84 c	2.98 b	4.84 a	8.22 a
	12	12	0.11 d	0.72 d	2.00 c	3.05 b	4.91 a	0.30 d	1.10 c	2.62 b	3.93 a	6.22 a	1.40 b	3.21 a	4.72 a	7.52 a
		16	—	0.24 e	1.53 d	2.55 c	4.34 b	—	0.58 d	2.11 c	3.38 b	5.62 a	0.82 d	2.63 c	4.11 a	6.90 a
		24	—	—	0.73 e	1.68 e	3.35 d	—	—	1.20 e	2.41 d	4.55 c	—	1.62 d	3.03 c	5.77 b
	14	12	—	0.18 e	1.22 e	2.01 d	3.42 c	—	0.45 e	1.67 d	2.67 c	4.45 b	0.66 d	2.10 c	3.26 b	5.51 a
		16	—	—	0.76 e	1.52 e	2.86 d	—	—	1.16 e	2.12 d	3.85 c	0.07 e	1.53 d	2.66 d	4.86 b
		24	—	—	—	0.68 f	1.90 e	—	—	0.28 f	1.19 e	2.80 e	—	0.54 e	1.61 e	3.74 d
	16	12	—	—	0.65 e	1.26 e	2.32 d	—	—	0.97 e	1.74 e	3.12 d	0.09 e	1.28 e	2.18 d	3.95 c
		16	—	—	0.21 f	0.79 f	1.80 e	—	—	0.49 f	1.23 e	2.55 e	—	0.73 e	1.60 e	3.33 d
		24	—	—	—	0.01 f	0.90 f	—	—	—	0.36 f	1.57 f	—	—	0.62 f	2.27 e

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

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# ALLOWABLE COMBINED AXIAL & LATERAL LOADS

(Kips/Stud)

Wind = 25psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	1.84 a	2.83 a	5.07 a	6.91 a	10.85 a	2.27 a	3.68 a	6.83 a	9.33 a	14.98 a	4.01 a	7.04 a	10.4 a	17.55 a
		16	1.61 a	2.60 a	4.85 a	6.70 a	10.63 a	2.03 a	3.43 a	6.58 a	9.08 a	14.71 a	3.76 a	6.79 a	10.13 a	17.26 a
		24	1.16 a	2.16 a	4.43 a	6.27 a	10.19 a	1.57 a	2.93 a	6.07 a	8.57 a	14.19 a	3.25 a	6.30 a	9.60 a	16.69 a
	9	12	1.65 a	2.63 a	4.87 a	6.71 a	10.64 a	2.05 a	3.43 a	6.51 a	8.97 a	14.52 a	3.76 a	6.73 a	10.00 a	16.98 a
		16	1.36 a	2.34 a	4.60 a	6.44 a	10.35 a	1.76 a	3.11 a	6.18 a	8.64 a	14.18 a	3.44 a	6.42 a	9.66 a	16.61 a
		24	0.80 a	1.79 a	4.06 a	5.89 a	9.79 a	1.18 a	2.49 a	5.55 a	8.00 a	13.50 a	2.80 a	5.81 a	8.99 a	15.87 a
	10	12	1.43 a	2.41 a	4.64 a	6.48 a	10.39 a	1.81 a	3.15 a	6.13 a	8.54 a	13.97 a	3.47 a	6.38 a	9.55 a	16.31 a
		16	1.08 a	2.06 a	4.30 a	6.13 a	10.03 a	1.45 a	2.76 a	5.73 a	8.14 a	13.54 a	3.08 a	6.00 a	9.12 a	15.84 a
		24	0.41 a	1.39 a	3.64 a	5.46 a	9.32 a	0.77 a	2.02 a	4.97 a	7.35 a	12.70 a	2.31 a	5.25 a	8.30 a	14.93 a
	12	12	0.92 a	1.87 a	4.05 a	5.90 a	9.75 a	1.27 a	2.50 a	5.24 a	7.51 a	12.58 a	2.82 a	5.55 a	8.46 a	14.66 a
		16	0.46 b	1.40 a	3.56 a	5.40 a	9.20 a	0.80 a	1.98 a	4.70 a	6.94 a	11.96 a	2.28 a	5.02 a	7.87 a	14.00 a
		24	—	0.52 b	2.66 a	4.45 a	8.17 a	—	1.02 b	3.69 a	5.88 a	10.80 a	1.27 a	4.02 a	6.75 a	12.73 a
14	12	0.39 c	1.27 a	3.25 a	4.97 a	8.85 a	0.71 b	1.80 a	4.23 a	6.29 a	10.88 a	2.10 a	4.62 a	7.21 a	12.71 a	
	16	—	0.70 c	2.66 b	4.34 a	8.11 a	0.14 c	1.17 b	3.58 a	5.60 a	10.09 a	1.44 a	3.96 a	6.47 a	11.86 a	
	24	—	—	1.60 d	3.19 c	6.76 a	—	0.05 d	2.40 c	4.33 b	8.66 a	0.24 c	2.75 b	5.10 a	10.29 a	
16	12	—	0.68 c	2.42 b	3.94 a	7.30 a	0.17 d	1.11 c	3.23 a	5.03 a	9.04 a	1.37 b	3.70 a	5.92 a	10.63 a	
	16	—	0.05 d	1.78 d	3.23 c	6.46 a	—	0.42 d	2.51 c	4.26 b	8.15 a	0.63 c	2.93 b	5.07 a	9.65 a	
	24	—	—	0.63 e	1.98 d	4.98 c	—	—	1.24 d	2.88 d	6.56 b	—	1.57 d	3.55 c	7.91 b	
8" Stud	8	12	1.99 a*	2.96 a	5.08 a	6.90 a	10.92 a	2.53 a*	4.02 a	7.30 a	9.84 a	15.54 a	4.42 a	7.72 a	11.32 a	19.26 a
		16	1.82 a*	2.80 a	4.93 a	6.76 a	10.78 a	2.35 a*	3.83 a	7.11 a	9.66 a	15.36 a	4.23 a	7.54 a	11.13 a	19.05 a
		24	1.49 a*	2.48 a	4.64 a	6.47 a	10.50 a	2.00 a*	3.46 a	6.75 a	9.30 a	15.01 a	3.85 a	7.17 a	10.74 a	18.63 a
	9	12	1.85 a*	2.83 a	4.95 a	6.78 a	10.80 a	2.38 a*	3.86 a	7.14 a	9.69 a	15.38 a	4.25 a	7.53 a	11.11 a	18.99 a
		16	1.64 a*	2.63 a	4.76 a	6.59 a	10.62 a	2.16 a*	3.63 a	6.90 a	9.45 a	15.16 a	4.00 a	7.30 a	10.86 a	18.72 a
		24	1.22 a*	2.22 a	4.39 a	6.23 a	10.26 a	1.71 a*	3.16 a	6.43 a	9.00 a	14.70 a	3.52 a	6.83 a	10.36 a	18.19 a
	10	12	1.69 a*	2.68 a	4.81 a	6.64 a	10.66 a	2.22 a*	3.68 a	6.95 a	9.50 a	15.20 a	4.05 a	7.31 a	10.87 a	18.67 a
		16	1.43 a*	2.43 a	4.58 a	6.41 a	10.44 a	1.94 a*	3.39 a	6.66 a	9.21 a	14.91 a	3.75 a	7.02 a	10.55 a	18.34 a
		24	0.93 a*	1.93 a	4.12 a	5.96 a	9.99 a	1.39 a*	2.81 a	6.08 a	8.64 a	14.34 a	3.15 a	6.44 a	9.93 a	17.67 a
	12	12	1.33 a*	2.32 a	4.47 a	6.30 a	10.32 a	1.83 a*	3.27 a	6.51 a	9.06 a	14.74 a	3.58 a	6.77 a	10.25 a	17.87 a
		16	0.97 a*	1.97 a	4.13 a	5.96 a	9.98 a	1.44 a*	2.85 a	6.08 a	8.63 a	14.31 a	3.15 a	6.35 a	9.80 a	17.37 a
		24	0.27 a*	1.27 a	3.47 a	5.30 a	9.32 a	0.68 a*	2.03 a	5.24 a	7.80 a	13.46 a	2.32 a	5.53 a	8.90 a	16.39 a
	14	12	0.92 a*	1.91 a	4.05 a	5.87 a	9.87 a	1.36 a*	2.73 a	5.88 a	8.44 a	14.14 a	3.03 a	6.10 a	9.42 a	16.71 a
		16	0.45 a*	1.43 a	3.59 a	5.41 a	9.40 a	0.85 a*	2.18 a	5.30 a	7.85 a	13.53 a	2.47 a	5.54 a	8.81 a	16.03 a
		24	—	0.53 a	2.71 a	4.53 a	8.49 a	—	1.14 a	4.20 a	6.73 a	12.34 a	1.39 a	4.47 a	7.62 a	14.70 a
	16	12	0.47 a*	1.44 a	3.56 a	5.36 a	9.32 a	0.86 a*	2.13 a	5.05 a	7.49 a	13.03 a	2.41 a	5.32 a	8.40 a	15.19 a
		16	—	0.85 a	2.98 a	4.77 a	8.70 a	0.25 b*	1.46 a	4.35 a	6.76 a	12.24 a	1.72 a	4.63 a	7.63 a	14.32 a
		24	—	—	1.89 b	3.64 a	7.51 a	—	0.22 c	3.03 a	5.38 a	10.74 a	0.43 b	3.33 a	6.18 a	12.67 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_n$ .
- Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

**ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)**

Wind = 30psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	0.84 a	1.58 a	3.14 a	4.36 a	6.73 a	1.13 a	2.13 a	4.06 a	5.57 a	8.38 a	2.48 a	4.62 a	6.53 a	9.89 a
		16	0.48 b	1.21 a	2.78 a	3.99 a	6.32 a	0.74 b	1.71 a	3.65 a	5.16 a	7.95 a	2.03 a	4.19 a	6.08 a	9.46 a
		24	—	0.52 c	2.11 b	3.29 a	5.53 a	0.02 d	0.95 b	2.89 a	4.40 a	7.13 a	1.21 b	3.37 a	5.23 a	8.63 a
	9	12	0.51 c	1.20 a	2.64 a	3.75 a	5.89 a	0.76 b	1.68 a	3.44 a	4.82 a	7.38 a	2.01 a	4.00 a	5.68 a	8.80 a
		16	0.11 d	0.78 c	2.23 b	3.32 a	5.41 a	0.32 c	1.21 b	2.97 a	4.35 a	6.88 a	1.49 a	3.49 a	5.15 a	8.29 a
		24	—	0.01 d	1.48 d	2.53 c	4.51 a	—	0.36 d	2.13 c	3.49 b	5.93 a	0.56 c	2.56 b	4.18 a	7.33 a
	10	12	0.21 d	0.84 c	2.15 b	3.13 a	5.03 a	0.42 c	1.25 b	2.83 a	4.07 a	6.37 a	1.54 a	3.37 a	4.82 a	7.68 a
		16	—	0.37 d	1.70 c	2.66 b	4.49 a	—	0.74 d	2.32 c	3.55 b	5.80 a	0.97 c	2.81 b	4.24 a	7.10 a
		24	—	—	0.90 e	1.83 d	3.53 c	—	—	1.43 d	2.63 d	4.78 b	—	1.80 d	3.20 c	6.05 a
	12	12	—	0.20 e	1.25 d	2.01 d	3.42 b	—	0.49 d	1.73 d	2.70 c	4.46 a	0.67 d	2.12 c	3.25 b	5.54 a
		16	—	—	0.79 e	1.52 e	2.86 d	—	—	1.21 e	2.16 d	3.86 c	0.06 e	1.53 d	2.64 c	4.91 b
		24	—	—	—	0.68 f	1.88 e	—	—	0.32 f	1.23 e	2.81 d	—	0.51 e	1.58 e	3.80 d
14	12	—	—	0.60 f	1.17 e	2.21 d	—	—	0.92 e	1.67 e	3.00 d	0.01 e	1.17 e	2.05 d	3.84 c	
	16	—	—	0.16 f	0.71 f	1.67 e	—	—	0.43 f	1.16 e	2.42 e	—	0.61 e	1.46 e	3.22 d	
	24	—	—	—	—	0.75 f	—	—	—	0.28 f	1.42 f	—	—	0.45 f	2.15 e	
16	12	—	—	0.16 f	0.60 f	1.36 e	—	—	0.38 f	0.96 f	1.96 e	—	0.53 f	1.21 e	2.62 d	
	16	—	—	—	0.16 f	0.87 f	—	—	—	0.48 f	1.42 f	—	—	0.66 f	2.04 e	
	24	—	—	—	—	0.02 f	—	—	—	—	0.50 f	—	—	—	1.04 f	
4" Stud	8	12	1.04 a	1.86 a	3.64 a	5.17 a	7.97 a	1.35 a	2.46 a	4.68 a	6.53 a	9.89 a	2.83 a	5.19 a	7.52 a	11.62 a
		16	0.68 a	1.49 a	3.28 a	4.80 a	7.56 a	0.97 a	2.05 a	4.28 a	6.12 a	9.45 a	2.41 a	4.79 a	7.09 a	11.19 a
		24	0.02 c	0.80 b	2.61 a	4.08 a	6.76 a	0.26 c	1.30 a	3.52 a	5.34 a	8.63 a	1.61 a	4.02 a	6.26 a	10.34 a
	9	12	0.71 b	1.49 a	3.16 a	4.59 a	7.17 a	0.99 a	2.03 a	4.09 a	5.82 a	8.92 a	2.39 a	4.67 a	6.82 a	10.56 a
		16	0.31 c	1.06 b	2.74 a	4.14 a	6.67 a	0.55 b	1.55 a	3.61 a	5.33 a	8.40 a	1.89 a	4.18 a	6.29 a	10.02 a
		24	—	0.28 d	1.96 c	3.31 b	5.73 a	—	0.69 c	2.73 b	4.41 a	7.42 a	0.96 b	3.26 a	5.30 a	9.02 a
	10	12	0.40 c	1.12 b	2.66 a	3.98 a	6.30 a	0.64 b	1.59 a	3.47 a	5.07 a	7.90 a	1.93 a	4.07 a	6.03 a	9.42 a
		16	—	0.64 c	2.19 b	3.47 a	5.73 a	0.15 d	1.07 c	2.94 a	4.51 a	7.30 a	1.36 b	3.50 a	5.42 a	8.81 a
		24	—	—	1.34 d	2.55 c	4.69 b	—	0.13 d	1.98 c	3.50 c	6.20 a	0.34 d	2.48 c	4.30 b	7.66 a
	12	12	—	0.43 d	1.71 d	2.74 c	4.56 a	—	0.78 d	2.31 c	3.59 b	5.85 a	1.05 c	2.86 b	4.34 a	7.14 a
		16	—	—	1.20 e	2.18 d	3.93 c	—	0.20 e	1.73 d	2.97 c	5.17 b	0.40 d	2.21 c	3.66 b	6.43 a
		24	—	—	0.29 f	1.21 e	2.81 d	—	—	0.71 e	1.89 e	3.97 d	—	1.08 e	2.45 d	5.15 c
	14	12	—	—	0.94 e	1.71 d	3.08 c	—	0.13 e	1.36 e	2.33 d	4.08 c	0.30 e	1.75 d	2.89 c	5.11 b
		16	—	—	0.43 f	1.17 e	2.46 d	—	—	0.79 e	1.73 e	3.41 d	—	1.11 e	2.22 d	4.39 c
		24	—	—	—	0.23 f	1.38 e	—	—	—	0.69 f	2.25 e	—	0.02 f	1.05 e	3.14 e
	16	12	—	—	0.38 f	0.97 e	2.00 e	—	—	0.68 f	1.43 e	2.77 d	—	0.94 e	1.82 e	3.57 d
		16	—	—	—	0.46 f	1.42 e	—	—	0.14 f	0.86 f	2.13 e	—	0.34 f	1.19 e	2.89 e
		24	—	—	—	—	0.42 f	—	—	—	—	1.05 f	—	—	0.10 f	1.71 f

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

## ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 30psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	1.70 a	2.69 a	4.94 a	6.78 a	10.71 a	2.13 a	3.53 a	6.68 a	9.18 a	14.82 a	3.86 a	6.89 a	10.24 a	17.38 a
		16	1.43 a	2.42 a	4.68 a	6.52 a	10.45 a	1.84 a	3.23 a	6.37 a	8.87 a	14.50 a	3.55 a	6.59 a	9.92 a	17.03 a
		24	0.90 a	1.89 a	4.17 a	6.02 a	9.93 a	1.29 a	2.64 a	5.77 a	8.27 a	13.87 a	2.95 a	6.01 a	9.28 a	16.35 a
	9	12	1.47 a	2.46 a	4.71 a	6.55 a	10.47 a	1.87 a	3.24 a	6.31 a	8.77 a	14.31 a	3.56 a	6.54 a	9.80 a	16.76 a
		16	1.13 a	2.12 a	4.38 a	6.22 a	10.13 a	1.52 a	2.86 a	5.93 a	8.38 a	13.91 a	3.18 a	6.17 a	9.39 a	16.31 a
		24	0.48 a	1.46 a	3.74 a	5.57 a	9.46 a	0.84 a	2.13 a	5.18 a	7.62 a	13.10 a	2.43 a	5.44 a	8.59 a	15.44 a
	10	12	1.22 a	2.20 a	4.44 a	6.27 a	10.17 a	1.59 a	2.91 a	5.89 a	8.30 a	13.71 a	3.23 a	6.15 a	9.29 a	16.03 a
		16	0.81 a	1.79 a	4.03 a	5.86 a	9.74 a	1.17 a	2.46 a	5.42 a	7.82 a	13.20 a	2.77 a	5.69 a	8.79 a	15.48 a
		24	0.03 b	1.00 a	3.25 a	5.07 a	8.91 a	0.37 a	1.59 a	4.52 a	6.90 a	12.21 a	1.87 a	4.81 a	7.82 a	14.40 a
	12	12	0.64 a	1.58 a	3.75 a	5.60 a	9.42 a	0.98 a	2.19 a	4.91 a	7.17 a	12.21 a	2.49 a	5.23 a	8.10 a	14.26 a
		16	0.12 c	1.03 a	3.20 a	5.01 a	8.78 a	0.44 b	1.59 a	4.29 a	6.51 a	11.49 a	1.87 a	4.61 a	7.41 a	13.48 a
		24	—	0.02 c	2.15 b	3.91 a	7.58 a	—	0.47 c	3.12 b	5.28 a	10.13 a	0.70 b	3.44 a	6.11 a	12.00 a
14	12	0.07 c	0.92 b	2.89 a	4.58 a	8.40 a	0.36 c	1.42 a	3.84 a	5.87 a	10.40 a	1.70 a	4.22 a	6.76 a	12.19 a	
	16	—	0.27 d	2.22 c	3.86 a	7.55 a	—	0.71 c	3.09 b	5.07 a	9.50 a	0.94 b	3.46 a	5.90 a	11.21 a	
	24	—	—	1.01 d	2.56 c	6.02 b	—	—	1.75 d	3.63 c	7.86 a	—	2.07 c	4.35 b	9.42 a	
16	12	—	0.29 d	2.03 c	3.50 b	6.79 a	—	0.69 c	2.79 b	4.56 a	8.50 a	0.92 c	3.23 b	5.40 a	10.03 a	
	16	—	—	1.30 d	2.71 c	5.84 b	—	—	1.98 d	3.68 c	7.49 a	0.08 d	2.36 c	4.43 b	8.92 a	
	24	—	—	0.02 e	1.31 e	4.18 d	—	—	0.56 e	2.14 d	5.70 c	—	0.84 e	2.73 d	6.96 c	
8" Stud	8	12	1.89 a*	2.87 a	4.99 a	6.81 a	10.84 a	2.42 a*	3.91 a	7.19 a	9.73 a	15.43 a	4.31 a	7.61 a	11.21 a	19.13 a
		16	1.69 a*	2.67 a	4.81 a	6.64 a	10.67 a	2.21 a*	3.68 a	6.97 a	9.52 a	15.22 a	4.08 a	7.39 a	10.97 a	18.88 a
		24	1.29 a*	2.29 a	4.46 a	6.30 a	10.34 a	1.79 a*	3.24 a	6.53 a	9.09 a	14.80 a	3.62 a	6.95 a	10.50 a	18.39 a
	9	12	1.72 a*	2.71 a	4.84 a	6.67 a	10.69 a	2.25 a*	3.72 a	7.00 a	9.55 a	15.25 a	4.10 a	7.39 a	10.96 a	18.83 a
		16	1.47 a*	2.46 a	4.62 a	6.45 a	10.48 a	1.98 a*	3.44 a	6.71 a	9.27 a	14.97 a	3.81 a	7.11 a	10.66 a	18.51 a
		24	0.98 a*	1.98 a	4.17 a	6.01 a	10.05 a	1.45 a*	2.88 a	6.16 a	8.72 a	14.43 a	3.23 a	6.55 a	10.07 a	17.87 a
	10	12	1.54 a*	2.53 a	4.67 a	6.50 a	10.53 a	2.05 a*	3.51 a	6.78 a	9.33 a	15.03 a	3.87 a	7.13 a	10.68 a	18.47 a
		16	1.23 a*	2.23 a	4.39 a	6.23 a	10.26 a	1.72 a*	3.16 a	6.43 a	8.99 a	14.68 a	3.51 a	6.79 a	10.30 a	18.07 a
		24	0.63 a*	1.64 a	3.84 a	5.69 a	9.72 a	1.07 a*	2.47 a	5.73 a	8.30 a	14.00 a	2.80 a	6.10 a	9.57 a	17.27 a
	12	12	1.12 a*	2.11 a	4.26 a	6.10 a	10.11 a	1.59 a*	3.01 a	6.25 a	8.80 a	14.48 a	3.33 a	6.52 a	9.98 a	17.57 a
		16	0.69 a*	1.68 a	3.86 a	5.70 a	9.71 a	1.13 a*	2.52 a	5.74 a	8.29 a	13.97 a	2.82 a	6.02 a	9.43 a	16.97 a
		24	—	0.86 a	3.08 a	4.92 a	8.93 a	0.24 a*	1.56 a	4.75 a	7.31 a	12.95 a	1.83 a	5.05 a	8.38 a	15.81 a
	14	12	0.64 a*	1.62 a	3.77 a	5.60 a	9.59 a	1.06 a*	2.40 a	5.53 a	8.08 a	13.77 a	2.69 a	5.76 a	9.05 a	16.30 a
		16	0.08 b*	1.06 a	3.24 a	5.05 a	9.03 a	0.46 a*	1.76 a	4.85 a	7.39 a	13.05 a	2.03 a	5.11 a	8.33 a	15.49 a
		24	—	0.01 b	2.21 a	4.01 a	7.96 a	—	0.54 a	3.57 a	6.08 a	11.65 a	0.77 a	3.85 a	6.94 a	13.94 a
	16	12	0.12 b*	1.08 a	3.21 a	5.00 a	8.95 a	0.49 a*	1.72 a	4.62 a	7.04 a	12.55 a	1.99 a	4.90 a	7.94 a	14.66 a
		16	—	0.40 b	2.53 a	4.31 a	8.21 a	—	0.95 a	3.81 a	6.19 a	11.62 a	1.19 a	4.10 a	7.04 a	13.64 a
		24	—	—	1.27 c	3.01 b	6.83 a	—	—	2.29 b	4.61 a	9.88 a	—	2.60 b	5.36 a	11.73 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

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- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "F" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

**ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)**

Wind = 35psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	0.65 b	1.39 a	2.96 a	4.17 a	6.52 a	0.93 a	1.92 a	3.85 a	5.36 a	8.16 a	2.25 a	4.40 a	6.31 a	9.67 a
		16	0.25 c	0.97 b	2.55 a	3.75 a	6.05 a	0.49 b	1.45 a	3.39 a	4.90 a	7.67 a	1.75 a	3.91 a	5.79 a	9.18 a
		24	—	0.19 d	1.80 c	2.96 b	5.16 a	—	0.60 c	2.54 b	4.04 a	6.73 a	0.82 b	2.99 a	4.82 a	8.24 a
	9	12	0.31 c	0.99 b	2.43 a	3.53 a	5.65 a	0.54 c	1.44 a	3.20 a	4.58 a	7.13 a	1.74 a	3.74 a	5.41 a	8.54 a
		16	—	0.51 d	1.97 c	3.05 b	5.10 a	0.05 d	0.92 c	2.68 b	4.05 a	6.55 a	1.17 b	3.17 a	4.82 a	7.96 a
		24	—	—	1.14 d	2.17 d	4.09 b	—	—	1.74 d	3.08 c	5.49 a	0.13 d	2.13 c	3.73 b	6.87 a
	10	12	—	0.60 d	1.92 c	2.89 b	4.76 a	0.17 d	0.99 c	2.57 b	3.81 a	6.08 a	1.25 b	3.08 a	4.53 a	7.39 a
		16	—	0.09 e	1.42 d	2.37 c	4.16 b	—	0.42 d	2.01 c	3.23 b	5.45 a	0.62 d	2.45 c	3.88 b	6.74 a
		24	—	—	0.54 e	1.44 e	3.09 d	—	—	1.02 e	2.21 d	4.31 c	—	1.34 d	2.73 d	5.56 b
	12	12	—	—	1.01 e	1.76 d	3.13 c	—	0.21 e	1.46 d	2.42 d	4.16 b	0.36 d	1.82 d	2.94 c	5.22 a
		16	—	—	0.51 e	1.22 e	2.52 d	—	—	0.90 e	1.83 e	3.49 d	—	1.17 e	2.26 d	4.52 c
		24	—	—	—	0.30 f	1.45 e	—	—	—	0.81 f	2.34 e	—	0.06 f	1.10 e	3.29 d
14	12	—	—	0.37 f	0.93 e	1.93 e	—	—	0.67 e	1.41 e	2.70 d	—	0.88 e	1.75 e	3.52 d	
	16	—	—	—	0.43 f	1.35 e	—	—	0.14 f	0.85 f	2.07 e	—	0.27 f	1.11 e	2.85 e	
	24	—	—	—	—	0.35 f	—	—	—	—	0.98 f	—	—	0.01 f	1.67 f	
16	12	—	—	—	0.37 f	1.11 f	—	—	0.14 f	0.71 f	1.69 e	—	0.26 f	0.93 f	2.32 e	
	16	—	—	—	—	0.57 f	—	—	—	0.19 f	1.10 f	—	—	0.33 f	1.68 f	
	24	—	—	—	—	—	—	—	—	0.09 f	—	—	—	—	0.59 f	
4" Stud	8	12	0.86 a	1.67 a	3.46 a	4.98 a	7.76 a	1.16 a	2.25 a	4.48 a	6.32 a	9.67 a	2.62 a	4.99 a	7.30 a	11.40 a
		16	0.45 b	1.26 a	3.05 a	4.55 a	7.29 a	0.72 a	1.80 a	4.02 a	5.85 a	9.17 a	2.14 a	4.53 a	6.81 a	10.90 a
		24	—	0.48 c	2.29 b	3.74 a	6.38 a	—	0.94 b	3.15 a	4.96 a	8.23 a	1.24 a	3.65 a	5.86 a	9.94 a
	9	12	0.50 b	1.27 a	2.95 a	4.37 a	6.91 a	0.77 b	1.79 a	3.84 a	5.57 a	8.66 a	2.13 a	4.42 a	6.55 a	10.29 a
		16	0.05 d	0.79 c	2.47 a	3.86 a	6.34 a	0.27 c	1.26 b	3.31 a	5.01 a	8.06 a	1.57 a	3.86 a	5.95 a	9.68 a
		24	—	—	1.60 c	2.92 c	5.29 a	—	0.29 d	2.32 c	3.98 b	6.95 a	0.53 c	2.83 b	4.83 a	8.54 a
	10	12	0.17 d	0.87 c	2.42 b	3.72 a	6.01 a	0.39 c	1.32 b	3.20 a	4.79 a	7.59 a	1.64 a	3.78 a	5.72 a	9.11 a
		16	—	0.34 d	1.90 c	3.15 b	5.37 a	—	0.74 c	2.61 b	4.16 a	6.92 a	1.01 c	3.15 a	5.03 a	8.41 a
		24	—	—	0.95 e	2.13 d	4.20 c	—	—	1.54 d	3.04 c	5.69 b	—	2.01 c	3.79 c	7.13 a
	12	12	—	0.16 e	1.45 d	2.46 c	4.24 b	—	0.48 d	2.01 c	3.27 c	5.50 a	0.71 d	2.52 c	3.99 b	6.78 a
		16	—	—	0.88 e	1.84 d	3.53 c	—	—	1.37 d	2.59 d	4.75 b	—	1.81 d	3.23 c	5.98 b
		24	—	—	—	0.77 e	2.30 e	—	—	0.26 e	1.41 e	3.43 d	—	0.58 e	1.91 e	4.58 d
	14	12	—	—	0.68 e	1.43 e	2.76 d	—	—	1.06 e	2.02 d	3.73 c	—	1.42 e	2.54 d	4.74 c
		16	—	—	0.12 f	0.84 f	2.08 e	—	—	0.44 f	1.36 e	3.00 d	—	0.73 e	1.80 e	3.95 d
		24	—	—	—	—	0.91 f	—	—	—	0.23 f	1.73 e	—	—	0.53 f	2.58 e
	16	12	—	—	0.13 f	0.71 f	1.70 e	—	—	0.40 f	1.13 e	2.44 e	—	0.63 f	1.49 e	3.22 d
		16	—	—	—	0.15 f	1.06 f	—	—	—	0.52 f	1.75 e	—	—	0.80 f	2.47 e
		24	—	—	—	—	0.03 f	—	—	—	—	0.57 f	—	—	—	1.19 f

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

# ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)

Wind = 35psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	1.57 a	2.56 a	4.81 a	6.65 a	10.58 a	1.99 a	3.38 a	6.52 a	9.02 a	14.66 a	3.70 a	6.74 a	10.08 a	17.21 a
		16	1.25 a	2.24 a	4.51 a	6.36 a	10.28 a	1.66 a	3.03 a	6.17 a	8.67 a	14.29 a	3.35 a	6.40 a	9.70 a	16.80 a
		24	0.64 a	1.63 a	3.93 a	5.77 a	9.68 a	1.02 a	2.35 a	5.48 a	7.97 a	13.56 a	2.65 a	5.73 a	8.97 a	16.01 a
	9	12	1.30 a	2.29 a	4.54 a	6.38 a	10.30 a	1.70 a	3.05 a	6.12 a	8.58 a	14.11 a	3.37 a	6.36 a	9.59 a	16.54 a
		16	0.91 a	1.90 a	4.16 a	6.00 a	9.90 a	1.29 a	2.62 a	5.67 a	8.13 a	13.64 a	2.93 a	5.93 a	9.12 a	16.02 a
		24	0.16 a	1.14 a	3.43 a	5.26 a	9.13 a	0.51 a	1.78 a	4.81 a	7.25 a	12.71 a	2.06 a	5.09 a	8.20 a	15.01 a
	10	12	1.01 a	1.99 a	4.23 a	6.06 a	9.96 a	1.38 a	2.69 a	5.66 a	8.06 a	13.45 a	3.00 a	5.92 a	9.04 a	15.75 a
		16	0.54 a	1.52 a	3.77 a	5.59 a	9.46 a	0.90 a	2.16 a	5.12 a	7.51 a	12.87 a	2.46 a	5.40 a	8.46 a	15.11 a
		24	—	0.62 a	2.88 a	4.68 a	8.50 a	—	1.17 a	4.09 a	6.45 a	11.73 a	1.44 a	4.39 a	7.35 a	13.88 a
	12	12	0.37 b	1.30 a	3.47 a	5.30 a	9.10 a	0.71 a	1.88 a	4.60 a	6.83 a	11.84 a	2.18 a	4.92 a	7.75 a	13.87 a
		16	—	0.69 b	2.84 a	4.63 a	8.37 a	0.09 c	1.20 a	3.88 a	6.09 a	11.02 a	1.47 a	4.21 a	6.97 a	12.98 a
		24	—	—	1.67 c	3.39 b	7.01 a	—	—	2.57 b	4.71 a	9.49 a	0.15 c	2.89 b	5.49 a	11.30 a
14	12	—	0.59 c	2.55 b	4.22 a	7.97 a	0.04 c	1.06 b	3.46 a	5.46 a	9.94 a	1.31 a	3.83 a	6.32 a	11.69 a	
	16	—	—	1.80 c	3.41 b	7.02 a	—	0.26 d	2.62 c	4.57 b	8.93 a	0.47 c	2.98 b	5.36 a	10.59 a	
	24	—	—	0.46 e	1.96 d	5.32 c	—	—	1.13 d	2.97 d	7.11 b	—	1.44 d	3.63 c	8.59 a	
16	12	—	—	1.65 d	3.10 c	6.31 a	—	0.29 d	2.37 c	4.11 b	7.98 a	0.49 c	2.79 c	4.91 a	9.46 a	
	16	—	—	0.85 e	2.22 d	5.26 c	—	—	1.48 d	3.14 c	6.86 b	—	1.83 d	3.84 c	8.24 a	
	24	—	—	—	0.68 e	3.44 d	—	—	—	1.45 e	4.90 d	—	0.15 e	1.96 d	6.08 c	
8" Stud	8	12	1.79 a*	2.77 a	4.90 a	6.73 a	10.76 a	2.32 a*	3.80 a	7.08 a	9.63 a	15.33 a	4.19 a	7.50 a	11.09 a	19.01 a
		16	1.55 a*	2.55 a	4.70 a	6.53 a	10.56 a	2.07 a*	3.54 a	6.82 a	9.38 a	15.08 a	3.92 a	7.24 a	10.82 a	18.72 a
		24	1.10 a*	2.10 a	4.29 a	6.13 a	10.17 a	1.58 a*	3.02 a	6.31 a	8.88 a	14.59 a	3.39 a	6.73 a	10.27 a	18.14 a
	9	12	1.60 a*	2.58 a	4.73 a	6.56 a	10.59 a	2.11 a*	3.58 a	6.85 a	9.41 a	15.11 a	3.96 a	7.25 a	10.81 a	18.67 a
		16	1.30 a*	2.30 a	4.47 a	6.30 a	10.33 a	1.80 a*	3.25 a	6.53 a	9.09 a	14.79 a	3.62 a	6.92 a	10.46 a	18.30 a
		24	0.73 a*	1.75 a	3.95 a	5.80 a	9.83 a	1.19 a*	2.60 a	5.88 a	8.45 a	14.16 a	2.94 a	6.28 a	9.77 a	17.56 a
	10	12	1.38 a*	2.38 a	4.53 a	6.36 a	10.39 a	1.88 a*	3.33 a	6.60 a	9.16 a	14.85 a	3.69 a	6.96 a	10.49 a	18.27 a
		16	1.03 a*	2.03 a	4.21 a	6.05 a	10.08 a	1.50 a*	2.93 a	6.19 a	8.76 a	14.45 a	3.27 a	6.56 a	10.06 a	17.8 a
		24	0.33 a*	1.35 a	3.57 a	5.42 a	9.45 a	0.75 a*	2.14 a	5.39 a	7.97 a	13.66 a	2.45 a	5.76 a	9.20 a	16.88 a
	12	12	0.90 a*	1.89 a	4.06 a	5.90 a	9.91 a	1.36 a*	2.76 a	5.99 a	8.55 a	14.22 a	3.07 a	6.27 a	9.70 a	17.27 a
		16	0.41 a*	1.41 a	3.60 a	5.43 a	9.45 a	0.83 a*	2.19 a	5.41 a	7.96 a	13.63 a	2.48 a	5.69 a	9.08 a	16.58 a
		24	—	0.47 a	2.70 a	4.54 a	8.54 a	—	1.10 a	4.27 a	6.82 a	12.46 a	1.35 a	4.58 a	7.86 a	15.24 a
	14	12	0.36 a*	1.34 a	3.50 a	5.32 a	9.31 a	0.76 a*	2.08 a	5.19 a	7.74 a	13.41 a	2.36 a	5.43 a	8.69 a	15.89 a
		16	—	0.70 a	2.89 a	4.70 a	8.67 a	0.08 b*	1.34 a	4.41 a	6.95 a	12.58 a	1.60 a	4.68 a	7.85 a	14.96 a
		24	—	—	1.72 b	3.51 a	7.43 a	—	—	2.96 a	5.45 a	10.98 a	0.18 b	3.25 a	6.27 a	13.19 a
	16	12	—	0.73 b	2.86 a	4.65 a	8.58 a	0.13 b*	1.33 a	4.21 a	6.61 a	12.08 a	1.59 a	4.49 a	7.48 a	14.15 a
		16	—	—	2.10 b	3.86 a	7.74 a	—	0.46 b	3.29 a	5.65 a	11.03 a	0.68 b	3.58 a	6.46 a	12.99 a
		24	—	—	0.68 d	2.39 c	6.17 a	—	—	1.59 c	3.87 b	9.06 a	—	1.89 c	4.57 a	10.83 a

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- For additional general notes, see page 41.
- Allowable axial loads listed in kips (1 kip = 1000 pounds).
- Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- Listed tables are based on simple (single)-span.
- Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- Cells marked with an "a," "b," "c," "d," "e," or "f" meet L/720, L/600, L/480, L/360, L/240, or L/120 respectively. Blank cells do not meet L/120.
- For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- Cells marked with an " " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

Complies with AISI S100-16 • IBC 2018

**ALLOWABLE COMBINED AXIAL & LATERAL LOADS (Kips/Stud)**

Wind = 40psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
3-5/8" Stud	8	12	0.48 b	1.21 a	2.78 a	3.99 a	6.32 a	0.74 b	1.71 a	3.65 a	5.16 a	7.95 a	2.03 a	4.19 a	6.08 a	9.46 a
		16	0.03 d	0.74 c	2.33 b	3.52 a	5.79 a	0.25 c	1.20 b	3.14 a	4.65 a	7.39 a	1.47 a	3.64 a	5.50 a	8.90 a
		24	—	—	1.49 d	2.65 c	4.80 a	—	0.26 d	2.19 c	3.69 b	6.36 a	0.45 c	2.62 b	4.43 a	7.85 a
	9	12	0.11 d	0.78 c	2.23 b	3.32 a	5.41 a	0.32 c	1.21 b	2.97 a	4.35 a	6.88 a	1.49 a	3.49 a	5.15 a	8.29 a
		16	—	0.25 d	1.72 c	2.79 b	4.80 a	—	0.63 c	2.40 c	3.76 a	6.24 a	0.86 c	2.86 b	4.50 a	7.64 a
		24	—	—	0.81 e	1.82 d	3.69 c	—	—	1.36 d	2.70 c	5.07 b	—	1.72 d	3.30 c	6.44 a
	10	12	—	0.37 d	1.70 c	2.66 b	4.49 a	—	0.74 d	2.32 c	3.55 b	5.80 a	0.97 c	2.81 b	4.24 a	7.10 a
		16	—	—	1.16 d	2.09 d	3.84 b	—	0.12 e	1.71 d	2.93 c	5.11 a	0.28 d	2.12 c	3.53 b	6.39 a
		24	—	—	0.20 e	1.08 e	2.67 d	—	—	0.64 e	1.81 e	3.86 c	—	0.91 e	2.27 d	5.09 c
	12	12	—	—	0.79 e	1.52 e	2.86 d	—	—	1.21 e	2.16 d	3.86 c	0.06 e	1.53 d	2.64 c	4.91 b
		16	—	—	0.25 f	0.94 e	2.19 e	—	—	0.60 e	1.52 e	3.15 d	—	0.83 e	1.91 d	4.15 c
		24	—	—	—	—	1.03 f	—	—	—	0.42 f	1.89 e	—	—	0.65 e	2.82 e
14	12	—	—	0.16 f	0.71 f	1.67 e	—	—	0.43 f	1.16 e	2.42 e	—	0.61 e	1.46 e	3.22 d	
	16	—	—	—	0.16 f	1.04 f	—	—	—	0.55 f	1.74 e	—	—	0.77 f	2.49 e	
	24	—	—	—	—	—	—	—	—	0.56 f	—	—	—	—	1.23 f	
16	12	—	—	—	0.16 f	0.87 f	—	—	—	0.48 f	1.42 f	—	—	0.66 f	2.04 e	
	16	—	—	—	—	0.29 f	—	—	—	—	0.79 f	—	—	0.02 f	1.35 f	
	24	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18 f	
4" Stud	8	12	0.68 a	1.49 a	3.28 a	4.80 a	7.56 a	0.97 a	2.05 a	4.28 a	6.12 a	9.45 a	2.41 a	4.79 a	7.09 a	11.19 a
		16	0.24 c	1.03 a	2.83 a	4.32 a	7.02 a	0.49 b	1.54 a	3.76 a	5.59 a	8.90 a	1.87 a	4.27 a	6.53 a	10.62 a
		24	—	0.17 c	1.98 b	3.42 a	6.01 a	—	0.60 c	2.80 b	4.60 a	7.84 a	0.87 b	3.29 a	5.47 a	9.54 a
	9	12	0.31 c	1.06 b	2.74 a	4.14 a	6.67 a	0.55 b	1.55 a	3.61 a	5.33 a	8.40 a	1.89 a	4.18 a	6.29 a	10.02 a
		16	—	0.53 c	2.21 b	3.58 a	6.03 a	—	0.97 b	3.01 a	4.71 a	7.74 a	1.26 b	3.56 a	5.62 a	9.34 a
		24	—	—	1.25 d	2.55 c	4.86 b	—	—	1.93 c	3.57 b	6.50 a	0.12 d	2.42 c	4.38 b	8.07 a
	10	12	—	0.64 c	2.19 b	3.47 a	5.73 a	0.15 d	1.07 c	2.94 a	4.51 a	7.30 a	1.36 b	3.50 a	5.42 a	8.81 a
		16	—	0.06 d	1.61 d	2.84 c	5.02 a	—	0.42 d	2.29 c	3.83 b	6.55 a	0.67 c	2.81 b	4.66 a	8.03 a
		24	—	—	0.58 e	1.73 d	3.75 c	—	—	1.13 d	2.59 d	5.20 b	—	1.56 d	3.30 c	6.62 b
	12	12	—	—	1.20 e	2.18 d	3.93 c	—	0.20 e	1.73 d	2.97 c	5.17 b	0.40 d	2.21 c	3.66 b	6.43 a
		16	—	—	0.58 e	1.52 e	3.16 d	—	—	1.03 e	2.23 d	4.35 c	—	1.44 d	2.83 d	5.56 b
		24	—	—	—	0.36 f	1.83 e	—	—	—	0.95 e	2.92 e	—	0.10 e	1.40 e	4.03 d
	14	12	—	—	0.43 f	1.17 e	2.46 d	—	—	0.79 e	1.73 e	3.41 d	—	1.11 e	2.22 d	4.39 c
		16	—	—	—	0.53 f	1.72 e	—	—	0.12 f	1.02 e	2.61 e	—	0.36 f	1.42 e	3.54 d
		24	—	—	—	—	0.46 f	—	—	—	—	1.24 f	—	—	0.05 f	2.06 e
	16	12	—	—	—	0.46 f	1.42 e	—	—	0.14 f	0.86 f	2.13 e	—	0.34 f	1.19 e	2.89 e
		16	—	—	—	—	0.73 f	—	—	—	0.20 f	1.39 f	—	—	0.44 f	2.08 e
		24	—	—	—	—	—	—	—	—	—	0.13 f	—	—	—	0.70 f

See page 27 for clarification of code developed wind pressures prior to using this table.

**Notes:**

- 1 For additional general notes, see page 41.
- 2 Allowable axial loads listed in kips (1 kip = 1000 pounds).
- 3 Allowable axial loads determined in accordance with AISI S100-16 and assuming that all axial loads pass through centroid of effective section.
- 4 Listed tables are based on simple (single)-span.
- 5 Studs are assumed to be adequately braced at a maximum spacing of  $L_u$  to develop full allowable moment,  $M_a$ .
- 6 Cells marked with an "a," "b," "c," "d," "e," or "f" meet  $L/720$ ,  $L/600$ ,  $L/480$ ,  $L/360$ ,  $L/240$ , or  $L/120$  respectively. Blank cells do not meet  $L/120$ .
- 7 For deflection calculations, lateral loads are multiplied by 0.7 per the AISI Standard for Cold-Formed Steel Framing - Wall Stud Design except for 5psf load which is considered interior wall load.
- 8 Cells marked with an " \* " have  $h/t > 200$ , and thus require bearing stiffeners. Cells are left blank when  $h/t > 260$ .

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# ALLOWABLE COMBINED AXIAL & LATERAL LOADS

(Kips/Stud)

Wind = 40psf		S162 (1-5/8" Flange)					S200 (2" Flange)					S250 (2-1/2" Flange)				
Stud length (ft)	Spacing (in) o.c.	-33	-43	-54	-68	-97	-33	-43	-54	-68	-97	-43	-54	-68	-97	
		(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(20ga) 33ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	(18ga) 33ksi	(16ga) 50ksi	(14ga) 50ksi	(12ga) 50ksi	
6" Stud	8	12	1.43 a	2.42 a	4.68 a	6.52 a	10.45 a	1.84 a	3.23 a	6.37 a	8.87 a	14.50 a	3.55 a	6.59 a	9.92 a	17.03 a
		16	1.07 a	2.07 a	4.34 a	6.19 a	10.11 a	1.47 a	2.83 a	5.97 a	8.47 a	14.08 a	3.15 a	6.21 a	9.49 a	16.57 a
		24	0.38 a	1.38 a	3.68 a	5.52 a	9.42 a	0.75 a	2.06 a	5.19 a	7.68 a	13.25 a	2.35 a	5.44 a	8.66 a	15.67 a
	9	12	1.13 a	2.12 a	4.38 a	6.22 a	10.13 a	1.52 a	2.86 a	5.93 a	8.38 a	13.91 a	3.18 a	6.17 a	9.39 a	16.31 a
		16	0.69 a	1.68 a	3.95 a	5.79 a	9.68 a	1.07 a	2.37 a	5.42 a	7.87 a	13.37 a	2.68 a	5.68 a	8.86 a	15.73 a
		24	—	0.83 a	3.12 a	4.95 a	8.80 a	0.19 a	1.43 a	4.45 a	6.88 a	12.32 a	1.70 a	4.74 a	7.82 a	14.58 a
	10	12	0.81 a	1.79 a	4.03 a	5.86 a	9.74 a	1.17 a	2.46 a	5.42 a	7.82 a	13.20 a	2.77 a	5.69 a	8.79 a	15.48 a
		16	0.29 a	1.26 a	3.51 a	5.33 a	9.18 a	0.63 a	1.87 a	4.82 a	7.20 a	12.54 a	2.16 a	5.10 a	8.14 a	14.75 a
		24	—	0.25 b	2.51 a	4.31 a	8.10 a	—	0.77 a	3.67 a	6.01 a	11.26 a	1.01 a	3.97 a	6.89 a	13.36 a
	12	12	0.12 c	1.03 a	3.20 a	5.01 a	8.78 a	0.44 b	1.59 a	4.29 a	6.51 a	11.49 a	1.87 a	4.61 a	7.41 a	13.48 a
		16	—	0.35 c	2.49 b	4.27 a	7.97 a	—	0.83 b	3.50 a	5.68 a	10.57 a	1.08 a	3.82 a	6.53 a	12.48 a
		24	—	—	1.20 d	2.89 c	6.46 a	—	—	2.04 c	4.15 b	8.86 a	—	2.36 b	4.90 a	10.62 a
14	12	—	0.27 d	2.22 c	3.86 a	7.55 a	—	0.71 c	3.09 b	5.07 a	9.50 a	0.94 b	3.46 a	5.90 a	11.21 a	
	16	—	—	1.40 d	2.98 c	6.51 a	—	—	2.18 c	4.09 b	8.39 a	0.01 d	2.52 c	4.85 a	10.00 a	
	24	—	—	—	1.39 d	4.64 c	—	—	0.55 e	2.34 d	6.39 c	—	0.83 d	2.95 c	7.80 b	
16	12	—	—	1.30 d	2.71 c	5.84 b	—	—	1.98 d	3.68 c	7.49 a	0.08 d	2.36 c	4.43 b	8.92 a	
	16	—	—	0.42 e	1.75 d	4.71 c	—	—	1.01 e	2.63 d	6.27 c	—	1.32 d	3.27 c	7.59 b	
	24	—	—	—	0.08 e	2.73 e	—	—	—	0.79 e	4.14 d	—	—	1.23 e	5.24 d	
8" Stud	8	12	1.69 a*	2.67 a	4.81 a	6.64 a	10.67 a	2.21 a*	3.68 a	6.97 a	9.52 a	15.22 a	4.08 a	7.39 a	10.97 a	18.88 a
		16	1.42 a*	2.42 a	4.58 a	6.41 a	10.45 a	1.93 a*	3.39 a	6.67 a	9.23 a	14.94 a	3.77 a	7.10 a	10.66 a	18.55 a
		24	0.90 a*	1.92 a	4.12 a	5.96 a	10.00 a	1.37 a*	2.80 a	6.09 a	8.67 a	14.38 a	3.16 a	6.52 a	10.04 a	17.89 a
	9	12	1.47 a*	2.46 a	4.62 a	6.45 a	10.48 a	1.98 a*	3.44 a	6.71 a	9.27 a	14.97 a	3.81 a	7.11 a	10.66 a	18.51 a
		16	1.14 a*	2.14 a	4.32 a	6.16 a	10.19 a	1.62 a*	3.06 a	6.34 a	8.90 a	14.61 a	3.42 a	6.74 a	10.26 a	18.08 a
		24	0.49 a*	1.51 a	3.73 a	5.58 a	9.62 a	0.93 a*	2.33 a	5.60 a	8.18 a	13.89 a	2.66 a	6.00 a	9.48 a	17.24 a
	10	12	1.23 a*	2.23 a	4.39 a	6.23 a	10.26 a	1.72 a*	3.16 a	6.43 a	8.99 a	14.68 a	3.51 a	6.79 a	10.30 a	18.07 a
		16	0.83 a*	1.83 a	4.02 a	5.87 a	9.90 a	1.29 a*	2.70 a	5.96 a	8.53 a	14.23 a	3.04 a	6.33 a	9.81 a	17.54 a
		24	0.04 a*	1.06 a	3.30 a	5.15 a	9.19 a	0.44 a*	1.80 a	5.06 a	7.63 a	13.32 a	2.11 a	5.42 a	8.84 a	16.49 a
	12	12	0.69 a*	1.68 a	3.86 a	5.70 a	9.71 a	1.13 a*	2.52 a	5.74 a	8.29 a	13.97 a	2.82 a	6.02 a	9.43 a	16.97 a
		16	0.13 a*	1.13 a	3.34 a	5.18 a	9.19 a	0.53 a*	1.87 a	5.08 a	7.63 a	13.29 a	2.16 a	5.37 a	8.72 a	16.20 a
		24	—	0.08 a	2.33 a	4.16 a	8.16 a	—	0.64 a	3.80 a	6.35 a	11.97 a	0.89 a	4.11 a	7.35 a	14.68 a
	14	12	0.08 b*	1.06 a	3.24 a	5.05 a	9.03 a	0.46 a*	1.76 a	4.85 a	7.39 a	13.05 a	2.03 a	5.11 a	8.33 a	15.49 a
		16	—	0.35 b	2.54 a	4.35 a	8.31 a	—	0.94 a	3.99 a	6.51 a	12.11 a	1.18 a	4.26 a	7.39 a	14.45 a
		24	—	—	1.24 c	3.02 a	6.92 a	—	—	2.37 b	4.83 a	10.33 a	—	2.67 a	5.62 a	12.45 a
	16	12	—	0.40 b	2.53 a	4.31 a	8.21 a	—	0.95 a	3.81 a	6.19 a	11.62 a	1.19 a	4.10 a	7.04 a	13.64 a
		16	—	—	1.68 c	3.43 a	7.28 a	—	—	2.78 b	5.12 a	10.45 a	0.19 b	3.08 a	5.90 a	12.35 a
		24	—	—	0.12 d	1.80 c	5.53 b	—	—	0.92 d	3.16 c	8.27 a	—	1.21 c	3.81 b	9.95 a

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