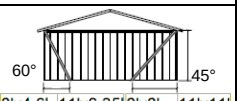
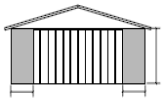
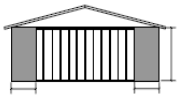
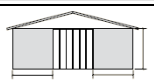
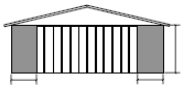
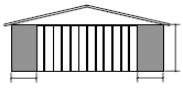
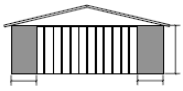
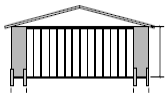
INTERMITTENT BRACING METHODS FOR WALLS UP TO 12' TALL (PER 2006 USBC)

METHOD	FIGURE MINIMUM PANEL LENGHTS	MINIMUM MATERIAL PROPERTIES	CONNECTION CRITERIA	MINIMUM BRACING REQUIRED (FEET) [4] ≤ 100 MPH													
				BWL Length (ft) [3]	BWL spacing (ft)				BWL spacing (ft)				BWL spacing (ft)			
					0' - 35'		35' - 50'		0' - 35'		35' - 50'		0' - 35'		35' - 50'	
LIB [1] Let-in bracing	 60° 45° 8'x4.6' 11'x6.35' 8'x8' 11'x11' 9'x5.2' 12'x6.92' 9'x9' 12'x12' 10'x5.8' 10'x10'	1x4 wood or approved metal straps between 45º to 60º angle	wood braces: 2-8d nails per stud metal straps per manufacturer	10	16%	6.9	23%	6.9	25%	6.9	36%	6.9	NOT PERMITTED			
				20		6.9		6.9		6.9		7.1				
				30		6.9		6.9		7.5		10.7				
				40		13.8		13.8		13.8		14.3				
				50		13.8		13.8		13.8		17.9				
				60		20.7		20.7		20.7		21.4				
DWB Diagonal wood boards	Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	5/8" thick spaced max. 24" o.c.	2-d (2-1/2"x 0.113") nails or 2 staples, 1-3/4" long per stud spaced max. 24" o.c.	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
WSP Wood structural panel	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing	10	16%	4.0	23%	4.0	16%	4.0	23%	4.0	25%	4.0	36%	4.0
				20		4.0		4.6		4.0		4.6		5.0		7.2
				30		5.0		6.9		5.0		6.9		7.5		10.8
				40		8.0		9.2		8.0		9.2		10.0		14.4
				50		11.5		11.5		11.5		11.5		12.5		18.0
				60		12.0		13.8		12.0		13.8		15.0		21.6
SFB Structural fiberboard	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	1/2" or 25/32" at 16" stud spacing only	1-1/2" galvanized roofing nails or 8d common nails at 3" edge spacing and at 6" field spacing	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
GB [2] Gypsum board	 Wall height 8' 9' 10' 11' 12' Length, 1 side 48" 48" 48" 53" 58" Length, 2 sides 96" 96" 96" 106" 116"	1/2" thick	Nails at 7" spacing at panel edges; for exterior sheathing nail size- see Table R602.3(1), for intierior gypsum board nail size - see Table R702.3.5	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
PBS Particle board sheathing	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	3/8" or 1/2" at 16" stud spacing only	0.092" dia., 0.225" head nails with length to accommodate 1-1/2" penetration into studs at 4" edge spacing and at 8" filed spacing	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
PCP Portland cement plaster	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	See Section R703.6	1-1/2", 11 gage, 7/16" head nails at 16" spacing or 7/16" 16 ga staples at 6" spacing	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
HPS Hardboard siding	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	7/16"	0.092" dia., 0.225" head nails with length to accommodate 1½" penetration into studs at 4" edge spacing and at 8" field spacing	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
ABW Alternate braced wall	 Wall height 8' 9' 10' 11' 12' Panel length 28" 32" 34" 38" 42"	3/8" wood structural panel	See Figure R602.10.2.1(1); Requires (2) 3600 lb hold-downs per panel. Cannot use with CMU foundation/stemwall.	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0
IPF Intermittent portal frame	Wall height 8' 9' 10' 11' 12' Length, 1 story 16" 16" 16" 18" 20" Length, 2 stories 24" 24" 24" 27" 29"	3/8" wood structural panel	See Figure R602.10.2.1(2); Requires (2) 2400 lb hold-downs per panel. Cannot use with steel header beam or CMU foundation/stemwall.	10	16%	4.0	23%	4.0	25%	4.0	36%	4.0	35%	4.0	50%	5.0
				20		4.0		4.6		5.0		7.1		7.0		10.0
				30		5.0		6.9		7.5		10.7		10.5		15.0
				40		8.0		9.1		10.0		14.3		14.0		20.0
				50		8.0		11.4		12.5		17.9		17.5		25.0
				60		12.0		13.7		15.0		21.4		21.0		30.0

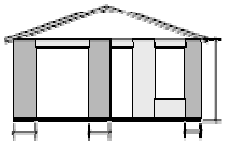
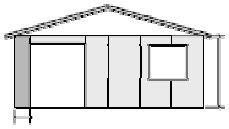
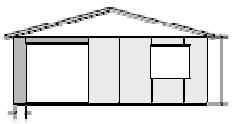
(1) The minimum length required assumes 60 degrees installation for an 8' tall wall.

(2) The required bracing assumes double sided application. If single sided application, the amount listed must be doubled.

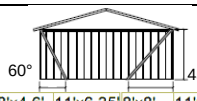
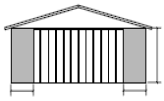
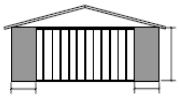
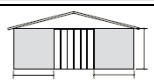
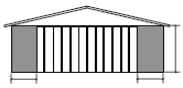
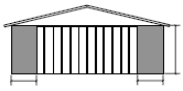
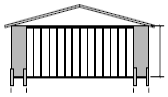
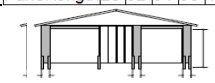
(3) The lengths of a BWL are not limited to 60 feet.

(4) The amount of bracing in the table provides the total length of braced wall panels required. Panels less than the minimum length cannot constribute. Requirements for location and spacing of panels must also be met.

CONTINUOUS SHEATHING BRACING METHODS FOR WALLS UP TO 12' TALL (PER 2006 USBC)

METHOD	FIGURE MINIMUM PANEL LENGHTS	MINIMUM MATERIAL PROPERTIES	CONNECTION CRITERIA	MINIMUM BRACING REQUIRED (FEET) ≤ 100 MPH											
				BWL Length (ft)	BWL spacing (ft)				BWL spacing (ft)				BWL spacing (ft)			
					0' - 35'		35' - 50'		0' - 35'		35' - 50'		0' - 35'		35' - 50'	
CS-WSP Cont. wood structural panel	 Minimum panel length is a function of the adjacent opening height. See Table R602.10.3.2 for panel lengths.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires a 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5)	10	16%	2.0	23%	2.3	16%	2.0	23%	2.3	25%	2.5	36%	3.6
				20		3.2		4.6		3.2		4.6		5.0		7.2
				30		4.8		6.9		4.8		6.9		7.5		10.8
				40		6.4		9.2		6.4		9.2		10.0		14.4
				50		8.0		11.5		8.0		11.5		12.5		18.0
				60		9.6		13.8		9.6		13.8		15.0		21.6
CS-G Cont. wood structural panel @ garage opening	 Wall Height 8' 9' 10' 11' 12' Panel Length 24" 27" 30" 33" 36" One story garage only; applies to one wall of garage only.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires a 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5) and stemwall details (if applicable)	10	16%	2.0	23%	2.3	16%	2.0	23%	2.3	25%	2.5	36%	3.6
				20		3.2		4.6		3.2		4.6		5.0		7.2
				30		4.8		6.9		4.8		6.9		7.5		10.8
				40		6.4		9.2		6.4		9.2		10.0		14.4
				50		8.0		11.5		8.0		11.5		12.5		18.0
				60		9.6		13.8		9.6		13.8		15.0		21.6
CS-PF Cont. portal frame	 Wall Height 8' 9' 10' 11' 12' Panel Length 16" 18" 20" 22" 24" Cannot be stacked vertically. No more than 4 panels in one BWL.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5) and stemwall details (if applicable). Cannot use with steel header beam.	10	16%	2.0	23%	2.3	16%	2.0	23%	2.3	25%	2.5	36%	3.6
				20		3.2		4.6		3.2		4.6		5.0		7.2
				30		4.8		6.9		4.8		6.9		7.5		10.8
				40		6.4		9.2		6.4		9.2		10.0		14.4
				50		8.0		11.5		8.0		11.5		12.5		18.0
				60		9.6		13.8		9.6		13.8		15.0		21.6

INTERMITTENT BRACING METHODS FOR WALLS UP TO 10' TALL (PER 2006 IRC)

METHOD	FIGURE MINIMUM PANEL LENGHTS	MINIMUM MATERIAL PROPERTIES	CONNECTION CRITERIA	MINIMUM BRACING REQUIRED (FEET) [4] < 110 MPH												
				BWL Length (ft) [3]	BWL spacing (ft)				BWL spacing (ft)				BWL spacing (ft)			
					0' - 35'		35' - 50'		0' - 35'		35' - 50'		0' - 35'		35' - 50'	
LIB [1] Let-in bracing	 60° 45° 8'x4.6' 11'x6.35' 8'x8' 11'x11' 9'x5.2' 12'x6.92' 9'x9' 12'x12' 10'x5.8' 10'x10'	1x4 wood or approved metal straps between 45º to 60º angle	wood braces: 2-8d nails per stud metal straps per manufacturer	10	25%	6.9	36%	6.9	45%	6.9	64%	6.9	NOT PERMITTED			
				20		6.9		6.9		6.9		7.1				
				30		6.9		6.9		7.5		10.7				
				40		13.8		13.8		13.8		14.3				
				50		13.8		13.8		13.8		17.9				
				60		20.7		20.7		20.7		21.4				
DWB Diagonal wood boards	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	5/8" thick spaced max. 24" o.c.	2-d (2-1/2"x 0.113") nails or 2 staples, 1-3/4" long per stud spaced max. 24" o.c.	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
WSP Wood structural panel	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing	10	16%	4.0	23%	4.0	30%	4.0	43%	4.3	45%	4.5	64%	6.4
				20		4.0		4.6		6.0		8.6		9.0		12.8
				30		4.8		6.9		9.0		12.9		13.5		19.2
				40		8.0		9.2		12.0		17.2		18.0		25.6
				50		8.0		11.5		15.0		21.5		22.5		32.0
				60		12.0		13.8		18.0		25.8		27.0		38.4
SFB Structural fiberboard	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	1/2" or 25/32" at 16" stud spacing only	1-1/2" galvanized roofing nails or 8d common nails at 3" edge spacing and at 6" field spacing	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
GB [2] Gypsum board	 Wall height 8' 9' 10' 11' 12' Length, 1 side 48" 48" 48" 53" 58" Length, 2 sides 96" 96" 96" 106" 116"	1/2" thick	Nails at 7" spacing at panel edges; for exterior sheathing nail size- see Table R602.3(1), for intierior gypsum board nail size - see Table R702.3.5	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
PBS Particle board sheathing	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	3/8" or 1/2" at 16" stud spacing only	0.092" dia., 0.225" head nails with length to accommodate 1-1/2" penetration into studs at 4" edge spacing and at 8" filed spacing	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
PCP Portland cement plaster	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	See Section R703.6	1-1/2", 11 gage, 7/16" head nails at 16" spacing or 7/16" 16 ga staples at 6" spacing	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
HPS Hardboard siding	 Wall height 8' 9' 10' 11' 12' Panel length 48" 48" 48" 53" 58"	7/16"	0.092" dia., 0.225" head nails with length to accommodate 1½" penetration into studs at 4" edge spacing and at 8" field spacing	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
ABW Alternate braced wall	 Wall height 8' 9' 10' 11' 12' Panel length 28" 32" 34" 38" 42"	3/8" wood structural panel	See Figure R602.10.2.1(1); Requires (2) 3600 lb hold-downs per panel. Cannot use with CMU foundation/stemwall.	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4
IPF Intermittent portal frame	 Wall height 8' 9' 10' 11' 12' Length, 1 story 16" 16" 16" 18" 20" Length, 2 stories 24" 24" 24" 27" 29"	3/8" wood structural panel	See Figure R602.10.2.1(2); Requires (2) 2400 lb hold-downs per panel. Cannot use with steel header beam or CMU foundation/stemwall.	10	25%	4.0	36%	4.0	45%	4.5	64%	6.4	60%	6.0	86%	8.6
				20		5.0		7.1		9.0		12.9		12.0		17.1
				30		7.5		10.7		13.5		19.3		18.0		25.7
				40		10.0		14.3		18.0		25.7		24.0		34.3
				50		12.5		17.9		22.5		32.1		30.0		42.9
				60		15.0		21.4		27.0		38.6		36.0		51.4

(1) The minimum length required assumes 60 degrees installation for an 8' tall wall.

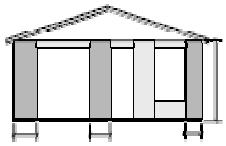
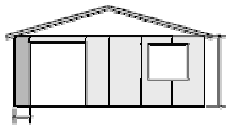
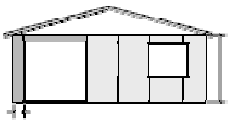
(2) The required bracing assumes double sided application. If single sided application, the amount listed must be doubled.

(3) The lengths of a BWL are not limited to 60 feet.

(4) The amount of bracing in the table provides the total length of braced wall panels required. Panels less than the minimum length cannot constribute. Requirements for location and spacing of panels must also be met.

CONTINUOUS SHEATHING BRACING METHODS FOR WALLS UP TO 12' TALL (PER 2006 USBC)

< 110 MPH

METHOD	FIGURE MINIMUM PANEL LENGHTS (CREDIT TOWARDS "REQUIRED")	MINIMUM MATERIAL PROPERTIES	CONNECTION CRITERIA	MINIMUM BRACING REQUIRED (FEET)											
				BWL Length (ft)	BWL spacing (ft)				BWL spacing (ft)				BWL spacing (ft)			
					0' - 35'		35' - 50'		0' - 35'		35' - 50'		0' - 35'		35' - 50'	
CS-WSP Cont. wood structural panel	 Minimum panel length is a function of the adjacent opening height. See Table R602.10.3.2 for panel lengths.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires a 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5)	10	16%	2.0	23%	2.3	30%	3.0	43%	4.3	45%	4.5	64%	6.4
				20		3.2		4.6		6.0		8.6		9.0		12.8
				30		4.8		6.9		9.0		12.9		13.5		19.2
				40		6.4		9.2		12.0		17.2		18.0		25.6
				50		8.0		11.5		15.0		21.5		22.5		32.0
				60		9.6		13.8		18.0		25.8		27.0		38.4
CS-G Cont. wood structural panel @ garage opening	 Wall Height 8' 9' 10' 11' 12' Panel Length 24" 27" 30" 33" 36" One story garage only; applies to one wall of garage only.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires a 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5) and stemwall details (if applicable)	10	16%	2.0	23%	2.3	30%	3.0	43%	4.3	45%	4.5	64%	6.4
				20		3.2		4.6		6.0		8.6		9.0		12.8
				30		4.8		6.9		9.0		12.9		13.5		19.2
				40		6.4		9.2		12.0		17.2		18.0		25.6
				50		8.0		11.5		15.0		21.5		22.5		32.0
				60		9.6		13.8		18.0		25.8		27.0		38.4
CS-PF Cont. portal frame	 Wall Height 8' 9' 10' 11' 12' Panel Length 16" 18" 20" 22" 24" Cannot be stacked vertically. No more than 4 panels in one BWL.	3/8" thick	6d common nails at 6" edge spacing and at 12" field spacing or 16 gage x 1-3/4" staples at 3" edge spacing and 6" field spacing Requires 24" return wall or 800 lb hold-down See Figures R602.10.3.3(2)-(5) and stemwall details (if applicable). Cannot use with steel header beam.	10	16%	2.0	23%	2.3	30%	3.0	43%	4.3	45%	4.5	64%	6.4
				20		3.2		4.6		6.0		8.6		9.0		12.8
				30		4.8		6.9		9.0		12.9		13.5		19.2
				40		6.4		9.2		12.0		17.2		18.0		25.6
				50		8.0		11.5		15.0		21.5		22.5		32.0
				60		9.6		13.8		18.0		25.8		27.0		38.4