

AWC Guide to Wood Construction in High Wind Areas: 110 mph Wind Zone
Massachusetts Checklist for Compliance (780 CMR 5301.2.1.1)¹

Check
 Compliance

1.1 SCOPE

Wind Speed (3-sec. gust)..... 110 mph _____
 Wind Exposure Category B _____

1.2 APPLICABILITY

Number of Stories (a roof which exceeds 8 in 12 slope shall be considered a story)

_____ stories \leq 2 stories..... _____
 Roof Pitch (Fig 2) \leq 12:12 _____
 Mean Roof Height (Fig 2) ft \leq 33' _____
 Building Width, W (Fig 3) ft \leq 80' _____
 Building Length, L (Fig 3) ft \leq 80' _____
 Building Aspect Ratio (L/W) (Fig 4) \leq 3:1 _____
 Nominal Height of Tallest Opening² (Fig 4) \leq 6'8" _____

1.3 FRAMING CONNECTIONS

General compliance with framing connections (Table 2) _____

2.1 FOUNDATION

Foundation Walls meeting requirements of 780 CMR 5404.1

Concrete _____
 Concrete Masonry _____

2.2 ANCHORAGE TO FOUNDATION^{1,3}

_____ " Anchor Bolts imbedded or _____ " Proprietary Mechanical Anchors as an alternative in concrete only

Bolt Spacing – general (Table 4) in. _____
 Bolt Spacing from end/joint of plate (Fig 5) in. \leq 6" – 12" _____
 Bolt Embedment – concrete (Fig 5) in. \geq 7" _____
 Bolt Embedment – masonry (Fig 5) in. \geq 15" _____
 Plate Washer (Fig 5) \geq 3" x 3" x 1/4" _____

3.1 FLOORS

Floor framing member spans checked (per 780 CMR 55.00) _____
 Maximum Floor Opening Dimension (Fig 6) ft \leq 12' _____
 Full Height Wall Studs at Floor Openings less than 2' from Exterior Wall (Fig 6) _____
 Maximum Floor Joist Setbacks
 Supporting Loadbearing Walls or Shearwall .. (Fig 7) ft \leq d _____
 Maximum Cantilevered Floor Joists
 Supporting Loadbearing Walls or Shearwall .. (Fig 8) ft \leq d _____
 Floor Bracing at Endwalls (Fig 9) _____
 Floor Sheathing Type (per 780 CMR 55.00) _____
 Floor Sheathing Thickness (per 780 CMR 55.00) in. _____
 Floor Sheathing Fastening (Table 2) _____ d nails at _____ in edge / _____ in field _____

4.1 WALLS

Wall Height
 Loadbearing walls (Fig 10 and Table 5) ft \leq 10' _____
 Non-Loadbearing walls (Fig 10 and Table 5) ft \leq 20' _____
 Wall Stud Spacing (Fig 10 and Table 5) in. \leq 24" o.c. _____
 Wall Story Offsets (Figs 7 & 8) ft \leq d _____

4.2 EXTERIOR WALLS³

Wood Studs
 Loadbearing walls (Table 5) 2x _____ - _____ ft _____ in. _____
 Non-Loadbearing walls (Table 5) 2x _____ - _____ ft _____ in. _____
 Gable End Wall Bracing¹
 Full Height Endwall Studs (Fig 10) _____
 WSP Attic Floor Length (Fig 11) ft \geq W/3 _____

Gypsum Ceiling Length (if WSP not used) (Fig 11).....	ft ≥ 0.9W	___
and 2 x 4 Continuous Lateral Brace @ 6 ft. o.c. .. (Fig 11).....		___
or 1 x 3 ceiling furring strips @ 16" spacing min. with 2 x 4 blocking @ 4 ft. spacing in end joist or truss bays		___
Double Top Plate		
Splice Length	(Fig 13 and Table 6).....	ft ___
Splice Connection (no. of 16d common nails)(Table 6).....		___
Loadbearing Wall Connections		
Lateral (no. of 16d common nails).....	(Tables 7).....	___
Non-Loadbearing Wall Connections		
Lateral (no. of 16d common nails).....	(Table 8)	___
Load Bearing Wall Openings (record largest opening but check all openings for compliance to Table 9)		
Header Spans	(Table 9)	ft ___ in. ≤ 11'
Sill Plate Spans	(Table 9)	ft ___ in. ≤ 11'
Full Height Studs (no. of studs).....	(Table 9)	___
Non-Load Bearing Wall Openings (record largest opening but check all openings for compliance to Table 9)		
Header Spans	(Table 9)	ft ___ in. ≤ 12'
Sill Plate Spans	(Table 9)	ft ___ in. ≤ 12''
Full Height Studs (no. of studs).....	(Table 9)	___
Exterior Wall Sheathing to Resist Uplift and Shear Simultaneously ⁴		
Minimum Building Dimension, W		
Nominal Height of Tallest Opening ²		≤ 6'8''
Sheathing Type	(note 4).....	___
Edge Nail Spacing.....	(Table 10 or note 4 if less).....	in. ___
Field Nail Spacing.....	(Table 10)	in. ___
Shear Connection (no. of 16d common nails) (Table 10).....		___
Percent Full-Height Sheathing.....	(Table 10)	% ___
5% Additional Sheathing for Wall with Opening > 6'8'' (Design Concepts).....		___
Maximum Building Dimension, L		
Nominal Height of Tallest Opening ²		≤ 6'8''
Sheathing Type	(note 4).....	___
Edge Nail Spacing.....	(Table 11 or note 4 if less).....	in. ___
Field Nail Spacing.....	(Table 11)	in. ___
Shear Connection (no. of 16d common nails) (Table 11).....		___
Percent Full-Height Sheathing.....	(Table 11)	% ___
5% Additional Sheathing for Wall with Opening > 6'8'' (Design Concepts).....		___
Wall Cladding		
Rated for Wind Speed?		___

5.1 ROOFS

Roof framing member spans checked? (For Rafters use AWC Span Tool, see BBRs Website)		___
Roof Overhang	(Figure 19).....	ft ≤ smaller of 2' or L/3
Truss or Rafter Connections at Loadbearing Walls		
Proprietary Connectors		
Uplift.....	(Table 12)	U= ___ plf
Lateral	(Table 12)	L= ___ plf
Shear	(Table 12)	S= ___ plf
Ridge Strap Connections, if collar ties not used per page 21 (Table 13)		T= ___ plf
Gable Rake Outlooker.....	(Figure 20).....	ft ≤ smaller of 2' or L/2
Truss or Rafter Connections at Non-Loadbearing Walls		
Proprietary Connectors		
Uplift.....	(Table 14)	U= ___ lb.
Lateral (no. of 16d common nails).....	(Table 14)	L = ___ lb.
Roof Sheathing Type.....	(per 780 CMR 58.00 and 59.00).....	___
Roof Sheathing Thickness.....		in. ≥ 7/16" WSP
Roof Sheathing Fastening.....	(Table 2)	___

Notes:

1. This checklist shall be met in its entirety, excluding the specific exception noted in 2, to comply with the requirements of 780 CMR 5301.2.1.1 Item 1. If the checklist is met in its entirety then the following metal straps and hold downs are not required per the WFCM 110 mph Guide:
 - a. Steel Straps per Figure 5
 - b. 20 Gage Straps per Figure 11
 - c. Uplift Straps per Figure 14
 - d. All Straps per Figure 17
 - e. Corner Stud Hold Downs per Figure 18a and Figure 18b

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2. Exception: Opening heights of up to 8 ft. shall be permitted when 5% is added to the percent full-height sheathing requirements shown in Tables 10 and 11.
3. The bottom sill plate in exterior walls shall be a minimum 2 in. nominal thickness pressure treated #2-grade.
4.
 - a. From Tables 10 and 11 and location of wall sheathing and Building Aspect Ratio, determine Percent Full-Height Sheathing and Nail Spacing requirements

- b. Wood Structural Panels shall be minimum thickness of 7/16" and be installed as follows:
- i. Panels shall be installed with strength axis parallel to studs.
 - ii. All horizontal joints shall occur over and be nailed to framing.
 - iii. On single story construction, panels shall be attached to bottom plates and top member of the double top plate.
 - iv. On two story construction, upper panels shall be attached to the top member of the upper double top plate and to band joist at bottom of panel. Upper attachment of lower panel shall be made to band joist and lower attachment made to lowest plate at first floor framing.
 - v. Horizontal nail spacing at double top plates, band joists, and girders shall be a double row of 8d staggered at 3 inches on center per figures below : Vertical and Horizontal Nailing for Panel Attachment