



TECHNICAL DATA SHEET

Effective March 15, 2010



James Hardie

Hardie® Reveal™ Panel

All national, state, and local building code requirements must be followed and where they are more stringent than the Hardie® Reveal™ Panel installation requirements, state and local requirements will take precedence.

General Description

Hardie® Reveal™ Panel is a noncombustible Fiber-Cement panel siding, manufactured by James Hardie Building Products. All James Hardie Manufacturing Plants are third party quality assurance certified by Intertek Testing Services.

Product Dimension

Thickness – 7/16 inch Length – 95-½ inches Width – 47-½ inches

Product Composition

Hardie® Reveal™ Panel is a *Grade II, Type A*, fiber-cement flat sheet as defined by ASTM C 1186. The panels are manufactured by the Hatschek process and cured by high pressure steam autoclaving.

Code Compliance

-Hardie® Reveal™ Panel fiber-cement complies with:

ICC-ES AC90 *Acceptance Criteria on Fiber Cement Siding used as Exterior Siding*,

The 2006 International Building Code® (IBC) Sections 1404.10 and 2006 International Residential Code® (IRC) Table R703.4 as ASTM C 1186-02 *Standard Specification Grade II, Type A, Non-Asbestos Fiber-Cement Flat Sheets*. (as shown in Table 1 below).

- Wind Design ~ Allowable Fastener Spacing:

Design Table 2a as shown in this sheet provides allowable fastener spacing to wood studs

Design Table 2b as shown in this sheet provides allowable fastener spacing to minimum 20 gauge metal studs, metal hat channel furring or Z-girts

- Fire Characteristics:

Hardie® Reveal™ Panel is deemed a noncombustible building material in accordance with ASTM E 136,

Hardie® Reveal™ Panel may be used in ASTM E119 fire resistance rated assemblies as listed by Warnock Hersey (for more information contact James Hardie at 1-888 J-HARDIE (1-888 542-7343) or info@JamesHardie.com):

120 minute Designs JH/WA 120-02 or JH/WA 120-04,

60 minute designs JH/WA 60-01, JH/WA 60-09 or JH/WA 60-10,

In all designs double studs may be required at the vertical joints.

Hardie® Reveal™ Panel is a Class A Product, Surface burning characteristics in accordance with ASTM E 84 are,

Flame Spread Index = 0 and Smoke Developed Index ≤ 5.

-Hardie® Reveal™ Panel shall be installed on exterior walls braced in accordance with the following sections of the applicable code: Sections 2308.9.3, 2308.11, or 2308.12 of the International Building Code®; Sections R602.10 or R603.3.3 of the International Residential Code®

-A water-resistive barrier complying with Section 1403.2 of the International Building Code® or Section R703.2 of the International Residential Code® is required to be installed.

-Hardie® Reveal™ Panel and Reveal™ Trims do not form a moisture management system; the architect and the builder are responsible for designing and installing a building code compliant building enclosure.

-Hardie® Reveal™ Panel shall be installed in accordance with this report and the manufacturer's published Installation Requirements, for a copy contact your local James Hardie Sales Representative or visit www.JamesHardieCommercial.com. All national, state, and local building code requirements must be followed and where they are more stringent than the Hardie® Reveal™ Panel Installation Requirements, state and local requirements will take precedence.

-The Building Official reserves the right to approve alternate materials, design and methods of construction based on research reports and tests

2006 International Building Code® Section 104.11, 2006 International Residential Code® Section R104.11.

-Test reports can be furnished to the Building Official upon request, contact your local James Hardie Sales Representative.

-Product Sampled and Tested by Intertek Testing Services. www.intertek-eflsemko.com

Table 1, Hardie® Reveal™ Panel ASTM C 1186 Physical Properties and Supplementary Requirements

Property	Requirement	Pass/Fail
Dimensional Tolerances	Length	± 0.5%
	Width	± 0.5%
	Thickness	± 1.6 mm
	Squareness	< 10.9 mm
	Edge Straightness	< 10.9 mm
Dimensional Variation (mm)	Length Width	< 6.0
	Width	< 6.0
	Thickness	< 2.4
Water Absorption, % by mass	As reported	Note 1
Density, kg/m3	As reported	Note 1
Moisture Movement, % Linear Change	30 – 90% Relative Humidity	As reported
	After 48 hr saturation	As reported
Flexural Strength	Wet conditioned, MPa	> 7.0 MPa
	Equilibrium conditioned, MPa	> 10.0 MPa
	Freeze/Thaw, % wet retention	≥ 80%
	Warm Water, % wet retention	≥ 85%
Moisture Content, %	As reported	Note 1
Water Tightness	No drop formation	Pass
Warm Water Resistance, Observations	No visible cracks or structural alteration	Pass
Heat/Rain Resistance	No visible cracks or structural alteration	Pass
Freeze/Thaw Resistance	Observations	No visible cracks or structural alteration
	Mass Loss, %	≤ 3.0
Accelerated Weathering Test	No cracking, checking, or crazing	Pass
Surface Burning Characteristics	FSI = 0 SDI ≤ 5	Pass

Note 1. No pass/fail requirement, results are reported.

Warnock Hersey
AUTHORIZATION TO
MARK



LISTED

Client # 8518,
17832





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Table 2a, Basic Wind Speed - Allowable Fastener Spacing Wood Framing

IBC® & IRC®/2006

Table Shows Maximum Allowable Fastener Spacing⁹, 7/16" Hardie® Reveal™ Panel

FRAME TYPE AT 16 INCHES ON CENTER⁸: Minimum 2X4 S-P-F Grade Wood Stud

SHEATHING TYPE^{7,8}: Minimum 7/16" thick APA Rated OSB (or equivalent)

Basic Wind Speed ⁴	Building Height (feet)	FASTENER: 0.092" Shank X 0.222" Head Diameter X 2" Long Galvanized Siding Nail (or equivalent)						FASTENER: No. 10 X 1-1/2" Long X 0.375" Head Diameter Ribbed Wafer Head Screw (or equivalent)					
		Exposure						Exposure					
		B		C		D		B		C		D	
		Fastener Spacing		Fastener Spacing		Fastener Spacing		Fastener Spacing		Fastener Spacing		Fastener Spacing	
		Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶
90 mph	0-15	14.5	24.0	11.9	24.0	9.9	24.0	24.0	24.0	22.2	24.0	18.3	24.0
	20	14.5	24.0	11.3	24.0	9.4	24.0	24.0	24.0	21.0	24.0	17.5	24.0
	30	14.5	24.0	10.4	24.0	8.8	24.0	24.0	24.0	19.2	24.0	16.3	24.0
	40	13.4	24.0	9.8	24.0	8.3	24.0	24.0	24.0	18.1	24.0	15.5	24.0
	50	12.5	24.0	9.3	24.0	8.0	24.0	23.3	24.0	17.3	24.0	14.9	24.0
	60	11.9	24.0	9.0	24.0	7.7	24.0	22.2	24.0	16.7	24.0	14.4	24.0
	70	9.1	24.0	6.9	24.0	6.0	24.0	16.9	24.0	12.9	24.0	11.2	24.0
	80	8.7	24.0	6.7	24.0	5.9	24.0	16.2	24.0	12.4	24.0	10.9	24.0
	90	8.4	24.0	6.5	24.0	5.8	24.0	15.7	24.0	12.1	24.0	10.8	24.0
	100	8.2	24.0	6.4	24.0	5.7	24.0	15.2	24.0	11.9	24.0	10.5	24.0
100 mph	0-15	11.7	24.0	9.7	24.0	8.0	24.0	21.8	24.0	18.0	24.0	14.8	24.0
	20	11.7	24.0	9.1	24.0	7.6	24.0	21.8	24.0	17.0	24.0	14.1	24.0
	30	11.7	24.0	8.4	24.0	7.1	24.0	21.8	24.0	15.6	24.0	13.2	24.0
	40	10.8	24.0	7.9	24.0	6.7	24.0	20.1	24.0	14.7	24.0	12.5	24.0
	50	10.2	24.0	7.5	24.0	6.5	24.0	18.9	24.0	14.0	24.0	12.0	24.0
	60	9.7	24.0	7.3	24.0	6.3	24.0	18.0	24.0	13.5	24.0	11.7	24.0
	70	7.4	24.0	5.6	24.0	4.9	24.0	13.7	24.0	10.4	24.0	9.1	24.0
	80	7.1	24.0	5.4	24.0	4.8	24.0	13.1	24.0	10.1	24.0	8.8	24.0
	90	6.8	24.0	5.3	24.0	4.7	24.0	12.7	24.0	9.8	24.0	8.7	24.0
	100	6.6	24.0	5.2	24.0	4.6	24.0	12.3	24.0	9.7	24.0	8.5	24.0
110 mph	0-15	9.7	24.0	8.0	24.0	6.6	24.0	18.0	24.0	14.9	24.0	12.3	24.0
	20	9.7	24.0	7.5	24.0	6.3	24.0	18.0	24.0	14.0	24.0	11.7	24.0
	30	9.7	24.0	6.9	24.0	5.9	24.0	18.0	24.0	12.9	24.0	10.9	24.0
	40	8.9	24.0	6.5	24.0	5.6	24.0	16.6	24.0	12.1	24.0	10.4	24.0
	50	8.4	24.0	6.2	24.0	5.4	24.0	15.6	24.0	11.6	24.0	9.9	24.0
	60	8.0	24.0	6.0	24.0	5.2	24.0	14.9	24.0	11.2	24.0	9.6	24.0
	70	6.1	24.0	4.6	24.0	4.0	24.0	11.3	24.0	8.6	24.0	7.5	24.0
	80	5.8	24.0	4.5	24.0	-	-	10.8	24.0	8.3	24.0	7.3	24.0
	90	5.6	24.0	4.4	24.0	-	-	10.5	24.0	8.1	24.0	7.2	24.0
	100	5.5	24.0	4.3	24.0	-	-	10.2	24.0	8.0	24.0	7.0	24.0
120 mph	0-15	8.2	24.0	6.7	24.0	5.5	24.0	15.2	24.0	12.5	24.0	10.3	24.0
	20	8.2	24.0	6.3	24.0	5.3	24.0	15.2	24.0	11.8	24.0	9.8	24.0
	30	8.2	24.0	5.8	24.0	4.9	24.0	15.2	24.0	10.8	24.0	9.1	24.0
	40	7.5	24.0	5.5	24.0	4.7	24.0	14.0	24.0	10.2	24.0	8.7	24.0
	50	7.0	24.0	5.2	24.0	4.5	24.0	13.1	24.0	9.7	24.0	8.4	24.0
	60	6.7	24.0	5.1	24.0	4.4	24.0	12.5	24.0	9.4	24.0	8.1	24.0
	70	5.1	24.0	-	-	-	-	9.5	24.0	7.2	24.0	6.3	24.0
	80	4.9	24.0	-	-	-	-	9.1	24.0	7.0	24.0	6.1	24.0
	90	4.7	24.0	-	-	-	-	8.8	24.0	6.8	24.0	6.0	24.0
	100	4.6	24.0	-	-	-	-	8.6	24.0	6.7	24.0	5.9	24.0
130 mph	0-15	6.9	24.0	5.7	24.0	4.7	24.0	12.9	24.0	10.6	24.0	8.8	24.0
	20	6.9	24.0	5.4	24.0	4.5	24.0	12.9	24.0	10.0	24.0	8.4	24.0
	30	6.9	24.0	5.0	24.0	4.2	24.0	12.9	24.0	9.2	24.0	7.8	24.0
	40	6.4	24.0	4.7	24.0	-	-	11.9	24.0	8.7	24.0	7.4	24.0
	50	6.0	24.0	4.5	24.0	-	-	11.2	24.0	8.3	24.0	7.1	24.0
	60	5.7	24.0	4.3	24.0	-	-	10.6	24.0	8.0	24.0	6.9	24.0
	70	4.4	24.0	-	-	-	-	8.1	24.0	6.2	24.0	5.4	24.0
	80	4.2	24.0	-	-	-	-	7.8	24.0	6.0	24.0	5.2	24.0
	90	4.0	24.0	-	-	-	-	7.5	24.0	5.8	24.0	5.2	24.0
	100	-	-	-	-	-	-	7.3	24.0	5.7	24.0	5.0	24.0
140 mph	0-15	6.0	24.0	4.9	24.0	4.1	24.0	11.1	24.0	9.2	24.0	7.6	24.0
	20	6.0	24.0	4.7	24.0	-	-	11.1	24.0	8.7	24.0	7.2	24.0
	30	6.0	24.0	4.3	24.0	-	-	11.1	24.0	8.0	24.0	6.7	24.0
	40	5.5	24.0	4.0	24.0	-	-	10.3	24.0	7.5	24.0	6.4	24.0
	50	5.2	24.0	-	-	-	-	9.6	24.0	7.2	24.0	6.1	24.0
	60	4.9	24.0	-	-	-	-	9.2	24.0	6.9	24.0	6.0	24.0
	70	-	-	-	-	-	-	7.0	24.0	5.3	24.0	4.6	24.0
	80	-	-	-	-	-	-	6.7	24.0	5.1	24.0	4.5	24.0
	90	-	-	-	-	-	-	6.5	24.0	5.0	24.0	4.4	24.0
	100	-	-	-	-	-	-	6.3	24.0	4.9	24.0	4.4	24.0
150 mph	0-15	5.2	24.0	4.3	24.0	-	-	9.7	24.0	8.0	24.0	6.6	24.0
	20	5.2	24.0	4.1	24.0	-	-	9.7	24.0	7.5	24.0	6.3	24.0
	30	5.2	24.0	-	-	-	-	9.7	24.0	6.9	24.0	5.9	24.0
	40	4.8	24.0	-	-	-	-	8.9	24.0	6.5	24.0	5.6	24.0
	50	4.5	24.0	-	-	-	-	8.4	24.0	6.2	24.0	5.3	24.0
	60	4.3	24.0	-	-	-	-	8.0	24.0	6.0	24.0	5.2	24.0
	70	-	-	-	-	-	-	6.1	24.0	4.6	24.0	4.0	24.0
	80	-	-	-	-	-	-	5.8	24.0	4.5	24.0	-	-
	90	-	-	-	-	-	-	5.6	24.0	4.4	24.0	-	-
	100	-	-	-	-	-	-	5.5	24.0	4.3	24.0	-	-

Notes to Table:

- Maximum basic wind speed shall be 150 mph.
- Interpolation to address building height is permitted.
- 1 inch = 25.4 mm, 1 foot = 305 mm, 1 mph = 0.44 m/s
- Basic wind speed is 3-second gust
- Field fastening shall be into framing
- Vertical Joint fastening shall be into sheathing or into framing when a double stud is installed at the vertical joint
- Minimum 7/16" APA rated OSB attached to studs with minimum 6d common nails at maximum 6 inches on center along the perimeter and maximum 12 inches on center in the field
- Framing shall be designed to resist the necessary wind and seismic loads
- Based on ASCE 7-05 a pressure coefficient of 1.58 for hs<60ft and 1.98 for h>60ft, Importance factor of 1, Kzt = 1, Kd = 0.85



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Table 2b, Basic Wind Speed - Allowable Fastener Spacing Metal Framing

		IBC® & IRC®/2006					
		Table Shows Maximum Allowable Fastener Spacing ¹¹ , 7/16" Hardie® Reveal™ Panel					
		FRAME TYPE AT 16 INCHES ON CENTER ¹⁰ : Min. 20 ga. 2X4 metal C-studs, Min. 20 gauge 1.5 in. wide Hat Channel Furring, or Min. 20 ga. X 2 in. flange X 2 in. deep Z-girts					
		SHEATHING TYPE ^{7,8,9,10} : 4 inch wide Minimum 20 gauge metal strapping					
Basic Wind Speed ⁴	Building Height (feet)	FASTENER: No. 8 X 1-5/8" L X 0.33" Head Diameter Ribbed Wafer Head Screw (or equivalent)					
		Exposure					
		B		C		D	
		Fastener Spacing		Fastener Spacing		Fastener Spacing	
		Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶	Field ⁵	Vertical Joint ⁶
90 mph	0-15	21.2	24.0	17.5	24.0	14.4	24.0
	20	21.2	24.0	16.5	24.0	13.7	24.0
	30	21.2	24.0	15.1	24.0	12.8	24.0
	40	19.5	24.0	14.3	24.0	12.2	24.0
	50	18.3	24.0	13.6	24.0	11.7	24.0
	60	17.5	24.0	13.1	24.0	11.3	24.0
	70	13.3	24.0	10.1	24.0	8.8	24.0
	80	12.7	24.0	9.8	24.0	8.6	24.0
	90	12.3	24.0	9.6	24.0	8.5	24.0
	100	12.0	24.0	9.4	24.0	8.3	24.0
100 mph	0-15	17.2	24.0	14.1	24.0	11.7	24.0
	20	17.2	24.0	13.4	24.0	11.1	24.0
	30	17.2	24.0	12.3	24.0	10.4	24.0
	40	15.8	24.0	11.6	24.0	9.9	24.0
	50	14.8	24.0	11.0	24.0	9.5	24.0
	60	14.1	24.0	10.6	24.0	9.2	24.0
	70	10.8	24.0	8.2	24.0	7.2	24.0
	80	10.3	24.0	7.9	24.0	7.0	24.0
	90	10.0	24.0	7.7	24.0	6.9	24.0
	100	9.7	24.0	7.6	24.0	6.7	24.0
110 mph	0-15	14.2	24.0	11.7	24.0	9.6	24.0
	20	14.2	24.0	11.0	24.0	9.2	24.0
	30	14.2	24.0	10.1	24.0	8.6	24.0
	40	13.1	24.0	9.6	24.0	8.1	24.0
	50	12.3	24.0	9.1	24.0	7.8	24.0
	60	11.7	24.0	8.8	24.0	7.6	24.0
	70	8.9	24.0	6.8	24.0	5.9	24.0
	80	8.5	24.0	6.6	24.0	5.7	24.0
	90	8.3	24.0	6.4	24.0	5.7	24.0
	100	8.0	24.0	6.3	24.0	5.5	24.0
120 mph	0-15	11.9	24.0	9.8	24.0	8.1	24.0
	20	11.9	24.0	9.3	24.0	7.7	24.0
	30	11.9	24.0	8.5	24.0	7.2	24.0
	40	11.0	24.0	8.0	24.0	6.8	24.0
	50	10.3	24.0	7.7	24.0	6.6	24.0
	60	9.8	24.0	7.4	24.0	6.4	24.0
	70	7.5	24.0	5.7	24.0	5.0	24.0
	80	7.2	24.0	5.5	24.0	4.8	24.0
	90	6.9	24.0	5.4	24.0	4.8	24.0
	100	6.7	24.0	5.3	24.0	4.7	24.0
130 mph	0-15	10.2	24.0	8.4	24.0	6.9	24.0
	20	10.2	24.0	7.9	24.0	6.6	24.0
	30	10.2	24.0	7.3	24.0	6.1	24.0
	40	9.4	24.0	6.8	24.0	5.8	24.0
	50	8.8	24.0	6.5	24.0	5.6	24.0
	60	8.4	24.0	6.3	24.0	5.4	24.0
	70	6.4	24.0	4.9	24.0	4.2	24.0
	80	6.1	24.0	4.7	24.0	4.1	24.0
	90	5.9	24.0	4.6	24.0	4.1	24.0
	100	5.7	24.0	4.5	24.0	-	-
140 mph	0-15	8.8	24.0	7.2	24.0	6.0	24.0
	20	8.8	24.0	6.8	24.0	5.7	24.0
	30	8.8	24.0	6.3	24.0	5.3	24.0
	40	8.1	24.0	5.9	24.0	5.0	24.0
	50	7.6	24.0	5.6	24.0	4.8	24.0
	60	7.2	24.0	5.4	24.0	4.7	24.0
	70	5.5	24.0	4.2	24.0	-	-
	80	5.3	24.0	4.0	24.0	-	-
	90	5.1	24.0	-	-	-	-
	100	4.9	24.0	-	-	-	-
150 mph	0-15	7.6	24.0	6.3	24.0	5.2	24.0
	20	7.6	24.0	5.9	24.0	4.9	24.0
	30	7.6	24.0	5.5	24.0	4.6	24.0
	40	7.0	24.0	5.1	24.0	4.4	24.0
	50	6.6	24.0	4.9	24.0	4.2	24.0
	60	6.3	24.0	4.7	24.0	4.1	24.0
	70	4.8	24.0	-	-	-	-
	80	4.6	24.0	-	-	-	-
	90	4.4	24.0	-	-	-	-
	100	4.3	24.0	-	-	-	-

Notes to Table:

- Maximum basic wind speed shall be 150 mph.
- Interpolation to address building height is permitted.
- 1 inch = 25.4 mm, 1 foot = 305 mm, 1 mph = 0.44 m/s
- Basic wind speed is 3-second gust
- Field fastening shall be into framing
- Vertical Joint fastening shall be into metal sheathing or into framing when a double stud is present
- Metal sheathing shall be installed when double studs are not installed at the Hardie Reveal Panel vertical joint
- Metal sheathing installed at maximum 24" on center vertically
- Metal sheathing shall be 4 inches tall and wide enough to fully span the stud bay
- Framing shall be designed to resist the necessary wind and seismic loads
- Based on ASCE 7-05 a pressure coefficient of 1.58 for h≤60ft and 1.98 for h>60ft, Importance factor of 1, Kzt = 1, Kd = 0.85



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All national, state, and local building code requirements must be followed and where they are more stringent than the Hardie® Reveal™ Panel installation requirements, state and local requirements will take precedence.

Figure 1, Wood Studs – Hardie Reveal Panel Vertical Joints Fastened into Sheathing

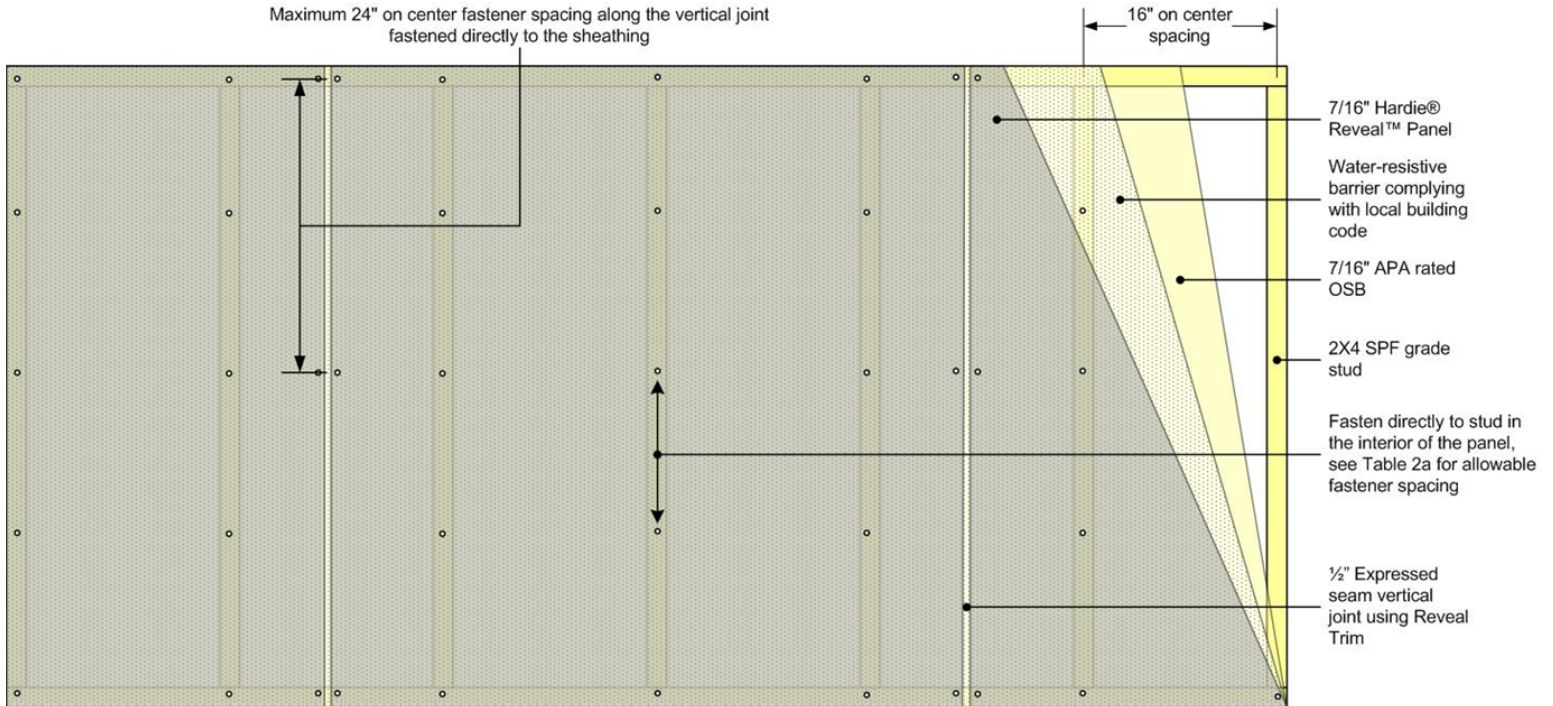
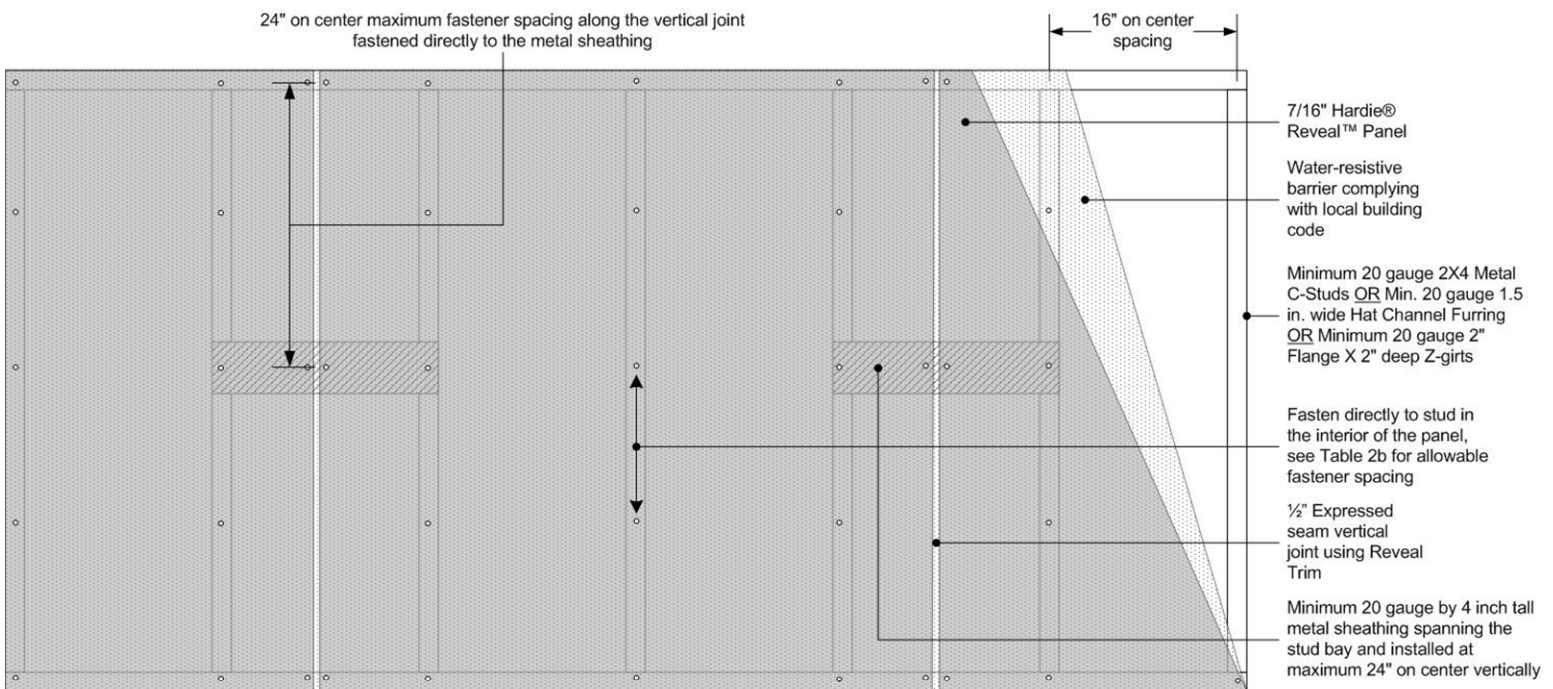


Figure 2, Minimum 20 gauge Metal – Hardie Reveal Panel Vertical Joints Fastened into Metal Sheathing



20 ga. Z – girt cross section

