

Hardie® Architectural Panels

Single Family Installation Requirements

EFFECTIVE FEBRUARY 2022

Shiplap with V-Groove Aesthetic

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1 Introduction

The material contained herein provides installation guidelines for the Hardie[®] Architectural Panel System by James Hardie. This document is intended for use by builders, cladding installers, and other contractors who may be involved with the installation of the Hardie[®] Architectural Panel System.

Before you begin your siding project read the instruction manual completely and thoroughly. This document describes and illustrates the minimum steps required to install the Hardie® Architectural Panel System. No instruction manual can anticipate every condition, circumstance, or situation that might arise during installation over the course of the project. When in doubt about assembly details, contact the architect, specifier, or a building official. Contact your James Hardie Sales and Install Representative for product support 1-800-9HARDIE (1- 800-942-7343).

PREPARATION

Ensure the drainage plane is intact and all penetrations are sealed. Plan your work, use the proper tools, techniques, and follow installation procedures as covered in this installation manual. It is important that builders, specifiers, and installers recognize requirements and information pertaining to:

- Safety
- Storage and Handling
- Cutting
- Wall Preparation
- Fastening

For best results, before installation, ensure your panels are clean and free of dirt, dust, chalking, oil, grease, organic contaminants, or mold. Dust from cutting and construction should be removed immediately upon installation.

PRACTICE INSTALLING MATERIAL

Utilize a mock-up to evaluate installation and finishing techniques, with a focus on specific applications designed by a design professional or engineer. The fastening practice and/or fastening tools shall be properly adjusted to avoid overdriving. Do not proceed with remaining work until workmanship, color, and sheen are approved. Repeat mock-up area as required to produce acceptable work.

HARDIE® ARCHITECTURAL PANEL I FINE SAND I FINE SAND GROOVED I MOUNDED SAND I SEA GRASS I SCULPTED CLAY

HS20110 P 1/18 02/22



2 Safe Working Practices

STORAGE & HANDLING

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

- 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area.
- 2. Cut using one of the following methods based on jobsite requirements:
 - a. **Best**: Circular saw equipped with a HardieBlade[®] saw blade and attached vacuum dust collection system.
 - b. Shears (manual, pneumatic or electric) or the score and snap method may also be used.
 - c. **Better**: Circular saw equipped with a dust collection feature and a HardieBlade[®] saw blade.
 - d. **Good**: Circular saw equipped with a HardieBlade[®] saw blade.

INDOORS

- 1. NEVER grind or cut with a power saw indoors.
- 2. Cut only using shears (manual, pneumatic or electric) or the score and snap method.

GENERAL

 During clean-up of dust and debris, wet dust and debris down with a fine water mist, apply a dust reducing sweeping compound in sufficient quantities, or use a vacuum to collect dust and debris. DO NOT use compressed air.

DO NOT dry sweep without first applying a dust reducing control measure.

- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade® saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

HANDLING PANELS

When handling Hardie[®] Architectural Panels care should be given to prevent damage to the machined edges and/or the ColorPlus finish.

- Utilize 2 persons to carry product.Carry panels along the long edges
- whenever possible (Fig. 2a).
- When handling panels on short edges and the need to set down, place with the underlap edge of the shiplap facing down. (tongue/long edge) (Fig. 2b). Doing so will:
 - Prevent damage to top edge (visible edge) of panel if dropped or dragged.
 - Help prevent scratches to ColorPlus finish.

Figure 2a



Figure 2b



ColorPlus Tip:

- When possible, carry with plastic covering in place. This will help to protect the ColorPlus finish.
- Wearing gloves will help prevent fingerprint smudges to the ColorPlus finish

CUT STATION & CUTTING

Setup cutting station (Fig. 2c), and locate close to installation area.

TIP: Utilize the pallet & cardboard toppers to create your cutting table

Use a HardieBlade® to cut James Hardie fiber cement products. A track saw with vacuum system (Fig. 2d) is best for cutting Hardie® Architectural Panels.

- a. Cleaner cuts
- b. Panels can be cut facing up (minimize panel movements)
- c. If using a traditional circular saw with vacuum system, place panel face down to prevent marring of the finished surface caused by friction from the saw.

Figure 2c



Figure 2d



ColorPlus Tip:

- A scratch proof platform is a good idea to prevent from scratching the ColorPlus surface while cutting. The cardboard cover from the top of the pallet makes a great non marking surface.
- Keep a spray bottle (filled with water) and soft cloths to wipe cut dust off immediately after cutting to keep your ColorPlus finish looking fresh.
- Touch-up all cut edges





3 Design & Fastener Aesthetics

PANEL JOINT CONSIDERATIONS

Hardie® Architectural Panels have been designed to feature a "V" groove look at panel joints. When considering the location of panel joint layout, please take into consideration the following:

- 1. Installation requirements
 - a. Clearances
 - b. Floor break (panels cannot be placed across floors) (horizontal flashing / trim is required)
 - c. Framing, sheathing, and fastener attachment (see Panel V-Groove joint placement options section within this document)
- 2. Align/center to key features (ex. windows, doors, etc.) (fig. 3a)
- 3. Align/center to the structure (ex. walls, gables, etc.) (fig. 3b)

FASTENER AESTHETICS

Hardie® Architectural Panels have been designed to be installed with stainless steel finish nails, which suggests the impression of a fastener free panel surface.

The following elements should be utilized to aid in achieving a fastener free appearance as well as minimize the need for patching & touch-up.

- In-Line Regulator.
- No-Mar Tip.
- Gun agle to wall.
- Nails should be left proud, then tapped flush with a smooth face hammer. Do Not over drive fasteners.
- Straight 16-gauge finish nailer in good working.
- Refer to the Fastener Requirements section for complete fastener installation & guidance. Additional information can be found in the Tools, installation & Finishing



Finish Nail *Use a smooth face hammer and lightly tap flush.

- Tips: for fastener depth control:
- If excessive air pressure (above 90psi) is needed or having difficulty controlling nail depth. Nail gun may be worn.



* Design Advice:

It is okay for panel widths to be equal or unequal at structure ends.



4 General Requirements

IMPORTANT: Read these instructions in their entirety before attempting installation.

- These instructions to be used for installation on single family homes only. **For Commercial / Multi-Family installation requirements go to www.JamesHardiePros.com
- Hardie[®] Architectural Panels can be installed over braced wood. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities before installing siding.
- Hardie® Architectural Panels may be installed on flat vertical wall applications only.
- · Information on installing James Hardie® products over non-nailable substrates (ex: gypsum, foam,etc.) can be located in
- JH Tech Bullet in 19 at www.jameshardie.com
- A water-resistive barrier (WRB) is required in accordance with local building code requirements. The WRB must be appropriately installed with
 penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration.
 James Hardie manufactures HardieWrap® Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.
- When orienting Hardie® Architectural Panels horizontally, a WRB with minimum 90% drainage efficiency per ASTM E2273 is required.
- Adjacent finished grade must slope away from the building in accordance with local building codes typically a minimum of 6 in. in the first 10 ft.
- Do not use Hardie[®] Architectural Panels in Fascia or Trim applications.
- Do not install James Hardie® products such that they may remain in contact with standing water.
- For larger projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient
 of thermal expansion and moisture movement of the product in their design. These values can be found in the <u>Technical Bullet in "Expansion</u>
 <u>Characteristics of James Hardie Siding Products" at www.jameshardie.com.</u>
- James Hardie Building Products provides installation/wind load information for buildings with a maximum mean roof height of 85 feet (Refer to the product Technical Data Sheet or ESR report). For information on installations above 60 feet, please contact JH technical support.
- Minimum standard panel design size is 12" x 16". Note: Panels may be notched and cut to size to fit between windows, doors, corners, etc.
- Straight 16 gauge stainless steel finish nails.

¹For additional information on HardieWrap[®] Weather Barrier, consult James Hardie at 1-866-4Hardie or www.hardiewrap.com



CLEARANCE AND FLASHING REQUIREMENTS





Hardie[®] Architectural Panels

FASTENING REQUIREMENTS

Refer to TDS (Technical Date Sheet) for Hardie Architectural Panels in the back of this document for wind load ratings (page 18).

FINISH NAIL REQUIREMENTS

- Minimum 1-1/2 inch
- Stainless steel only.
- 16 gauge straight. DO NOT use 15 gauge angled finish nails.

FASTENING GUIDELINES

The following guidelines should be followed to achieve the desired aesthetics from the fastening of stainless steel finish nails to attach Hardie® Architectural Panels:

- 1. In-Line Regulator (Fig. 13)
 - a. Control variable air supply from compressor
 - b. 75-90 psi (average setting) if difficulty maintaining psi and/or depth control, check nailer for wear and replace or repair accordingly
- 2. No-Mar Tips (fig.14)
 - a. Avoid surface damage
 - b. Depth control
- 3. Gun angle to wall (fig. 15)
- 4. Nails should be left proud, then tapped flush immediately with a smooth face hammer
- 5. Do Not over drive fasteners
 - a. Will appear after painting
 - b. Will increase need for patching & touch-up
- 6. Test nail depth on scrap prior to panel installation

GENERAL

Finish nails must be stainless steel. Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. Unless otherwise directed, James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners.

Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates. Note: Ring shank (not smooth) shall be used when specifying stainless steel nails.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminium products. Fasteners used to attach HardieTrim Tabs, aluminium trim, or flashing to preservative treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to the latest versions of the IRC/IBC.

- Consult applicable product evaluation or listing for correct fasteners type and placement to achieve specified design wind loads.
- NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space).

PNEUMATIC FASTENING

James Hardie® products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control

the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).

COLORPLUS FASTENERS

Color matched stainless steel finish nails are available for Hardie® Architectural Panels with ColorPlus technology Nails installed the same as described above. Touch- up fasteners as needed using the touch applicator brush Fig.16



Figure 13



Figure 16







Figure 14

- Finish Nail *Use a smooth face hammer and lightly tap flush.
- Tips: for fastener depth control:
- Oil nail guns regularly.
- · If excessive air pressure (above 90psi) is needed or having difficulty controlling nail depth. Nail gun may be worn.





5 Tools

TOOLS FOR FASTENING

1 Straight 16 Gauge Stainless Finish Nails	2 Straight Finish Nailer	2 Inline Air Regulator
		THE CELE
Fasten using minimum 1-1/2 inch straight 16 gauge stainless steel nails. DO NOT use 15 gauge angled finish nails.	16 gauge straight finish nailer for attaching trims and panels.	An inline pressure regulator will assist in better fastener depth control. Nails shall be underdriven as opposed to overdriven if depth control is an issue

TOOLS FOR CUTTING METAL TRIMS



TOOLS FOR CUTTING HARDIE® ARCHITECTURAL PANELS



FASTENING METAL TRIMS



Attach trims to: Wood - using a staple, or finish nail or flat head nail.

DO NOT use a button or bugle headed fastener when attaching trims.



6 Products and Accessories

INSTALLATION EXAMPLE







ACCESSORIES



TRIM



VERTICAL TRIM OPTIONS



HORIZONTAL TRIM OPTIONS



OPTIONAL ACCESSORIES



FASTENER DETAILS



Refer to the Hardie® Architectural Panel Technical Data Sheet for fastening options.

†When orienting panels horizontally a weather resistive barrier (WRB) with minimum 90% drainage efficiency per ASTM E 2273 is required.

Note: When installing preservative-treated wood/furring, a non permeable membrane shall be installed between the furring and aluminium trims.





7 Panel Installation

PANEL INSTALLATION PROCESS - VERTICAL ORIENTATION

When installing Hardie® Architectural Panels in the vertical orientation, one of the following conditions shall be used to meet moisture management requirements:

- 1. Use drainage wrap† install joint in moderate contact (no caulk or EPDM tape required by James Hardie).
- 2. Standard WRB caulk the vertical joint.
- 3. Standard WRB EPDM tape at the vertical joint.



*Refer to the Hardie® Architectural Panel Technical Data Sheet for fastening options.

+Requires code approved drainage wrap - a weather resistive barrier (WRB) with minimum 90% drainage efficiency per ASTM E 2273



PANEL INSTALLATION PROCESS - HORIZONTAL ORIENTATION

Requires code approved drainage wrap - a weather resistive barrier (WRB) with minimum 90% drainage efficiency per ASTM E 2273.





Optional

-Trim

Detail:



8 Construction Details

CONSTRUCTION DETAILS - JUNCTIONS

Figure 14 - Slab Junction Detail



Figure 16 - Upper Floor Junction Option 1 - Angled T Flashing







Note: Go to Tamlyn.com for examples of transition trim options.

Figure 15 - Eave Junction Detail

1/8 in

gap

Figure 17 - Upper Floor Junction Option 2 - Z Flashing



HardieSoffit® Panel

Hardie® Architectural Panel

HardieWrap® Weather Barrier

OSB sheathing

HardieTrim® Boards



CONSTRUCTION DETAILS - CORNER DETAILS

Figure 19 - Trim Over Outside Corner Option



Figure 21 - Trim Over Inside Corner Option



Figure 23 - W Inside Corner Option





Figure 20 - Aluminium Outside Corner Option

Figure 22 - Aluminium Inside Corner Detail







NON-NAILABLE SUBSTRATES 1in. OR LESS (eg. foam & gypsum)

Figure 24 - Fastening over non-nailable substrates



V-GROOVE JOINT PLACEMENT OPTIONS



Figure 27 - Panel V-Groove joint placement options



Figure 26 - Off-stud nailing when installing non-nailable substrates



CONSTRUCTION DETAILS - WINDOW DETAIL OPTIONS

Figure 28 - Window With 'Trim Over' Option





CONSTRUCTION DETAILS - WINDOW DETAIL OPTIONS CONTINUED

Figure 29 - Window With 'J-Trim' Option





Figure 30 - Window With Panel Butt Option

*Caulk in accordance with caulk manufacturers instructions.





CONSTRUCTION DETAILS - SOFFIT DETAILS

- · Finish nails are not allowed when installing Hardie® Architectural Panels as a soffit. Full headed nails only.
- Multi-Groove panels can not be used in soffit applications.
- For proper fastener selection, spacing and wind load rating refer to ESR 1844.

Figure 31 - Hardie® Architectural Panels as Soffit



Note: For proper fastener selection, spacing, and wind load rating refer to ESR 1844



Figure 32 - Greater than 24in. Wide Soffit

Figure 33 - Maximum 24in. Wide Soffit





9 Finishing & Maintenance

CUT EDGE TREATMENT

IMPORTANT: Caulk, paint or prime all field cut edges. James Hardie touchup kits are required to touch-up James Hardie[®] products with ColorPlus[®] Technology finishes.

CARE & MAINTENANCE

Routinely perform the following to help maintain the appearance and performance of James Hardie[®] siding and trim products:

- Washing down the exterior surfaces every 6 to 12 months with a garden hose or low pressure water spray to remove dirt and debris.
- Re-applying of exterior finishes.
- Maintaining the exterior envelope and connections including joints, penetrations, flashings, and sealants (caulking) to prevent moisture entry behind the siding.
- · Cleaning out gutters, blocked pipes, and overflows as required.
- Prune vegetation to prevent contact with the siding.
- Ensuring required external ground clearances and drainage slopes are maintained.

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions.

NOTE: some caulk manufacturers do not allow "tooling".

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie[®] products. James Hardie factory primed products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when James Hardie[®] products are wet. Follow paint manufacturer's instructions and application rates. Back rolling is recommended if spray application is used.

- Tips: for a beautiful finish
- Surface preparation Ensure the surface is dry, clean and any blemishes are patched using a suitable exterior grade cementitious patching compound and blend with surrounding texture using a sponge or scouring pad.
- Prevent paint bridging by applying thin even coats of paint. If bridging occurs, take a paint brush and brush bridging out. When rolling or brushing paint with the joint lines. Do not paint across the joint lines, this may result in bridging.
- Avoid excess painting of the "V" joint.

COLORPLUS® TECHNOLOGY FINISH CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie[®] products ColorPlus[®] Technology finishes. During installation, use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
- Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with a new piece of siding with ColorPlus Technology.
- Laminate sheet must be removed immediately after installation of each course.
- Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your James Hardie[®] products ColorPlus[®] Technology finishes dealer.
- Treat all other non-factory cut edges using the ColorPlus[®] Technology edge coaters, available from your James Hardie[®] products ColorPlus[®] Technology finishes dealer.

NOTE: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie[®] products with ColorPlus[®] Technology finishes.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY FINISHES

When repainting James Hardie[®] products with ColorPlus[®] Technology finishes, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew.
- Repriming is normally not necessary.
- 100% acrylic topcoats are recommended.
- DO NOT use stain or oil/alkyd based paints on James Hardie products.
- Apply finish coat in accordance with paint manufacturers' written instructions regarding coverage, application methods, and application temperature.
- DO NOT caulk nail heads when using James Hardie[®] products with ColorPlus[®] Technology finishes, refer to the ColorPlus[®] Technology touch-up section.

WARNING

High pressure water blast and sand blasting may damage the surface of the fiber cement product. Low pressure water spray, a soft medium bristle (nonmetal) brush is most suitable for cleaning fiber cement products. Acid washing can damage fiber cement surface and is not recommended.

NOTE: if using a pressure washer, care must be taken to ensure that the water stream does not damage the surface of the siding. Use wide fan tips that are kept a minimum of 6 feet from the wall and at a pressure under 1500 psi to minimize the chance of damaging the siding. Damage arising from improper cleaning or maintenance is not covered under applicable James Hardie warranties.



TECHNICAL DATA SHEET Hardie® Architectural Panels

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

Document Scope

This document applies to the following Hardie® Architectural Panel- Fine Sand, Hardie® Architectural Panel- Fine Sand-Grooved, Architectural Panel-Mounded Sand, Architectural Panel- Sea Grass, and Architectural Panel- Sculpted Clay. The use of this product is limited to buildings not exceeding 85 feet in height.

General Description
Hardie® Architectural Panels are non-combustible fiber-cement panel, manufactured by James Hardie Building Products Inc.
Product Dimensions

Thickness –0.3125 inches	Length – 96, 120, & 144 inches	Width – 48 inches	Vertical Joint – Shiplap
Product Composition			

Hardie® Architectural Panels are Grade II, Type A, fiber-cement sheets as defined by ASTM C 1186. The panels are manufactured by the Hatschek process and cured by high pressure steam autoclaving.

Code Compliance

Hardie® Architectural Panels complies with:

- The 2009, 2012, and 2015 International Building Code® (IBC) Section 1404.10, 2018 and 2021 International Building Code® (IBC) Section 1403.10 and 2009, 2012, 2015, 2018, and 2021 International Residential Code® (IRC) Table R703.3(1) and Section R703.10.1 as ASTM C 1186 Grade II, Type A Fiber Cement.
- The 2017 and 2020 Florida Building Code® (FBC) Section 1404.10 and 1405.16 as ASTM C 1186 Grade II, Type A Fiber Cement.

Wind Design:

- Design Tables 2 & 3 provide allowable capacity in mph for transverse load conditions for the Hardie® Architectural Panels attached to either wood framing, furring or WSP, tested in accordance to ASTM E 330.
- Wood framing shall have a specific gravity of 0.42 or greater unless otherwise stated.
- Wood Structural Sheathing (WSP) panel must have a specific gravity of 0.50 or higher unless otherwise stated.

Fire Characteristics:

- Hardie® Architectural Panels are classified as non-combustible when tested in accordance with ASTM E136.
- Hardie® Architectural Panels may be used in ASTM E119 fire resistance rated assemblies as listed by Warnock Hersey.
- Hardie® Architectural Panels are a Class A material according to 2017 and 2020 FBC, 2018 and 2021 IBC Section 803.1.2; Surface
- Burning Characteristics when tested in accordance with ASTM E 84: Flame Spread Index = 0 and Smoke Developed Index = 0.
- The building official reserves the right to approve alternate materials, design and methods of construction based on research reports and/or tests based on 2018 IBC, 2017 & 2020 FBC Section 104.11.

Installation Requirements

- Test reports can be furnished to the building official upon request, contact your local James Hardie sales representative.
- Hardie® Architectural Panels shall be installed on exterior walls braced in accordance with the applicable buildingcode.
- A water-resistive barrier complying with Section R703.2 of the IRC or Section 1403.2 of the FBC is required to be installed.
- Install the Hardie® Architectural Panels in accordance with this report and the James Hardie published installation requirements. For a copy contact your local James Hardie sales representative or visit<u>www.JamesHardiePros.com</u>.

Table 1, Hardie® Architectural Panels ASTM C 1186 Physical Properties and Supplementary Requirements

	ASTM Test Method	General Property	Unit or Characteristic	Requirement	Result
Attributes	ASTM C1185	Dimensional Tolerances	Length Width Thickness Squareness Edge Straightness	± 0.5% or ±1/4in ± 0.5% or ±1/4in ± 0.04 in <1/32 in/ft of length <1/32 in/ft of length	Pass
cal	ASTM C1185	Density, lb./ft ³		As reported	<83
ıysi	ASTM C1185	Water Tightness	Physical Observations	No drop formation	Pass
Ч	ASTM C1185	Flexural Strength	Wet conditioned, psi Equilibrium conditioned, psi	>1015 psi >1450 psi	Pass
	ASTM C1185	Warm Water Resistance, Observations	Physical Observations	No visible cracks or structural alteration	Pass
~	ASTM C1185	Heat/Rain Resistance	Physical Observations	No visible cracks or structural alteration	Pass
Durabilit	ASTM C1185	Freeze/Thaw Resistance	Physical Observations Mass Loss, % Freeze/Thaw, % strength retention	No visible cracks or structural alteration ≤ 3.0% ≥ 80%	Pass
aracteristics	ASTM E84	Surface Burning Characteristics	Flame Spread Index (FSI) Smoke Developed Index (SDI) Fuel Contributed International Building Code®	As reported	0 0 0 A
Fire Ch	ASTM E136	Non-combustibility		As reported	Pass

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TECHNICAL DATA SHEET

Hardie® Architectural Panels

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

Table 2, V	Wind Desig	jn Table, Ex	kposed Faster	ning											
Allo	wable Wind	d Speed (mp	oh) for Hardie®	Architectural F	Panels (Ar	nalytical Met	thod in AS	CE 7-	10, 7-1	6 Cha	pter 3	0)			
								20 2012 2015 (Ulti Win (Ba Winc Win	17 & 20 FBC, & 2019 & 2019 & 201 mate D ind Spee Vult),5, 2018 IB asic De asic De d Speec and expo categor	020 5 IBC, 8 IRC esign eed, 9 C sign d, V) ¹¹ sure y	2006, 2009 & 2012 IRC 2006 & 2009 IBC (Nominal Design Wind Speed, V _{asd}) ^{4,10,12,13} Wind exposure category				
Product ¹	Minimum Thicknes s (in.)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (in.)	Allowable Design load (psf)	Building Height (ft.) ^{2,3}	В	с	D	В	с	D		
							0-15	153	139	126	119	108	98		
Hardie® Architect	5/16	16 Gauge, 1 ¹ /2" long, stainless Finish Nail	4 inches	2X4 wood ⁶	16	33.6	20	153	135	123	119	105	95		
ural Panel ¹			along studs			33.0	40	147	126	116	114	97	90		
							60	139	120	112	108	93	87		
	5/16	16 Gauge, 1 ¹ /2" long, stainless Finish Nail	4 inches along studs	2X4 wood ⁷	16	37.0	0-15	160	145	132	124	113	102		
Hardie® Architect							20	160	141	129	124	109	100		
ural Panel ¹							40	154	131	121	119	102	94		
							60	145	126	117	113	98	91		
			4 inches o.c.	2x4 wood or			0-15	139	126	114	107	97	89		
Hardie®	5/16	16 Gauge, 1.25" long,	vertically along furring	20 ga. (33 mils) steel	10	07.7	20	139	122	112	107	95	86		
ural	5/10	stainless Finish Nail	strips spaced at 16 inches	framing with 3⁄4" thick by	10	21.1	40	133	114	105	103	88	81		
Paner			o.c., min. 3/8" from edge of siding	3.5" wide WSP furring (SG=0.50) ¹⁴			60	126	109	101	97	85	78		
			4 inches o.c.	2x4 wood or			0-15	122	110	100	94	85	78		
Hardie®	5/40	5/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16	luge, vertically long, along furring	20 ga.(33 mils) steel framing with ³ ⁄ ₄ " by3.5" wide SPF	16	24.4	20	122	107	-	94	83	-		
ural Bapol ¹	5/10		strips spaced at 16 inches			21.4	40	117	-	-	90	-	-		
Panel					o.c., min. 3/8" from edge of siding	furring (SG=0.42) ¹⁴			60	110	-	-	85	-	-

Installation must be in accordance with manufacturer's installation instructions Building heights are the mean roof height (ft) of a building except the eave height shall be used for the roof angles of less than or equal to 10° (2-12 roofslope) 2

3.

4. 5.

6. Wood framing species must have a specific gravity of 0.42 gravity or higher 7.

Wood framing species must have a specific gravity of 0.46 gravity or higher. Wood Structural Sheathing panel must have a specific gravity of 0.50 or higher. Vult = ultimate design wind speed. 8.

9.

Vasd = nominal design wind speed. V = basic design wind speed

10. 11.

Basic Design Wind Speed per ASCE 7-16 or 2017 FBC/2018 IBC Figures 1609.3(1) through 1609.3(8). Where design is based on the fastest mile wind speeds, the basic wind speed shall be converted to the fastest mile wind speed Vfm per Section R301.2.1.3 of the 2012 IRC. 12.

13.

2017 & 2020 FBC, 2018 IBC Section 1609.3.1 Eq. 16-33, Vasd = Vult (0.6)^{0.5} The NDS published specific gravities of SPF lumber & Wood Structural Panel (WSP) furring are 0.42 and 0.50 respectively. Attachment of the furring to the structural framing must be determine by the project 14. design engineer to resist the allowable design wind loads for the maximum wind speeds as tabulated.

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TECHNICAL DATA SHEET Hardie® Architectural Panels

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

> 2017 & 2020 FBC, 2012 & 2015 IBC,

Table 3, Wind Design Table, Off-Stud Nailing Application Allowable Wind Speed (mph) for Hardie® Textured Panels (Analytical Method in ASCE 7-10, 7-16 Chapter 30)

								2012 & 2013 IBC, 2015 & 2018 IBC (Ultimate Design Wind Speed, Vult),5,9 2018 IBC (Basic Design Wind Speed, V) ¹¹			2006, 2009 & 201 IRC 2006 & 2009 IBC (Nominal Design Wind Speed, V _{asd}) ^{4,10,12,13}							
								Wir	nd expos category	sure /	Wir	nd expos category	sure /					
Product ¹	Minimum Thickness (in.)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (in.)	Allowable Design load (psf)	Building Height (ft.) ^{2,3}	В	С	D	В	С	D					
Hardie® Architect ural Panel ¹	5/16	16	1 inches	2X4 wood ⁷ with min 7/16" Wood Structural Panel ⁹ Sheathing attached per code			0-15	172	156	142	133	121	110					
		Gauge, 1 ¹ /2"	ge, 4 inches 2" along studs g, & panel less edges. sh See figure 1 iil		16	40.7	20	172	152	138	133	117	107					
		s/16 long, stainless Finish Nail				42.7	40	165	141	130	128	109	101					
							60	156	135	126	121	105	97					
	5/16	16 Cauga	4 inchos	2X4 wood ⁸ with min 7/16" Wood Structural Panel ⁹ Sheathing attached per code			0-15	147	133	121	114	103	94					
Hardie®		5/16 long, 8 stainless 6 Finish See Nail	auge, 4 inches 7/16 11/2" along studs Str ong, & panel P ainless edges. P sinless See figure 2 She Nail 0 0		24	31.2	20	147	130	118	114	100	92					
Architect ural					Panel ⁹ Sheathing attached per code	24	01.2	40	141	121	111	109	93	86				
Faller								60	133	116	-	103	90	-				
		16 Course	4 inchoo	2X4 wood ⁷ with min			0-15	139	126	115	108	98	89					
Hardie® Architect ural Panel ¹	5/16	long	along studs	7/16″ Wood Structural	28.0	20	139	123	112	108	95	87						
		0,10	0,10	0,10	0,10	0,10	stainless Finish	edges. See figure 2	Panel ⁹ Sheathing	27	20.0	40	134	114	-	104	89	-
		Nail	-	attached per code			60	126	-	-	98	-	-					

Applies to Hardie® Architectural Panel - Fine Sand, Hardie® Architectural Panel - Mounded Sand, Hardie® Architectural Panel - Sea Grass. Hardie® Architectural Panel - Sculpted Clav only.

Installation must be in accordance with manufacturer's installation instructions Building heights are the mean roof height (ft) of a building except the eave height shall be used for the roof angles of less than or equal to 10° (2-12 roof slope) 2 3. 4

Linear interpolation of building height (< 60th) and wind speed is permitted. Wind speed design coefficient assumptions per Analytical Method in ASCE 7-05: I=1, Kzt=1, Kd=0.85, GCp= -1.4, GCpi= -0.18 Wind speed design assumptions per Analytical Method in ASCE 7-10 & ACE 7-16 Section 30.4: Kzt=1, Kd=0.85, GCp= -1.4, GCpi= 0.18 Wood framing species must have a specific gravity of 0.42 gravity or higher. 5

6

7 8.

Wood framing species must have a specific gravity of 0.46 gravity or higher. Wood Structural Sheathing panel must have a specific gravity of 0.50 or higher

10. Vult = ultimate design wind speed.

11 Vasd = nominal design wind speed. V = basic design wind speed

12.

Basic Design Wind Speed per ASCE 7-16 or 2017 FBC/2018 IBC Figures 1609.3(1) through 1609.3(8). Where design is based on the fastest mile wind speeds, the basic wind speed shall be converted to the fastest mile wind speed Vfm per Section R301.2.1.3 of the 2012 IRC. 13.

14. 2017 & 2020 FBC, 2018 IBC Section 1609.3.1 Eq. 16-33, Vasd = Vult(0.6)0.5

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Figure 1, Fastening Configuration for 16" O.C. Wood Frame: Off-Stud Application

3/8

- 4 in o.c. along studs
- 4 in o.c. along panel edges

4 in o.c. along studs 4 in o.c. along panel edges

0

Edges may be attached to WSP sheathing only 0

3/8 ιο_ 4 ft

Figure 2, Fastening Configuration for 24" O.C. Wood Frame: Off-Stud Application

3/8" 3/8' 2 4 Edges may be attached to WSP sheathing only 24 4 ft

HS20110 P 21/21 01/22

DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, maching, origing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

A WARNING: This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.

RECOGNITION: James Hardie® Architectural Panels complies with ASTM C1186 and meets the following Fiber-Cement siding code requirements; Sections 1404.10, 1405.16, and 1405.16.1 (2006, 2009, 2012, 2015 IBC), Sections 1403.10, 1404.16 & 1404.16.1 (2018, 2022 IBC), Table R703.4 (2006, 2009, 2012 IRC), Table R703.3 (2015, 2018, 2022 IRC) and Section R703.10. Hardie® Architectural Panel is also recognized for application with the following product approval agencies: State of Florida Product Approval FL#13223.

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