

ISSUE: Certificate of Appropriateness for alterations

APPLICANT: Old Town #1, LLC

LOCATION: Old and Historic Alexandria District
101 North Columbus Street

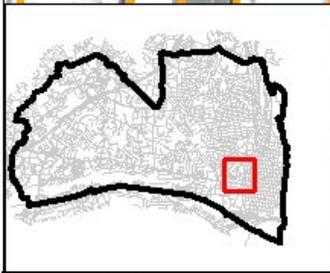
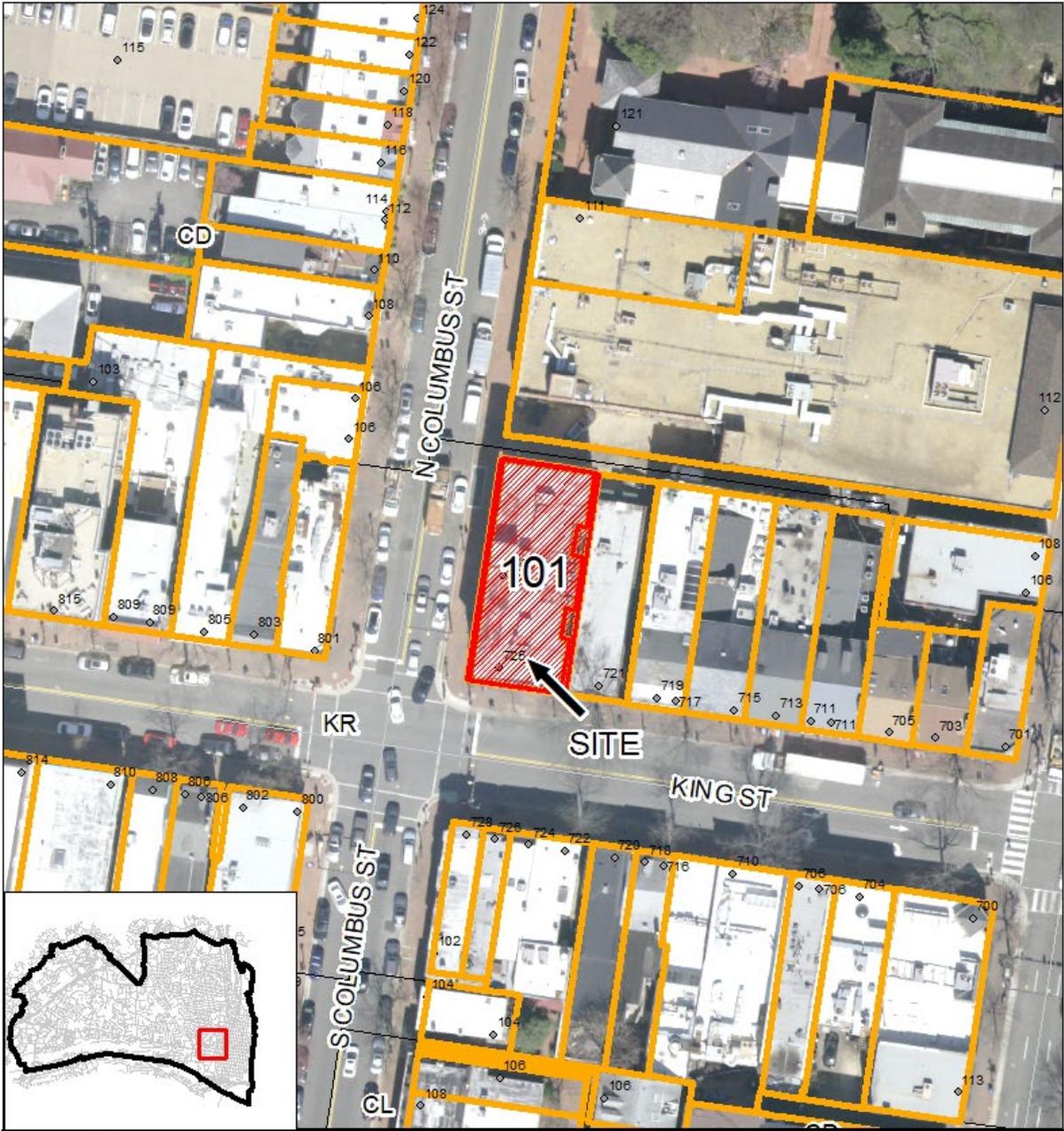
ZONE: KR/King Street Urban Retail Zone

STAFF RECOMMENDATION

Staff recommends approval of the Certificate of Appropriateness for alterations with the condition that the applicant work with staff to determine whether repairing the stucco is feasible and if not feasible, work with staff on details for the appropriate replacement to match the original stucco.

GENERAL NOTES TO THE APPLICANT

1. **APPEAL OF DECISION:** In accordance with the Zoning Ordinance, if the Board of Architectural Review denies or approves an application in whole or in part, the applicant or opponent may appeal the Board's decision to City Council on or before 14 days after the decision of the Board.
2. **COMPLIANCE WITH BAR POLICIES:** All materials must comply with the BAR's adopted policies unless otherwise specifically approved.
3. **BUILDING PERMITS:** Most projects approved by the Board of Architectural Review require the issuance of one or more construction permits by Department of Code Administration (including signs). The applicant is responsible for obtaining all necessary construction permits after receiving Board of Architectural Review approval. Contact Code Administration, Permit Center, 4850 Mark Center Drive, Suite 2015, 703-746-4200 for further information.
4. **ISSUANCE OF CERTIFICATES OF APPROPRIATENESS AND PERMITS TO DEMOLISH:** Applicants must obtain a copy of the Certificate of Appropriateness or Permit to Demolish PRIOR to applying for a building permit. Contact BAR Staff, Room 2100, City Hall, 703-746-3833, or preservation@alexandriava.gov for further information.
5. **EXPIRATION OF APPROVALS NOTE:** In accordance with Sections 10-106(B), 10-206(B) and 10-307 of the Zoning Ordinance, any Board of Architectural Review approval will expire 12 months from the date of issuance if the work is not commenced and diligently and substantially pursued by the end of that 12-month period.
6. **HISTORIC PROPERTY TAX CREDITS:** Applicants performing extensive, certified rehabilitations of historic properties may separately be eligible for state and/or federal tax credits. Consult with the Virginia Department of Historic Resources (VDHR) prior to initiating any work to determine whether the proposed project may qualify for such credits.



 **BAR#2025-00548 - OHAD**
101 North Columbus Street

0 30 60 120 Feet

N

I. APPLICANT'S PROPOSAL

The applicant is requesting approval to remove the upper story stucco on both façades (King and Columbus Street) and install new cement panels with texture finish painted to match the existing stucco.

Site context

The subject property sits on the northeast corner of the intersection of King and North Columbus streets. There is a private alley running adjacent to the north of the property. The work to be performed is on the building's façades on King and Columbus streets, the rear/north and side/east elevations don't feature stucco on the upper story (Figure 1 and 2).



Figure 1 – N. Columbus St. and rear alley view

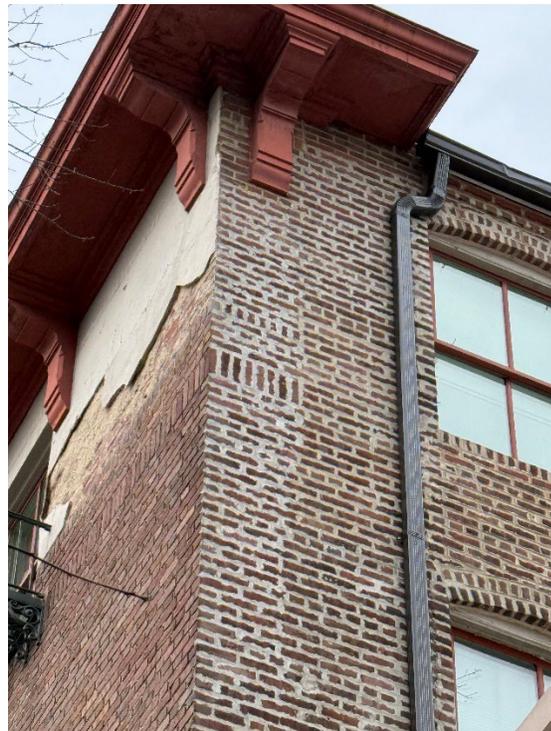


Figure 2 – King St. and east elevation view

II. HISTORY

The four-story brick commercial building with Italianate features historically known as the Doniphan Building was constructed in **1907** according to Sanborn Fire Insurance Maps and an article in the Alexandria Times (*Out of the Attic, July 2-8, 2009*). It was constructed as a store/retail on the ground level with apartments on the upper levels (Figure 3). In 1929, the building suffered a substantial fire which gutted the entire building, it was then remodeled to convert the upper levels into office spaces.



Original stucco on
the upper story

Figure 3 - Out of the Attic article picture (ca. 1909)

Previous BAR Approvals

In 1995 and 1996, the Board approved a storefront and signage for the first-floor tenant, Bertucci's restaurant (BAR Case #s 1995-0009 and 1996-0009).

More recently, BAR2011-00065, approval to replace 110 windows.

III. ANALYSIS

As visible on Figure 3 above from ca. 1909, the upper story was already finished with stucco, which is considered an architectural feature original to the building. Nonetheless, the stucco is in poor condition and considered a hazard since it's breaking off onto the sidewalk below.

Having said that, the *Design Guidelines* state that "A central tenet of the philosophy of historic preservation is that original historic materials should be retained and repaired rather than replaced.

An informed and careful analyses of the existing condition should be made before any decision to replace historic material is made." However, the Guidelines also state that "the Guidelines are intended only to provide guidance and that the Board considers each application on a case-by-case basis...The Board views the Guidelines as a living document that will change as circumstances warrant." Furthermore, "The Board will strive to provide consistency in their decisions by giving careful attention to the Guidelines. The Board recognize, however, that they may, in their decisions, have to depart from the Guidelines where such departure is appropriate to assure the historic fabric of the districts."

Staff has not located original plans for the subject building, however, the picture on the *Out of the Attic* article (Figure 3) clearly shows stucco on the upper floor in ca. 1909, therefore, we can consider the material original to the building, and it should be repaired rather than replaced.

Staff consulted with a mason who works in Alexandria and was advised that stucco on brick is not recommended but it can be repaired efficiently depending on the conditions. The proposed cement panels installation is against preservation standards. Thus, staff recommends that the applicant work with staff to determine whether repairing the stucco is feasible and if not feasible, work with staff on details for the appropriate replacement to match the original stucco.

STAFF

Marina Novaes, Historic Preservation Planner, Planning & Zoning

Tony LaColla, AICP, Land Use + Preservation Division Chief, Planning & Zoning

IV. CITY DEPARTMENT COMMENTS

Legend: C- code requirement R- recommendation S- suggestion F- finding

Zoning

F-1 Proposed façade changes comply with zoning.

Code Administration

C-1 A building permit is required.

Transportation and Environmental Services

R-1 The building permit must be approved and issued prior to the issuance of any permit for demolition, if a separate demolition permit is required. (T&ES)

R-2 Applicant shall be responsible for repairs to the adjacent city right-of-way if damaged during construction activity. (T&ES)

R-3 No permanent structure may be constructed over any existing private and/or public utility easements. It is the responsibility of the applicant to identify any and all existing easements on the plan. (T&ES)

F-1 After review of the information provided, an approved grading plan is not required at this time. Please note that if any changes are made to the plan it is suggested that T&ES be included in the review. (T&ES)

F-2 If the alley adjacent to the parcel is to be used at any point of the construction process, the following will be required:

For a Public Alley - The applicant shall contact T&ES, Construction Permitting & Inspections at (703) 746-4035 to discuss any permits and accommodation requirements that will be required.

For a Private Alley - The applicant must provide proof, in the form of an affidavit at a minimum, from owner of the alley granting permission of use. (T&ES)

C-1 The applicant shall comply with the City of Alexandria's Solid Waste Control, Title 5, Chapter 1, which sets forth the requirements for the recycling of materials (Sec. 5-1-99). (T&ES)

C-2 The applicant shall comply with the City of Alexandria's Noise Control Code, Title 11, Chapter 5, which sets the maximum permissible noise level as measured at the property line. (T&ES)

- C-3 Roof, surface and sub-surface drains be connected to the public storm sewer system, if available, by continuous underground pipe. Where storm sewer is not available applicant must provide a design to mitigate impact of stormwater drainage onto adjacent properties and to the satisfaction of the Director of Transportation & Environmental Services. (Sec.5-6-224) (T&ES)
- C-4 Any work within the right-of-way requires a separate permit from T&ES. (Sec. 5-2) (T&ES)
- C-5 All improvements to the city right-of-way such as curbing, sidewalk, driveway aprons, etc. must be city standard design. (Sec. 5-2-1) (T&ES)

Alexandria Archaeology

F-1 No archaeology comments

V. ATTACHMENTS

- Application Materials
- Completed application
- Plans
- Material specifications
- Scaled survey plat if applicable
- Photographs

ADDRESS OF PROJECT: _____

DISTRICT: Old & Historic Alexandria Parker – Gray 100 Year Old Building

TAX MAP AND PARCEL: _____ ZONING: _____

APPLICATION FOR: *(Please check all that apply)*

- CERTIFICATE OF APPROPRIATENESS
- PERMIT TO MOVE, REMOVE, ENCAPSULATE OR DEMOLISH
(Required if more than 25 square feet of a structure is to be demolished/impacted)
- WAIVER OF VISION CLEARANCE REQUIREMENT and/or YARD REQUIREMENTS IN A VISION CLEARANCE AREA *(Section 7-802, Alexandria 1992 Zoning Ordinance)*
- WAIVER OF ROOFTOP HVAC SCREENING REQUIREMENT
(Section 6-403(B)(3), Alexandria 1992 Zoning Ordinance)

Applicant: Property Owner Business *(Please provide business name & contact person)*

Name: _____
Address: _____
City: _____ State: _____
Phone: _____ E-mail: _____

Authorized Agent *(if applicable):* Attorney Architect _____
Name: _____ Phone: _____
E-mail: _____

Legal Property Owner:

Name: _____
Address: _____
City: _____ State: _____
Phone: _____ E-mail: _____

Additions & New Construction: Drawings must be to scale and should not exceed 11" x 17" unless approved by staff. Check N/A if an item in this section does not apply to your project.

- ^{N/A} Scaled survey plat showing dimensions of lot and location of existing building and other structures on the lot, location of proposed structure or addition, dimensions of existing structure(s), proposed addition or new construction, and all exterior, ground and roof mounted equipment.
- FAR & Open Space calculation form.
- Clear and labeled photographs of the site, surrounding properties and existing structures, if applicable.
- Existing elevations must be scaled and include dimensions.
- Proposed elevations must be scaled and include dimensions. Include the relationship to adjacent structures in plan and elevations.
- Materials and colors to be used must be specified and delineated on the drawings. Actual samples may be provided or required.
- Manufacturer's specifications for materials to include, but not limited to: roofing, siding, windows, doors, lighting, fencing, HVAC equipment and walls.
- For development site plan projects, a model showing mass relationships to adjacent properties and structures.

Signs & Awnings: One sign per building under one square foot does not require BAR approval unless illuminated. All other signs including window signs require BAR approval. Check N/A if an item in this section does not apply to your project.

- ^{N/A} Linear feet of building: Front: _____ Secondary front (if corner lot): _____.
- Square feet of existing signs to remain: _____.
- Photograph of building showing existing conditions.
- Dimensioned drawings of proposed sign identifying materials, color, lettering style and text.
- Location of sign (show exact location on building including the height above sidewalk).
- Means of attachment (drawing or manufacturer's cut sheet of bracket if applicable).
- Description of lighting (if applicable). Include manufacturer's cut sheet for any new lighting fixtures and information detailing how it will be attached to the building's facade.

Alterations: Check N/A if an item in this section does not apply to your project.

- ^{N/A} Clear and labeled photographs of the site, especially the area being impacted by the alterations, all sides of the building and any pertinent details.
- Manufacturer's specifications for materials to include, but not limited to: roofing, siding, windows, doors, lighting, fencing, HVAC equipment and walls.
- Drawings accurately representing the changes to the proposed structure, including materials and overall dimensions. Drawings must be to scale.
- An official survey plat showing the proposed locations of HVAC units, fences, and sheds.
- Historic elevations or photographs should accompany any request to return a structure to an earlier appearance.

ALL APPLICATIONS: *Please read and check that you have read and understand the following items:*

- I understand that after reviewing the proposed alterations, BAR staff will invoice the appropriate filing fee in APEX. The application will not be processed until the fee is paid online.
- I understand the notice requirements and will return a copy of the three respective notice forms to BAR staff at least five days prior to the hearing. If I am unsure to whom I should send notice I will contact Planning and Zoning staff for assistance in identifying adjacent parcels.
- I, the applicant, or an authorized representative will be present at the public hearing.
- I understand that any revisions to this initial application submission (including applications deferred for restudy) must be accompanied by the BAR Supplemental form and revised materials.

The undersigned hereby attests that all of the information herein provided including the site plan, building elevations, prospective drawings of the project, and written descriptive information are true, correct and accurate. The undersigned further understands that, should such information be found incorrect, any action taken by the Board based on such information may be invalidated. The undersigned also hereby grants the City of Alexandria permission to post placard notice as required by Article XI, Division A, Section 11-301(B) of the 1992 Alexandria City Zoning Ordinance, on the property which is the subject of this application. The undersigned also hereby authorizes the City staff and members of the BAR to inspect this site as necessary in the course of research and evaluating the application. The applicant, if other than the property owner, also attests that he/she has obtained permission from the property owner to make this application.

APPLICANT OR AUTHORIZED AGENT:

Signature: _____ 

Printed Name: _____

Date: _____

OWNERSHIP AND DISCLOSURE STATEMENT

Use additional sheets if necessary

1. Applicant. State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1.		
2.		
3.		

2. Property. State the name, address and percent of ownership of any person or entity owning an interest in the property located at _____(address), unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1.		
2.		
3.		

3. Business or Financial Relationships. Each person or entity listed above (1 and 2), with an ownership interest in the applicant or in the subject property is required to disclose **any** business or financial relationship, as defined by Section 11-350 of the Zoning Ordinance, existing at the time of this application, or within the 12-month period prior to the submission of this application with any member of the Alexandria City Council, Planning Commission, Board of Zoning Appeals or either Boards of Architectural Review.

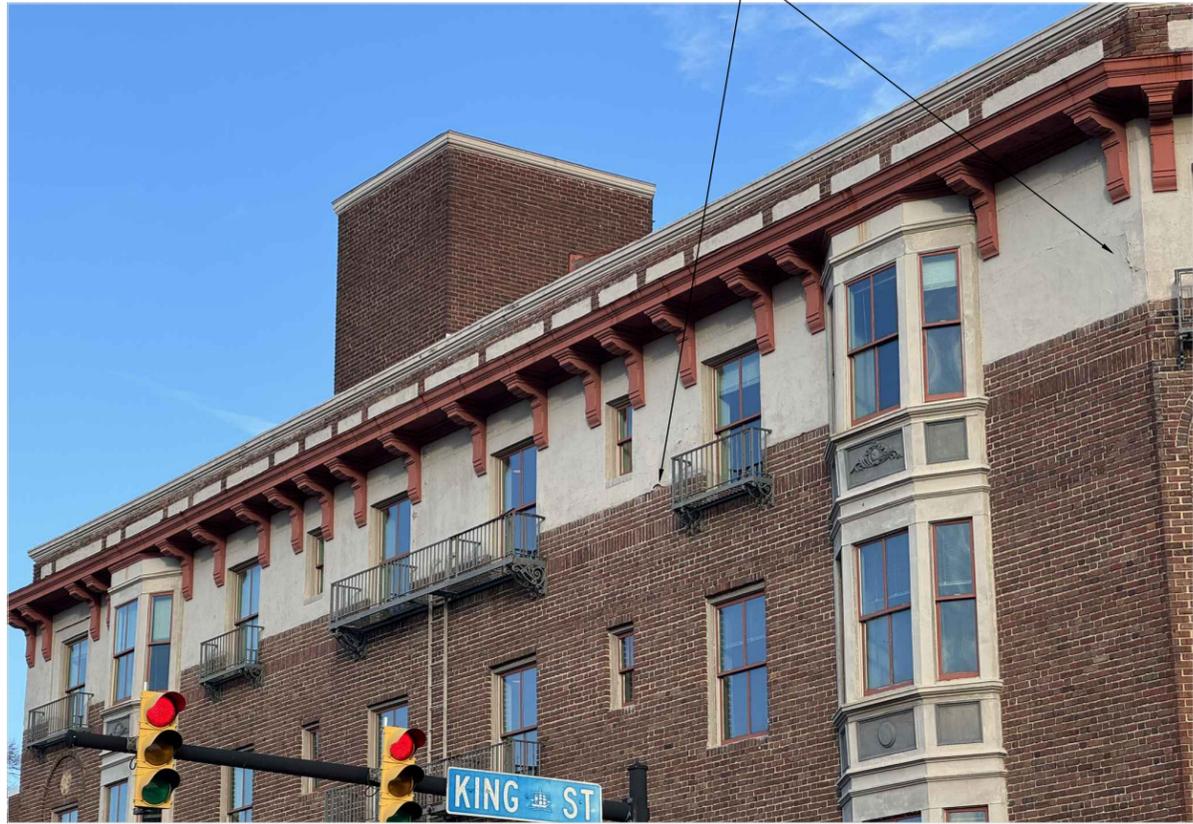
Name of person or entity	Relationship as defined by Section 11-350 of the Zoning Ordinance	Member of the Approving Body (i.e. City Council, Planning Commission, etc.)
1.		
2.		
3.		

NOTE: Business or financial relationships of the type described in Sec. 11-350 that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings.

As the applicant or the applicant's authorized agent, I hereby attest to the best of my ability that the information provided above is true and correct.

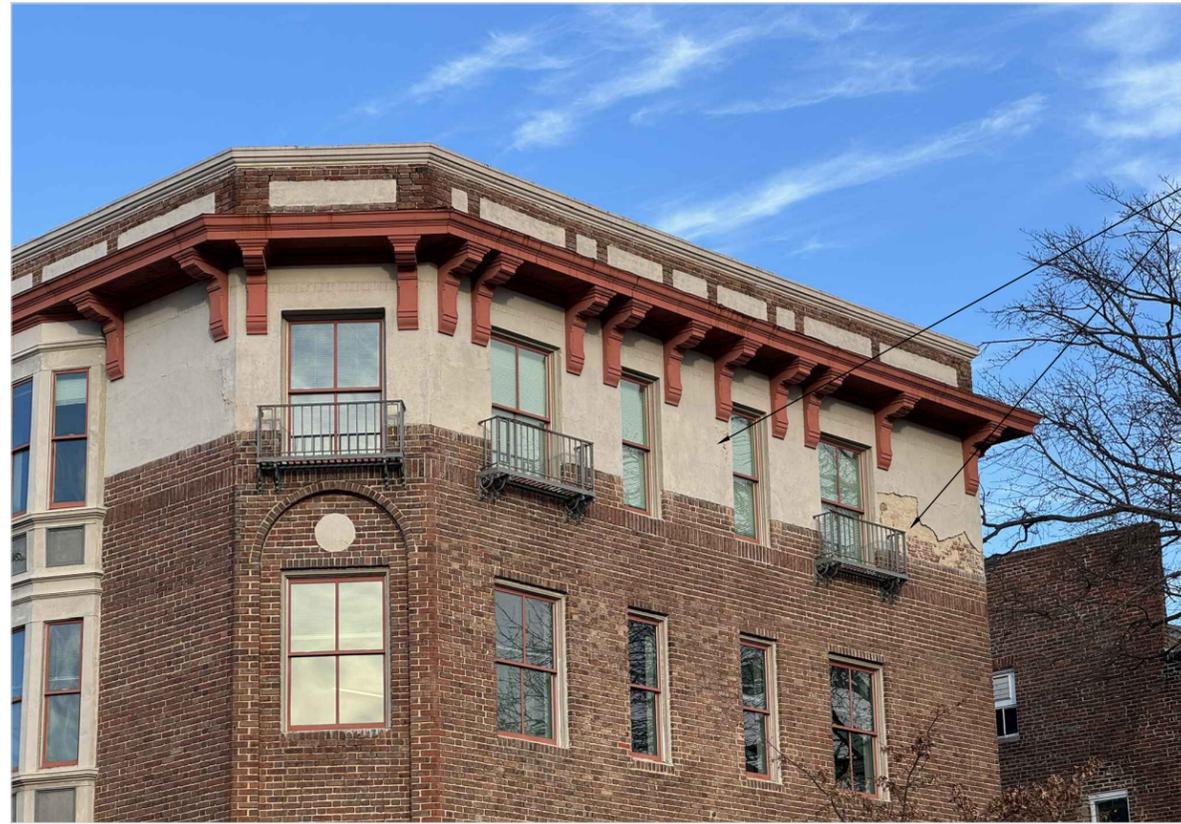
_____ Date
 Forrest Cherry Printed Name
 Forrest Cherry Signature

AREAS OF DELAMINATING STUCCO



1/A1 WEST FACADE—EXISTING CONDITIONS
NTS

AREAS OF DELAMINATING STUCCO



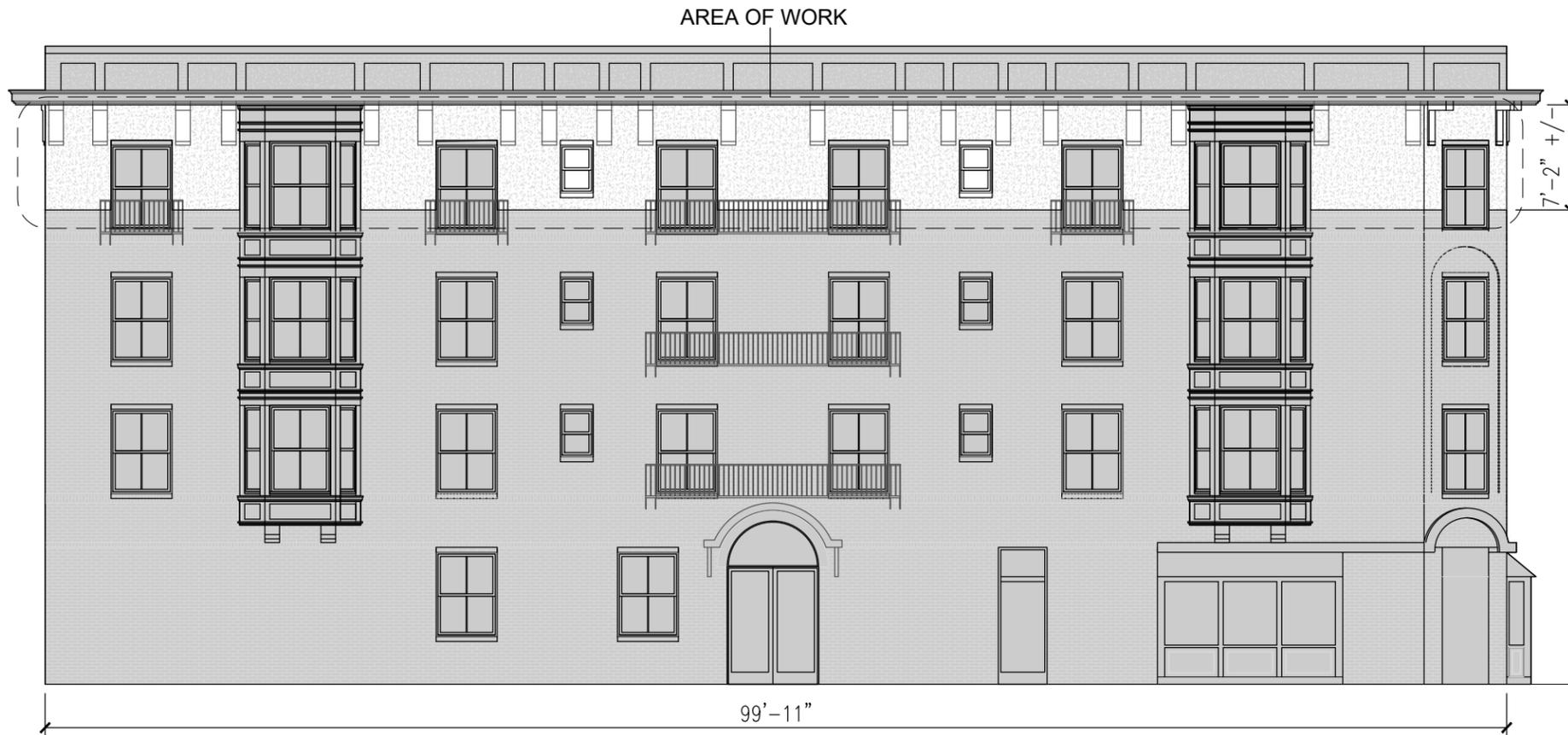
2/A1 SOUTH FACADE — EXISTING CONDITIONS
NTS



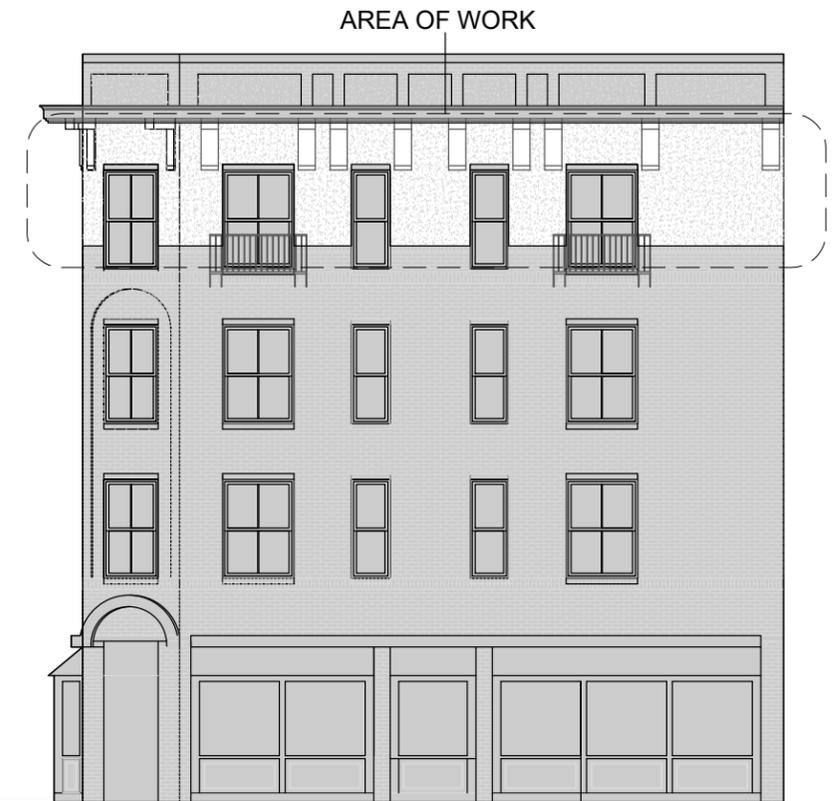
3/A1 EXISTING CONDITIONS PHOTO
NTS

FACADE REPAIR APPLICATION
101 NORTH COLUMBUS STREET
ALEXANDRIA, VA 22314
DEC. 15, 2025

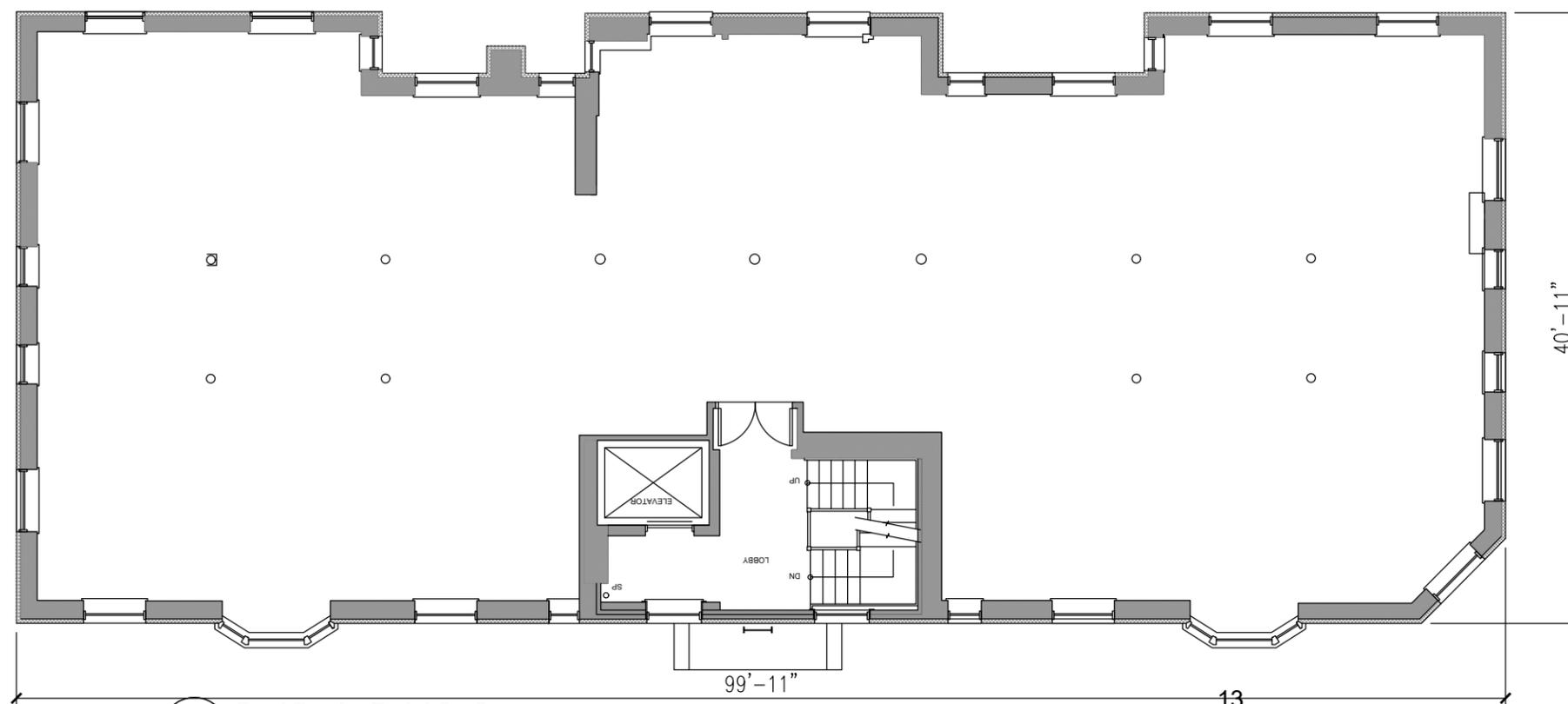




1/A2 WEST FACADE—EXISTING CONDITIONS
SCALE: 3/32=1'-0"



2/A2 SOUTH FACADE — EXISTING CONDITIONS
SCALE: 3/32=1'-0"



3/A2 EXISTING FLOOR PLAN
SCALE: 3/32=1'-0"

FACADE REPAIR APPLICATION
101 NORTH COLUMBUS STREET
ALEXANDRIA, VA 22314
DEC. 15, 2025



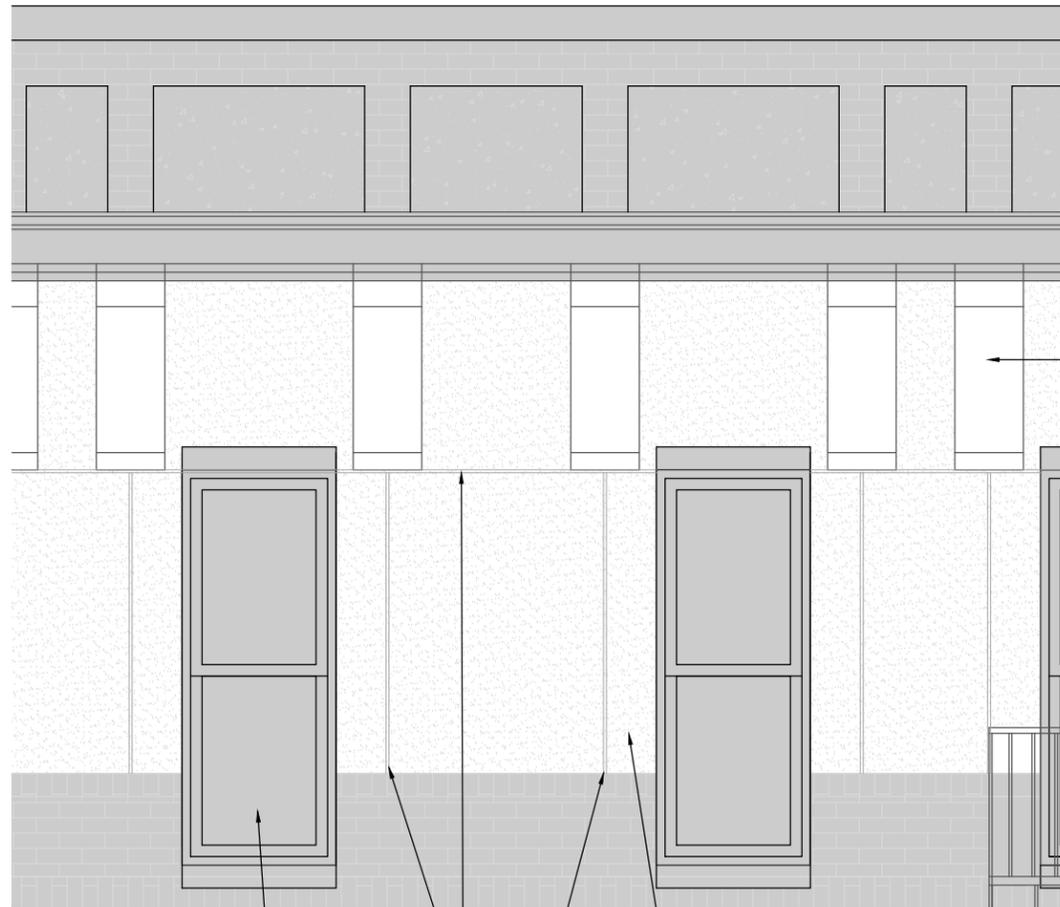
SHEET A2



1/A3 WEST FACADE - PROPOSED
SCALE: 1/8"=1'-0"



2/A3 SOUTH FACADE - PROPOSED
SCALE: 1/8"=1'-0"



EXISTING CORBELS - REPAIR AND REPAINT AS REQ.

EXISTING WINDOWS - REPAIR EXT. TRIM AS REQ.

ALUM. PANEL JOINTS

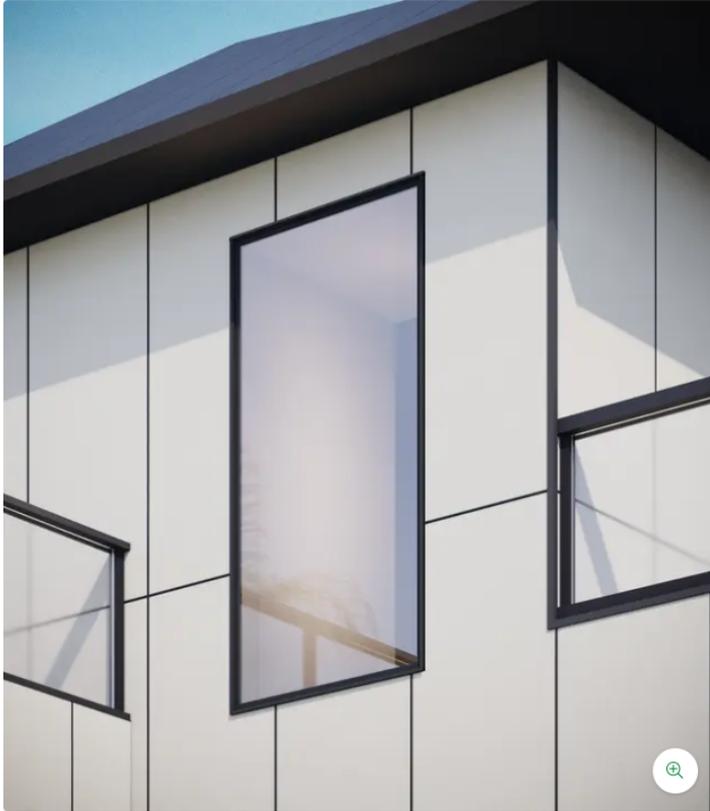
NEW CEMENT PANEL OVER EXISTING MASONRY - PAINTED TO MATCH EXISTING STUCCO COLOR

3/A3 ENLARGED ELEVATION DETAIL
SCALE: 1/8"=1'-0"

FACADE REPAIR APPLICATION
101 NORTH COLUMBUS STREET
ALEXANDRIA, VA 22314
DEC. 15, 2025



SHEET A3



Primed for Paint product samples are not available. Please check with your contractor or local dealer for availability in your area.

Hardie® Architectural Panel

Find your style

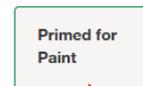
Your home is a blank canvas. Experiment with the unique textures and clean lines of Hardie® Architectural Panel products—primed for your choice of paint color—to create your masterpiece.

Select your texture

SELECTED FINISH



Select your color collection



PAIN T COLOR TO MATCH EXISTING STUCCO

Hardie® Architectural Panel

Submittal Form

08

Submitted to: Product: Fine Sand Mounded Sand Sea Grass

Project Name: Product Zone: HZ5® HZ10®

Submitted by: Product Width: 4ftx8ft 4ftx10ft 4ftx12ft

Date: Product Finish: Primed ColorPlus® Technology finish (Limited Availability)

Hardie® Architectural Panel

Specification Sheet

08

DIVISION: 07 00 00 THERMAL AND MOISTURE PROTECTION | SECTION: 07 46 46 FIBER CEMENT SIDING

HARDIE® ARCHITECTURAL PANEL

Manufacturer

James Hardie Building Products Inc.

The products are manufactured at the following locations, with quality control inspections by Intertek:

- Reno, Nevada

Compliance with the following codes

- 2006 through 2021 International Building Code (IBC)
- 2006 through 2021 International Residential Code (IRC)

For more information about other compliances and applicable uses, refer to the ESR-1844.

Features

- Noncombustible
- Dimensionally Stable
- Resistant to damage caused by pests
- Weather Resistant-Engineered for Climate®
- Impact resistant
- Sustainable

Use

Hardie® fiber cement panels are used as exterior wall covering. The product complies with IBC Section 1403.9 and IRC Section R703.10. The product may be used on exterior walls of buildings of Type I, II, III, IV, and V construction.

Description

Hardie® Architectural Panel are single-faced, cellulose fiber-reinforced cement (fiber cement) product. Hardie® Architectural Panel comply with ASTM C1186, as Grade II, Type A; have a flame-spread index of 0 and a smoke-developed index of 5 when tested in accordance with ASTM E84; and are classified as noncombustible when tested in accordance with ASTM E136.

Available Sizes

Product	Width (inches)	Length (feet)	Thickness (inches)
Hardie® Architectural Panel Fine Sand	48	8, 10, 12	5/16
Hardie® Architectural Panel Mounded Sand	48	8, 10, 12	5/16
Hardie® Architectural Panel Sea Grass	48	8, 10, 12	5/16

* Product not available in ColorPlus® Technology finishes, primed only.

Weight: 2.49 lbs. per square foot

Texture & Finish

Hardie® Architectural Panel comes with distinct textures and a variety of finishes. The product is available in Fine Sand, Mounded Sand, and Sea Grass textures. Finish options are primed for field paint, or factory finished with ColorPlus® Technology finishes.

Color availability varies by region.

Engineered for Climate®

Hardie® Architectural Panel is engineered for performance in specific weather conditions by climate zones as identified by the following map.



Performance Properties

General Property		Test Method	Unit or Characteristic	Requirement	Result
PHYSICAL ATTRIBUTES	Dimensional Tolerances	ASTM C1185	Length	± 0.5% or ± 1/4 in	Pass
			Width	± 0.5% or ± 1/4 in	
			Thickness	± 0.04 in	
			Squareness	Δ in diagonals ≤ 1/32 in/ft of sheet length. Opposite sheet sides shall not vary in length by more than 1/32 in/ft	
			Edge Straightness	≤ 1/32 in/ft of length	
	Density, lb/ft ³	ASTM C1185		As reported	83
	Water Absorption, % by mass	ASTM C1185		As reported	36
	Water Tightness	ASTM C1185	Physical Observations	No drop formation	Pass
	Flexural Strength	ASTM C1185	Wet conditioned, psi	>1015 psi	Pass
			Equilibrium conditioned, psi	>1450 psi	
THERMAL	Thermal Conductivity	ASTM C177	(BTU/(hr·ft ² ·F))/inch	As reported	2.07
	Actual Thermal Conductivity		(K _{eff})		6.62
	Thermal Resistance		R=1/ K _{eff}		0.48
	Actual Thermal Resistance		(R)		0.15
DURABILITY	Warm Water Resistance	ASTM C1185	Physical Observations	No visible cracks or structural alteration	Pass
	Heat/Rain Resistance	ASTM C1185	Physical Observations	No visible cracks or structural alteration	Pass
	Freeze/Thaw Resistance	ASTM C1185	Physical Observations	No visible cracks or structural alteration	Pass
			Mass Loss, %	≤ 3.0%	
	Freeze/Thaw, % strength retention	≥ 80%			
	UV Accelerated Weathering Test	ASTM G23	Physical Observations	No cracking, checking, or crazing	Pass
FIRE CHARACTERISTICS	Surface Burning Characteristics	ASTM E84	Flame Spread Index (FSI)		0
			Smoke Developed Index (SDI)		≤ 5
			Fuel Contributed		0
			NFPA Class		A
			Uniform Building Code Class	As reported	1
	International Building Code® class		A		
	Noncombustibility	ASTM E136	Noncombustible	Pass/fail	Pass
Fire Resistance Rated Construction	ASTM E119	Fire Resistance Rating	1-hour	Note 1	

Note 1: See Intertek Listing or ICC-ES ESR-1844 for rated assemblies

Installation

Install Hardie® Architectural Panel in accordance with:

- Hardie® Architectural Panel installation instructions
- ICC-ES ESR-1844
- Requirements of authorities having jurisdiction

Warranty

Hardie® Architectural Panel: 30-year, Non-Prorated, Limited Warranty
 ColorPlus® Technology: 15-year Limited Finish Warranty

Sustainable Design Contribution

- Regionally sourced content- vary by project location
- LEED Avoidance of certain chemicals or LBC Red List Compliance

Detailed product information for LEED projects, or other state or regional sustainability programs is available through James Hardie Technical Services.

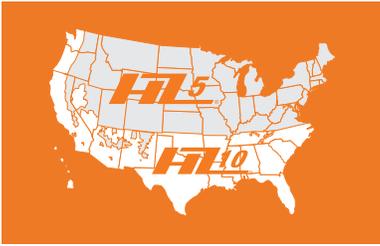
Storage and Handling

Store flat and keep dry and covered prior to installation.

Technical Services

Contact James Hardie Technical Services online at JamesHardie.com, or by phone at (800) 426-4051

IMPORTANT: Failure to install and finish this product in accordance with applicable building codes and James Hardie written application instructions may affect system performance, violate local building codes, void the product-only warranty and lead to personal injury. **DESIGN ADVICE:** Any information or assistance provided by James Hardie in relation to specific projects must be approved by the relevant specialists engaged for the project eg. builder, architect or engineer. James Hardie will not be responsible in connection with any such information or assistance.



Hardie® Architectural Panels

Multifamily / Commercial Installation Requirements

EFFECTIVE SEPTEMBER 2024

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIE® ZONE PRODUCT INSTRUCTIONS BY VISITING HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE).

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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.

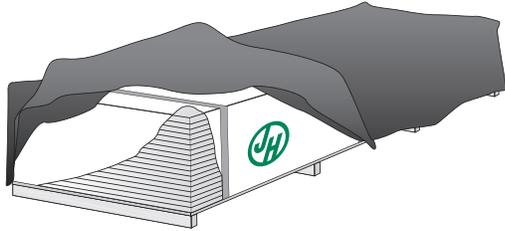




2 Safe Working Practices

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 fibre 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

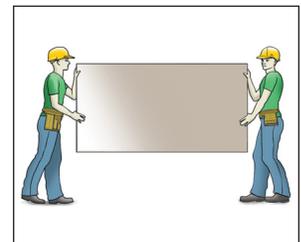
When handling Hardie® Architectural Panels care should be given to prevent damage to the edges and/or the ColorPlus finish.

- Utilize 2 persons to carry product.
- Carry panels as shown in Figure 2.1 and Figure 2.2.

Figure 2.1



Figure 2.2



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. 2.3), and locate close to installation area.

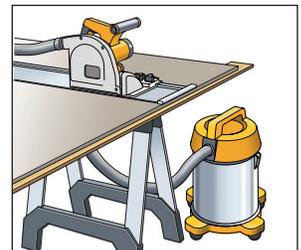
Figure 2.3



Use a HardieBlade® to cut James Hardie fibre cement products. A track saw with vacuum system (Fig. 2.4) 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 2.4



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

PANEL JOINT CONSIDERATIONS

Hardie® Architectural Panels have been designed to feature a “V” groove look, achieved by placing Y trim at vertical panel joints. When considering the location of panel joint layout, use 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 joint placement options section within this document)
2. Align/center to key features
(ex. windows, doors, etc.) (fig. 3.1)
3. Align/center to the structure
(ex. walls, gables, etc.) (fig. 3.2)

Figure 3.1 Align to Key Feature

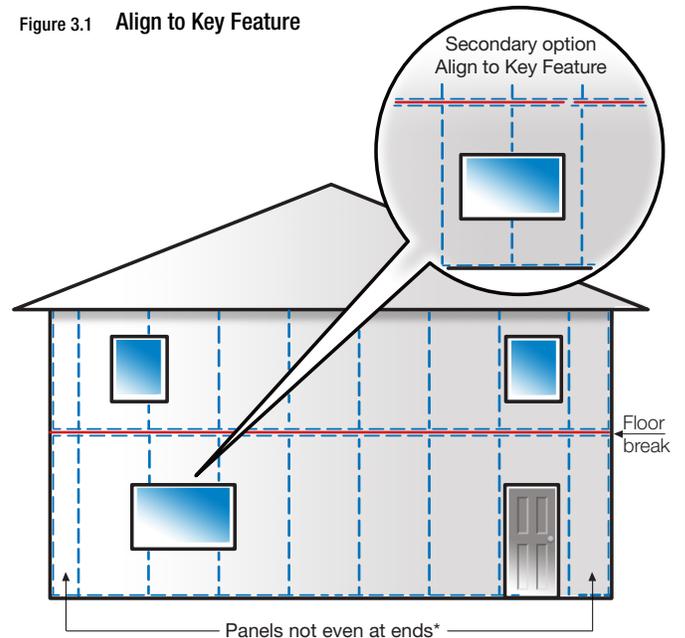
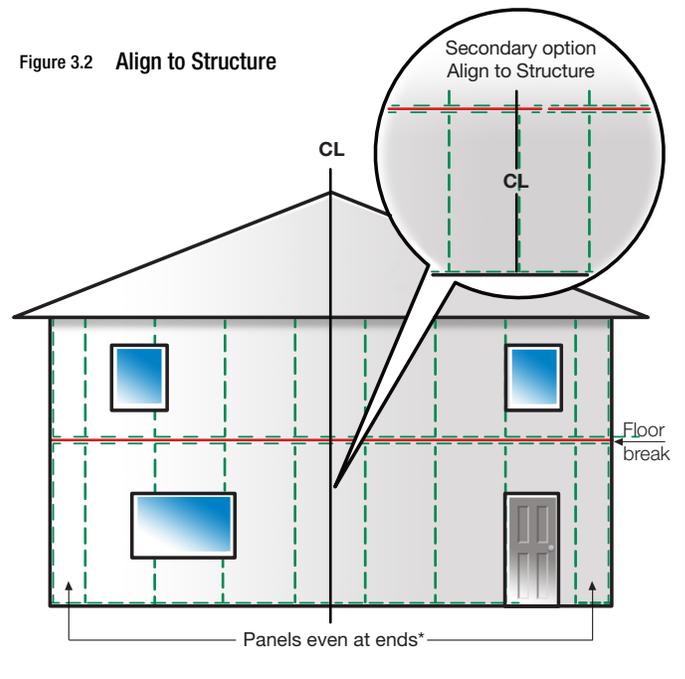


Figure 3.2 Align to Structure



*** Design Advice:**

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



4 General Requirements

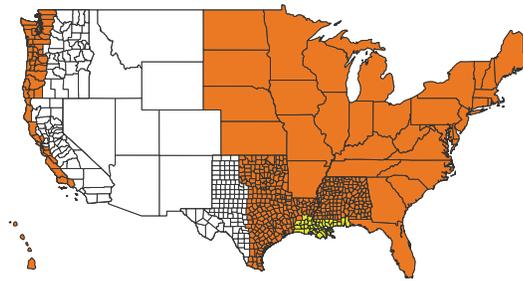
IMPORTANT: Read these instructions in their entirety before attempting installation.

- Refer to table 1 for multifamily/commercial drainage requirements for Hardie® Architectural Panels.
- These instructions to be used for installation on Commercial / Multi-Family only. **For Single 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 Hardie® products over non-nailable substrates (ex: gypsum, foam, etc.) can be located in [JH Tech Bulletin 19 at www.jameshardie.com](http://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 Hardie™ Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.
- 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 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 [Technical Bulletin in “Expansion Characteristics of Hardie® Siding Products” at www.jameshardie.com.](http://www.jameshardie.com)
- 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-1844). 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 Hardie™ Weather Barrier, consult James Hardie at 1-866-4Hardie or www.hardiewrap.com

Table 1: Hardie® Architectural Panels Wall Drainage Requirements

All national, state, and local building codes must be followed, and where they are more stringent than James Hardie Installation requirements, state and local requirements will take precedence. Consult the “Exterior Wall Drainage Requirements” bulletin at www.jameshardiecommercial.com for additional guidance and a more detailed list of drainage required areas.

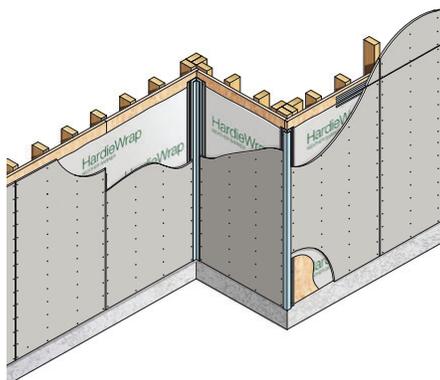


MINIMUM REQUIREMENTS BY STATE/COUNTY	
(A)	WRB ¹ Dry Climates
(B)	DRAINAGE PLANE (E.G. DRAINABLE WRB) WITH 90% DRAINAGE EFFICIENCY ² Moist and Marine Climates
(C)	RAINSCREEN (MIN. 3/8 IN. AIR GAP) ³ Severe Wind Driven Rain Climate

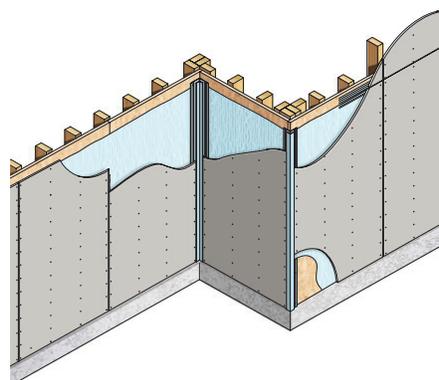
1 Water-resistive Barrier and drainage requirements as defined by building code.
 2 Water-resistive Barrier as defined by local building code that is manufactured in a manner to enhance drainage; must meet minimum 90% drainage efficiency when tested in accordance with ASTM E2273 or other recognized national standards.
 3 Water-resistive Barrier (WRB) as defined by building code and a minimum 3/8 in. (10mm) air space between the WRB and the panel siding (formed by minimum 3/8 in. furring).

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

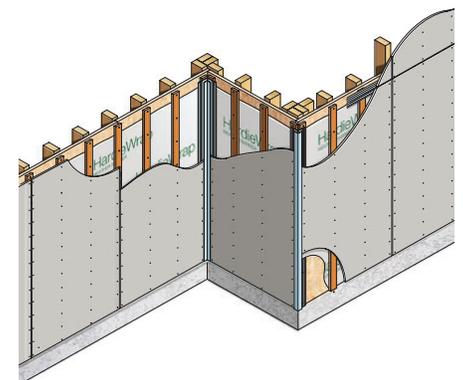
A: Dry Climates: Weather Resistive Barrier



B: Moist and Marine Climates: Drainage Plane (Drainable WRB with min. 90% drainage efficiency)



C: Wind Driven Climates: Rainscreen



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



CLEARANCE AND FLASHING REQUIREMENTS

Figure 4.1
Roof to Wall

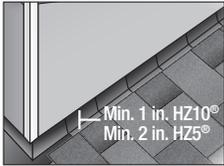


Figure 4.2
Horizontal Flashing

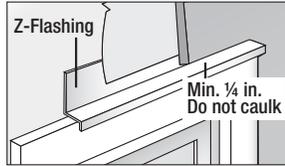


Figure 4.3
Kickout Flashing



Figure 4.4
Slabs, Path, Steps to Siding

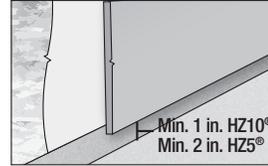


Figure 4.5
Deck to Wall

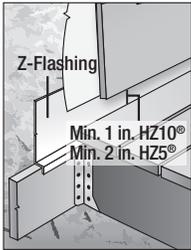


Figure 4.6
Ground to Siding

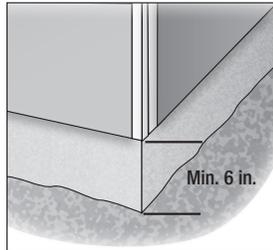


Figure 4.7
Gutter to Siding



Figure 4.8
Sheltered Areas

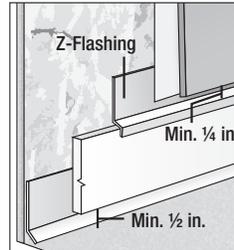


Figure 4.9
Mortar/Masonry

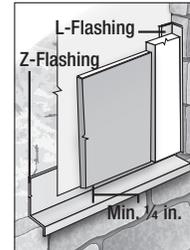


Figure 4.10
Drip Edge

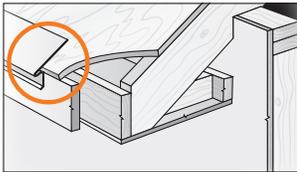


Figure 4.11
Block Penetration
(Recommended for HZ10®)

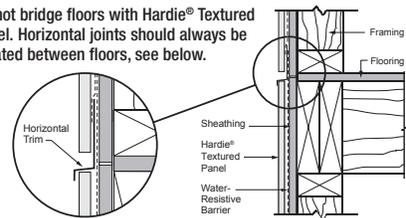


Figure 4.12
Valley/Shingle Extension



Figure 4.13
Bridging Floors

Do not bridge floors with Hardie® Textured Panel. Horizontal joints should always be created between floors, see below.





FASTENING REQUIREMENTS

Position fasteners 3/8 in. from panel edges and no closer than 2 in. away from corners. Do not nail into corners. Refer to TDS (Technical Data Sheet) or ESR-1844 for Hardie Architectural Panels in the back of this document for wind load ratings (page 20).

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. 4.15)
 - 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. 4.16)
 - a. Avoid surface damage
 - b. Depth control
3. Gun angle to wall (fig. 4.14)
4. Nails should be driven flush or proud. If left proud, then tap 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

SCREWS TO STEEL REQUIREMENTS

When screws are used to attach panels to steel studs/furring, the screws shall have wing tips. If screws do not have wing tips, then pre-drilling is required. (Not applicable when using pins). Follow chart below for pre-drilling:

SCREW	PRE-DRILL	HEAD DIAMETER
No. 8	7/32 in.	Min 0.323 in.
No. 10	1/4 in.	Min 0.323 in.

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 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 (ESR-1844).
- **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

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. 4.17

Figure 4.14

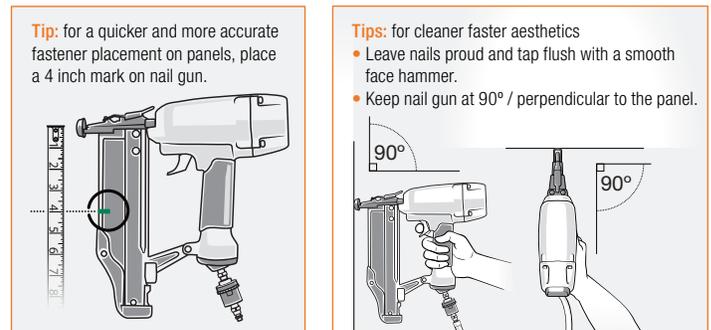


Figure 4.15

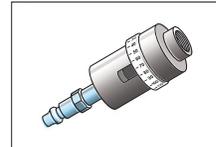


Figure 4.16



Figure 4.17



BEST

FLUSH

PROUD*

OVER DRIVEN

Finish Nail

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.

*Use a smooth face hammer and lightly tap flush.

SIDING NAIL

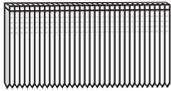
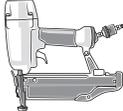
SNUG

FLUSH

DO NOT	DO NOT	DO NOT USE
<p>UNDER DRIVE</p>	<p>OVER DRIVE</p> <p>SLANT</p>	<p>ALUMINUM FASTENERS</p>
<p>IF, THEN</p>		<p>CLIPPED HEAD NAILS</p>
<p>WOOD FRAME</p> <p>HAMMER FLUSH</p>	<p>STEEL FRAME</p> <p>REMOVE & REPLACE</p>	<p>STAPLES</p>
<p>IF, THEN ADDITIONAL NAIL</p>		
<p>FACE NAIL</p> <p>COUNTERSINK & FILL</p>		

5 Tools

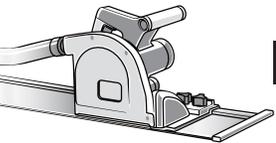
TOOLS FOR FASTENING

<p>1 Straight 16 Gauge Stainless Finish Nails</p>	<p>2 Straight Finish Nailer</p>	<p>3 Inline Air Regulator</p>
		
<p>Fasten using minimum 1-1/2 inch straight 16 gauge stainless steel nails. DO NOT use 15 gauge angled finish nails.</p>	<p>16 gauge straight finish nailer for attaching trims and panels.</p>	<p>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</p>

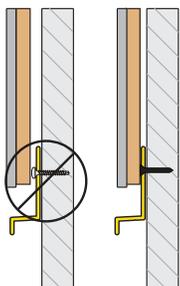
TOOLS FOR CUTTING METAL TRIMS

<p>1 Miter Saw</p>	<p>2 Non-Ferrous Metals Blade</p>	<p>3 Tin Snips</p>
		
<p>To cut metal trims</p>	<p>80-tooth</p>	<p>Cutting flashings</p>

TOOLS FOR CUTTING HARDIE® ARCHITECTURAL PANELS

<p>1 Track Saw With Vacuum dust collection system</p>	<p>2 7-1/4 in Circular Saw with Vacuum dust collection system</p>	<p>3 HardieBlade® Saw Blade</p>
	<p>OR</p>  <p>Cutting against straight edge is recommended.</p> 	 <p>Poly-diamond blade for James Hardie® fiber cement.</p>

FASTENING METAL TRIMS



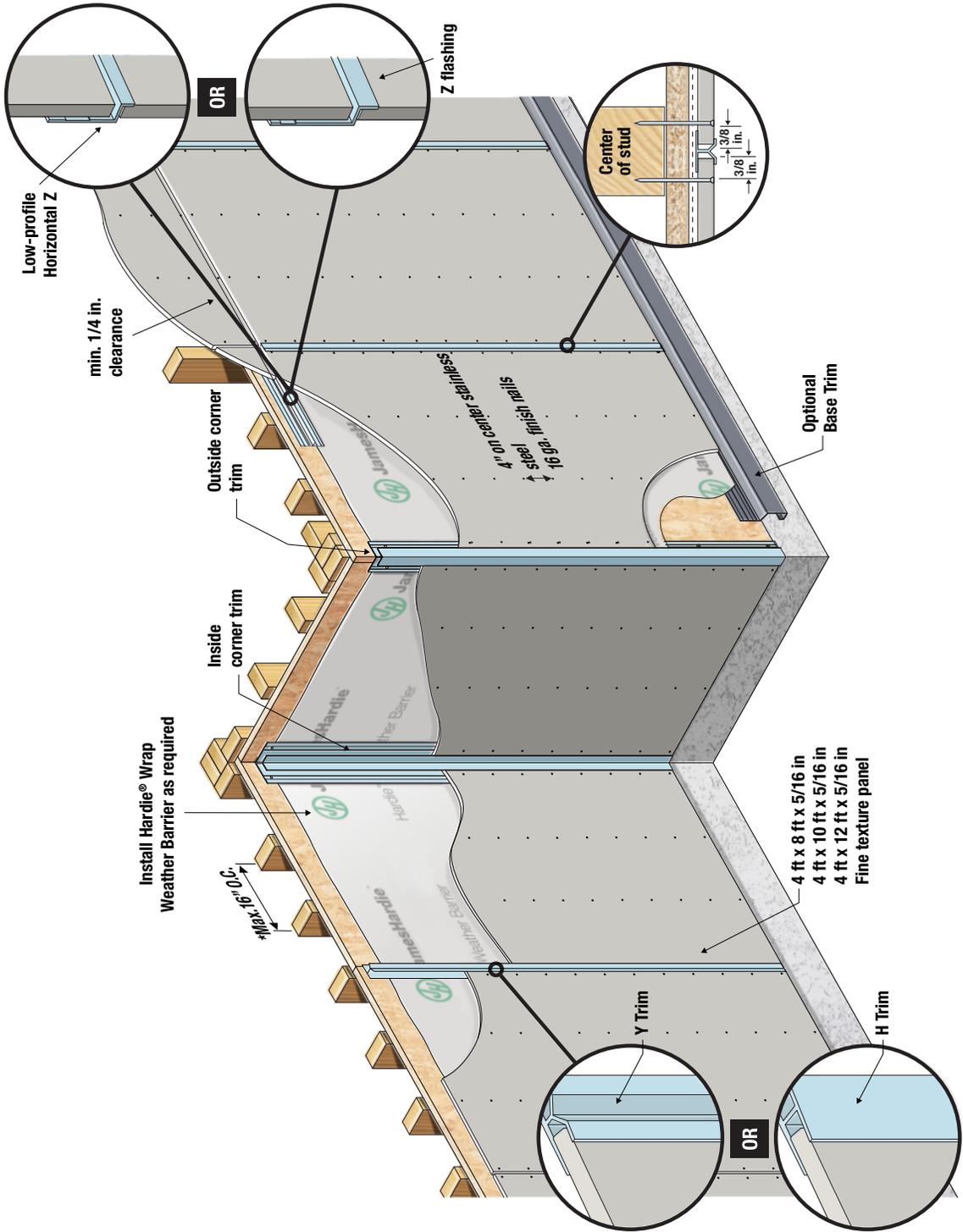
Attach trims to:
Wood - using a staple, or finish nail or flat head nail.

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



6 Products and Accessories

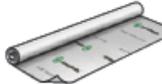
INSTALLATION EXAMPLE



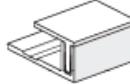
*Max 16 in. O.C. stud spacing applies to finish nail direct to stud application only. See Technical Data Sheet for nail spacing and additional framing options.



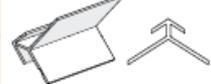
ACCESSORIES

<p>1 Joint Sealant</p>  <p>General purpose polyurethane exterior grade joint sealant. Not supplied by James Hardie.</p>	<p>2 Hardie™ Weather Barrier</p>  <p>Water barrier and vapor permeable membrane.*</p>	<p>3 Seam Tape</p>  <p>Hardie™ Seam Tape or equivalent.</p>	<p>4 Flex Flashing</p>  <p>Hardie™ Flex Flashing or equivalent.</p>	<p>5 Pro-Flashing</p>  <p>Hardie™ Pro-Flashing or equivalent.</p>	<p>6 Foam Back Sealing Tape (EPDM)</p>  <p>Minimum 2 in. x 1/16 in. thick. Installed under vertical joints to improve water tightness.</p>
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TRIM

<p>7 J Trim</p>  <p>Aluminium extrusion to be used as a trim at abutments. (e.g. soffits, masonry, etc. Not recommended for windows & doors)</p>	<p>8 2-Piece J Trim</p>  <p>Aluminium extrusion to be used as a trim at abutments. (e.g. windows, doors, soffits, masonry, etc.)</p>	<p>9 Low-Profile Inside Corner Trim</p>  <p>Aluminium extrusion to be used for inside corners.</p>	<p>10 Inside Corner Trim</p>  <p>Aluminium extrusion to be used for inside corners.</p>	<p>11 Low-Profile Outside Corner Trim</p>  <p>Aluminium extrusion to be used for outside corners.</p>	<p>12 Low Profile 45° Inside Corner Trim</p>  <p>Aluminium extrusion to be used for bay windows.</p>
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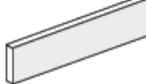
VERTICAL TRIM OPTIONS

<p>13 Low Profile 45° Outside Corner Trim</p>  <p>Aluminium extrusion to be used for bay windows.</p>	<p>14 Vertical Y Trim</p>  <p>Aluminium extrusion to be used along vertical butt joints.</p>	<p>15 Vertical H Trim</p>  <p>Aluminium extrusion to be used along vertical butt joints. For horizontal panel orientations only.</p>
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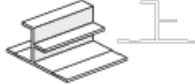
HORIZONTAL TRIM OPTIONS

<p>16 Low-Profile Horizontal Z-Trim</p>  <p>Aluminium extrusion to be used along vertical butt joints.</p>	<p>17 Horizontal Z Flashing Trim</p>  <p>Aluminium extrusion to be used along horizontal control joints.</p>
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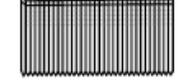
OPTIONAL ACCESSORIES

<p>18 Base Trim</p>  <p>Aluminium extrusion to be used as a base edge solution.</p>	<p>19 HardieTrim® Boards</p>  <p>Fiber cement trim for corners and windows. Can be mounted horizontally or vertically.</p>
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TRANSITIONAL TRIMS

<p>20 Low-Profile Inside Corner Transition Trim</p>  <p>Aluminium extrusion to be used for transitions at inside corners.</p>	<p>21 Low-Profile Outside Corner Transition Trim</p>  <p>Aluminium extrusion to be used for transitions at outside corners.</p>	<p>22 Low-Profile Vertical Transition Trim</p>  <p>Aluminium extrusion to be used for transitions at mid-wall</p>
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FASTENER DETAILS

<p>23 Straight 16 Gauge Stainless Finish Nails</p>  <p>Min. 1 1/2 in. straight 16 gauge stainless steel finish nails. DO NOT use 15 gauge angled finish nails.</p>

BEST



FLUSH **PROUD*** **OVER DRIVEN**

Finish Nail
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.

*Use a smooth face hammer and lightly tap flush.

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

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

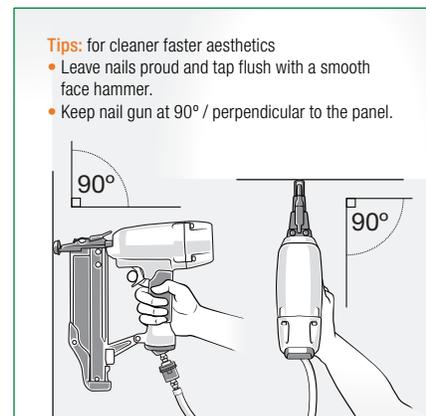
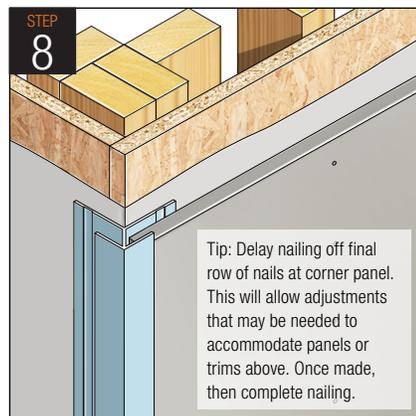
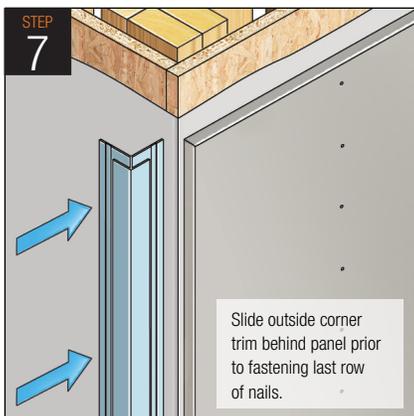
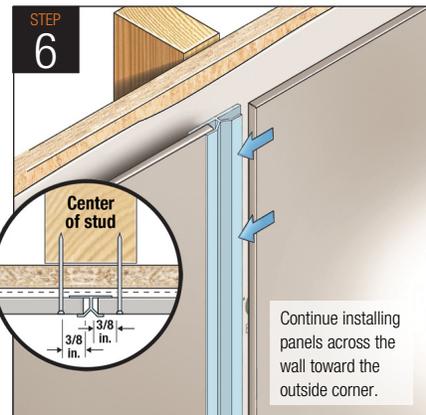
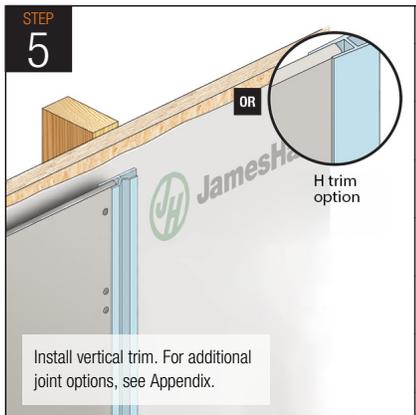
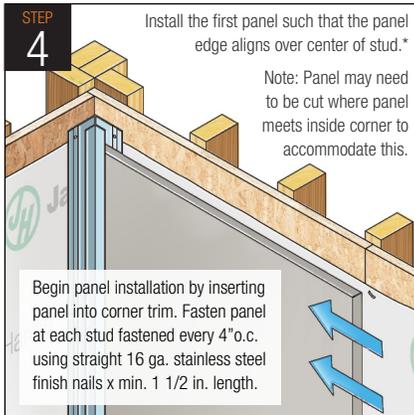
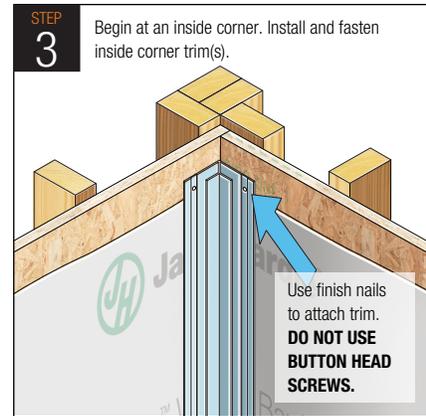


7 Panel Installation

PANEL INSTALLATION PROCESS - VERTICAL ORIENTATION

Follow Table 1 on page 4 for wall drainage requirements:

- A. Dry Climate: Code approved WRB required.
- B. Moist and Marine Climate: Drainage wrap required.
- C. Severe Wind Driven Rain Climate: 3/8 in. rainscreen required.



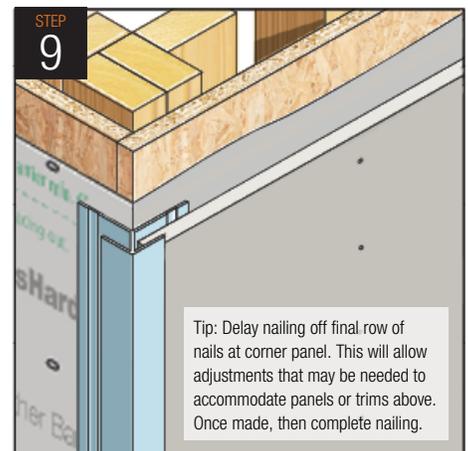
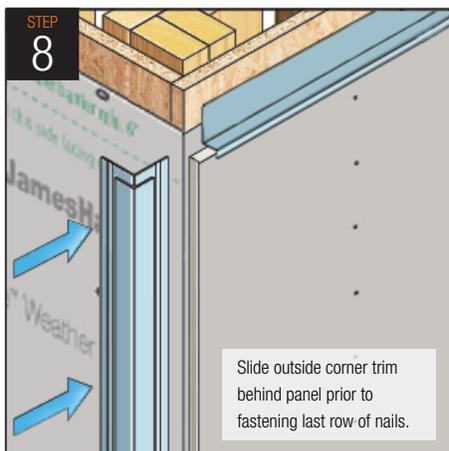
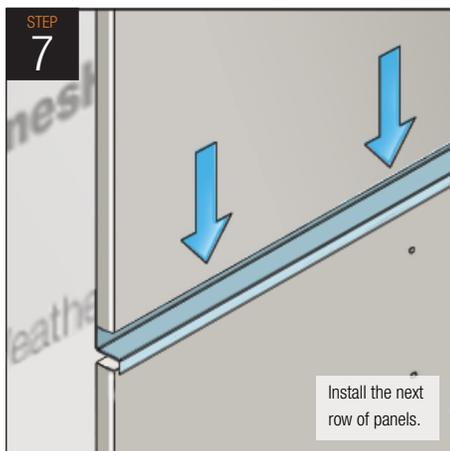
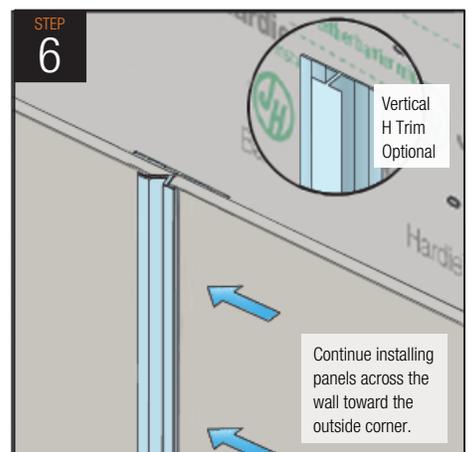
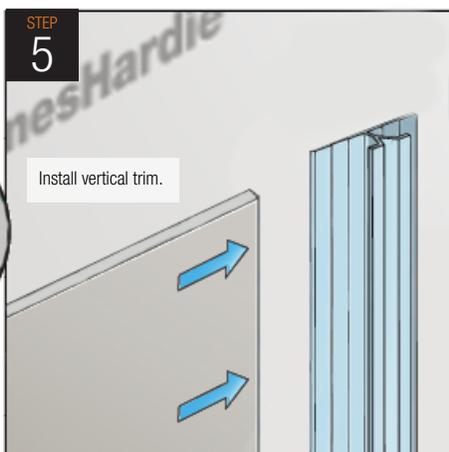
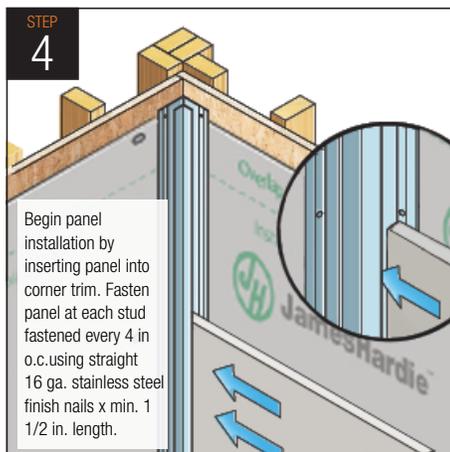
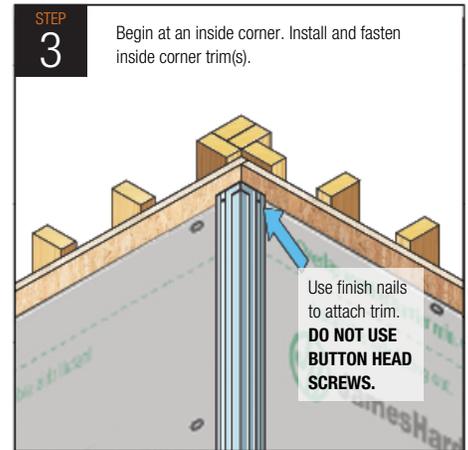
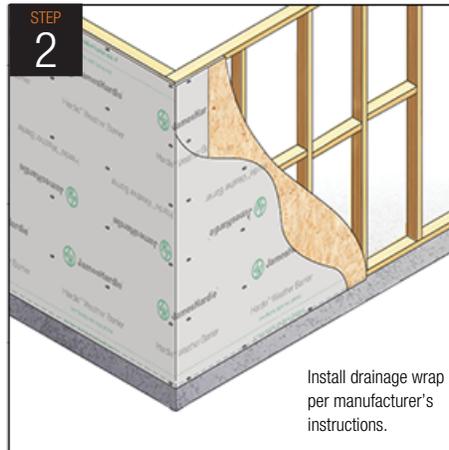
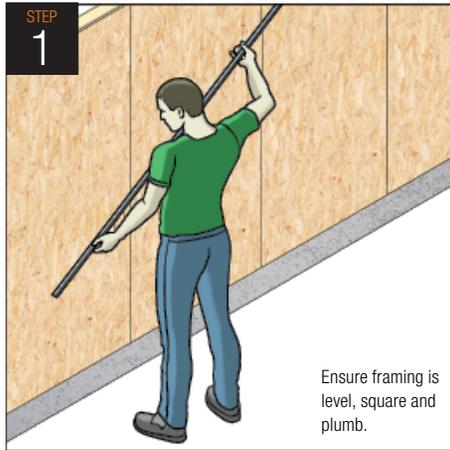
*Refer to the Hardie® Architectural Panel Technical Data Sheet for fastening options.



PANEL INSTALLATION PROCESS - HORIZONTAL ORIENTATION

Follow Table 1 on page 4 for wall drainage requirements:

- A. Dry Climate: Drain wrap* required.
- B. Moist and Marine Climate: Drain wrap* required.
- C. Severe Wind Driven Rain Climate: 3/8 in. rainscreen required.



*Minimum 90% drainage efficiency when tested in accordance with ASTM E2273.



8 Construction Details

CONSTRUCTION DETAILS - JUNCTIONS

Figure 8.1 - Slab Junction Detail

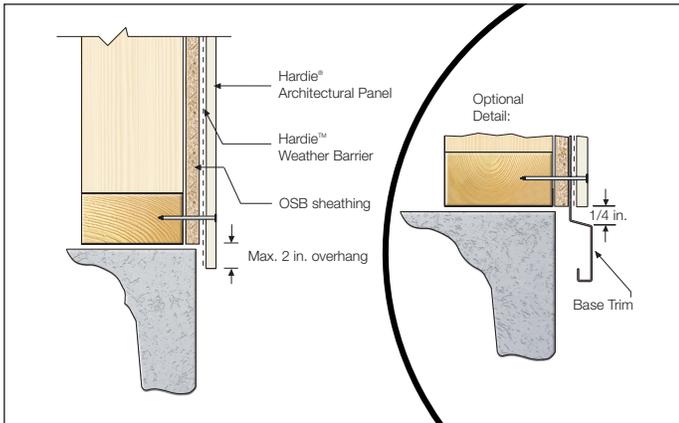


Figure 8.2 - Eave Junction Detail

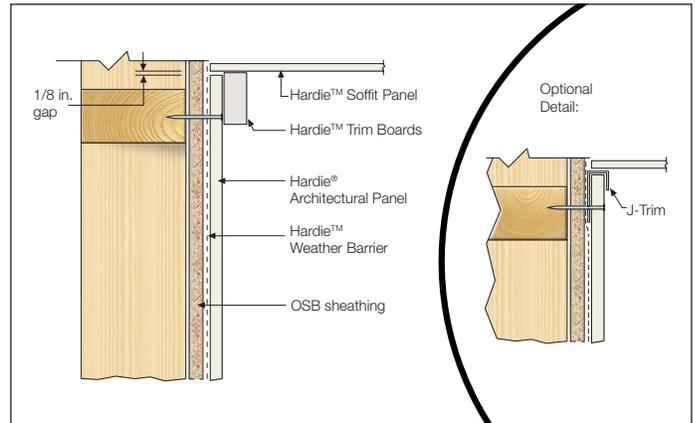


Figure 8.3 - Upper Floor Junction Option 1 - Low Profile Z Flashing

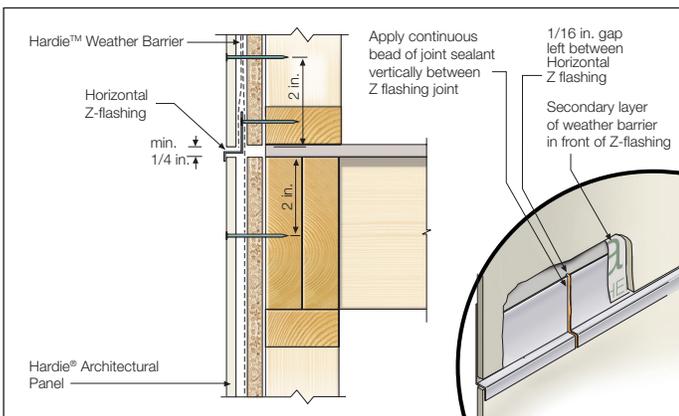


Figure 8.4 - Upper Floor Junction Option 2 - Z Flashing

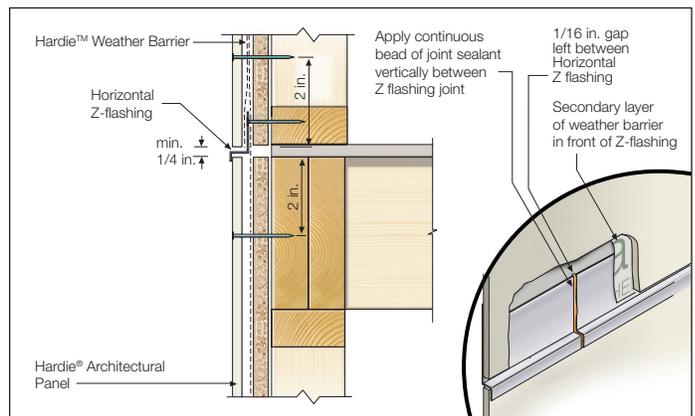
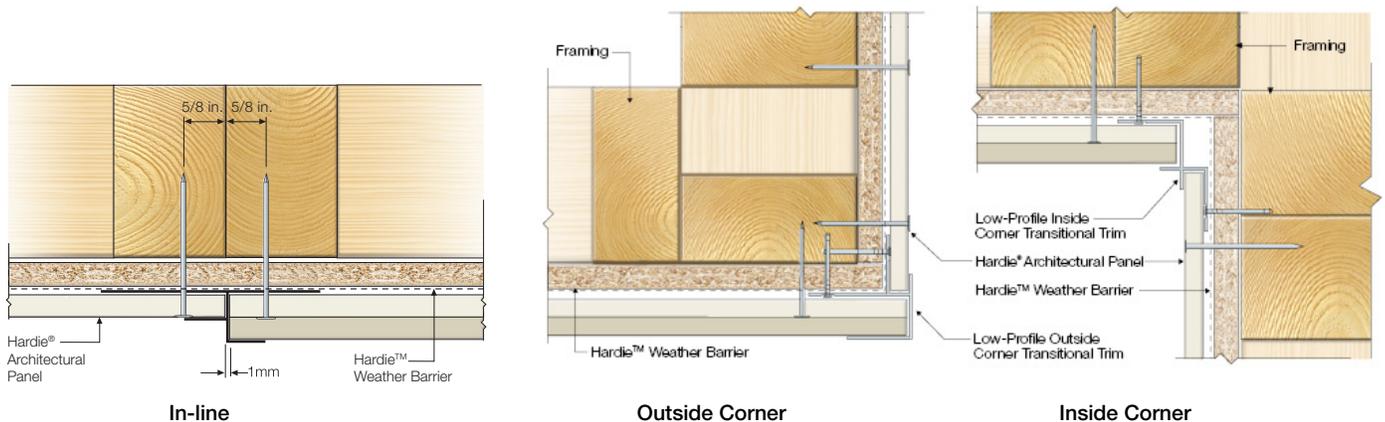


Figure 8.5 - Transitions to additional James Hardie® products





CONSTRUCTION DETAILS - CORNER DETAILS

Figure 8.6 - Trim Over Outside Corner Option

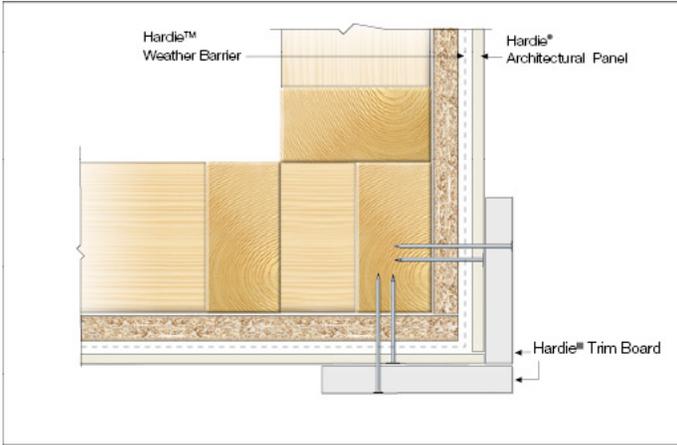


Figure 8.7 - Aluminium Outside Corner Option

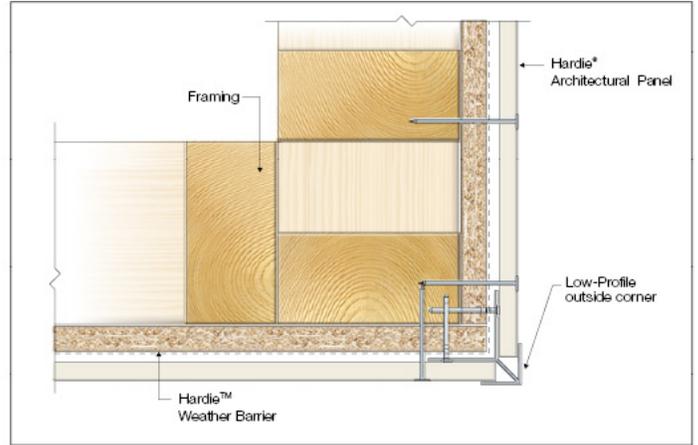


Figure 8.8 - Trim Over Inside Corner Option

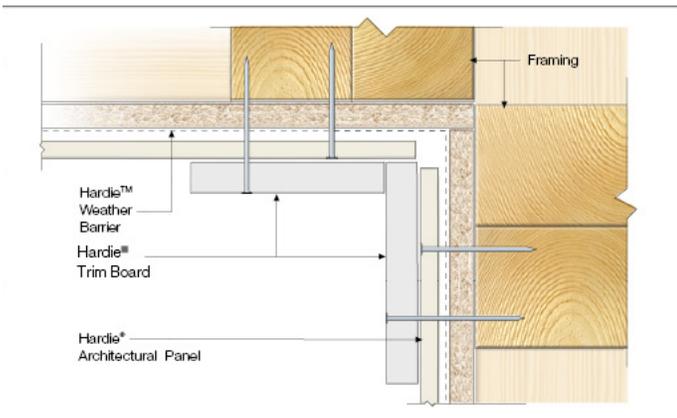


Figure 8.9 - Aluminium Inside Corner Detail

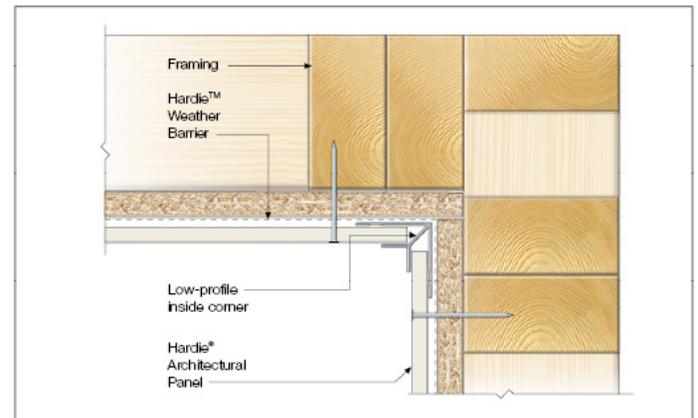
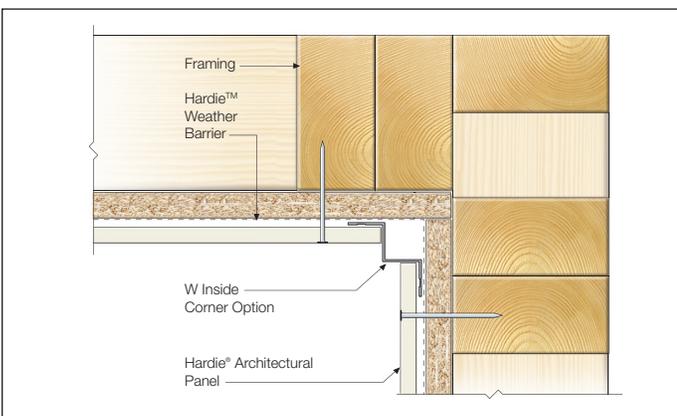


Figure 8.10 - W Inside Corner Option





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

Figure 8.11 - Fastening over non-nailable substrates

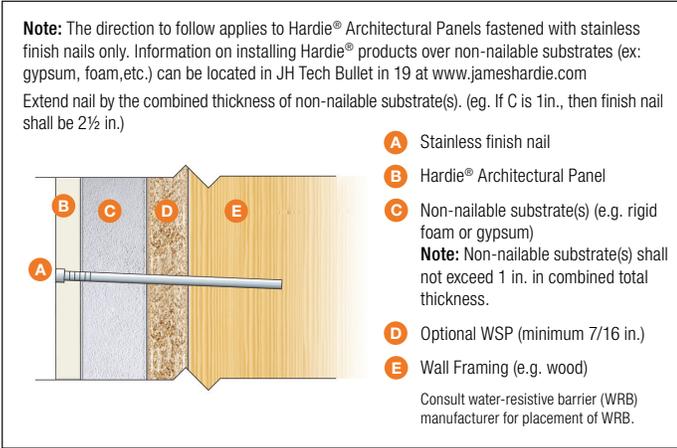
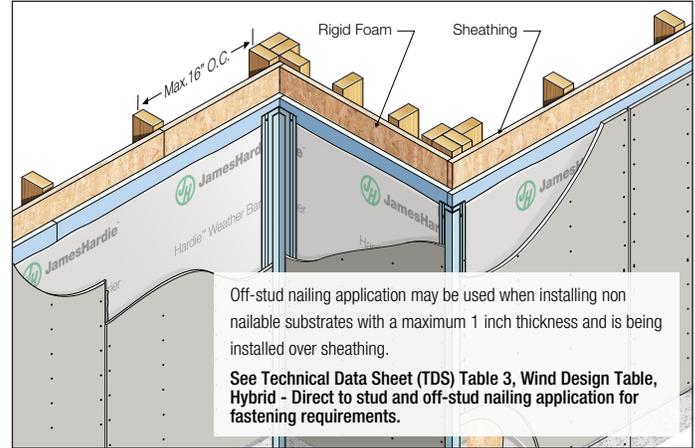
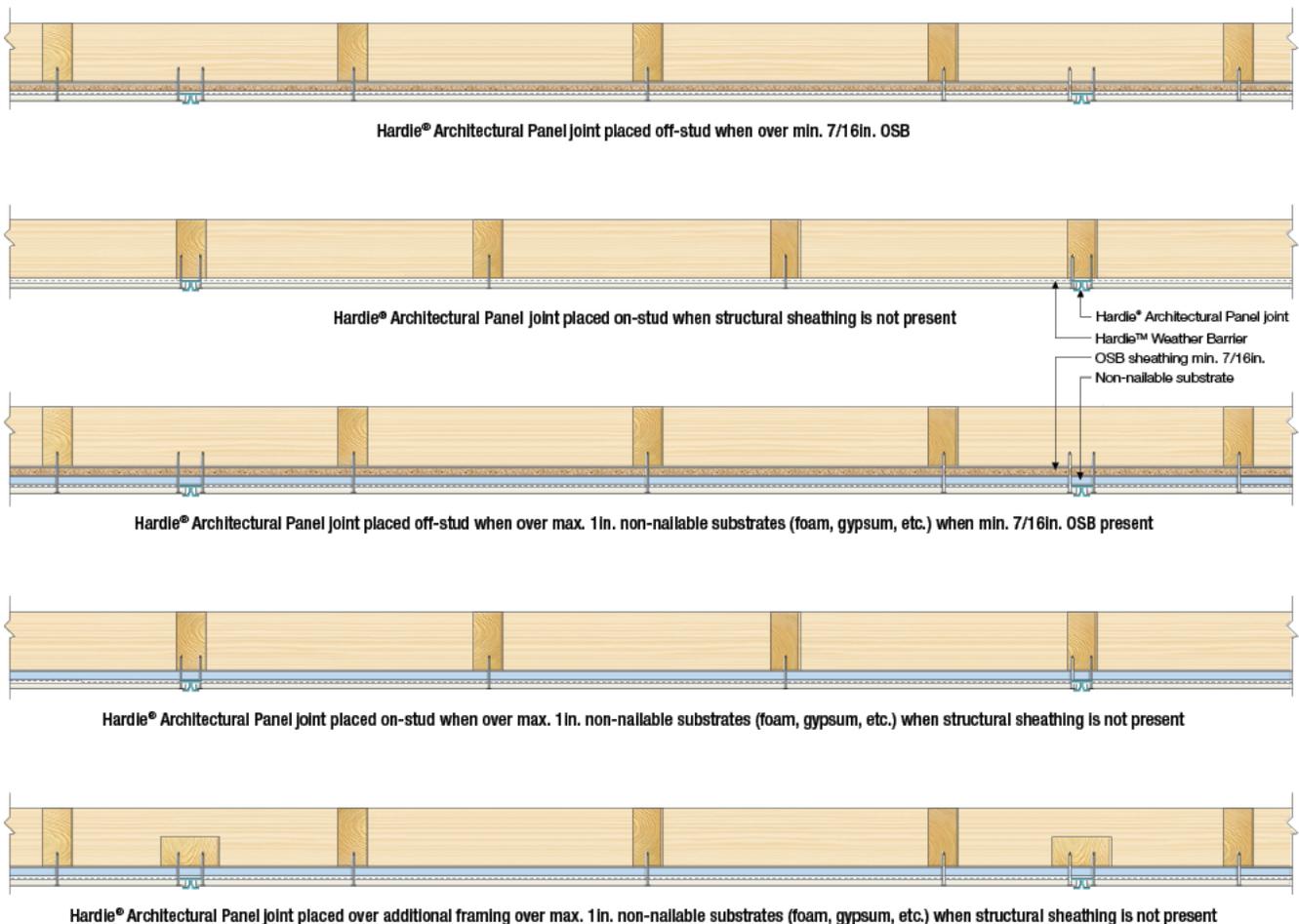


Figure 8.12 - Hybrid - Direct to stud and off-stud nailing when installing non-nailable substrates



JOINT PLACEMENT OPTIONS

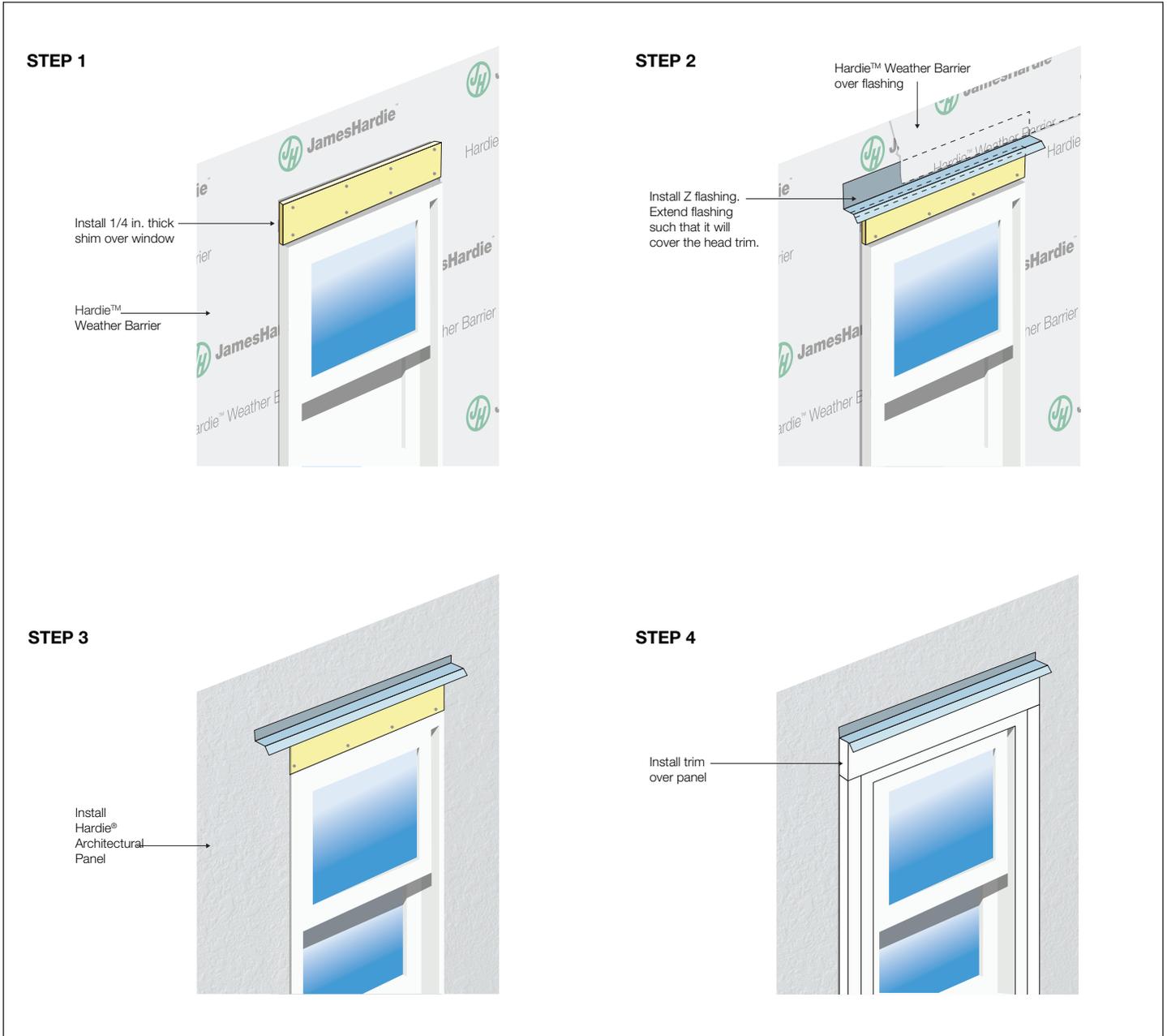
Figure 8.13 - Panel joint placement options





CONSTRUCTION DETAILS - WINDOW DETAIL OPTIONS

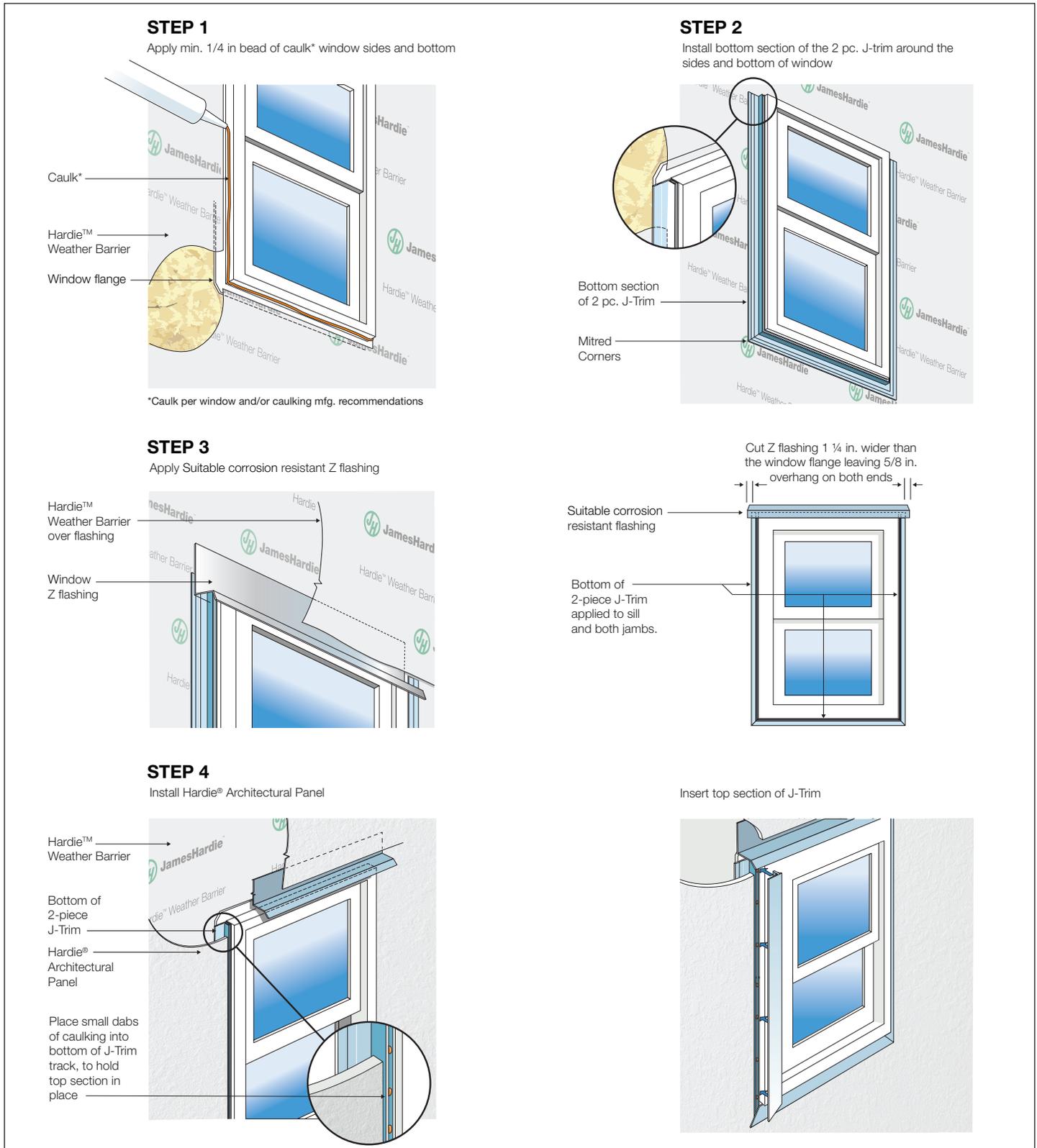
Figure 8.14 - Window With 'Trim Over' Option





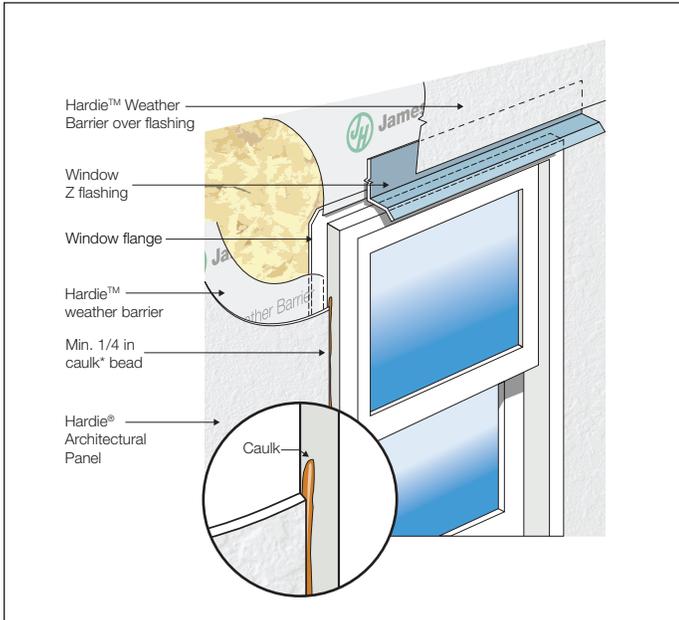
CONSTRUCTION DETAILS - WINDOW DETAIL OPTIONS CONTINUED

Figure 8.15 - Window With '2pc. J-Trim' Option



CONSTRUCTION DETAILS - WINDOW DETAIL OPTIONS CONTINUED

Figure 8.16 - Window with Panel Butt Option

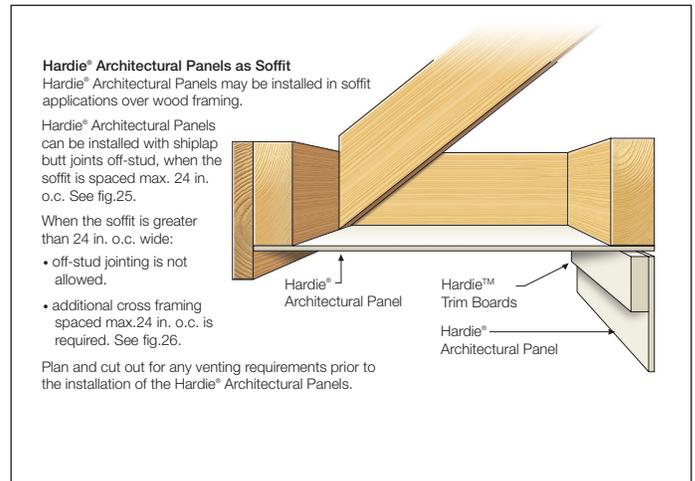


*Caulk in accordance with caulk manufacturers instructions.

CONSTRUCTION DETAILS - SOFFIT DETAILS

- Finish nails are not allowed when installing Hardie® Architectural Panel as a soffit. **Full headed nails only.**
- For proper fastener selection, spacing and wind load rating refer to ESR 1844.

Figure 8.17 - Hardie® Architectural Panels as Soffit



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

Figure 8.18 - Greater than 24in. Wide Soffit

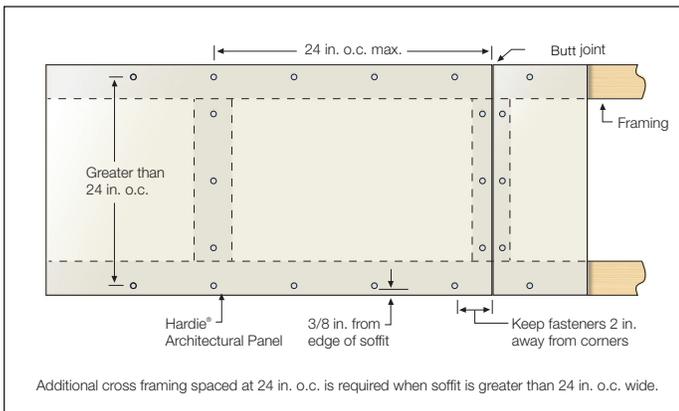
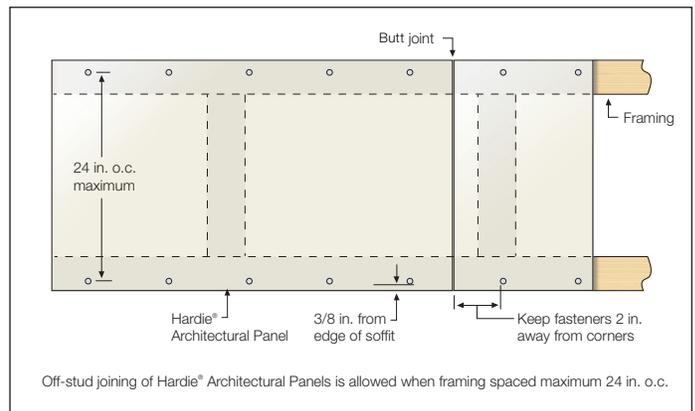


Figure 8.19 - Maximum 24in. Wide Soffit





9 Finishing & Maintenance

CUT EDGE TREATMENT

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

CARE & MAINTENANCE

Routinely perform the following to help maintain the appearance and performance of 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 Hardie® products. James Hardie factory primed products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when 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 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 Hardie® products ColorPlus® Technology finishes dealer.
- Treat all other non-factory cut edges using the ColorPlus® Technology edge coaters, available from your 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 Hardie® products with ColorPlus® Technology finishes.

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

When repainting 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 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 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 fibre cement product. Low pressure water spray, a soft medium bristle (nonmetal) brush is most suitable for cleaning fibre cement products. Acid washing can damage fibre 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.



10 Appendix

ALTERNATIVE VERTICAL JOINT TREATMENTS

Install panels in moderate contact (Fig. 1), alternatively joints may also be covered with battens, PVC, or metal jointers or caulked (Not applicable to ColorPlus® Finish) (Fig. 2-4).

Figure 1

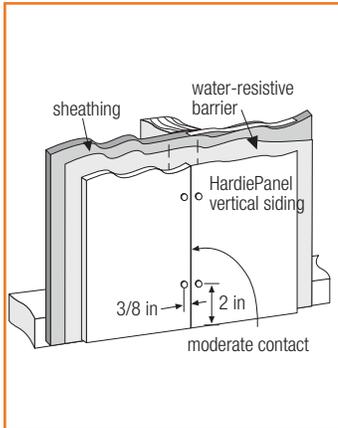


Figure 2

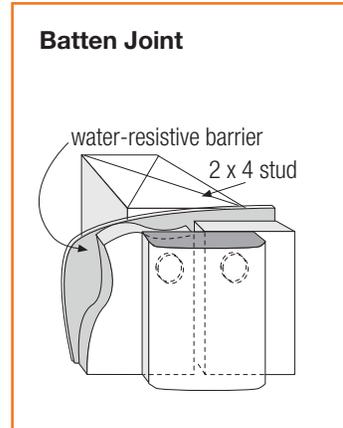


Figure 3

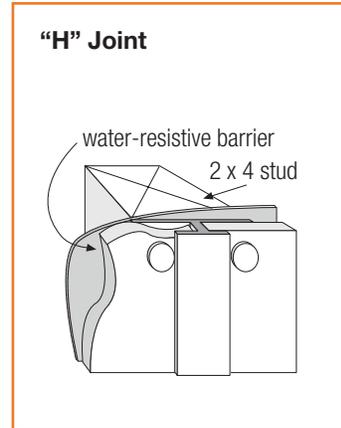
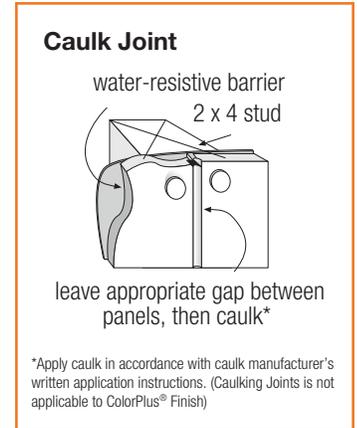


Figure 4





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

Document Scope

This document applies to the following Hardie® Architectural Panel- Fine Sand, Architectural Panel- Mounded Sand, Architectural Panel- Sea Grass. 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

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.*
- *2017, 2020, & 2023 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, 2020, & 2023 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 & 2021 IBC, 2017, 2020, & 2023 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 building code.
- 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 www.JamesHardiePros.com.

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

	ASTM Test Method	General Property	Unit or Characteristic	Requirement	Result
Physical Attributes	ASTM C1185	Dimensional Tolerances	Length	± 0.5% or ±1/4in	Pass
			Width	± 0.5% or ±1/4in	
			Thickness	± 0.04 in	
			Squareness	<1/32 in/ft of length	
			Edge Straightness	<1/32 in/ft of length	
ASTM C1185	Density, lb./ft³		As reported	<83	
ASTM C1185	Water Tightness	Physical Observations	No drop formation	Pass	
ASTM C1185	Flexural Strength	Wet conditioned, psi	>1015 psi	Pass	
ASTM C1185		Equilibrium conditioned, psi	>1450 psi	Pass	
ASTM C1185	Warm Water Resistance, Observations	Physical Observations	No visible cracks or structural alteration	Pass	
Durability	ASTM C1185	Heat/Rain Resistance	Physical Observations	No visible cracks or structural alteration	Pass
	ASTM C1185	Freeze/Thaw Resistance	Physical Observations Mass Loss, % Freeze/Thaw, % strength retention	No visible cracks or structural alteration ≤ 3.0% ≥ 80%	Pass
Fire Characteristics	ASTM E84	Surface Burning Characteristics	Flame Spread Index (FSI) Smoke Developed Index (SDI) International Building Code®	As reported	0 0 Class A
	ASTM E136	Non-combustibility		As reported	Pass



Hardie® Architectural Panels

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

Table 2, Wind Design Table, Exposed Fastening

Allowable Wind Speed (mph) for Hardie® Architectural Panels (Analytical Method in ASCE 7-10, 7-16 Chapter 30)

Product ¹	Minimum Thickness (in.)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (in.)	Allowable Design load (psf)	Building Height (ft.) ^{2,3}	2017 & 2020 FBC, 2012 & 2015 IBC, 2015 & 2018 IRC (Ultimate Design Wind Speed, V _{ult}), 5,9 2018 IBC (Basic Design Wind Speed, V) ¹¹			2006, 2009 & 2012 IRC 2006 & 2009 IBC (Nominal Design Wind Speed, V _{asd}) ^{4,10,12,13}		
								Wind exposure category	B	C	D	Wind exposure category	B
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1 1/2" long, stainless Finish Nail	4 inches along studs	2X4 wood ⁶	16	33.8	0-15	153	139	126	119	108	98
							20	153	135	123	119	105	95
							40	147	126	116	114	97	90
							60	139	120	112	108	93	87
Hardie® Architectural Panel ¹	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
							20	160	141	129	124	109	100
							40	154	131	121	119	102	94
							60	145	126	117	113	98	91
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1.25" long, stainless Finish Nail	4 inches o.c. vertically into furring only	2x4 wood or 20 ga. (33 mils) steel framing with 3/4" thick by 3.5" wide WSP furring (SG=0.50) ¹⁴	16	27.7	0-15	139	126	114	107	97	89
							20	139	122	112	107	95	86
							40	133	114	105	103	88	81
							60	126	109	101	97	85	78
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1.25" long, stainless Finish Nail	4 inches o.c. vertically into furring only	2x4 wood or 20 ga. (33 mils) steel framing with 3/4" by 3.5" wide SPF furring (SG=0.42) ¹⁴	16	21.4	0-15	122	110	100	94	85	78
							20	122	107	-	94	83	-
							40	117	-	-	90	-	-
							60	110	-	-	85	-	-

1. Installation must be in accordance with manufacturer's installation instructions
2. 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)
3. Linear interpolation of building height (≤ 60ft) and wind speed is permitted.
4. 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
5. 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
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.
8. Wood Structural Sheathing panel must have a specific gravity of 0.50 or higher.
9. V_{ult} = ultimate design wind speed.
10. V_{asd} = nominal design wind speed.
11. 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 V_m per Section R301.2.1.3 of the 2012 IRC.
13. 2017, 2020, & 2023 FBC, 2018 IBC Section 1609.3.1 Eq. 16-33, V_{asd} = V_{ult} (0.6)^{0.5}
14. 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 design engineer to resist the allowable design wind loads for the maximum wind speeds as tabulated.



Hardie® Architectural Panels

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

Table 3, Wind Design Table, Hybrid - Direct to Stud and Off-Stud Nailing Application

Allowable Wind Speed (mph) for Hardie® Textured Panels (Analytical Method in ASCE 7-10, 7-16 Chapter 30)

Product ¹	Minimum Thickness (in.)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (in.)	Allowable Design load (psf)	Building Height (ft.) ^{2,3}	2017 & 2020 FBC, 2012 & 2015 IBC, 2015 & 2018 IRC (Ultimate Design Wind Speed, V _{ult}), ^{5,9} 2018 IBC (Basic Design Wind Speed, V) ¹¹			2006, 2009 & 2012 IRC 2006 & 2009 IBC (Nominal Design Wind Speed, V _{asd}) ^{4,10,12,13}		
								Wind exposure category			Wind exposure category		
								B	C	D	B	C	D
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1 1/2" long, stainless Finish Nail	4 inches along studs & panel edges. See figure 1	2X4 wood ⁷ with min 7/16" Wood Structural Panel ⁹ Sheathing attached per code	16	42.7	0-15	172	156	142	133	121	110
							20	172	152	138	133	117	107
							40	165	141	130	128	109	101
							60	156	135	126	121	105	97
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1 1/2" long, stainless Finish Nail	4 inches along studs & panel edges. See figure 2	2X4 wood ⁸ with min 7/16" Wood Structural Panel ⁹ Sheathing attached per Code	24	31.2	0-15	147	133	121	114	103	94
							20	147	130	118	114	100	92
							40	141	121	111	109	93	86
							60	133	116	-	103	90	-
Hardie® Architectural Panel ¹	5/16	16 Gauge, 1 1/2" long, stainless Finish Nail	4 inches along studs & panel edges. See figure 2	2X4 wood ⁷ with min 7/16" Wood Structural Panel ⁹ Sheathing attached per code	24	28.0	0-15	139	126	115	108	98	89
							20	139	123	112	108	95	87
							40	134	114	-	104	89	-
							60	126	-	-	98	-	-

- Applies to Hardie® Architectural Panel – Fine Sand, Hardie® Architectural Panel – Mounded Sand, Hardie® Architectural Panel – Sea Grass, Hardie® Architectural Panel – Sculpted Clay 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)
- Linear interpolation of building height (≤ 60ft) 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.
- 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.
- V_{ult} = ultimate design wind speed.
- V_{asd} = nominal design wind speed.
- V = basic design wind speed.
- 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 V_{fm} per Section R301.2.1.3 of the 2012 IRC.
- 2017 & 2020 FBC, 2018 IBC Section 1609.3.1 Eq. 16-33, V_{asd} = V_{ult}(0.6)0.5



Hardie® Architectural Panels

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

Figure 1, Fastening Configuration for 16" O.C. Wood Frame: Hybrid - Direct to Stud and Off-Stud Nailing Application

- 4 in o.c. along studs
- 4 in o.c. along panel edges
 - Edges may be attached to WSP sheathing only

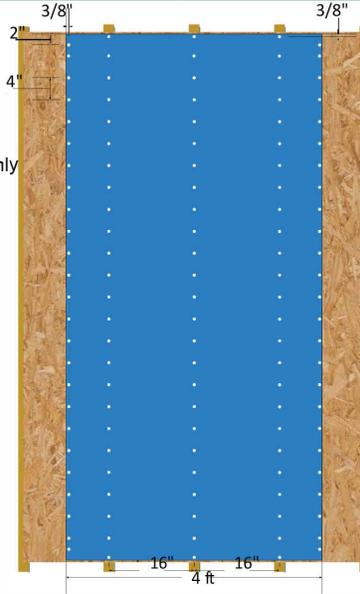
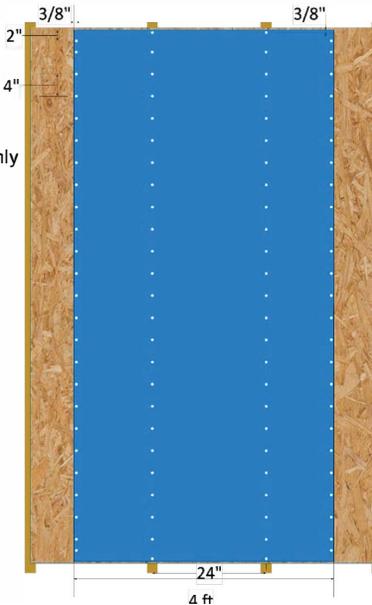


Figure 2, Fastening Configuration for 24" O.C. Wood Frame: Hybrid - Direct to Stud and Off-Stud Nailing Application

- 4 in o.c. along studs
- 4 in o.c. along panel edges
 - Edges may be attached to WSP sheathing only



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SILICA WARNING

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 fibre cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fibre 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.

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® Hardie® Architectural Panel 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, 2021 IBC), Table R703.4 (2006, 2009, 2012 IRC), Table R703.3 (2015, 2018, 2021 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.