



SECTION 07 46 46.10
FIBER-CEMENT SIDING
(Hardie Architectural Panels Engineered for HZ5 and HZ10 Climate)

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fiber cement lap siding, panels, shingle, trim, fascia, moulding, and accessories; James Hardie HZ10 Engineered for Climate Siding and Hardie Architectural Panels.
- B. Factory-finished fiber cement lap siding, panels, shingle, trim, fascia, moulding, and accessories; James Hardie HZ10 Engineered for Climate Siding.

1.2 RELATED SECTIONS

- A. Section 05 40 00 - Cold-Formed Metal Framing.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 06 10 00 - Rough Carpentry.
- D. Section 07 21 19 - Foamed-In-Place Insulation.

1.3 REFERENCES

- A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Remodel mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Product Warranty: Limited, non-pro-rated product warranty.
 - 1. Hardie Architectural Panels for 30 years.
- B. Finish Warranty: Limited product warranty against manufacturing finish defects.
 - 1. When used for its intended purpose, properly installed and maintained according to Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.
- C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 231 S. La Salle St. Suite 2000; Chicago, IL 60604; Toll Free Tel: 877-236-7526; Email:[request info \(info@jameshardie.com\)](mailto:info@jameshardie.com); Web:<https://www.jameshardiepros.com>|<https://www.jameshardie.com>
- B. Substitutions: Not permitted.
- C. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 TEXTURED PANELS AND TRIM

- A. Hardie Architectural Panels as manufactured by James Hardie Building Products, Inc. A non-combustible fiber-cement panel.
1. Product Composition: Grade II, Type A, fiber-cement sheets as defined by ASTM C1186. manufactured by the Hatschek process and cured by high pressure steam autoclaving.
 2. Florida State Product Approval FL13223.
 3. Florida State Product Approval FL 32103.
 4. Intertek Product Listing.
 5. Code Compliance:
 - a. International Building Code (IBC):
 - 1) Section 1404.10: 2009, 2012 and 2015.
 - 2) Section 1403.10: 2018 and 2021.
 - b. International Residential Code (IRC):
 - 1) Table R703.3(1): 2009, 2012, 2015, 2018, and 2021.
 - 2) Section R703.10.1 as ASTM C 1186 Grade II, Type A Fiber Cement: 2009, 2012, 2015, 2018 and 2021.
 - c. Florida Building Code (FBC):
 - 1) Section 1404.10: 2017 and 2020.
 - 2) Section 1405.16 as ASTM C 1186 Grade II, Type A Fiber Cement.
 - d. Wind Design:
 - 1) Manufacturer's readily available design load and exposure category tables are derived from testing in accordance with ASTM E 330.
 - 2) Wind speed design coefficient assumptions per Analytical Method in ASCE 7.
 - 3) Wood Framing Specific Gravity: 0.42 or greater unless otherwise stated.
 - 4) Wood Structural Sheathing Panel Specific Gravity of 0.50 or higher unless otherwise stated.
 6. Fire Characteristics:
 - a. Tested in Accordance with ASTM E136: Classified as non-combustible.
 - b. May be used in ASTM E119 fire resistance rated assemblies as listed by Warnock Hersey.
 - c. Class A Material: Per FBC 2017 and 2020, and 2018 IBC Section 803.1.1 Surface Burning Characteristics when tested in accordance with ASTM E84:
 - 1) Flame Spread Index : 0. Smoke Developed Index: 0.
 7. Type (WxL): Hardie Architectural Panel - Fine Sand 4 by 8 feet (1219 by 2438 mm).
 8. Type (WxL): Hardie Architectural Panel - Fine Sand 4 by 10 feet (1219 by 3048 mm).
 9. Type (WxL): Hardie Architectural Panel - Fine Sand 4 by 12 feet (1219 by 3658 mm).
 10. Type (WxL): Hardie Architectural Panel - Mounded Sand 4 by 8 feet (1219 by 2438 mm).
 11. Type (WxL): Hardie Architectural Panel - Mounded Sand 4 by 10 feet (1219 by 3048 mm).
 12. Type (WxL): Hardie Architectural Panel - Mounded Sand 4 by 12 feet (1219 by 3658 mm).
 13. Type (WxL): Hardie Architectural Panel - Fine Sand-Grooved 4 by 8 feet (1219 by 2438 mm).
 14. Type (WxL): Hardie Architectural Panel - Fine Sand-Grooved 4 by 10 feet (1219 by 3048 mm).
 15. Type (WxL): Hardie Architectural Panel - Fine Sand-Grooved 4 by 12 feet (1219 by 3658 mm).
 - a. Thickness: 0.3125 inches (8 mm).
 - b. Length: 96 inches (2438 mm).
 - c. Length: 120 inches (3048 mm).
 - d. Length: 144 inches (3658 mm).
 - e. Width: 48 inches (1219 mm).

- f. Vertical Joint: Shiplap.
- 16. Physical Properties:
 - a. Test Method ASTM C1185: Passed.
 - 1) Dimensional Tolerances:
 - a) Length: Plus or minus 0.5 percent or plus or minus 1/4 inch (6 mm).
 - b) Width: Plus or minus 0.5 percent or plus or minus 1/4 inch (6 mm).
 - c) Thickness: Plus or minus 0.04 inch (1 mm).
 - d) Squareness: Less than 1/32 inches per ft (2.6 mm per m) of length.
 - e) Edge Straightness: Less than 1/32 inches per ft (2.6 mm per m) of length.
 - 2) Density: Less than 83 pounds per sq ft (4 kPa).
 - 3) Water Tightness: No drop formation; Pass.
 - 4) Flexural strength:
 - a) Wet Conditioned, psi: Greater than 1015 psi (7 MPa); Pass.
 - b) Equilibrium Conditioned, psi: Greater than 1450 psi (10 MPa); Pass.
 - 5) Warm Water Resistance, Observations: No structural alteration; Pass
 - 6) Heat and Rain Resistance: No structural alteration; Pass.
 - 7) Freeze and Thaw Resistance:
 - a) Physical Observations Mass: No structural alteration; Pass
 - b) Loss Percentage: Less than or equal to 3.0 percent; Pass.
 - c) Freeze/Thaw, Percent Strength Retention: Greater than or equal to 80 percent; Pass.
 - b. Fire Characteristics:
 - 1) ASTM E84: Surface Burning Characteristics.
 - a) Flame Spread Index (FSI) Smoke: 0.
 - b) Developed Index (SDI): 0.
 - c) Fuel Contributed: 0.
 - d) International Building Code: A.
 - 2) ASTM E136: Non-combustibility: Pass.
- 17. Trim Accessories:
 - a. J Trim: Aluminum extrusion to be used as a trim at abutments; soffits, masonry, windows, etc.
 - b. Low-Profile Inside Corner Trim: Aluminum extrusion to be used for inside corners.
 - c. Inside Corner Trim: Aluminum extrusion to be used for inside corners.
 - d. Low-Profile Outside Corner Trim: Aluminum extrusion to be used for outside corners.
 - e. Low Profile 45 degrees Inside Corner Trim: Aluminum extrusion to be used for bay windows.
 - f. Low Profile 45 degrees Outside Corner Trim: Aluminum extrusion to be used for bay windows.
 - g. Vertical T Trim: Aluminum extrusion to be used along vertical butt joints. For horizontal panel orientations only.
 - h. Vertical H Trim: Aluminum extrusion to be used along vertical butt joints. For horizontal panel orientations only.
 - i. Horizontal Angled T Flashing Trim: Aluminum extrusion to be used along horizontal control joints.
 - j. Horizontal Z Flashing Trim: Aluminum extrusion to be used along horizontal control joints.
 - k. Base Trim: Aluminum extrusion to be used as a base edge solution.
 - l. Base Outside Corner Trim: To be used as an outside corner connection for Base trim.
 - m. Base Inside Corner Trim: To be used as an inside corner connection for Base trim.

- n. Base Jointer: To be used to connect Base trims.
- o. HardieTrim Boards: Fiber cement trim for corners and windows. Can be mounted horizontally or vertically.

2.3 FASTENERS

A. Wood Framing Fasteners:

1. Wood Framing: 4d common corrosion resistant nails.
2. Wood Framing: 6d common corrosion resistant nails.
3. Wood Framing: 8d box ring common corrosion resistant nails.
4. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
5. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
6. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2-1/2 inches (64 mm) corrosion resistant siding nails.
7. Wood Framing: 0.091 inch (2.3 mm) shank by 0.221 inch (5.6 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
8. Wood Framing: 0.091 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
9. Wood Framing: 0.121 inch (3 mm) shank by 0.371 inch (9.4 mm) head by 1-1/4 inches (32 mm) corrosion resistant roofing nails.
10. Wood Framing: No. 11 gauge 1-1/4 inches (32 mm) corrosion resistant roofing nails.
11. Wood Framing: No. 11 gauge 1-1/2 inches (38 mm) corrosion resistant roofing nails.
12. Wood Framing: No. 11 gauge 1-3/4 inches (44 mm) corrosion resistant roofing nails.
13. Wood Framing: 16 gauge 1-1/2 inches (38 mm) stainless finish nails

B. Metal Framing:

1. Metal Framing: 1-1/4 inches (32 mm) No. 8-18 by 0.375 inch (9.5 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
2. Metal Framing: 1-5/8 inches (41 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
3. Metal Framing: 1 inch (25 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant ribbed buglehead screws.
4. Metal Framing: 1 inch (25 mm) No. 8-18 by 0.311 inch (7.9 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
5. Metal Framing: 1.5 inch (38 mm) [AGS-100] .100 inches by 25 inches (2540 mm by 635 mm) ET and F Pin or equivalent pneumatic fastener.

C. Masonry Walls:

1. Masonry Walls: Aerico Stud Nail, ET&F ASM No.-144-125, 0.14 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 2 inches (51 mm) long corrosion resistant nails.

2.4 FINISHES

A. Factory Primer: Provide factory applied universal primer.

1. Primer: Factory primed by James Hardie.
2. Topcoat: Refer to Section 09 90 00 - Painting and Coating and Exterior Finish Schedule.

B. Factory Finish: Refer to Exterior Finish Schedule.

1. Product: ColorPlus Technology by James Hardie.
2. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
3. Process:
 - a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat

- cured finish within one manufacturing process.
 - b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photo spectrometer and verified by third party.
 - 4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
 - 5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.
- C. Factory Finish Color for Siding Colors:
 - 1. Alpine Frost JH50-10.
 - 2. Arctic White JH10-20.
 - 3. Autumn Tan JH20-20.
 - 4. Boothbay Blue JH70-20.
 - 5. Chestnut Brown JH80-30.
 - 6. Cobble Stone JH40-10.
 - 7. Countrylane Red JH90-20.
 - 8. Evening Blue JH70-30.
 - 9. Frosted Green JH60-20.
 - 10. Harris Cream JH80-10.
 - 11. Heathered Moss JH50-20.
 - 12. Iron Gray JH90-30.
 - 13. Khaki Brown JH20-30.
 - 14. Light Mist JH70-10.
 - 15. Monterey Taupe JH40-20.
 - 16. Mountain Sage JH50-30.
 - 17. Navajo Beige JH30-10.
 - 18. Parkside Pine JH60-30.
 - 19. Sail Cloth JH20-10.
 - 20. Sandstone Beige JH30-20.
 - 21. Soft Green JH60-10.
 - 22. Timber Bark JH40-30.
 - 23. Traditional Red JH90-10.
 - 24. Tuscan Gold JH80-20.
 - 25. Woodland Cream JH10-30.
 - 26. Woodstock Brown JH30-30.
 - 27. Terra Cotta JH15-20.
 - 28. Coral Coast JH25-20.
 - 29. Aqua Marine JH35-20.
 - 30. Cool Breeze JH45-20.
 - 31. Pink Sand JH55-20.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 - 1. Install water-resistive barriers and claddings to dry surfaces.
 - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of

- the siding.
- 3. Protect siding from other trades.
- D. Minimum 20 gauge 3-5/8 inch (92 mm) C-Stud 16 inches maximum on center or 16 gauge 3-5/8 inches (92 mm) C-Stud 24 inches (610 mm) maximum on center metal framing complying with local building codes, including the use of water-resistive barriers and/or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 - 1. Install water-resistive barriers and claddings to dry surfaces.
 - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
 - 3. Protect siding from other trades.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install Engineered for Climate HardieWrap weather barrier in accordance with local building code requirements.
- F. Use HardieWrap Seam Tape and joint and laps.
- G. Install and HardieWrap flashing, HardieWrap Flex Flashing.

3.3 INSTALLATION - HARDIE ARCHITECTURAL PANELS

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Install over braced wood. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities before installing siding.
- C. A water-resistive barrier (WRB) is required in accordance with local building code requirements. The water-resistive barrier 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 does manufacture HardieWrap Weather Barrier, a non-woven non-perforated housewrap, which complies with building code requirements.
- D. When installing horizontally, a WRB with min. 90 percent drainage efficiency shall be used.
- E. Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6 inches (152 mm). in the first 10 ft (3.048 mm).
- F. Do not use Hardie Architectural Panels in Fascia or Trim applications.
- G. Do not install that product remains in contact with standing water.
- H. Installed on flat vertical wall applications only.

- I. 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 "Expansion Characteristics of James Hardie Siding Products" at www.jameshardie.com.
- J. James Hardie Building Products provides installation /wind load information for buildings with a maximum mean roof height of 85 feet (25.9 m). For information on installations above 60 feet (18.288 m), please contact JH technical support.
- K. Minimum standard panel design size is 12 x 16 inches (305 x 406 mm). Panels may be notched and cut to size to fit between windows, doors, corners, etc.

3.4 FINISHING

- A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.
- B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION