



KuraStone LedgeStone Three-Part Specification

07 42 43

Composite Wall Panels

Part I - General

1.1 SECTION INCLUDES:

- A. Exterior, panelized fiber cement cladding system and accessories.
- B. Interior fiber cement panelized cladding system and accessories.

1.2 RELATED SECTIONS

- A. Section 05 41 00 - Structural Metal Stud Framing
- B. Section 06 10 00 - Rough Carpentry
- C. Section 06 16 00 - Sheathing
- D. Section 07 20 00 - Thermal Protection
- E. Section 07 25 00 - Weather Barriers
- F. Section 07 60 00 - Flashing and Sheet Metal
- G. Section 07 90 00 - Joint Protection

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM C 1185 - Standard Test Methods for Sampling and Testing Non-Asbestos Fiber Cement.
 - a. ASTM C 1186 – Standard Specification for Flat Fiber-Cement Sheets.
 - 2. ASTM E-84 - Standard Test for Surface Burning Characteristics of Building Materials.
 - 3. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 4. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 5. ASTM G 155 - Standard Practice for Operating Xenon Arc Light Exposure Apparatus for Exposure of Nonmetallic Materials.
- B. Florida Building Code - Test Protocol HVHZ.
 - 1. Testing Application Standard (TAS) 201, 202, 203 – Impact Test Procedures.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.

B. Product Data: Submit manufacturer's product description, standard detail drawings relevant to the project, storage and handling requirements, and installation instructions.

C. Product Test Reports and Code Compliance: Documents demonstrating product compliance with local building code, such as test reports or Evaluation Reports from qualified, independent testing agencies.

D. Shop Drawings: Submit drawings, including plan, section, and elevation drawings, showing installation details that demonstrate product layout, dimensions, finish colors, edge/termination conditions/treatments, compression and control joints, openings, and penetrations.

E. Samples: Submit samples of each product type proposed for use.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. All fiber cement panels specified in this section must be supplied by a manufacturer with a minimum of 10 years of experience in fabricating and supplying fiber cement cladding systems.

2. Provide technical and design support as needed regarding installation requirements and warranty compliance provisions.

B. Installer Qualifications: All products listed in this section are to be installed by a single installer trained by manufacturer or representative.

C. Mock-Up Wall: Provide a mock-up wall as evaluation tool for product and installation workmanship.

D. Pre-Installation Meetings: Prior to beginning installation, conduct conference to verify and discuss substrate conditions, manufacturer's installation instructions and warranty requirements, and project requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Panels must be stored flat and kept dry before installation. A waterproof cover over panels and accessories should be used at all times prior to installation.

B. If panels are exposed to water or water vapor prior to installation, allow to completely dry before installing. Failure to do so may result in panel shrinkage at joints, and such action may void warranty.

C. Direct contact between the panels and the ground should be avoided at all times. It is necessary to keep panels clean during installation process.

1.7 WARRANTY

- A. Provide manufacturer's 15-year warranty against manufactured defects in fiber cement panels. Additional 5-year extension available when refinished in year 14-15.
- B. Provide manufacturer's 10-year warranty against manufactured defects in panel finish.
- C. Warranty provides for the original purchaser. See warranty for detailed information on terms, conditions and limitations.

PART II: PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Nichiha Decoration BM (Jiaxing) Co., Ltd., No 321 Wa Shan Road, Zhapu Development Zone, Zhe Jiaxing, China, 314201.
- B. Acceptable Manufacturer's Representative: Nichiha USA, Inc., 6465 East Johns Crossing, Suite 250. Johns Creek, GA 30097. Toll free: 1.866.424.4421, Office: 770.805.9466, Fax: 770.805.9467, www.nichiha.com.

1. Basis of Design Product: Nichiha KuraStone LedgeStone.

- a. Profile colors: Bluff.
- b. Dimensions:
 - i. Regular Pieces: Nominal - 6" (h) x 25-5/8", 15-3/8", 10-1/4" (l);
Actual - 150mm (h) x 650mm, 390mm, 260mm (l).
 - ii. Corner Pieces: Nominal – 6" (h) x 6-1/2" and 13" (l –short and long);
Actual – 152.4mm (h) x 165.1mm and 330.2mm (l).
- c. Panel Thickness: 1-3/8" (35mm actual).
- d. Weight: 9.21 lbs. per square foot.
- e. Exposed Coverage (square feet/panel): Regular pieces 1.05, .63, .43;
Corner pieces .98
- f. Factory sealed on six [6] sides.
- g. Optional Accessory: Sill-Chiseled.
 - 1. Colors: Gray, Tan.
 - 2. Dimensions: Nominal – 1-2/3" (h) front/ 1-7/8" (h) back x 23-5/8" (l) x 2-1/4" (t); Actual – 40.64mm (h) front/ 47mm (h) back x 600mm (l) x 57.15mm (t).
 - 3. Coverage: 2 linear feet.
 - 4. Weight: 3.5 lbs per linear foot.

C. Substitutions: Not permitted.

D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 MATERIALS

A. Fiber cement panels manufactured from a pressed, stamped, and autoclaved mix of Portland cement and river sand.

B. Panel surface pre-finished and machine applied.

2.3 PERFORMANCE REQUIREMENTS:

A. Fiber Cement Cladding – Must comply with ASTM C-1186, Type A requirements:

1. Linear Variation with Change in Moisture Content: 0.11%.

2. Wet Flexural Strength, lower limit: 580 psi.

3. Water Tightness: No water droplets observed on any specimen.

4. Freeze-thaw: No damage or defects observed.

5. Warm Water: No evidence of cracking, delamination, swelling, or other defects observed.

6. Heat-Rain: No crazing, cracking, or other deleterious effects, surface or joint changes observed in any specimen.

7. Moisture Content: Avg. 3.86%

8. Density: Avg. 1,678.12 kg/m³ or 104.72 lbs/ft³.

B. Surface Burning (UL 723/ASTM E-84): Flame Spread: 0, Smoke Developed: 0.

C. Wind Load (ASTM E-330): Ultimate test pressure average 128 psf. Project engineer(s) must determine Zone 4 and 5 design pressures based on project specifics and apply appropriate safety factor for allowable design pressures.

D. Water Penetration (ASTM E-331): Water may pass through butt joints, but not 15 pound felt building paper.

E. Weather Resistant (ASTM G-155): No signs of cracks, checking or erosion observed after 2000 hours of aging.

F. Florida Building Code – Impact Resistance (TAS 201-203): Passed.

2.4 INSTALLATION COMPONENTS

A. Steel Clip System:

1. Starter Track: FA 700 (10mm rainscreen) – 10' (l) galvalume coated steel.

2. Panel Clips: JE 720 (10mm rainscreen) – Zinc-Aluminum-Magnesium alloy coated steel.

3. Corrugated Spacer – FS 1005 (5mm), FS 1010 (10mm) – 4' (l).
- B. Fasteners: Corrosion resistant fasteners, such as hot-dipped screws appropriate to local building codes and practices must be used. Use Stainless Steel fasteners in high humidity and high-moisture regions. Panel manufacturer is not liable for corrosion resistance of fasteners. Do not use nails. Use a minimum 1-1/2", fully-threaded #8 or greater wood screw.
- C. Flashing: Flash all areas specified in manufacturer's instructions. Do not use raw aluminum flashing. Flashing must be galvanized, anodized, or PVC coated.
- D. Sealant: Sealant shall comply with ASTM C920, Class 35.

PART III: EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 1. Fiber cement panels can be installed over braced wood or steel studs with plywood/OSB sheathing. Fiber cement panels can also be installed over Structural Insulated Panels (SIP's), Concrete Masonry Units (CMU's) and Concrete Block Structures (CBS's) with furring strips, and Pre-Engineered Metal Construction, all with plywood/OSB sheathing.
 2. Allowable stud spacing: See manufacturer's installation instructions for details.
 3. A weather resistive barrier is required when installing fiber cement panels. Use an approved weather resistive barrier (WRB) as defined by the 2012 IRC. Refer to local building codes.
 4. Appropriate metal flashing should be used to prevent moisture penetration around all doors, windows, wall bottoms, material transitions and penetrations. Refer to local building codes for best practices.
- B. Examine site to ensure substrate conditions are within specification for proper installation.
- C. Do not begin installation until unacceptable conditions have been corrected.
- D. Do not install panels or components that appear to be damaged or defective. Do not install wet panels.

3.2 INSTALLATION

A. General: Install products in accordance with the latest installation guidelines of the manufacturer and all applicable building codes and other laws, rules, regulations and ordinances. Review all manufacturer installation, maintenance instructions, and other applicable documents before installation.

1. Consult with your local dealer or Nichiha Technical Department before installing any Nichiha fiber cement product on a building higher than 45 feet or three stories. Special installation conditions may be required.

B. Panel Cutting

1. Always cut fiber cement panels outside or in a well ventilated area. Do not cut the products in an enclosed area.

2. Always wear safety glasses and NIOSH/OSHA approved respirator whenever cutting, drilling, sawing, sanding or abrading the products. Refer to manufacturer SDS for more information.

3. Use a dust-reducing circular saw with a diamond-tipped or carbide-tipped blade.

a. Recommended circular saw: Makita 7-1/4" Circular Saw with Dust Collector (#5057KB).

b. Recommended blade: Tenryu Board-Pro Plus PCD Blade (#BP-18505).

c. Shears (electric or pneumatic) or jig saw can be used for complicated cuttings, such as service openings, curves, radii and scrollwork.

4. **Silica Dust Warning:** Fiber cement products may contain some amounts of crystalline silica, a naturally occurring, potentially hazardous mineral when airborne in dust form. Consult product SDS or visit www.osha.gov/SLTC/silicacrystalline/index.html.

3.3 CLEANING AND MAINTENANCE

A. Review manufacturer guidelines for detailed care instructions.