



Architectural Specifications

Nichiha Fiber Cement Products

KuraStone™

I General

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1.1 SCOPE

- A. Furnish and install Nichiha KuraStone fiber cement pieces where shown on drawings or specified herein.

1.2 RELATED SECTIONS

- A. Division 06 - Wood and plastics.
- B. Section 13112 - Steel framing and bracing.
- C. Section 07210 - Insulation.
- D. Section 07915 - Sealants, caulking and seals.

1.3 REFERENCES

- A. ASTM C-1185, Standard Test Methods for Sampling and Testing Non-Asbestos Fiber Cement Flat Sheet, Roofing and Siding, Shingles and Clapboards.
- B. ASTM E-84, Standard Test Method for Surface Burning Characteristics.
- C. ASTM E-330, Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- D. ASTM E-331, Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- E. ASTM G-155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

I General (continued)

1.4 SUBMITTALS

- A. Drawings: Submit detailed drawings showing installation details.
- B. Product Data: Submit manufacturer's product description, indicating material types and thicknesses, and installation details.
- C. Samples: Submit samples of each product type proposed for use.
- D. Certificates: Submit documents certifying that products meet or exceed requirements herein.

1.5 QUALITY ASSURANCE

- A. Performance requirements: Nichiha KuraStone pieces are fiber cement board products with the following typical properties:
 - 1. Linear Variation with Change in Moisture Content: 11%
 - 2. Wet Flexural Strength, Controlled Specimens: Avg. MD: 974.32 psi, CD: 873.93 psi
 - 3. Wet Flexural Strength, After Freeze-Thaw: Avg. MD: 1,308.34 psi, CD: 752.09 psi
 - 4. Wet Flexural Strength, After Warm Water: Avg. MD: 1,90.17 psi, CD: 744.81 psi
 - 5. Wet Flexural Strength, Equilibrium: Avg. MD: 1,065.98 psi, CD: 1,298.28 psi
 - 6. Moisture Movement: Linear Change (%): 0.11
 - 7. Water Tightness: No water droplets were observed.
 - 8. Freeze-thaw: No cracks or delamination after 50 cycles.
 - 9. Warm Water: No signs of cracks, delaminations, no loss of flexural strength on any samples tested.
 - 10. Moisture Content: Avg. 3.86%
 - 11. Density: Avg. 1,678.12 kg/m³ or 104.72 lbs/ft³
 - 12. Heat-Rain Resistance: No damage, cracking or structural failure present after 25 cycles.
 - 13. Surface Burning: Flame Spread: 0, Smoke Developed: 0
 - 14. Wind Load: Positive: Avg. 53.87 psf. Negative: Avg. 45.18 psf.
 - 15. Water Penetration: Water may pass through butt joints, but not 15# felt building paper.
 - 16. Weather Resistance, Accelerated Aging: No signs of cracks, checking or erosion were observed after 2000 hours of aging.

1.6 WARRANTY

- A. Provide manufacturer's 50-year warranty against manufactured defects in Nichiha KuraStone.
- B. Provide manufacturer's 15-year warranty against manufactured defects in KuraStone finish.
- B. Warranty provides for the original purchaser. See warranty for detailed information on terms, conditions and limitations.

II Products

2.1 MANUFACTURER

- A. Manufacturer: Nichiha Decoration BM (Jiaxing) Co., Ltd., No 321 Wa Shan Road, Zhapu Development Zone, Jiaxing, China, 314201.
- B. US Sales Office: Nichiha USA, Inc., 6659 Peachtree Industrial Blvd., Suite AA, Norcross, GA 30092, Toll free: 1.866.424.4421, Office: 770.805.9466, Fax: 770.805.9467, nichiha.com.

II Products (continued)

2.2 MATERIALS

- A. Nichiha fiber cement KuraStone pieces are based on autoclaved, wood fiber reinforced cement panels. Wood fiber bundles are prepared in accordance with Nichiha specifications, are mixed with Portland cement and silica, etc.
- B. The KuraStone wall pieces, inside corner pieces, outside corners and border pieces come in varying lengths.
- C. The pieces' surfaces are pre-finished and factory applied.
- D. A factory-applied sealant is applied to panel edges, such that all joints will contain a factory sealant.

2.3 PRODUCT DESCRIPTION

- A. KuraStone™
 - 1. Profile colors: Canyon, Desert, Mountain.
 - 2. Accessories: Nominal - Inside Corner Pieces, Large - 17" (l) x 6" (h) x 1-3/8" (t), Small - 10-1/4 (l) x 6" (h) x 1-3/8" (t); Actual - Large - 432mm(l) x 150mm(h) x 35mm(t), Small - 260mm(l) x 150mm(h) x 35mm(t), Nominal - Outside Corner, 11-5/8 (l) x 6" (h) x 1-3/8" (t), Actual - 295mm(l) x 150mm(h) x 35mm(t), Nominal - Border Pieces, Large - 17" (l) x 6" (h) x 1-3/8" (t), Small - 10-1/4 (l) x 6" (h) x 1-3/8" (t); Actual - Large - 432mm(l) x 150mm(h) x 35mm(t), Small - 260mm(l) x 150mm(h) x 35mm(t),
 - 3. Dimensions: Nominal - Wall Pieces, Large - 25-5/8 (l) x 6" (h) x 1-3/8" (t), Medium - 15-3/8 (l) x 6" (h) x 1-3/8" (t), Small - 10-1/4 (l) x 6" (h) x 1-3/8" (t); Actual - 150mm(h) x Large - 650mm(l), Medium - 390mm(l), Small - 260mm (l)
 - 4. Weight: Wall Pieces, Large - 8.4 lbs., Medium - 5.0 lbs., Small - 3.4 lbs., Inside Corner Pieces, Large - 5.6 lbs., Small - 3.4 lbs., Outside Corner - 5.4 lbs., Border Pieces, Large - 5.6 lbs., Small - 3.4 lbs.
 - 5. Coverage: Wall Pieces, Large 1.05 sq ft, Medium .63 sq ft, Small .42 sq ft, Inside Corner Pieces, Large .69 sq ft, Small .42 sq ft, Outside Corner .68 sq ft, Border Pieces, Large .69 sq ft, Small .42 sq ft.
 - 6. Factory sealed on six [6] sides.

2.4 ACCESSORIES AND INSTALLATION COMPONENTS

- A. Always use Nichiha KuraStone accessories for complete and proper installation, whether or not specifically shown on installation drawings.
- B. Additional accessories for installation and designer aesthetics are available. Consult catalog or contact Nichiha USA Inc., for further details.

III Execution

3.1 HANDLING

- A. Pieces must be stored flat and kept dry before installation. A waterproof cover over pieces and accessories should be used at all times prior to installation.
- B. If pieces are exposed to water or water vapor prior to installation, allow to completely dry before installing. Failure to do so may result in shrinkage, and such action may void warranty.
- C. KuraStone pieces **MUST** be carried on edge. Do not carry or lift pieces flat. Improper handling may cause cracking or panel damage. Nichiha is not responsible for damage caused by improper handling.
- D. Direct contact between the pieces and the ground should be avoided at all times. It is necessary to keep pieces clean during installation process.

3.2 JOB CONDITIONS

- A. KuraStone pieces can be installed over bracing wood, steel studs and sheathing including: plywood, or OSB. Nichiha KuraStone pieces can also be installed over Structural Insulated Panels (SIP's), Insulating Concrete Forms (ICF's), Concrete Masonry Units (CMU's), Concrete Block Structures (CBS's).
- B. Allowable stud spacing: See manufacturer's installation instructions for details.
- C. A water resistant barrier [WRB] is required when installing Nichiha KuraStone pieces. Use an approved weather resistant barrier [WRB] as defined by the 2007 IRC. Refer to local building codes. Nichiha is not responsible for water infiltration.
- D. Appropriate metal flashing should be used to prevent moisture penetration around all doors, windows, wall bottoms, material transitions and penetrations. Please refer to local building codes for best practice.

3.3 SURFACE CONDITIONS

- A. Examine site to ensure substrate conditions are within specification for proper installation.
- B. Do not begin installation until unacceptable conditions have been corrected.

3.4 CUTTING

- A. Always cut Nichiha KuraStone pieces outside or in a well ventilated area. Do not cut the products in an enclosed area.
- B. Always wear safety glasses and NIOSH/OSHA approved respirator, whenever cutting, drilling, sawing, sanding or abrading the products. Refer to manufacturer MSDS for more information.
- C. Always cut KuraStone pieces outside or in a well-ventilated area. Do not cut KuraStone in an enclosed area. Always cut pieces from the front to minimize chips on face. Always wear safety glasses and NIOSH/OSHA-approved respirator whenever cutting, drilling, sawing, sanding, or abrading pieces. Refer to the Safety Information in these instructions for more details. Use a miter saw with a diamond-tipped fiber cement or masonry blade when cutting KuraStone.

III Execution (continued)

D. Silica Dust Warning: Nichiha products contain *crystalline silica* (a.k.a. sand, silicon dioxide), which is a common Earth's naturally occurring mineral. Inhalation of *crystalline silica* into the lungs and repeated exposure to silica can cause health disorders, such as silicosis, lung cancer, or potentially death depending on various factors. To be conservative, Nichiha requires that, whenever drilling, cutting, sawing, sanding or abrading the product, users must observe the following safety practices: 1) Use best work practices (proper cutting blade) to reduce airborne dust concentrations. 2) Use a fiber cement circular saw with a dust collector for cutting (e.g., Makita 5057KB). The dust collector must be connected to a HEPA vacuum. 3) Do not use compressed air for cleaning dust. 4) Work outdoors where feasible; otherwise, use mechanical ventilation. 5) Everyone handling Nichiha products must wear safety glasses and properly fitted respirators prior to handling Nichiha products. Nichiha requires that users wear a **NIOSH/OSHA approved respirator with a rating of N100, O100, P100, or R100** in accordance with applicable government regulations and manufacturer instructions. All employers must comply with the OSHA PEL and ACGIH TLV-TWA. 6) Warn others in area. These requirements are designed to help minimize exposure to crystalline silica. We also require that you read all instructions and warnings (including the MSDS) prior to using Nichiha product. For further information or questions, please consult the MSDS or your employer. The MSDS for Nichiha products are available at Nichiha.com at your local Nichiha dealer or through Nichiha directly at 1.866.424.4421. MSDS's are also available at the back of this manual. ***FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND OTHER INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.***

3.5 FASTENING

A. Corrosion resistant screws such as stainless steel and hot-dipped galvanized wood screws that are appropriate to local building codes and practices must be used to fasten clips to sheathing. Nichiha is not liable for the corrosion resistance of fasteners. Do not use fuel-cell, pneumatic, powder-actuated, aluminum, staples, nails or fasteners that are not rated or designed for intended use. Use a minimum 3/4", fully-threaded, #8 or greater wood screw. **DO NOT USE NAILS FOR FASTENING KuraStone pieces.**

3.6 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. Nichiha KuraStone can be installed on many types of construction methods, review individual installation details for specifics for each type of construction method. Nichiha KuraStone pieces can be installed over Wood and Metal Stud Construction, Structural Insulated Panels (SIP's), Concrete Masonry Units (CMU's), Concrete Block Structures (CBS's), and Pre-Engineered Metal Construction. Install Nichiha KuraStone pieces in accordance with the manufacturer's detailed installation instruction for the construction method used.
2. Please consult with your local dealer or Nichiha Technical Department before installing any Nichiha fiber cement product on a building 45 feet or higher or three [3] stories or higher. Special installation conditions may be required.

3.7 FINISHING AND MAINTENANCE

A. Review KuraStone Maintenance, Repair and Cleaning Guidelines for detailed care instructions.

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