



Architectural Specifications Nichiha Fiber Cement Products

NichiFrontier™

I General

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1.1 SCOPE

- A. Furnish and install NichiFrontier™ fiber cement lap siding boards 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 C1185, Standard Test Methods for Sampling and Testing Non-Asbestos Fiber Cement Flat Sheet, Roofing and Siding, Shingles and Clapboards.
- B. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets.
- C. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. ASTM E72, Standard Test Methods for Conducting Strength Tests of Panels for Building Construction.
- E. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials.
- F. ASTM E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
- G. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

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: NichiFrontier™ is a fiber cement board product with the following typical properties:
 1. Flexural Strength: Dry: 2,154 psi, Wet: 1,743 psi = ASTM C1186, Type A Grade II
 2. Moisture Movement Linear Change: 0.10 %
 3. Water Tightness: No water droplets were observed on any specimen
 4. Freeze-Thaw Flexural Strength (% wet retention): 123 %
 5. Warm Water: No evidence of cracking, delamination, swelling, or other defects were observed
 6. Heat-Rain: No crazing, cracking, or other deleterious effects, surface or joint changes were observed in any specimen

General, Products & Execution

I General (continued)

1.5 QUALITY ASSURANCE (continued)

7. Accelerated Weathering Test: No apparent change was observed
8. Surface Burning: Flame Spread: 0, Smoke Developed: 0
9. Ultimate Wind Load: varies according to board width
10. Fire Resistant: The walls successfully endured a 60-minute fire exposure without developing excessive unexposed surface temperature or allowing flaming on the unexposed side of the assembly.
11. Non-combustibility: meets the requirements of ASTM E-136-99.

1.6 WARRANTY

- A. Provide manufacturer's limited lifetime warranty against manufactured defects.

II Products

2.1 MANUFACTURER

- A. Manufacturer: Nichiha USA, Inc., 3150 Avondale Mill Road, Macon, GA 31216, Tel: 478-238-9070, Fax: 478-238-9160, www.NICHIHA.com
- B. Sales Office: Nichiha USA, Inc., 6659 Peachtree Industrial Boulevard, Suite-AA, Norcross, GA 30092 – Toll free: 1-866-NICHIHA 1(1.866.424.4421) Tel: 770-805-9466; Fax: 770-805-9467; www.NICHIHA.com

2.2 MATERIALS

- A. Nichiha fiber cement boards are based on autoclaved, organic fiber reinforced cement boards. Organic fibers are prepared in accordance with Nichiha specifications and are mixed with Portland cement, additives, and powdered rejects.

2.3 PRODUCT DESCRIPTION

- A. NichiFrontier™
 1. Widths: 9-1/4"
 2. Length: 8'
 3. Thickness: 7/16"
 4. Weight: 3.06 lbs/sq. ft.
 5. Coverage 6.17 sq. ft
 6. Exposed Coverage: 5.33 sq. ft
 7. Factory sealed on five (5) sides.

III Execution

3.1 HANDLING

- A. NichiProducts™ boards MUST be stored flat and off the ground (on pallets) prior to installation. NichiProducts MUST be kept dry and stored in a covered area or covered with wrap before installation. Moisture saturation before installation can cause shrinkage and board damage. If boards are exposed to water or water vapor prior to installation, allow boards to completely dry before installing. Nichiha is not responsible for damage caused by improper storage. Do not stack more than 3 pallets high.
- B. NichiProducts™ boards MUST be carried on edge. Do not carry or lift boards flat. Improper handling may cause cracking or board damage. Nichiha is not responsible for damage caused by improper handling.

III Execution (continued)

3.2 PREPARATION

- A. Job site conditions:
1. NichiFrontier™ can be installed directly on APA rated sheathing, braced wood or steel stud (20GA or heavier) construction, spaced at max. 24" o.c. over sheathing. Fasteners must penetrate wood studs a min. of 1" and 1/2" in steel studs.
 2. It is recommended that APA rated 7/16" OSB [Oriented Strand Board] or plywood sheathing be used to ensure nail-holding power and provide an air gap between board and sheathing.
 3. A weather resistive barrier is required by building code when installing NichiProducts™ (refer to local building codes). Use the approved weather resistive barrier (WRB) as defined by the 2006 IRC. Refer to local building codes. Nichiha is not liable for water infiltration.
 4. Please consult with your local dealer or Nichiha directly when using NichiFrontier™ on large projects, such as 45' or higher building or three (3) stories or greater buildings.
- B. Surface conditions:
1. Do not begin installation until unacceptable conditions have been corrected.

3.3 FASTENING

- A. Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions.
1. Nichiha is not liable for the corrosion resistance of fasteners.
 2. Do not use aluminum fasteners, staples, clipped head nails or fasteners that are not rated or designed for intended use.
 3. NichiFrontier must be jointed on studs and should be staggered after installing the first course.
 4. Fasteners must penetrate studs at least 1" into wood studs and 1/2" into steel studs. Fastener head must be flush to the board surface.
 5. Fasteners should be placed a minimum of 3/4" to 1" from the top edge and a minimum of 1/2" from board edges.
 6. If face fastening, fasteners should be a minimum of 3/4" from the bottom edge.

3.4 CUTTING

- A. Whenever cutting, drilling, sawing, sanding or abrading the product, users must observe the following safety practices:
1. Use best work practices to reduce airborne dust concentrations.
 2. Use a fiber cement circular saw with dust collector for cutting (e.g., Makita 5057KB—recommended blade: Tenryu Board-Pro Plus PCD Blade #BP-18505). The dust collector must be connected to a HEPA vacuum. A jig saw can be used for complicated cuttings, such as service openings, curves, radii and scrollwork.

III Execution (continued)

3.4 CUTTING (continued)

3. **Silica Dust Warning:** NICHHA products may contain some amounts of crystalline silica [a.k.a. sand, silicon dioxide], which is a naturally occurring mineral. The amount will vary from product to product. Inhalation of crystalline silica into the lungs and repeated exposure to silica can cause health disorders, such as silicosis, lung cancer, or death depending upon various factors. To be conservative, Nichiha recommends that whenever cutting, sawing, sanding, sniping or abrading the product, users observe the Safety Instructions above. For further information or questions, please consult the MSDS, your employer, or visit www.osha.gov/SLTC/silicacrystalline/index.html and www.cdc.gov/niosh/topics/silica. The MSDS for Nichiha products are available at www.nichiha.com, at your local Nichiha dealer or through Nichiha directly at 1.866.424.4421. **FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND OTHER INSTRUCTION MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.**

3.5 INSTALLATION

- A. **General:** Install product 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. A starter strip is required to set the first course on the proper angle and to create the drip edges and air spaces.
 2. Cut boards horizontally into 1-1/4"-3" wide strips and install leaving a minimum of 6" from soil grade or 2" from hard surface (steps, driveways and decking products—roofs 1") to the bottom of the strip. PVC siding starter can also be used, do not use dimensional lumber, plywood, OSB or engineered wood products for starter strip. Nichiha FS 1005, 1/4" spacer can also be used as a starter strip.
 3. Ensure that the first course of boards is level as it will be the guide for entire installation.
- B. **Vertical Joints:** All board vertical joints must be located at the stud line.
- C. **Joint Installation Using Flashing (required):** Attach joint flashing recommended for fiber cement siding and follow manufacturer's instructions. Joint flashing should be at least 3" in width and long enough to extend above the board width a minimum of 1-1/2". Then install boards over flashing with an 1/8" gap.
- D. **Horizontal Joints:** A minimum 1-1/4" overlap is required. Do not fasten closer than 1" from the top edge and no closer than 1/2" from the board ends. If face fastening is required, fasteners should be placed at 1/2" from bottom edge. For top of windows/doors, leave 1/4" gap over flashing or drip cap.
- E. **Trim Joints (outside and inside corners around windows, doors, and vents, etc.):** For sides, bottom and around windows and trim, leave a 1/8" gap and fill with recommended sealant.

3.6 FINISHING AND MAINTENANCE

- A. Use exterior grade high-quality sealant that complies with for all gaps that require filling with sealant. Follow the manufacturer's written instructions for use.
- B. All exposed field cut edges must be covered with fiber cement sealer paint, or primer. Never leave uncoated, cut edges exposed.
- C. Dents, chips, scratches, etc. on the products shall be filled with exterior grade cementitious patching or putty. Follow the manufacturer's instructions for use.
- D. All unfinished (pre-primed) products should be painted within 12 months. Exterior grade 100% acrylic latex paints are recommended. Follow the manufacturer's instructions for use.
- E. **Cleaning:** Rub boards with a soft brush using a diluted neutral detergent. Do not use hard tools such as a wire brush or other abrasive materials.

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