

NICHIHA USA, INC. ARCHITECTURAL WALL PANELS

SECTION 07 4243 COMPOSITE WALL PANELS

PART I: GENERAL

1.1 SECTION INCLUDES

- A. Exterior, panelized fiber cement siding cladding system and accessories to complete a drained and back-ventilated rainscreen.
- B. Interior, panelized fiber cement cladding system and accessories.

1.2 RELATED REQUIREMENTS

- A. Section 033300: Cast-in-Place Concrete
- B. Section 040513: Masonry Mortar
- C. Section 042113: Brick Masonry
- D. Section 054100: Structural Metal Framing
- E. Section 061000: Rough Carpentry
- F. Section 061600: Sheathing
- G. Section 072000: Thermal Protection
- H. Section 072500: Weather Barriers
- I. Section 072600: Vapor Retarders
- J. Section 072700: Air Barriers
- K. Section 074646: Fiber Cement Siding
- L. Section 076200: Sheet Metal Flashing and Trim
- M. Section 099113: Exterior Painting
- N. Section 097000: Wall Finishes
- O. Section 097800: Interior Wall Panels

1.3 REFERENCE STANDARDS

- A. AAMA 509: Voluntary Test and Classification Method for Drained and Back Ventilated Rainscreen Wall Cladding System
- B. AAMA 611: Specification for Anodized Architectural Aluminum
- C. ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard
- D. ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus
- E. ASTM C518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- F. ASTM C1186: Standard Specification for Flat Fiber Cement Sheets
- G. ASTM C1288: Standard Specification for Flat Fiber Cement Interior Sheets
- H. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials

- I. ASTM E90: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- J. ASTM E119: Standard Test Method for Fire Tests of Building Construction and Materials
- K. ASTM E228: Standard Test Method for Linear Thermal Expansion of Solid Materials with a Vitreous Silica Dilatometer
- L. ASTM E330/E330M: Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- M. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- N. ASTM E2768: Standard Test Method for Extended Surface Burning Characteristics of Building Materials
- O. BABA: Build America, Buy America. Federally Funded Infrastructure Construction Materials must be Manufactured in the United States, Public Law 117-58, Title IX, Subtitle A, Subtitle 70901-70927
- P. CAN/ULC S102: Standard Council of Canada & Underwriters Laboratories Canada ULC, Standard Method of Test for Surface Burning
- Q. CAN/ULC S134: Standard Council of Canada & Underwriters Laboratories Canada ULC, Standard Method of Fire Test of Exterior Wall Assembly
- R. FBC TAS 202: Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure
- S. FBC TAS 203: Criteria for Testing Products Subject to Cyclic Wind Pressure Loading
- T. NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components
- U. NFPA 268: Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source
- V. NFPA 286: Standard Fire Test Method for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

1.4 SUBMITTALS

- A. See Section 013300: Administrative Requirements for Submittal Procedures
- B. Product Data: Submit manufacturer's product description, storage, and handling requirements and installation instructions
- C. Manufacturer's Details: 3-Part CAD & BIM (.dwg, .dxf, .rvt, and/or .pdf formats) including plans, sections, and installation details that demonstrate product dimensions, edge/termination condition treatments, compression, control joints, corners, openings, and penetrations
- D. LEED Credits: Provide documentation of LEED credits for project certifications under USGBC LEED 2009, Version 3.0 or 4.0
- E. Product Test Reports and Code Compliances: Documents demonstrating product compliance with local building codes, such as reports or evaluations from qualified independent agencies
- F. Samples: Submit samples of each product type proposed for use
- G. Manufacturer's Instructions: Indicate installation procedures
- H. Installer's Qualification Statement

- I. Specimen Warranty
- J. Executed Warranty

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Panels must be manufactured in the United States to ensure compliance with BABA (Build America Buy America), Public Law 117-58, Title IX, Subtitle A, Subtitle 70901-70927
- B. Products manufactured in Japan: Miraia, Latura V-Groove, and Novenary
- C. 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
- D. Provide technical and design support regarding installation requirements and warranty compliance provisions
- E. Installer Qualifications: All products listed in this section must be installed by a single installer trained and approved by manufacturer or representative
- F. Pre-Installation Meetings: Prior to beginning installation, conduct conference to verify and discuss substrate conditions, manufacturer's installation instructions, warranty, and project requirements

1.6 MOCK-UPS

- A. See Section 014000: Quality Requirements for additional requirements
- B. Provide a mock-up wall as evaluation tool for product and installation workmanship
- C. Location directed by the architect on file
- D. Mock-ups may remain as part of the work

1.7 DELIVERY, STORAGE, AND HANDLING

- A. See Section 017800: Construction Waste Management and Disposal for packaging waste requirements
- B. Deliver and store materials in manufacturer's unopened packaging with labels intact
- C. Manufacturer's panels must be stored flat and kept dry before installation
 - a. Conduct conference to verify and discuss substrate conditions, manufacturer's installation instructions, warranty, and project requirements
 - b. Do not expose manufacturer's panels to water or vapor prior to installation; allow panels to dry completely before installation. Failure to do so may result in panel shrinkage at shiplap joints and will void warranty
 - c. Manufacturer's panels must be carried on edge. Do not carry or lift manufacturer's panels flat. Improper handling may cause cracking or panel damage
 - d. Contact between manufacturer's panels and ground should be avoided at all times. It is necessary to keep manufacturer's panels clean during the installation process

1.8 FIELD CONDITIONS

Do not install manufacturer's panels when air temperature or relative humidity are outside the manufacturer's specified limits

1.9 WARRANTY

- A. See Section 017800: Closeout Submittals for additional warranty requirements
- B. Warranty provides for the original purchaser. See warranty for detailed information on terms, conditions, and limitations
- C. Manufacturer Warranty: Provide a manufacturer's 15-year warranty for manufacturer's panels against defects in the fiber cement panels
- D. Finish Warranty: Provide a 15-year manufacturer's warranty against manufactured defects in the manufacturer's panel finish

PART II: PRODUCTS

2.1 MANUFACTURERS

- A. Nichiha USA, Inc.: www.nichiha.com: Substitutions Not Permitted
- B. **Nichiha USA Contact Information:**
 - a. National Specification Manager: Mark Scharff Email: mscharff@nichiha.com Phone: (312) 221-5513
 - b. Technical Support: technicalservices@nichiha.com, (866) 424-4421
 - c. Sales/Price Quote Request: insidesales@nichiha.com, (866) 424-4421
 - d. Address: Nichiha USA, 6465 E. Johns Crossing, Suite #250, Johns Creek, GA 30097
- C. **International Contact:** Nichiha Japan, 18-19 Nishiki 2-Chome, Naka-Ku, Nagoya, Aichi 460-8610, Japan
- D. **Specification Resources:**
 - a. Nichiha USA Website, Architect Resources Center: www.nichiha.com/resource-center
 - b. CADdetails.com: www.caddetails.com
 - c. RIB SpecLink: www.ribspecklink.com
 - d. BIMsmith: www.bimsmith.com

2.2 PRODUCT SELECTION

- A. Nichiha Architectural Wall Panels (AWP): Substitutions Not Permitted
- B. Nichiha Architectural Wall Panels have an engineered rainscreen incorporated into each panel with cavity dimensions of 3/8" (10 mm), which achieves building standards, [AWP Series Product Website](#) [PDF Brochure](#)

2.3 AVAILABLE AWP SERIES

- A. **Designer Series: Illumination**
 - a. Size Dimensions: 2 different orientations, horizontal or vertical
 - i. AWP 1818 (Horizontal): 17-7/8" H × 71-9/16" L
 - ii. AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
 - b. Colors: Warm White, Cotton, Fog, Nickel, Graphite, Bay Blue, Lava, Scarlet, Raven. Custom colors available
 - c. Thickness: 5/8" (both horizontal and vertical)

- d. Weight:
 - i. AWP 1818 (Horizontal): 39.71 lbs/panel
 - ii. AWP 3030 (Horizontal or Vertical): 66.18 lbs/panel
- e. Coverage per panel:
 - i. AWP 1818 (Horizontal): 8.88 sq. ft./panel
 - ii. AWP 3030 (Horizontal or Vertical): 14.81 sq. ft./panel
- f. Application: Interior and exterior

B. Designer Series: Miraia

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Onyx, Snow, Glacier
- c. Thickness: 5/8"
- d. Weight: 37.9 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

C. Dimension Series: Ribbed

- a. Size Dimensions: AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: Ivory, Indigo, and custom colors available
- c. Thickness: 5/8"
- d. Weight: 57.3 lbs/panel
- e. Coverage: 14.81 sq. ft./panel
- f. Application: Interior and exterior

D. Dimension Series: Novenary

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Opal, Slate, Sand, Ochre, Clay
- c. Thickness: 7/8" (21 mm)
- d. Weight: 47.84 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

E. Dimension Series: Latura V-Groove

- a. Size Dimensions:
 - i. AWP 1818 (Horizontal): 17-7/8" H × 71-9/16" L
 - ii. AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: White, Gray
- c. Thickness: 5/8"
- d. Weight:
 - i. AWP 1818: 40.35 lbs/panel
 - ii. AWP 3030: 65.25 lbs/panel
- e. Coverage:
 - i. AWP 1818: 8.88 sq. ft./panel
 - ii. AWP 3030: 14.81 sq. ft./panel
- f. Application: Interior and exterior

F. Modern Series: ArchitecturalBlock

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Gray, Mocha, Tuscan
- c. Thickness: 5/8"
- d. Weight: 35.2 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

G. Modern Series: TuffBlock

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Steel, Bamboo, Walnut, Pewter, Taupe, and custom colors available
- c. Thickness: 5/8"
- d. Weight: 35.2 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

H. Wood Series: VintageWood

- a. Size Dimensions:
 - i. AWP 1818 (Horizontal): 17-7/8" H × 71-9/16" L
 - ii. AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: Cedar, Bark, Ash, Spruce, Redwood, Blackwood, Poplar (3030 only)
- c. Thickness: 5/8"
- d. Weight:
 - i. AWP 1818: 34.8 lbs/panel
 - ii. AWP 3030: 57.3 lbs/panel
- e. Coverage:
 - i. AWP 1818: 8.88 sq. ft./panel
 - ii. AWP 3030: 14.81 sq. ft./panel
- f. Application: Interior and exterior

I. Wood Series: RoughSawn

- a. Size Dimensions: AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: Smoke, Tobacco, Espresso
- c. Thickness: 5/8"
- d. Weight: 57.3 lbs/panel
- e. Coverage: 14.81 sq. ft./panel
- f. Application: Interior and exterior

J. Wood Series: RiftSawn

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Chestnut, Pecan
- c. Thickness: 3/4"
- d. Weight: 41.6 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

K. Wood Series: Natura

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L

- b. Colors: Rustic White (only)
- c. Thickness: 5/8"
- d. Weight: 40.02 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

L. Concrete Series: EmpireBlock

- a. Size Dimensions: AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: Concrete finish with appearance of form tie holes
- c. Thickness: 5/8"
- d. Weight: 57.3 lbs/panel
- e. Coverage: 14.81 sq. ft./panel
- f. Application: Interior and exterior

M. Concrete Series: IndustrialBlock

- a. Size Dimensions: AWP 3030 (Horizontal or Vertical): 17-7/8" H × 119-5/16" L
- b. Colors: Gray (natural concrete only)
- c. Thickness: 5/8"
- d. Weight: 57.3 lbs/panel
- e. Coverage: 14.81 sq. ft./panel
- f. Application: Interior and exterior

N. Concrete Series: Corbosa

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Moondust, Shadow (mimics wet concrete appearance)
- c. Thickness: 5/8"
- d. Weight: 40 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

O. Concrete Series: ConcreteBoard

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Weathered concrete
- c. Thickness: 5/8"
- d. Weight: 40.1 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

P. Brick Series: VintageBrick

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
- b. Colors: Alexandria Buff, White Wash, White Smoke
- c. Thickness: 3/4"
- d. Weight: 39.6 lbs/panel
- e. Coverage: 8.88 sq. ft./panel
- f. Application: Interior and exterior

Q. Brick Series: PlymouthBrick

- a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L

- b. Colors: Crimson (natural brick)
 - c. Thickness: 5/8"
 - d. Weight: 35.2 lbs/panel
 - e. Coverage: 8.88 sq. ft./panel
 - f. Application: Interior and exterior
- R. Brick Series: CanyonBrick**
 - a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
 - b. Colors: Shale Brown (earthy tone brick)
 - c. Thickness: 5/8"
 - d. Weight: 35.2 lbs/panel
 - e. Coverage: 8.88 sq. ft./panel
 - f. Application: Interior and exterior
- S. Brick Series: ModernBrick**
 - a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
 - b. Colors: Midnight (painted brick)
 - c. Thickness: 5/8"
 - d. Weight: 36.6 lbs/panel
 - e. Coverage: 8.88 sq. ft./panel
 - f. Application: Interior and exterior
- T. Masonry Series: Sandstone**
 - a. Size Dimensions: AWP 1818 (Horizontal only): 17-7/8" H × 71-9/16" L
 - b. Colors: Autumn Brown, Desert Beige, Gentle Gray
 - c. Thickness: 3/4"
 - d. Weight: 39.68 lbs/panel
 - e. Coverage: 8.88 sq. ft./panel
 - f. Application: Interior and exterior

2.4 MATERIALS

- A. Nichiha Architectural Wall Panels are manufactured from a proprietary dry-process pressed, stamped, and autoclaved mix of Portland cement, silica, recycled rejects, and wood fiber bundles
- B. Panel surfaces are pre-finished with machine-applied finish
- C. Panels are profiled along edges to create a shiplap connection at all horizontal joints; vertical panels are manufactured with shiplap, sealant, and metal trim options
- D. Factory-applied sealant gaskets are added to the top and right panel edges (AWP 1818) or top edge only (AWP 3030)

2.5 PERFORMANCE REQUIREMENTS

- A. Nichiha USA Architectural Support, Design Support, Test Approvals, and supporting documents can be found on the Nichiha website Resources Pages, [Nichiha Support Documents](#)
- B. Technical Support: technicalservices@nichiha.com, (866) 424-4421
- C. Fiber Cement Panels: Architectural Wall Panels Compliance:

- a. ASTM C1186: Type A, Grade II
- b. AAMA 509-21: Drained and Back Ventilated Rainscreen
 - i. System Classifications: W1, V1
- c. ASTM C1185: Standard Test Methods for Sampling and Testing Non-Asbestos Fiber Cement
 - i. Wet Flexural Strength: 1,418 psi (lower limit: 1,015 psi)
 - ii. Water Tightness: No water droplets on any materials
 - iii. Freeze-Thaw: No damage or defects observed
 - iv. Warm Water: No evidence of cracking, delamination, or defects
 - v. Heat-Rain: No crazing, cracking, or deleterious effects observed
- d. ASTM C518: Steady-State Heat Flux and Thermal Transmission Properties Test
 - i. 16 mm thick panel thermal resistance R-value: 0.47
- e. ASTM E84: Surface Burning Characteristics of Building Materials
 - i. Maximum Flame Spread: 0
 - ii. Maximum Smoke Developed Index: 5
- f. ASTM E119: Fire Resistant
 - i. AWP passed ASTM E119 testing on wood-stud wall assembly with Type X gypsum sheathing and fiberglass batt insulation. Assembly successfully withstood 60-minute fire exposure without developing excessive surface temperatures or allowing flaming on the unexposed side. Hose stream test did not penetrate the interior sheathing
- g. ASTM E228: Mean Coefficient of Linear Thermal Expansion
 - i. Maximum: 1.0×10^{-5} in./in. °F
- h. ASTM E2768: Extended Duration Surface Burning Characteristics
 - i. Flame Spread Index Result: 0: Final flame front did not exceed initial 4'-6" flame front; no visible surface ignition
- i. ASTM E330/E330M: Wind Load
 - i. Maximum lateral deflection: L/180
 - ii. Comply with LAHJ requirements
- j. ASTM E331: Water Penetration
 - i. No water leakage observed into wall cavity
- k. BABA: Build America Buy America
 - i. Federally funded infrastructure construction materials must be manufactured in the United States, Public Law 117-58, Title IX, Subtitle A, Subtitle 70901-70927
 - ii. AWP Products that do not meet the BABA compliance; Corbosa, Concrete Board Gray, Latura V-Groove, Miraia, Natura and Novenary are manufactured in Japan, 2026, Please confirm Sku# for BABA compliance.
- l. CAN-ULC S102/ASTM E84: Surface Burning
 - i. Flame Spread: 0
 - ii. Smoke Developed: 5
- m. CAN/ULC S-134: Fire Propagation

- i. Wall assembly with Ultimate Clips, Starter Track, Commercial Wrap, 5/8" plywood, 16" o.c. 18-gauge steel studs, fiberglass in-cavity insulation, and interior 5/8" Type X gypsum met acceptance criteria
- n. Florida Building Code FBC TAS 202 and FBC TAS 203: Test Protocol HVHZ
 - i. Horizontal install design pressure: 95 psf
 - ii. Vertical install design pressure: 85 psf
- o. NFPA 285: Fire Propagation
 - i. Wall assembly with AWP panels, Ultimate Clips, Starter Track, 7/8" 18-gauge steel vertical hat channel (legs facing out) on top of 4" polyiso continuous insulation with maximum 1-1/4" air gap, Commercial Wrap, 1/2" gypsum sheathing, 16" o.c. 18-gauge steel studs, mineral wool in-cavity insulation, and interior 5/8" Type X gypsum
- p. NFPA 268: Ignition Resistance
 - i. No sustained flaming of panels/wall assembly when subjected to minimum radiant heat flux of 12.5 kW/m² ±5% in presence of pilot ignition source for 20-minute period

2.6 INSTALLATION COMPONENTS

- A. All projects above 45 feet or 3 stories, in coastal/high wind zones (Exposure C/D with wind speeds >130 mph), with continuous insulation over 1" thickness, or with wall assemblies not described in framing and sheathing requirements: a Nichiha Technical Design Review is suggested
- B. Technical Support: technicalservices@nichiha.com, (866) 424-4421
- C. Starter Track, Substitutions Not Permitted:
 - a. Horizontal FA 700 (10 mm rainscreen)
 - b. Vertical FA 710T (10' length/3030 mm)
 - c. Galvalume-coated steel
- D. Ultimate Clip System, Substitutions Not Permitted:
 - a. Panel Clips: JEL 778 'Ultimate Clip II' (10 mm rainscreen for 5/8" AWP): Zinc-aluminum-magnesium alloy-coated steel
 - b. Joint Tab Attachments: For all AWP 1818 panel-to-panel vertical joints
- E. Single Flange Sealant Backer: FHK 1015 R (10 mm): 6.5' length Fluorine-coated Galvalume
- F. Double Flange Sealant Backer: FH 1015 R (10 mm): 10' length Fluorine-coated Galvalume
- G. Corrugated Spacer: FS 1005 (5 mm), FS 1010 (10 mm): 4' length
- H. Aluminum Trim: Paint as Specified in Finish Schedule:
 - a. Profiles: H-Mold, inside corner, and outside corner trim, available in 1-piece and 2-piece configurations
 - b. Class 1 Clear Anodized Finish: AAMA 611 AA-M12C22A41 clear anodic coating
- I. Essential Flashing System:
 - a. Starter: Main segments (3030 mm), inside corners, outside corners
 - b. Overhang: Main segments (3030 mm), inside corners, outside corners, joint clips
- J. Fasteners: Corrosion Resistant Fasteners:

- a. See manufacturer's instructions for appropriate fasteners for construction method use.
See Section 076200.
 - b. Hot-dipped galvanized screws appropriate to local building codes and practices
 - c. Stainless steel fasteners in high-humidity, high-moisture regions
 - d. Do not use aluminum fasteners
 - e. Manufacturer is not liable for inappropriate fasteners
- K. Flashing: Must be galvanized, anodized, or PVC-coated. Do not use raw aluminum
- L. Furring Strips: Furring channels in accordance with manufacturer's requirements
- M. Sealant: Sealant shall comply with ASTM C920, Class 35

PART III: EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions
- B. Consult with Nichiha Technical Support: technicalservices@nichiha.com, (866) 424-4421
- C. Fiber Cement Panels: Architectural Wall Panels (AWP) can be installed over:
 - a. Wood studs
 - b. Steel studs
 - c. Sheathing including plywood, OSB, and plywood nailbase sheathing
 - d. Fiberboard sheathing
 - e. Continuous insulation up to 1" thickness (furring strips required for insulation over 1" thickness or under 15 psi compressive strength)
 - f. Structural Insulated Panels (SIPs)
 - g. Concrete Masonry Units with furring strips
 - h. Concrete Block Structures (CBS) with furring strips
 - i. Pre-engineered metal construction
 - j. Insulated Concrete Forms (ICFs): may require added measures
- D. Allowable stud spacing: 16" o.c. maximum
 - a. 17- $\frac{7}{8}$ " o.c. maximum for 3030mm panels installed vertically
- E. A weather-resistant barrier is required when installing fiber cement panels. Use an approved weather-resistive barrier (WRB) as defined by the IBC or IRC. Refer to local building codes
- F. Appropriate metal flashing to prevent moisture penetration around all doors, windows, wall bottoms, material transitions, and penetrations. Refer to local building codes
- G. Examine site to ensure substrate conditions are within alignment tolerances: plumb and level within $\pm 1/4$ " over a 20-foot span in any direction
- H. Do not install panels or components that appear to be damaged or defective
- I. Do not install wet panels

3.2 INSTALLATION

- A. Nichiha Technical Support: technicalservices@nichiha.com, (866) 424-4421
- B. Compression and expansion joints must follow Nichiha published details. No substitutions
- C. General: Install Architectural Wall Panels (AWP) according to the latest installation guidelines of the manufacturer and follow all applicable building codes and other laws, rules, regulations, and ordinances. Review all manufacturer installation, maintenance instructions, and other applicable documents before installation
- D. Consult the local Nichiha dealer or Nichiha Technical Support:
 - a. technicalservices@nichiha.com, (866) 424-4421: for buildings higher than 45 feet or 3 stories, or for conditions not matching the prescribed standard installation guide requirements and methods.
 - b. Nichiha USA Technical Design Review (TDR) is available to evaluate project feasibility
- E. **Expansion and Control Joints:**

- a. Vertical control/expansion joints are required with Fiber Cement Panels: Architectural Wall Panels (AWP) 1818 for walls wider than 30 feet, within 2–12 feet of outside corners finished with metal trim, and approximately every 30 feet thereafter
- b. Horizontal control/expansion joints or H-Mold trims are required with Fiber Cement Panels: Architectural Wall Panels (AWP) 3030 at every panel joint
- c. Horizontal compression joints are required for multi-story installations of Architectural Wall Panels (AWP): locate joints at floor lines with flashed minimum 1/2" breaks; do not caulk. Refer to the installation guide
- d. Wood-framed buildings with 3 or more floors require a compression joint at each floor
- e. Steel-framed buildings including reinforced concrete core with light-gauge metal frame exterior walls more than 3 floors (or 45 feet) require a compression joint every 25 feet at the floor line

F. Panel Cutting:

- a. Always cut fiber cement panels in an outdoor, well-ventilated area. Do not cut panels in an enclosed area
- b. Always wear safety glasses and NIOSH/OSHA-approved respirator whenever cutting, drilling, sawing, sanding, or abrading Architectural Wall Panels (AWP). Refer to manufacturer's Safety Data Sheet (SDS) for more information
- c. Always use a dust-reducing circular saw with a diamond-tipped or carbide-tipped blade
- d. Recommended circular saw: Makita 7-1/4" with dust collector (Model #5057KB)
- e. Recommended blade: Tenryu Board-Pro Plus PCD blade (Model #BP-18505)
- f. Shears (electric or pneumatic) or jig saw can be used for complicated cutting, service openings, curves, radii, and scrollwork
- g. Crystalline Silica Dust Warning: Fiber cement panels may contain crystalline silica, a naturally occurring potentially hazardous mineral when airborne in dust form. Consult the manufacturer's SDS or Silica Technical Bulletin,
- h. Immediately clean dust from cut panels as it may bind to the finish

3.3 CLEANING AND MAINTENANCE

- A. Review manufacturer's guidelines for detailed care instructions
- B. Protect installed Nichiha Fiber Cement Panels: Architectural Wall Panels (AWP) during construction. Visit the AWP Maintenance Construction Guide:
<https://www.nichiha.com/docs/Nichiha-Tech-Bulletin-AWP-Maintenance-Guide.pdf>