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# MANUFACTURER'S GUIDE SPECIFICATIONS

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## **SECTION 06 16 13** **FIRE-TREATED PLYWOOD** **INSULATING NAIL BASE**



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**FIRE-TREATED PLYWOOD INSULATING NAIL BASE**

1 GENERAL

1.01 SECTION INCLUDES

- A. Fire-treated plywood insulating nail base for use in above-grade wall assemblies.
- B. Materials and installation to provide continuous insulated nail base in walls as indicated in Drawings.

1.02 RELATED SECTIONS

- A. Section 01 41 13 – Codes [Continuous insulation, Continuous air barrier, wall assembly fire tests: ASTM E 119, NFPA 285]
- B. Section 01 83 16 – Exterior Enclosure Performance Requirements [continuous insulation, continuous air barrier, hygro-thermal performance, wall assembly fire tests –ASTM E 119, NFPA 285]
- C. Section 01 91 19 – Facility Shell Commissioning [address continuity of insulation throughout the building enclosure, alignment of insulation with fenestration thermal breaks, assure that insulation does not interfere with wall weep/ drainage systems and address any other issues involving proper incorporation of the insulation into the building enclosure]
- D. Section 03 30 00 - Cast-In-Place Concrete [Product fastened interior or exterior side of concrete wall]
- E. Section 03 40 00 – Pre-Cast Concrete [Product fastened to exterior side of concrete wall]
- F. Section 04 20 00 - Unit Masonry [Product fastened to exterior side of concrete masonry unit wall]
- G. Section 05 40 00 – Cold-Formed Metal Framing [Product fastened over metal framing on exterior side of wall assembly]
- H. Section 06 11 00 – Wood Framing [Product fastened over wood framing on exterior side of wall assembly]
- I. Section 07 25 00 – Weather Barriers [Weather barrier installed over product]
- J. Section 07 27 00 – Air Barriers [Product installed over membrane air barrier membrane or membrane air barrier installed over product]
- K. Section 07 42 00 – Wall Panels [Installed over product. Attach wall panels to fire-treated plywood insulating nail base.]

- L. Section 07 46 00 – Siding [Installed over product. Attach siding to fire-treated plywood insulating nail base.]
- M. Section 09 22 00 – Supports for Plaster and Gypsum board [Installed over product. Attach supports to fire-treated plywood insulating nail base.]
- N. Section 09 24 00 – Portland Cement Plastering [Installed over product. Attach lath or supports to fire-treated plywood insulating nail base and install stucco over product]
- O. Section [\_\_\_\_\_] Other

### 1.03 REFERENCES

- A. ASTM C 209 Standard Test Methods for Cellulosic Fiber Insulating Board
- B. ASTM C 518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- C. ASTM C 1289 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- D. ASTM D 2126 Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- E. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
- F. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
- G. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Materials
- H. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

### 1.04 PERFORMANCE REQUIREMENTS

- A. Material Properties – Insulating Nail Base
  - 1. Shall consist of fire-treated, kiln dried plywood laminated to a coated-glass faced polyisocyanurate foam insulation board.
  - 2. Thickness / R Value: [Select one: 1.625 inch R-6.6, 2.125 inch R-9.6, 2.625 inch R-12.7, 3.125 inch R-15.9, 3.625 inch R-19.1], units:  $F \cdot ft^2 \cdot h / Btu$  per inch. Measured at 75 degrees F mean temperature, as per ASTM C 518 according to requirements of ASTM C 1289.
  - 3. Properties of fire-treated plywood
    - a. 0.625 or 0.75 inch thickness
    - b. Flame spread index of 25 or less and a smoke generation index of 450 or less, ASTM E 84
    - c. Moisture content of 15% maximum
  - 4. Properties of insulation board
    - a. Shall consist of a closed cell polyisocyanurate foam core with coated glass facing, both sides

- b. Shall meet ASTM C 1289 Type II, Class 2 [Grade 2 (20 psi) or Grade 3 (25 psi)]
  - c. Flame spread index: 75 or less, smoke generation index: 450 or less, ASTM E 84
  - d. Water vapor permeance of 1 inch thick board: Maximum 1 Perm, ASTM E 96 A
  - e. Dimensional stability: Maximum 2% change after 7 days, ASTM D 2126
  - f. Water absorption: Maximum 0.05% volume, ASTM C 209
- B. Material Properties – Foam Sealant
- 1. Shall consist of one-component, low expansion polyurethane foam.
  - 2. Flame Spread Index 25 or less, Smoke Development Index 450 or less, ASTM E 84
  - 3. Cellular structure: 60% closed cell
  - 4. Skin formation time: 10 minutes or less
  - 5. Waterproof after full cure

#### 1.05 SUBMITTALS

- A. Manufacturer's insulation product literature, including physical properties, installation instructions and detail drawings.
- B. NFPA 285 submittal sheets for Project wall assemblies.
- C. Manufacturer's literature for accessory items, including foam sealant, insulation adhesive and insulation fasteners
- D. Sample of insulation product, minimum 4 inch X 4 inch size
- E. Manufacturer's 15-year thermal performance warranty

#### 1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Shall be experienced in applying the same or similar materials and shall be specifically approved in writing by Manufacturer.
- B. Comply with the provisions of the Owner's building envelope commissioning program in accordance with [Section 01 91 15]
- C. Pre-Installation Meeting: Convene [one] [\_\_\_\_\_] week prior to commencing Work of this Section, in accordance with [Section 01 31 19 - Project Meetings].
- D. [Note to specifier: Mockup testing is recommended but not required. Retain paragraph F if mockups will be built and tested.]
- E. Field-Constructed Mock-Ups: Prior to installation on Project, apply product and accessories on mock-up to verify details under shop drawing submittals, to demonstrate tie-ins with adjoining construction and other termination conditions and to become familiar with properties of materials in application. [NOTE TO SPECIFIER: incorporate sub paragraph 1 or 2 into Paragraph E]
  - 1. Apply in field-constructed mockups of assemblies as specified in [Section 01 43 39 – Mockups]

2. Construct typical exterior wall panel, 8 feet long by 8 feet wide, incorporating back-up wall, water resistive barrier, insulation, cladding, window and doorframe and sill and flashing, [building corner condition,] [junction with roof system] [foundation wall] [and] [typical penetrations and gaps]; illustrating interface of materials and seals
- F. Cooperate and coordinate with the Owner's inspection and testing agency. Do not cover any installed insulation until it has been inspected and approved

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Protect product from physical damage.
- B. Store product pallets indoors, or store product pallets outdoors elevated above ground 4 inches minimum and covered with breathable UV-resistant tarpaulin.
- C. Store foam sealant in an area maintained between 50 and 90 degrees F and protected from precipitation and direct sunlight.

#### 1.08 PROJECT CONDITIONS

- A. Install foam sealant within approved ambient and substrate temperature range and conditions stated in manufacturer's literature.
- B. Do not apply product or accessories over incompatible materials
- C. Observe safety and environmental measures indicated in manufacturer's MSDS, and mandated by federal, state and local regulations.

### 2 PRODUCTS

#### 2.01 PRODUCT:

- A. R2+ BASE commercial grade insulating nail base, as manufactured by Carlisle Coatings & Waterproofing, Incorporated. 900 Hensley Lane, Wylie, TX 75098. Phone 1-800-527-7092. Website <http://www.carlisle-ccw.com>
- B. Other equivalent product

#### 2.02 ACCESSORIES

- A. Foam Sealant
  1. FireBlock Gun Foam by TVM Building Products
  2. Fireblock Foam Sealant by FOMO
  3. Others as approved by insulation manufacturer
- B. Fasteners
  1. SIP LD, SIP TP or Tru-GRIP fasteners as manufactured by Tru-Fast Corporation
  2. Others as approved by Design Professional.

### 3 EXECUTION

#### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions affecting installation of the product for compliance with requirements. Verify that surfaces and conditions are suitable prior to commencing Work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Concrete wall surfaces shall be of sound condition and shall have honeycomb filled and sharp protrusions knocked off or ground flush
- C. Concrete masonry unit wall surfaces shall be free of mortar droppings. Mortar joints shall be completely filled and tooled or struck flush.
- D. Wood or metal wall studs shall be of sound condition, properly spaced, plumb and laterally-braced according to structure and code requirements.
- E. Membrane air barrier over wall surfaces shall be firmly attached and in good condition.

### 3.02 INSTALLATION

- A. Provide separation of the edge of product from concrete at grade with pressure-treated lumber sill plate, sill gasket or non-permeable flashing material.
- B. Begin at base of wall from firm, permanent support
- C. Attach product to structure with fasteners
  - 1. Fastening shall be approved by a structural engineer to verify sufficiency to secure the both the weight of the product and the weight of the cladding for the Project conditions
  - 2. Use specified fasteners and spacing.
- D. Apply product horizontally using maximum board lengths to minimize number of joints. Offset board joints minimum 6-inches.
- E. Pre-cut product to fit openings and projections.
- F. L-cut or saddle cut product at windows and large openings.
- G. Allow a minimum 0.125 inch and maximum 0.25 inch gaps between boards to accommodate hygric movement of wood.
- H. Fasten boards tightly to provide a flush, level surface
- I. Fill all gaps between insulation boards exceeding 0.25 inch across and gaps between insulation and penetrations exceeding 0.25 inch across with foam sealant

### 3.03 REPAIR AND PROTECTION

- A. Protect insulation from mechanical damage and exposure to open flame during installation and exposure.
- B. Repair damage to product as recommended by manufacturer before covering
- C. Product shall be sound and dry, with wood moisture content measuring 15% or less before membrane air barrier or weather barrier installation.
- D. Cover product with fully-adhered membrane air barrier or mechanically-attached weather barrier as soon as schedule permits. Do not leave product exposed longer than 60 days.

END OF SECTION