

REFERENCE STANDARDS

ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E2178 – Standard Test Method for Air Permeance of Building Materials
NFPA 259 – Standard Test Method for Potential Heat of Building Materials
NFPA 285 – Standard Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non Load Bearing Wall Assemblies Containing Combustible Components
NFPA 286 – Standard Test Method of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
ASTM E331 – Test Method for Water Penetration
ASTM E72 - Test Method for Lateral and Horizontal Load
ASTM E2126 – Test method for Seismic Evaluation
ASTM E330 – Test Method for Structural Components with Uniform Static Air Pressure Differential
ASTM C518 – Test Method for Thermal Resistance
ASTM D1621 - Test Method Compressive Strength
ASTM D1037 – Test Method for Water Absorption
ASTM E2178 – Test Method for Air Barrier Analysis

QUALITY ASSURANCE

- A. Thermal Resistivity: Where thermal resistivity of insulation product are designated by “R-values”, they represent the reciprocal of thermal conductivity (k-values).
 1. Thermal conductivity is the rate of heat flow through a homogenous material exactly 1-inch thick.
 2. Thermal resistivity is expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated
- B. Fire Performance Characteristics: Provide insulation materials identified to those whose indicated fire performance characteristics have been determined per ASTM test method indicated below, by UL, or other testing and inspection organization acceptable to authorities having jurisdiction. Identify products with appropriate marking of applicable testing and inspecting organization.
 1. Surface Burning Characteristics: E 84
 2. Fire Resistance Rating: ASTM E 119
 3. Room Corner Tests: NFPA 286
- C. Structural Performance Characteristics: Where structural performance is required, fastening requirements to framing shall be specified. Published shear values shall be used by design professional to calculate exterior bracing, shear wall design, resistance to horizontal wind load, and resistance to transverse wind loads.
 1. Lateral Load: ASTM E72, ASTM E564, ASTM E2126
 2. Transverse Load: ASTM E72, or E330
- D. Water-Resistive Barrier: When not provided by other means, structural insulated sheathing shall provide water-resistive functionality.
 1. Water Penetration Testing: ASTM E331
- E. Air Barrier Properties: When not provided by other means, structural insulated sheathing shall be an approved air barrier functionality.
 1. Air Barrier: ASTM E2178

PRODUCTS

06 16 13 Insulated Sheathing

Structural Insulation Sheathing shall be suitable for conventional light frame wood or steel construction, and be approved as an equivalent bracing method to braced wall panels or continuously sheathed bracing panels as defined in IRC Section R602.10, or IBC section 2308.9.3, and approved for structural panel shear walls of IBC 2306.3. The structural panels must also be resist transverse wind loads as required for prescribed cladding/wall system prescribed. Structural panels must be the nominal thickness defined on the drawings or of thickness to provide the specified R value. If a separate water-resistive barrier is not provided, structural insulated sheathing must be approved as water-resistive barrier system as defined by IBC Section 1404.2 and *IRC* Section R703.2 when installed

per the manufacturers recommended instructions. If a separate air-barrier is not provided, structural insulated sheathing must be approved as an air-barrier material as defined by IECC Section 402 when installed per the manufacturers recommended instructions. Current Evaluation Reports may be submitted as substantiation of all code claims.

- A. Structural Insulated Sheathing –Type V, Class B Insulation with structural component with the following characteristics:
 - 1. Flame Spread Index: <75 when tested in accordance with ASTM E 84
 - 2. Smoke Developed Index: <450 when tested in accordance with ASTM E 84
 - 3. Board Edges: Square
 - 4. Thermal Resistance at 75 degrees F, ASTM C518 as specified
 - 5. Insulation Compressive Strength, ASTM D1621: 25 psi minimum
 - 6. Water Absorption, ASTM D1037, Method B, % by weight <9%
 - 7. Manufacturers:
 - a) Ox Engineered Products: STYROFOAM SIS Structural Insulated Sheathing

ACCESSORIES

06 06 10.13 Fastening and Joint Treatment

- A. See Product Installation instructions and/or Evaluation Report for fastener type and spacing
- B. See Product Installation instructions and/or Evaluation Report for joint treatment options as it relates water-resistive barrier options.