# SECTION 061200 – STRUCTURAL INSULATED SHEATHING

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. Section Includes:

1. Structural Insulated Sheathing

B. REFERENCE STANDARDS:

1. ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation
2. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
3. ASTM E2178 – Standard Test Method for Air Permeance of Building Materials
4. ASTM E331 – Test Method for Water Penetration
5. ASTM E72 – Test Method for Lateral and Horizontal Load
6. ASTM E2126 – Test Method for Seismic Evaluation
7. ASTM E330 – Test Method for Structural Components with Uniform Static Air Pressure Differential
8. ASTM C518 – Test Method for Thermal Resistance
9. ASTM D1621 – Test Method Compressive Strength
10. ASTM D1037 – Test Method for Water Absorption
11. ASTM E2178 – Test Method for Air Barrier Analysis

### 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:
1. 70% Post-Consumer Recycled Content

### 1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each product, for tests performed by a qualified testing agency.

B. Evaluation Reports: from accredited agency

## 1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect foam-plastic board insulation as follows:

1. Limit UV expose to extent defined in product recommendations.
2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.
4. Deliver products to site with seals and labels intact, in manufacturer’s original containers, dry and undamaged.
5. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
6. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins)
7. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

## 1.6 QUALITY ASSURANCE

A. Installer Qualifications: The installer shall be trained by a representative of the manufacturer prior to construction. The Installer shall carry liability insurance and bonding.

B. Pre-installation meeting: Prior to commencement of application of wall system, review and document methods and procedures related to installation, including the following:
1. Participants: Authorized representative of the Contractor [Construction Manager], [Owner], Architect, [Engineer], Applicator, [Independent Inspector], and Manufacturers representative
2. Review metal wall framing assemblies for potential interference and conflicts and coordinate layout and support provisions for interfacing work.
3. Review insulated sheathing, flashing and [spray polyurethane foam] methods and procedures related to application including manufacturer’s installation guidelines.
4. Review construction schedule and confirm availability of products, applicator personnel, equipment and facilities.
5. Review governing regulatory requirements, and requirements for insurance and certificates as applicable.
6. Review field quality control procedures.

C. 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.

D. Fire Performance Characteristics: Provide insulation materials identified to those whose indicated fire performance characteristics have been determined by ASTM test method indicated below, by UL, or other testing and inspection organizations acceptable to authorities having jurisdiction. Identify products with appropriate marking of applicable testing and inspecting organization.
   1. Surface Burning Characteristics: ASTM E84
   2. Fire Resistance Rating: ASTM E119
   3. Room Corner Tests: NFPA 286
   4. Current Evaluation Reports may be submitted as substantiation of compliance with Fire performance claims.

## PART 2 - PRODUCTS

2.1 Structural Insulated 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 2308.9.3, and approved for structural panel shear walls of IBC 2306.3, The structural panels must also be able to 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.

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 E84
   2. Smoke Developed Index: <450 when tested in accordance with ASTM E84
   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 ,1%

B. Acceptable Manufacturers:
   1. Ox Engineered Products: OX -IS Structural Insulation
      22260 Haggerty Road #365
      Northville, MI 48167
      Contact: Lee Bybee
      Telephone: 303-748-0858
      Email: lbybee@oxep.com

2.2 ACCESSORIES

A. Fastening Treatment

1. Recommended Nail Type: Shank Diameter: 0.113 min. with 1" stud penetration minimum
2. Recommended Staple Type: Gauge: 16 Crown: 0.5 inch or 1 inch with 1" stud penetration minimum
3. Recommended Screw Type: Corrosion-resistant self-tapping screws with 1" stud penetration minimum

B. Taping Treatment
1. For water resistive and/or air barrier installations, tape all seams with minimum 2-7/8" wide seam tape
2. Acceptable Seam Tape Manufacturers:
   a. Ox Seam Tape – 2-7/8" thick. Ox 30 year system warranty only applies with the use of Ox tape products.
   b. Or Equivalent
3. Flashing Tape: Provide insulation manufacturer's recommended tape for counter-flashing and penetrations through the insulation layer.
4. Acceptable Flashing Tape Manufacturers:
   a. Ox Artic Flash: 4 inch, 6 inch, 9 inch at openings at heads, jambs and sills. Ox 30 year system warranty only applies with the use of Ox tap products
   b. Other manufacturers that meet minimum requirements

## PART 3 - EXECUTION

### 3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

### 3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

### 3.3 INSTALLATION OF STRUCTURAL INSULATED SHEATHING

A. Installing Panels
1. Install panels so that the foam faces the exterior of the structure

2. For structural use, all edges must be fastened and backed by minimum 2” (nominal) framing
3. For non-structural uses, edges do not need to be backed

B. Installing Panels (Intermittent)
1. When used in combination with nonstructural foam sheathing use OX-IS Structural Insulation sheathing in areas where bracing is required.
2. Supplement remaining wall with regular foam sheathing, such as ISO RED CI Polyiso Foam Sheathing.

C. Fastening
1. Fasten OX-IS Structural Insulation using approved nails or staples every 3 inches around the perimeter of the board.
2. Nail or staple every 6 inches in the fields of the board.
3. A 3-3 pattern may also be used for staples, resulting in lower bracing percentage requirements.

D. Taping
1. For water resistive and/or air barrier installations, tape all seams with minimum 2-7/8” wide construction tape
2. Center the tape over the joint to cover fasteners.
3. When taping joints, use shingle fashion technique.
4. Tape must be installed in temperatures within manufacturer’s recommendations.

END OF SECTION 061200