SECTION 06 1613 – INSULATING SHEATHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Continuous insulation laminated to oriented strand board (OSB) with integral water resistive film facer on the exterior side of graphite enhanced expanded polystyrene (GPS) insulation. The OSB is installed directly to the studs, while the faced continuous insulation faces outward.

1.02 RELATED REQUIREMENTS

A. Section 04 2723 - Cavity Wall Unit Masonry: Brick veneer enclosing insulating sheathing.
B. Section 04 4300 – Stone Masonry: Adhered stone veneer enclosing insulating sheathing.
C. Section 05 4000 – Cold-Formed Metal Framing: Insulating sheathing support framing.
D. Section 06 1000 – Rough Carpentry: Insulating sheathing support framing.
E. Section 07 2500 - Weather Barriers: Insulating sheathing as water resistive barrier.
F. Section 07 4600 – Siding: Siding enclosing insulating sheathing.
G. Section 09 2400 – Cement Plastering: Stucco enclosing insulating sheathing.

1.03 REFERENCE STANDARDS

A. AATCC – American Association of Textile Chemists and Colorists; www.aatcc.org:
B. ASTM International - American Society for Testing and Materials; www.astm.org:
C. DOC - Department of Commerce, Voluntary Product Standards; www.commerce.gov:
   1. PS 2 – Performance Standard for Wood-Based Structural-Use Panels; 2010.
D. International Code Council (ICC) Evaluation Service (ES); www.icc-es.org:

1.04 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
C. Shop Drawings: Provide drawings indicating typical installation.
D. Manufacturer’s Certificate: Certify that products meet or exceed specified requirements.
E. Test and Evaluation Reports:
   1. ICC-ES or UL report for building code compliance.
F. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

G. Manufacturer’s Qualification Statement.

H. Installer’s Qualification Statement.

I. Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturers Qualifications: Company specializing in manufacturing products specified in this section, with not less than [three] years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least [three] years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original, unopened, undamaged containers with identification labels intact.

B. Store materials protected from exposure to harmful environmental conditions as recommended by manufacturer.
   1. Avoid prolonged exposure to sunlight; cover with opaque tarp or inside original packaging.
   2. Store materials elevated from ground and moist conditions, and do not stack master bundle.
   3. Avoid exposure of insulation to temperatures exceeding 165 degrees F (74 degrees C).
   4. Avoid exposure of insulation to heated asphalt or coal tar.

C. Handling: Rigid foam insulation may be cut, drilled, sawn, rasped or otherwise handled similar to other construction materials, such as wood.
   1. Field test compatibility with waterproofing mastics or other materials prior to use; examples of non-compatible compounds include products containing ketones, gasoline or diesel solvents.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Manufacturer shall warrant rigid foam insulation for the life of installation it is originally installed for the following:

C. Exterior foam facer will remain functionally adhered.

D. Thermal insulation value will not vary more than ten (10) percent from the published R-value.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Atlas EPS, a Division of Atlas Roofing Corporation:
   1. Address: 8240 Byron Center Ave SW, Byron Center, Michigan 49315.
   2. Phone: (800) 917-9138; Fax: (616) 878-9942.

B. Product and Application:
   1. ThermalStar One Structural Insulated Sheathing for Traditional Wall Siding Applications.
      a. Refer to Section 07 4600 for additional requirements.
   2. ThermalStar One Structural Insulated Sheathing for Three Coat Stucco Applications.
      a. Refer to Section 09 2400 for additional requirements.
      a. Refer to Section 09 2400 for additional requirements.
   4. ThermalStar One Structural Insulated Sheathing for Brick Veneer Applications.
      a. Refer to Section 04 2723 for additional requirements.
5. ThermalStar One Structural Insulated Sheathing for Adhered Stone Veneer Applications.
   a. Refer to Section 04 4300 for additional requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Flame Spread Index (FSI): Class A – 20 or less, when tested in accordance with ASTM E84.
B. Smoke Developed Index (SDI): 400 or less, when tested in accordance with ASTM E84.
C. Maximum Use Temperature: Short term of 10 to 15 minutes, maximum temperature of 180 degrees F (82 degrees C); long term maximum temperature of 165 degrees F (74 degrees C).
D. Insulation materials containing formaldehyde, chlorofluorocarbon (CFCs), hydro chlorofluorocarbons (HCFCs), or other volatile organic compounds (VOCs) are not permitted.
E. Qualifies as air barrier in accordance with IECC Section R402.4.1.1.
F. Qualifies as water-resistant barrier in accordance with ICC-ES AC71.
G. Insulation Film Facer Water Vapor Permeance: Class II, less than 1.0 perm and greater than 0.1 perm, tested in accordance with ASTM E96/E96M on 1 inch (305 mm) test specimen at 75 degrees F (24 degrees C) using desiccant method.

2.03 MATERIALS

A. Composite Insulating Wall sheathing: Graphite enhanced expanded polystyrene (GPS) insulation with a polymeric film facer, bonded to exterior face of oriented strand board (OSB) attached to support structure.
   1. Film Facer: Factory-laminated water-resistant barrier polymer facer laminated to exterior side of GPS insulation.
   2. Exterior facer has fastener spacing symbols for 16 inch (406 mm) and 24 inch (610 mm) on center.
   3. Water resistance of sealed joints complies with AATCC 127; maintains 21.7 inch head pressure for 5 hours.
B. Oriented Strand Board (OSB): 7/16 inch (11.1 mm) thick, with Exposure 1 rating in accordance with PS 2.
C. Insulation Compressive Strength: 15 psi (103 kPa), at 10 percent deformation in accordance with ASTM D1621.
D. Insulation Thermal Resistance: At 75 degrees F (24 degrees C) mean temperature in accordance with ASTM C518.
   1. R-value of [3.0 at 11/16 inch (17.46 mm) thick] [5.0 at 1-1/16 inch (27 mm) thick] or [7.5 at 1-9/16 inch (39.69 mm) thick].
E. Board Insulation Thickness: [11/16 inch (17.46 mm)] [1-1/16 inch (27 mm)] or [1-9/16 inch (39.69 mm)].
F. Board Width and Length: [4 feet (1219 mm) wide by 8 feet (2438 mm) long] [4 feet (1219 mm) wide by 9 feet (2743 mm) long] or [4 feet (1219 mm) wide by 10 feet (3048 mm) long].
G. Insulation is comprised of 98 percent air and 2 percent rigid polystyrene.
H. Board Edges: Square edge.

2.04 ACCESSORIES

A. Nailer and Fasteners for Oriented Strand Board (OSB): Provide as recommended by insulating sheathing manufacturer.
   1. Nailer for ThermalStar One R3 and R5: SENCO SCN63LDXP Nailer with 3/8 inch (9.5 mm) thick spacer on nailer; www.senco.com/tools/nailers/.
   3. Fasteners: SENCO GL24APBF Nails; 2-3/8 inch (60.325 mm) long by 0.113 inch (2.87 mm) diameter with 15 degree angled wire coil and full round head; www.senco.com/fasteners/nails/.
4. Ensure sheathing nail head is seated on outer surface of OSB.

B. Self-Adhering Seam and Flashing Tape: Pressure-sensitive, self-adhering, cold-applied polymer film seam tape with acrylic adhesive.
   1. Width: At least 3 inch (76 mm) wide.
   2. Products:
      b. 3M - 8087.
      c. 3M – 8777.
      d. Dow – Weathermate.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine framing spacing and alignment to determine if work is ready to receive sheathing. Proceed with sheathing work once conditions meet requirements.

3.02 INSTALLATION

A. Install insulation in accordance with manufacturers written installation instructions, requirements of applicable Evaluation Reports and of authorities having jurisdiction (AHJ).

B. Moisture and Air Barrier: Coordinate sheathing installation with flashing and joint sealant installation and adjacent building air and moisture barrier components to provide complete, continuous weather-resistant barrier.
   1. Refer to Section 07 2500 for additional requirements.

C. Do not bridge joints, allow joint spacing equal to spacing of structural studs.

D. Install panels with laminated facer to exterior, OSB directly to framing, and stagger end joints of adjacent panel runs.

E. Attach sheathing panels securely to substrate with manufacturer approved nailer and fasteners.

F. Apply seam tape at panel seams and facer defects or cracks to form continuous weathertight surface.
   2. Nail penetrations in sheathing panels do not need to be taped.
   3. Apply seam and flashing tape in accordance with manufacturer’s written instructions.

3.03 CLEANING

A. Comply with the requirements of Section 01 7419 - Construction Waste Management and Disposal.

B. Remove excess and waste materials from job site in accordance with Owner’s construction waste management requirements.

C. Clean EPS insulation may be recycled through a national program; http://www.epsrecycling.org/.

3.04 PROTECTION

A. Protect installed products from damage during subsequent construction.

B. Repair or replace damaged products before Date of Substantial Completion.

END OF SECTION