

**SECTION 07 2100**  
**NEOPOR PLUS GRAPHITE POLYSTYRENE (GPS) THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, and exterior wall behind \_\_\_\_\_ wall finish.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2723 - Cavity Wall Unit Masonry: Masonry walls enclosing insulation.
- B. Section 06 1000 - Rough Carpentry: Installation requirements for board insulation over steep slope roof sheathing or roof structure.
- C. Section 07 2400 - Exterior Insulation and Finish Systems: Board insulation on exterior side of walls, finished with weatherproof coating.

**1.03 REFERENCE STANDARDS**

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2015a.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- D. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components; 2012.
- E. ASTM E119 –Standard Test Methods for Fire Tests of Building Construction and Materials.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

Visit [www.neopor-insulation.com/contact](http://www.neopor-insulation.com/contact) to locate the nearest manufacturing facility to your project.

- A. United States:
  - 1. ACH Foam
  - 2. Atlas EPS
  - 3. Big Sky
  - 4. Carpenter
  - 5. Cellofoam
  - 6. Drew Foam
  - 7. FMI-EPS LLC
  - 8. Insulfoam, LLC
  - 9. Opco
  - 10. Perma R Products
  - 11. Plymouth Foam
  - 12. Polar Industries
  - 13. Progressive Foam Technologies
  - 14. Star R Foam
  - 15. Styrotech

16. Versatech
- B. Canada:
  1. AMC Foam Insulation
  2. Beaver Plastics
  3. Concept JRC, Inc. (Polyform)
  4. Form Solutions
  5. Groupe Isofoam
  6. Le Groupe Legerlite
  7. PlastiFab

## 2.02 APPLICATIONS

- A. Insulation Under Concrete Slabs: Graphite polystyrene board.
- B. Insulation at Perimeter of Foundation: Graphite polystyrene board.
- C. Insulation Inside Masonry Cavity Walls: Graphite polystyrene board.
- D. Insulation Inside Prefabricated Wall Panels: Graphite polystyrene board.
- E. Insulation Over Metal Stud Framed Walls, Continuous: Graphite polystyrene board.

## 2.03 FOAM BOARD INSULATION MATERIALS

- A. Graphite Polystyrene (GPS) Board for Above and Below Grade Insulation.  
ASTM C578, Type I; with the following characteristics:
  1. Flame Spread Index: 5 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 25 or less, when tested in accordance with ASTM E84.
  3. Complies with fire resistance requirements shown on the drawings as part of an exterior non-load-bearing exterior wall assembly when tested in accordance with NFPA 285.
  4. Board Edges: \_\_\_\_\_.
  5. Water Absorption: 1.1 percent by volume, maximum.
  6. Compressive Resistance: 10 psi at yield of 10% deformation.
  7. Thermal Resistance: R-value of 5 per 1-1/16 inch (27 mm) at 75 degrees F (24 degrees C) mean temperature.
  8. Manufacturers:
    - a. BASF Corporation; BASF Neopor Plus GPS: [www.neopor-insulation.com](http://www.neopor-insulation.com).
    - b. Visit [www.neopor-insulation.com/contact](http://www.neopor-insulation.com/contact) to locate the nearest manufacturing facility to your project.
  
- B. Graphite Polystyrene (GPS) Board for Above and Below Grade Insulation.  
ASTM C578, Type VIII; with the following characteristics:
  1. Flame Spread Index: 5 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 25 or less, when tested in accordance with ASTM E84.
  3. Complies with fire resistance requirements shown on the drawings as part of an exterior non-load-bearing exterior wall assembly when tested in accordance with NFPA 285.
  4. Board Edges: \_\_\_\_\_.
  5. Water Absorption: 1.1 percent by volume, maximum.
  6. Compressive Resistance: 14 psi at yield of 10% deformation.
  7. Thermal Resistance: R-value of 5 per 1-1/16 inch (27 mm) at 75 degrees F (24 degrees C) mean temperature.
  8. Manufacturers:
    - a. BASF Corporation; BASF Neopor Plus GPS: [www.neopor-insulation.com](http://www.neopor-insulation.com).
    - b. Visit [www.neopor-insulation.com/contact](http://www.neopor-insulation.com/contact) to locate the nearest manufacturing facility to your project.

- C. Graphite Polystyrene (GPS) Board for Above and Below Grade Insulation.  
ASTM C578, Type II; with the following characteristics:
1. Flame Spread Index: 5 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 25 or less, when tested in accordance with ASTM E84.
  3. Complies with fire resistance requirements shown on the drawings as part of an exterior non-load-bearing exterior wall assembly when tested in accordance with NFPA 285.
  4. Board Edges: \_\_\_\_\_.
  5. Water Absorption: 1.1 percent by volume, maximum.
  6. Compressive Resistance: 20 psi at yield of 10% deformation.
  7. Thermal Resistance: R-value of 5 per 1-1/16 inch (27 mm) at 75 degrees F (24 degrees C) mean temperature.
  8. Manufacturers:
    - a. BASF Corporation; BASF Neopor Plus GPS: [www.neopor-basf.com](http://www.neopor-basf.com).
    - b. Visit [www.neopor-insulation.com/contact](http://www.neopor-insulation.com/contact) to locate the nearest manufacturing facility to your project.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

### **3.02 INSTALLATION**

- A. General
  1. Install GPS board insulation in a [Single] [Double] layer to achieve required R-value(s) as indicated in drawings. Cut and fit tightly around projections and penetrations.
  2. Secure insulation to substrate with [Mechanical fasteners] [Or] [Spot adhesive applied to back of board] using quantity and pattern recommended by manufacturer.
  3. Insulation Board Joints: Stagger GPS insulation board joints in one direction for each course. Butt edges and ends tightly to adjacent GPS boards.

Specifier Note: Retain, edit or delete articles below to suit project and specifier practice

4. Sheathing and Underlayment Installation: On exterior side of stud framing, install GPS insulation board [Vertically] [Horizontally]. Fasten vertically 12" (300 mm) maximum on centers using fasteners recommended by manufacturer. On interior side of stud framing, install minimum 1/2" (12.7 mm) thick gypsum wallboard over GPS board.
5. Concrete and Masonry Walls: Install GPS insulation board over furring channels attached to concrete and unit masonry substrates. Fasten vertically 12" (300 mm) maximum on centers using fasteners recommended by manufacturer.
6. Cavity Walls: Install GPS insulation board on exterior surface of interior width of cavity wall, fitting board between wall ties and other projections and penetrations.
7. Perimeter Foundation: Install GPS insulation board on exterior surface of perimeter foundation walls. Secure board with spot adhesive applied to back of board using quantity and pattern recommended by manufacturer.
8. Slab-On-Grade: Install GPS insulation board under slab-on-grade and over properly prepared subgrade of compacted fill and vapor retarder. Place GPS board with sides and ends butted.

Specifier Note: Specify the final actions required to clean installed equipment or other completed work to properly function or perform. Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

### **3.03 PACKAGING AND TRANSPORTATION**

- A. Material handling, and the flow of materials from manufacturing site to job site is a significant part of the construction process. Precautionary measures taken in packaging, storage, transportation and installation of insulation products made of Neopor can help minimize the potential for damage to the products.
- B. Precautions taken when storing insulation products on the jobsite can help minimize the potential for damage. Keep product tarped or covered to protect from weather. Do not use clear plastic covering film. If possible, store in-doors. Care should be taken to keep exposed foam protected from reflective sunlight or prolonged solar exposure.
- C. Precautions taken during the construction process can help minimize the potential for damage. Care should be taken to keep exposed foam protected from reflected sunlight or prolonged solar exposure. If deformation of the insulation product occurs due to excessive heat transferred from reflected and concentrated sunlight, remove the reflective surface or shield the insulation product.
- D. A secondary method to protect the foam from direct sunlight and heat is to install sunscreen or tarp on the outside of the scaffolding, much the same that is used on building construction that protects the public when it is necessary for them to pass by construction site underneath the scaffolding. This is only needed until the finish coat of the foam is applied.

**END OF SECTION**