



## Guide Specifications

**PROJECT ENGINEER RESPONSIBILITY:** This is a general specification guide, intended to be used by experienced construction professionals, in conjunction with good construction practice and professional judgment. This guide is to aid in the creation of a complete building specification that is to be fully reviewed and edited by the engineer. Sections of this guide should be included, edited, or omitted based on the requirements of a specific project. It is the responsibility of both the specifier and the purchaser to determine if a product or system is suitable for its intended use. Neither Owens Corning, nor any of its subsidiary or affiliated companies, assume any responsibility for the content of this specification guide relative to actual projects and specifically disclaim any and all liability for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or other construction related details, whether based upon the information provided by Owens Corning or otherwise.

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### FOAM BOARD INSULATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Provide extruded polystyrene cavity wall insulation.
- B. Related Sections:
  - 1. Division 04 - Masonry for insulation installed in cavity walls and masonry cells.

##### 1.2 DEFINITIONS

- A. Extruded Polystyrene Insulation (XPS): Insulation formed from polystyrene resin pellets fed into an extruder where they are melted into a viscous fluid and mixed with critical additives including an injected blowing agent gas to make the mixture foamable. Under carefully controlled temperature and pressure conditions, the foamable polystyrene/admixture mass is forced through a die where it is foamed, expanded and shaped in a continuous process, soon cooling and then trimmed to form a rigid homogeneous, closed cell structure, board insulation.
- B. ICC-ES: International Code Council Evaluation Service.

##### 1.3 SUBMITTALS

- A. Product Data: Submit data on product characteristics, performance criteria, and limitations, including installation instructions.
- B. Sustainable Design: Submit manufacturer's sustainable design certifications as indicated.
- C. Source Limitations: Obtain exterior building insulation through one source from a single manufacturer.

##### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain exterior building insulation through one source from a single manufacturer.
- B. Each insulation board must be labeled with manufacturer's name, product brand name, ASTM material specification reference, and identification of the third party inspection agency used for building code qualification.



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### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original packaging.
- B. Store and protect products in accordance with manufacturer's instructions. Store in a dry area and protect from water, direct sunlight, flame, and ignition sources. Do not install insulation that has been damaged or wet.
  - 1. In the event the board insulation becomes wet, wipe dry prior to installation.

Note to Specifier: For proper fire protection of plastic foam in storage, consult the National Fire Protection Association (NFPA) standards or the authority having jurisdiction.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. Owens Corning Insulating Systems, LLC, Toledo, OH 43659; [www.owenscorning.com](http://www.owenscorning.com).

### 2.2 FOAM PLASTIC BOARD INSULATION

- A. Extruded Polystyrene Board Insulation: Unfaced, complying with ASTM C 578 and meeting the following criteria:
  - 1. ASTM C 578 type [ X, IV ], certified by independent third party such as RADCO.
  - 2. Blowing Agent Formulation: Shall be zero ozone depleting.
  - 3. Compressive Strength (ASTM D 1621): [ 15, 25 ] psi, minimum.
  - 4. Edge condition: square.
  - 5. Water Absorption (ASTM C272): Maximum 0.10 percent by volume.
  - 6. Surface Burning Characteristics (ASTM E 84): Flame spread less than 25, smoke developed less than 450, certified by independent third party such as Underwriters Laboratories.
  - 7. Compliance certified by independent third party such as GREENGUARD Indoor Air Quality Certified® and/or GREENGUARD Children and Schools Certified<sup>SM</sup>.
  - 8. Recycle Content: Minimum 20%, certified by independent third party such as Scientific Certification Systems.
  - 9. Warranty: Limited lifetime warranty covering all ASTM C578 physical properties.
  - 10. Thermal Resistance (180 day real-time aging as mandated by ASTM C578, measured per ASTM C 518) with 90% lifetime limited warranty on thermal resistance.
    - a. [ Thermal resistance: ]. R-values (hr x ft<sup>2</sup> x oF/ Btu) 5.4 and 5.0 per inch of thickness. Measured at 40°F and 75°F mean temperature respectively in accordance with test method ASTM C518.
      - 1) [ CW15, Type X ].
      - 2) [ CW25, Type IV ].
      - 3) [ FOAMULAR® 150, Type X ].
      - 4) [ FOAMULAR® 250, Type IV ].
    - b. [ Thermal resistance: ]. R-values (hr x ft<sup>2</sup> x oF/ Btu) of [10.0 for 1 3/4"] [12 for 2 1/8"] thick. Measured at 75°F mean temperature in accordance with test method ASTM C518.
      - 1) [ High-R CW Plus, Type IV ].
- B. Product compliant with ASTM C 578 type and minimum density indicated:
  - 1. [ CW15, Type X, 1.30 lb/cu. ft. (21 kg/cu. m) ].
  - 2. [ CW25, Type IV, 1.60 lb/cu. ft. (26 kg/cu. m) ].
  - 3. [ FOAMULAR® 150, Type X, 1.30 lb/cu. ft. (21 kg/cu. m) ].
  - 4. [ FOAMULAR® 250, Type IV, 1.60 lb/cu. ft. (26 kg/cu. m) ].



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5. [ High-R CW Plus, Type IV, 1.60 lb/cu. ft. (26 kg/cu. m) ].

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine the areas and conditions under which work of this section will be installed. Verify that adjacent materials are dry and ready to receive insulation.
- B. Provide written report listing conditions detrimental to performance of work in this section. Do not proceed with installation until unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

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

#### 3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Apply single layer of insulation boards to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

#### 3.4 INSTALLATION OF CAVITY-WALL INSULATION

Note to Specifier: Choose optional installation instructions. Edit, combine and/or retain as needed. Owens Corning does not require a particular method of securing FOAMULAR® XPS Insulation, nor does Owens Corning require joint sealing.

- A. Secure insulation boards with two-piece wall ties designed for this purpose and specified in Division 04, Masonry Anchorage and Reinforcing. Fit courses of 16" wide insulation boards horizontally between 16" o.c. horizontal continuous joint reinforcing/adjustable wall tie eyes. Snugly friction fit insulation in place, between the wall tie eyes. Push the insulation back tightly against the back-up wall surface, with edges butted tightly in both directions. Secure insulation in place by inserting the adjustable brick tie pintel into the wall tie eye.

Note to Specifier: Optional installation instructions, edit, combine and/or retain as needed.

- B. Secure insulation boards with construction adhesive. Place pads of construction adhesive spaced approximately 24 inches (610 mm) o.c. along the edges of the inside face of the insulation board, or as recommended by the adhesive manufacturer. Construction adhesive must be recommended by its manufacturer for use with polystyrene rigid board insulation. Fit courses of insulation horizontally between wall ties and other obstructions, with edges butted tightly in both directions. Press insulation firmly against inside back-up wall surface.



# FOAMULAR® Insulation, Thermal, Masonry Cavity Wall

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Note to Specifier: Optional and additional adhesive instructions, edit, combine and/or retain as needed.

1. Spot Method: Apply 4 spots of adhesive per insulation board and set insulation firmly against the inside wythe of masonry or other construction as shown. Apply spots at each corner; spread spots to form pads 4 inches (101 mm) in diameter by 1/4 inch (6 mm) thick.
2. Serrated-Trowel Method: Apply adhesive to entire surface of each insulation board with a serrated trowel complying with the adhesive manufacturer's written instructions.
3. Seal joints between foam plastic insulation units by applying adhesive, mastic, or sealant to edges of each board to form a tight seal as units are pressed into place. Fill voids in completed installation with adhesive, mastic, or sealant.
4. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Division 04 - Masonry.

END OF SECTION

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