



## SECTION 07210

### EPS BUILDING INSULATION

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#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. EPS Building Insulation for sheathing and underlayment applications.
- B. EPS Building Insulation for concrete and masonry wall applications.
- C. EPS Building Insulation for cavity wall applications.
- D. EPS Building Insulation for underslab applications.
- E. EPS Building Insulation for below grade applications.

##### 1.2 RELATED SECTIONS

- A. Section 03300 - Cast In Place Concrete: Perimeter and under-slab insulation installation.
- B. Section 03300 - Cast In Place Concrete: Concrete base wall.
- C. Section 03400 - Pre-Cast Concrete: Pre-cast concrete base wall.
- D. Section 05400 - Cold Formed Metal Framing.
- E. Section 04210 - Clay Masonry: Brick facing.
- F. Section 04800 - Masonry Assemblies: Masonry base wall.
- G. Section 04850 - Stone Facing.
- H. Section 06100 - Rough Carpentry.
- I. Section 06110 - Wood Framing: Wood framed base wall.
- J. Section 07260 - Vapor Retarders: Vapor retarder materials over insulation to adjacent insulation.
- K. Section 07270 - Air Barriers: Air seal materials over insulation to adjacent insulation.
- L. Section 09110 - Non-Structural Metal Framing.
- M. Section 09200 - Plaster and Gypsum Board.

N. Section 09220 - Stucco.

### 1.3 REFERENCES

- A. ASTM C 177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- B. ASTM C 203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.
- C. ASTM C 272 - Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
- D. ASTM C 303 - Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.
- E. ASTM C 518 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- F. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- G. ASTM D 1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
- H. ASTM D 2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
- I. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- J. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
- K. US Green Building Council.

### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
  - 1. EA - Energy and Atmosphere: EA Credit 1: Optimize Energy Performance: Demonstrate percentage of performance improvement that meets or surpasses ASHRAE/IESNA Standard 90.1-2004.
  - 2. Product Data for Credit MR 2.1 and 2.2: For products being recycled, documentation of total weight of project waste diverted from landfill.
  - 3. Product Data for Credit MR Credit 3.1 and 3.2: Materials Reuse: 5 percent or 10 percent.
  - 4. Product Data for Credit MR 4.1 and MR 4.2: For products having recycled content, documentation including percentages by weight of post consumer and preconsumer recycled content
    - a. Include statement indicating costs for each product having recycled content.

5. Product Data for Credit EQ 4.1: For adhesives used to laminate gypsum board panels to substrates, including printed statement of VOC content
  6. Product Data for Credit MR 5.1 and Credit MR 5.2: Submit data, including location and distance from Project of material manufacturer and point of extraction, harvest or recovery for main raw material.
    - a. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
- D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with a minimum of 5 years documented experience in the manufacture of products specified.
- B. Installer Qualifications: Installer shall be experienced in performing work of this section and should have specialized in installation of work similar to that required for this project.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  1. Finish areas designated by Architect.
  2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
  3. Refinish mock-up area as required to produce acceptable work.
- D. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, foundation/structural system/substrate conditions, and insulation manufacturer's installation instructions.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in conformance with the manufacturer's instruction. Store under cover in manufacturer's unopened packaging with identification labels or markings intact until ready for installation.
- B. Products shall be fully supported in storage and prevented from contact with the ground until ready for installation.
- C. Store in a protected area and protect against exposure to sun, rain, water, dirt, mud, and other residue that may affect performance. Cover stored products with breathable protective wraps.

#### 1.7 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

#### 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within

limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.9 WARRANTY

- A. Provide the manufacturer's written 20 year warranty that Insulfoam insulations, R-Tech and InsulFoam, have no thermal drift and the installed R-value will not degrade below the published values at the time of installation. Products with warranty's based on decreasing percentage or time weighted average thermal performance provisions will not be acceptable.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Insulfoam, a Carlisle Company, which is located at: 6004 N. Westgate Blvd. Suite 120 ; Tacoma, WA 98406; Toll Free Tel: 800-248-5995; Tel: 253-572-5111; Email: [request info \(info@insulfoam.com\)](mailto:info@insulfoam.com); Web: [www.insulfoam.com](http://www.insulfoam.com)
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### 2.2 EPS BUILDING INSULATION

- A. Unfaced Flat Board Stock: InsulFoam rigid, closed cell, expanded polystyrene (EPS) boards, UL certified, complying with ASTM C 578:
  - 1. InsulFoam:
    - a. Type I.
    - b. Type VIII.
    - c. Type II.
    - d. Type IX.
    - e. Type XIV.
    - f. Type XV.
  - 2. Size:
    - a. 4 foot by 4 foot.
    - b. 4 foot by 8 foot.
    - c. Custom sizes as indicated.
    - d. Largest practical size for project.
  - 3. Thickness:
    - a. Minimum thickness of \_\_\_\_\_ inch.
    - b. Thickness required to achieve an R value of \_\_\_\_\_.
    - c. Thickness as indicated on the Drawings.
  - 4. Insect/Mold Resistant: Provide with insect and mold resistant treatments.
  - 5. Physical Properties Type I, Unfaced:
    - a. Nominal Density (pcf): 1.0 as tested in accordance with ASTM C 303.
    - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
      - 1) C .230 @ 25 degrees.
      - 2) C .240 @ 40 degrees.
      - 3) C .260 @ 75 degrees.
    - c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
      - 1) R 4.35 @ 25 degrees.
      - 2) R 4.17 @ 40 degrees.
      - 3) R 3.85 @ 75 degrees.

- d. Compressive Strength, ASTM D 1621: Minimum 10 psi.
  - e. Flexural Strength, ASTM C 203: Minimum 25 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 5.0 perms.
  - h. Water Absorption, ASTM C 272: Maximum 4.0 percent.
  - i. Capillarity: None.
  - j. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - k. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.
6. Physical Properties Type VIII, Unfaced:
- a. Nominal Density (pcf): 1.25 as tested in accordance with ASTM C 303.
  - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) C .220 @ 25 degrees.
    - 2) C .235 @ 40 degrees.
    - 3) C .255 @ 75 degrees.
  - c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 4.55 @ 25 degrees
    - 2) R 4.25 @ 40 degrees.
    - 3) R 3.92 @ 75 degrees.
  - d. Compressive Strength, ASTM D 1621: Minimum 13psi.
  - e. Flexural Strength, ASTM C 203: Minimum 30 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 3.5 perms.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.
7. Physical Properties Type II, Unfaced:
- a. Nominal Density (pcf): 1.5 as tested in accordance with ASTM C 303.
  - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) C .210 @ 25 degrees.
    - 2) C .220 @ 40 degrees.
    - 3) C .240 @ 75 degrees.
  - c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 4.76 @ 25 degrees.
    - 2) R 4.55 @ 40 degrees.
    - 3) R 4.17 @ 75 degrees.
  - d. Compressive Strength, ASTM D 1621: Minimum 15 psi.
  - e. Flexural Strength, ASTM C 203: Minimum 35 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 3.5 perms.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.
8. Physical Properties Type IX, Unfaced:
- a. Nominal Density (pcf): 2.0 as tested in accordance with ASTM C 303.
  - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) R .200 @ 25 degrees.
    - 2) R .210 @ 40 degrees.
    - 3) R .230 @ 75 degrees.

- c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) C 5.00 @ 25 degrees.
    - 2) C 4.76 @ 40 degrees.
    - 3) C 4.35 @ 75 degrees.
  - d. Compressive Strength, ASTM D 1621: Minimum 25 psi.
  - e. Flexural Strength, ASTM C 203: Minimum 50 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 2.0 perms.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.
9. Physical Properties Type XIV, Unfaced:
- a. Nominal Density (pcf): 2.50 as tested in accordance with ASTM C 303.
  - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) C .198 @ 25 degrees.
    - 2) C .206 @ 40 degrees.
    - 3) C .222 @ 75 degrees.
  - c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) R 5.05 @ 25 degrees.
    - 2) R 4.85 @ 40 degrees.
    - 3) R 4.50 @ 75 degrees.
  - d. Compressive Strength, ASTM D 1621: Minimum 40 psi.
  - e. Flexural Strength, ASTM C 203: Minimum 60 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 2.5 perms.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.
10. Physical Properties Type XV, Unfaced:
- a. Nominal Density (pcf): 3.0 as tested in accordance with ASTM C 303.
  - b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) C .196 @ 25 degrees.
    - 2) C .198 @ 40 degrees.
    - 3) C .217 @ 75 degrees.
  - c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177.
    - 1) R 5.10 @ 25 degrees.
    - 2) R 5.05 @ 40 degrees.
    - 3) R 4.60 @ 75 degrees.
  - d. Compressive Strength, ASTM D 1621: Minimum 60 psi.
  - e. Flexural Strength, ASTM C 203: Minimum 75 psi.
  - f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - g. Water Vapor Permeance, ASTM E 96: Maximum 2.5 perms.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.

B. Faced Flat Board Stock: R-Tech faced one side with a printed polymeric facer and the other side with a metalized polymeric facer, rigid, closed cell, expanded

polystyrene (EPS) boards, UL certified, complying with ASTM C 578:

1. R-Tech Board Stock:
  - a. R-Tech I.
  - b. R-Tech X.
  - c. R-Tech IV.
  - d. R-Tech VI.
  - e. R-Tech VII.
2. Size:
  - a. 4 foot by 4 foot.
  - b. 4 foot by 8 foot.
  - c. Custom sizes as indicated.
  - d. Largest practical size for project.
3. Thickness:
  - a. Minimum thickness of \_\_\_\_\_ inch.
  - b. Thickness required to achieve an R value of \_\_\_\_\_.
  - c. Thickness as indicated on the Drawings.
4. Insect/Mold Resistant: Provide with insect and mold resistant treatments.
5. Physical Properties: R-Tech I:
  - a. Nominal Density (pcf): 1.00 as tested in accordance with ASTM C 303.
  - b. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 4.4 @ 25 degrees.
    - 2) R 4.2 @ 40 degrees.
    - 3) R 3.9 @ 75 degrees.
  - c. Compressive Strength, ASTM D 1621: Minimum 13 psi.
  - d. Flexural Strength, ASTM C 203: Minimum 33 psi.
  - e. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - f. Water Vapor Permeance, ASTM E 96: Less than 1.0 perms.
  - g. Water Absorption, ASTM C 272: Maximum 1.0 percent.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 450.
6. Physical Properties: R-Tech X:
  - a. Nominal Density (pcf): 1.35 as tested in accordance with ASTM C 303.
  - b. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 4.8 @ 25 degrees.
    - 2) R 4.6 @ 40 degrees.
    - 3) R 4.2 @ 75 degrees.
  - c. Compressive Strength, ASTM D 1621: Minimum 15 psi.
  - d. Flexural Strength, ASTM C 203: Minimum 40 psi.
  - e. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - f. Water Vapor Permeance, ASTM E 96: Less than 5.0 perms.
  - g. Water Absorption, ASTM C 272: Maximum 3.0 percent.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 75.
  - j. Smoke Developed as tested in accordance with ASTM E 84: Less than 450.
7. Physical Properties: R-Tech IV:
  - a. Nominal Density (pcf): 1.80 as tested in accordance with ASTM C 303.
  - b. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 5.0 @ 25 degrees.
    - 2) R 4.8 @ 40 degrees.
    - 3) R 4.4 @ 75 degrees.

- c. Compressive Strength, ASTM D 1621: Minimum 25 psi.
  - d. Flexural Strength, ASTM C 203: Minimum 50 psi.
  - e. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - f. Water Vapor Permeance, ASTM E 96: Less than 1.1 perms.
  - g. Water Absorption, ASTM C 272: Maximum 3.0 percent.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 75.
  - j. Smoke Developed as tested in accordance with ASTM E 84: Less than 450.
8. Physical Properties: R-Tech VI:
- a. Nominal Density (pcf): 2.4 as tested in accordance with ASTM C 303.
  - b. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 5.1 @ 25 degrees.
    - 2) R 4.9 @ 40 degrees.
    - 3) R 4.5 @ 75 degrees.
  - c. Compressive Strength, ASTM D 1621: Minimum 40 psi.
  - d. Flexural Strength, ASTM C 203: Minimum 60 psi.
  - e. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - f. Water Vapor Permeance, ASTM E 96: Less than 1.1 perms.
  - g. Water Absorption, ASTM C 272: Maximum 0.3 percent.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 75.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 1 Less than 450.
9. Physical Properties: R-Tech VII:
- a. Nominal Density (pcf): 2.8 as tested in accordance with ASTM C 303.
  - b. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177
    - 1) R 5.1 @ 25 degrees.
    - 2) R 5.0 @ 40 degrees.
    - 3) R 4.6 @ 75 degrees.
  - c. Compressive Strength, ASTM D 1621: Minimum 60 psi.
  - d. Flexural Strength, ASTM C 203: Minimum 75 psi.
  - e. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
  - f. Water Vapor Permeance, ASTM E 96: Less than 1.1 perms.
  - g. Water Absorption, ASTM C 272: Maximum 3.0 percent.
  - h. Capillarity: None.
  - i. Flame Spread as tested in accordance with ASTM E 84: Less than 75.
  - j. Smoke Developed as tested in accordance with ASTM E 84: 1 Less than 450.
- C. Faced Fanfold Flat Board Stock: R-Tech Fanfold faced one side with a printed polymeric facer and the other side with a metalized polymeric facer, rigid, closed cell, expanded polystyrene (EPS) labor saving accordion style, UL certified, complying with ASTM C 578:
- 1. Size:
    - a. Largest practical size for project.
  - 2. Thickness:
    - a. 3/8 inch.
    - b. 1/2 inch.
    - c. 3/4 inch.
    - d. Thickness as indicated on the Drawings.
  - 3. Insect Resistant: Provide with insect resistant treatment.
  - 4. Physical Properties Type I:
    - a. Nominal Density (pcf): 1.0 as tested in accordance with ASTM C 303.



- b. C-Value (Conductance) BTU/(hr/ft<sup>2</sup>/degrees F) per inch as tested in accordance with ASTM C 518 or ASTM C 177.
  - 1) 3/8 inch C .240 @ 40 degrees.
  - 2) 1/2 inch C .260 @ 75 degrees.
  - 3) 3/4 inch C .260 @ 75 degrees.
- c. R-Value Thermal Resistance (hr/ft<sup>2</sup>/degrees F) /BTU per inch as tested in accordance with ASTM C 518 or ASTM C 177.
  - 1) 3/8 inch R 4.17 @ 40 degrees.
  - 2) 1/2 inch R 4.17 @ 40 degrees.
  - 3) 3/4 inch R 3.85 @ 75 degrees.
- d. Compressive Strength, ASTM D 1621: Minimum 10 psi.
- e. Flexural Strength, ASTM C 203: Minimum 33 psi.
- f. Dimensional Stability, ASTM D 2126: Maximum 2 percent.
- g. Water Vapor Permeance, ASTM E 96: Maximum 1.0 perms.
- h. Capillarity: None.
- i. Flame Spread as tested in accordance with ASTM E 84: Less than 20.
- j. Smoke Developed as tested in accordance with ASTM E 84: 150 to 300.

### 2.3 ACCESSORIES

- A. Adhesive: Material and type compatible with EPS insulation board and acceptable to EPS insulation board manufacturer.
- B. Wall Ties: Material and type compatible with EPS insulation board and acceptable to EPS insulation board manufacturer.
- C. Mechanical Fasteners: Material and type compatible with EPS insulation board and acceptable to EPS insulation board manufacturer.
- D. Furring Channels: Material and type compatible with EPS insulation board and acceptable to EPS insulation board manufacturer.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION/APPLICATION

- A. Install in accordance with manufacturer's instructions.
- B. Install faced insulation with the facing on the side recommended by the manufacturer.
- C. Insulation Board Joints: Stagger EPS insulation board joints in one direction for each course. Butt edges and ends tightly to adjacent EPS boards.

- D. Interior Wall Sheathing Installation: On exterior side of stud framing, install EPS insulation board vertically or horizontally as required. Fasten vertically 12 inches (300 mm) maximum on centers using fasteners recommended by manufacturer. On interior side of stud framing, install a minimum of 1/2 inch (12.7 mm) thick gypsum wallboard over EPS board.
- E. Interior Concrete and Masonry Walls: Install EPS insulation board directly to concrete and unit masonry substrates.
1. Remove jagged surfaces or surface irregularities prior to installation.
  2. Attach insulation by using polystyrene compatible adhesive or an approved mechanical fastener.
  3. Butt edges tightly.
  4. Mechanically attach furring strips through the insulation and into the wall substrate with approved using fasteners recommended by manufacturer.
  5. On interior side of the wall, install a minimum of 1/2 inch (12.7 mm) thick gypsum wallboard over EPS board.
- F. Cavity Walls: Install EPS insulation board on exterior surface of interior wythe of cavity wall, fitting board between wall ties and other projections and penetrations without large gaps or openings.
1. Remove jagged surfaces or surface irregularities prior to installation.
  2. Attach insulation in conformance with the applicable code.
  3. Maintain installed insulation to a point above the outer wythe as the work progresses to keep mortar from blocking the cavity.
  4. Maintain a space between the insulation and the inside face of the outer wythe of at least 3/4 inch.
  5. Stagger multiple layers of insulation. Butt edges tightly.
  6. Tape all horizontal and vertical joints in the insulation with PolyGard 136 tape.
- G. Protection Board and Perimeter Foundation Insulation: Install EPS insulation board on exterior surface of perimeter foundation walls.
1. Remove jagged surfaces or surface irregularities prior to installation.
  2. Verify that damproofing or waterproofing is fully cured prior to application over such surfaces.
  3. Attach insulation by pressing into cured damproofing or waterproofing or by using polystyrene compatible adhesive.
  4. Butt edges tightly.
  5. Apply polystyrene compatible sealant to the joint between the substrate and the insulation board to minimize water infiltration behind the insulation.
  6. Do not allow ESP insulation to be exposed for an extended period of time to protect from UV exposure and damage from other trades.
  7. Carefully backfill without displacing or damaging the insulation board.
- H. Under Slab-On-Grade: Install EPS insulation board under slab-on-grade and over properly prepared subgrade of compacted fill and vapor retarder. Place EPS board with sides and ends butted.
1. Prepare subgrade by removing surface irregularities prior to installation.
  2. Install vapor barrier over subgrade to protect against dampness and moisture penetration.
  3. If under slab waterproofing is indicated on the Drawings verify that it is fully cured prior to application.
  4. For vertical surfaces attach insulation by pressing into cured damproofing or waterproofing or by using polystyrene compatible adhesive.
  5. Butt edges tightly.
  6. For the top edge of vertical surfaces apply polystyrene compatible sealant to the joint between the substrate and the insulation board to minimize water

- infiltration behind the insulation.
7. Do not allow ESP insulation to be exposed for an extended period of time to protect from UV exposure and damage from other trades.
  8. Carefully install reinforcing and concrete without displacing or damaging the insulation board.

#### 3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION