

**SECTION 07 21 14
EXTRUDED POLYSTYRENE BOARD INSULATION**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the general Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.

1.2 SECTION INCLUDES

- A. Gypsum Underlayment System
- B. Furred and Cavity Wall Masonry Wall
- C. Exterior Sheathing System

1.3 REFERENCES

- A. ASHRAE Handbook
- B. ASTM C272/C272M – Standard Test Methods for Water Absorption of Core Materials for Structural Sandwich Construction
- C. ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- E. ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- F. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- G. ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials
- H. FBC - Florida Building Code

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver to the job site in the original manufacturer's wrapping or individual sheets clearly marked to identify contents.
- B. Protect all material from exposure to direct sunlight using an opaque, light-colored tarp, or the manufacturer's packaging.
 - 1. Protect any unwrapped material using an opaque, light-colored tarp or packaging.
 - 2. Follow manufacturer's requirements.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Install only when surfaces are dry and inclement weather is not prevalent.

1.6 WARRANTY

- A. Provide written warranty from the manufacturer that the actual thermal resistance of the extruded polystyrene insulation will not vary by more than 10% from its published thermal resistance.
- B. Warranty period is 15-years from the date of Substantial Completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Insulation: Rigid closed cell extruded polystyrene thermal board insulation conforming to the properties shown in the following table.

1. PROPERTY	TEST	@1" Thickness
a. Thickness: Refer to drawings and energy form.		
i) R-Value (F-ft-h/Btu) @ 75°F Mean Temperature	ASTM C518	5.00 (Min)
b. Compressive Strength	ASTM D1621	

	i) Minimum		15 PSI (Min)
c.	Water Absorption	ASTM C272/C272M	0.1% (Max)
d.	Water Vapor Transmission Rate (perm)	ASTM E96/E96M	1.1 (Max)
e.	Fire characteristics, maximum values		ASTM E84
	i) Flame Spread		25 (Max)
	ii) Smoke Developed		450 (Max)
f.	Maximum Recommended Use Temperature		165°F

B. Use un-faced insulation board, no vapor barrier.

C. Provide thermal barrier as required by FBC.

2.2 ADHESIVE

A. Adhesive: Type recommended by insulation manufacturer.

2.3 FASTENERS

A. Type as recommended by the insulation manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate is flat, dry, and free of honeycombs, fins, or foreign material that will impede adhesive bond or damage the insulation board.

B. Beginning of installation means installer accepts the existing conditions.

3.2 INSTALLATION-GYPSUM UNDERLAYMENT SYSTEM

A. Install vertically with seams located on studs using fasteners.

B. Fasteners should be of sufficient length to penetrate the studs a minimum of ½".

3.3 INSTALLATION-MASONRY WALL-FURRED

A. Attach to the masonry wall using a compatible adhesive, carefully following the manufacturer's installation instructions.

B. Attach metal furring strips over insulation using common masonry fasteners, which are long enough to penetrate the masonry wall a minimum of 1".

C. Attach gypsum wallboard to the furring strips.

3.4 INSTALLATION-MASONRY WALL-CAVITY WALL

A. Install boards horizontally beginning at the bottom of the wythe.

B. Secure between joint reinforcement and the wall ties.

C. Install subsequent courses with staggered joints.

3.5 INSTALLATION-EXTERIOR SHEATHING-FRAME SYSTEM

A. Install diagonal corner bracing or engineered sheathing that complies with code requirements for racking resistance.

B. Apply insulation vertically with seams located on framing members using galvanized roofing nails or staples.

1. Provide fasteners long enough to penetrate studs a minimum of ½" and space 6" o.c. around the perimeter and 12" o.c. at intermediate framing members.

2. If using staples, apply with the crown parallel to the framing members.

3. Do not overdrive nail heads or staples this will damage the insulation.

3.6 DRAFT STOPPING

A. Provide draft stopping in any concealed space of the extruded insulation at the ceiling line, where interior wall(s) intersect or abut the exterior wall, at no more than 20' intervals in large rooms with walls over 20', and as required by FBC.

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1. Draft stopping may be ½" drywall, solid minimum 22-gauge metal strip, or ½" minimum mineral wool.
2. Anchor draft stopping independent of the extruded insulation.

END OF SECTION