



Foundations

STYROFOAM Brand Insulation In Foundation Applications

NOTE TO THE SPECIFIER:

Bracket [] denotes either (1) a choice between bracketed alternatives or (2) a choice to either include or omit the single bracketed language.

Part 1 - General

1.01 Work Included

- A. This specification covers the installation of STYROFOAM* brand insulation in building foundation wall applications and beneath building floor slabs. (See end of this section for Foundation Insulation Details.)

1.02 Delivery, Storage and Handling

- A. The insulation shall be shielded from sunlight when stored outdoors for extended periods. Cover with an opaque light-colored tarp for protection from solar radiation.

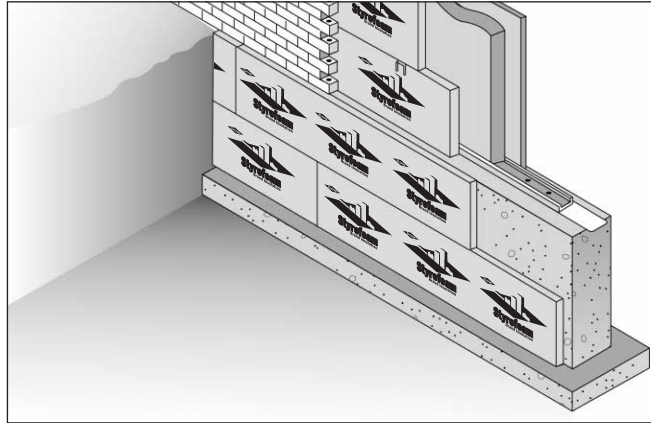
1.03 Design Considerations

A. Compatibility

01. Do not apply heated asphalt or heated coal tar products directly to STYROFOAM brand insulation products.
02. It is the installer's responsibility to test waterproofing products or other materials in contact with STYROFOAM brand insulation for compatibility.
03. Do not expose STYROFOAM brand insulation to temperatures exceeding 165°F.

B. Specific Instructions

01. In constructions incorporating STYROFOAM brand insulation, an adequate thermal barrier should be provided between the insulation and interior of the building. Masonry or concrete of one inch thickness is acceptable in meeting this recommendation. (Insulation between the interior foundation wall and floor slab, which is exposed to the interior of the



STYROFOAM brand insulation is used as part of the building thermal envelope when installed around the interior or exterior perimeter foundation and beneath the building floor slab.

building, need only be covered per installation instructions.)

1.04 References

- A. *American Society for Testing and Materials (ASTM)*
01. ASTM Specifications for Preformed, Cellular Polystyrene Thermal Insulation (C578).
02. ASTM Test for Compressive Properties of Rigid Cellular Plastics (D1621).
03. ASTM Test for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter (C518).
- B. *Model Codes*
01. BOCA No. 90-11
02. ICBO No. 2257
03. SBCCI No. 9161

Part 2 - Products

2.01 Manufacturer

- A. Insulation
01. The Dow Chemical Company - STYROFOAM Brand Square Edge or Score Board Insulation.
- B. *Adhesive*
01. Contech PL300 or other compatible polystyrene foam board adhesive.

2.02 Materials

A. Insulation

01. The insulation shall be STYROFOAM Brand Square Edge or Score Board insulation manufactured by The Dow Chemical Company.
02. The insulation shall meet ASTM C578, Type IV. See Dow Technical Data Sheet 2.1.1 for minimum design values.
03. The insulation shall be [] inches x 96 inches x [] inches in thickness to achieve the desired U-factor through the completed foundation construction.
04. STYROFOAM Brand Square Edge or Score Board insulation has an aged R-value of 5.0 ft²•h•°F/Btu per inch of thickness when tested at 75°F mean temperature in accordance with ASTM C518.

B. Adhesive

01. The adhesive shall be Contech PL300 or other compatible polystyrene foam board adhesive.

*Trademark of The Dow Chemical Company

Product Sizes of STYROFOAM Brand Insulation†

Insulation	Width (inches)	Length (inches)	Thickness (inches)
STYROFOAM Brand Square Edge	16	96	1 1/2, 2
	24	96	3/4, 1 1/2, 2, 3, 4
	48	96	3/4, 1 1/2, 2, 3
STYROFOAM Brand Score Board (scored 16" and 24" on center)	48	96	1, 1 1/2, 2

† Not all products are available in all parts of the country. Other product sizes are available on a made-to-order basis. Please contact your Dow sales representative with questions.

Recommended Insulation Thickness

It is recommended that the following thicknesses of STYROFOAM Brand Square Edge or Score Board insulation be used for specific annual Fahrenheit heating degree day ranges (65°F base):

Thickness of STYROFOAM Brand Insulation	Annual Fahrenheit Heating Degree Day Range
1"	0-2000
1 1/2"	2000-5000
2"	5000-8000
2 1/2"	8000-11000

NOTE: These recommendations meet and exceed the recommendations outlined in the ANSI/ASHRAE/IES Standard 90.1-1989 and the CABO Model Energy Code, 1989 edition, for heated and non-heated slab-on-grade building foundations. This recommendation is based on 4ft insulation depth.

2.03 Associated Materials

A. Insulation Fasteners

01. Insulation fasteners shall be [galvanized] [electroplated] [nails] [impale clip type] [mechanical fasteners] with large heads or including large washers.

B. Protective Edge Covering

01. Protective edge covering for exposed interior foundation wall insulation shall be a J-channel type and size to suit.

C. Protective Exterior Finish

01. Protective exterior finish for exterior foundation wall insulation exposed above grade shall be a type to match exterior wall finish.

Part 3 - Execution

3.01 Preparation

- A. Foundation wall substrate, adjacent materials and insulation boards shall be dry and ready to receive insulation [and adhesive].
- B. Foundation wall substrate shall be flat and free of fins and irregularities [and other materials that may impede adhesive bond].
- C. Floor slab grade shall be well tamped, drained [and covered with a suitable vapor barrier].
- D. *Environmental Data*
01. STYROFOAM brand products are CFC free.*

3.02 Board Installation On Foundation Wall

A. Exterior

01. Place insulation boards with long edge horizontally or vertically on the exterior foundation wall from the exterior finish down [] feet below grade.

B. Interior

01. Place insulation boards with long edge horizontally or vertically on the interior foundation wall from a point establishing the top of the proposed floor slab down [] feet.

- C. Secure boards to the foundation wall with [mechanical fasteners] [impale clip fasteners] [adhesive] [held in place with backfill soil].

- D. Butt all edges tightly. [Stagger all end joints].

- E. Cover exposed exterior foundation insulation using exterior finish. Install per manufacturer's recommendations.

* STYROFOAM brand products are manufactured with HCFC blowing agents which have ozone depletion potentials over 90% less than CFC blowing agents.

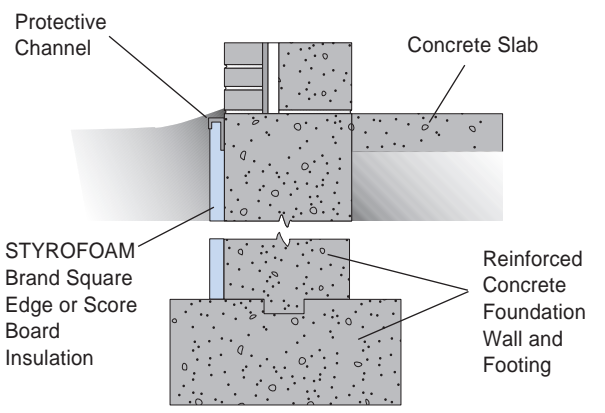
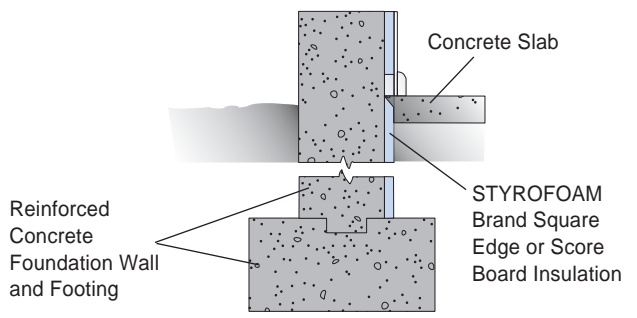
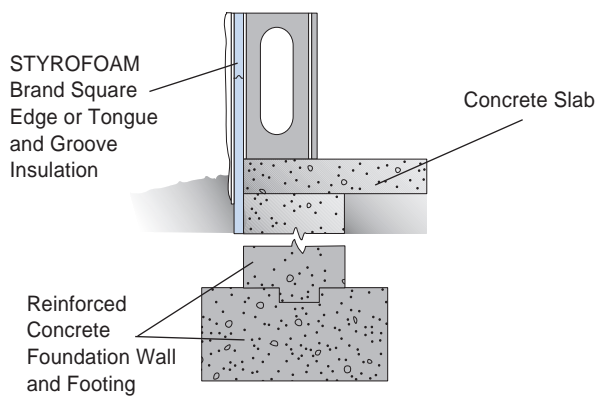
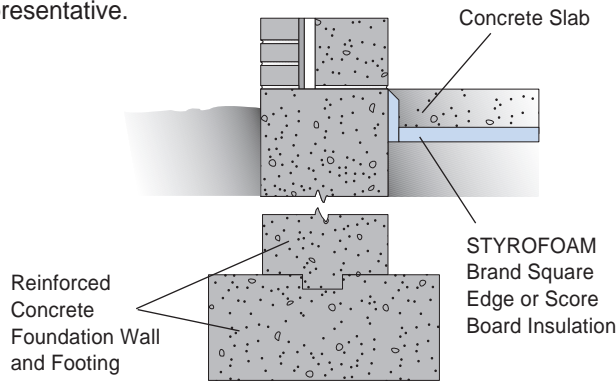
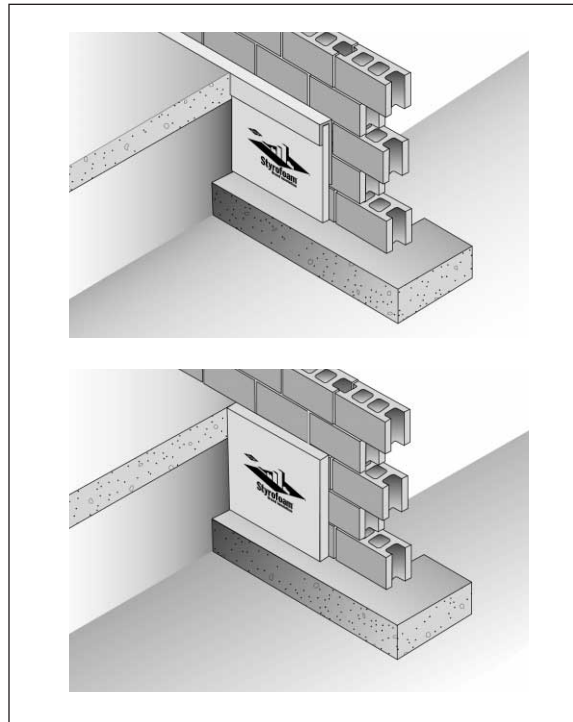
When installation of insulation will take place over a solvent-based waterproofing coating, allow ample time for the coating to cure to prevent solvent attack to the foam. Do not apply hot asphalt directly to the foam.

If needed, protect interior foundation wall insulation between the foundation wall and floor slab from the interior of the building by covering with a protective J-channel or cutting 45 degree level. See illustration at right.

**3.03 Board Installation
Underneath Floor Slab**

- A. Place insulation boards horizontally on [slab vapor retarder] [grade] around the perimeter butted up to the foundation wall and extending inward [] inches to the center of the floor space.

Property values are presented for design purposes. A fifteen-year limited thermal warranty is available. For property ranges or specification limits or more information on the thermal warranty, contact your Dow representative.



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COMBUSTIBLE: Protect from flame and other high heat sources. For more information, consult MSDS and/or call Dow (1-800-441-4369). In an emergency, call (1-517-636-4400). Local building codes may require a protective or thermal barrier. Contact your local building inspector for more information.

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**For Technical Information:
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