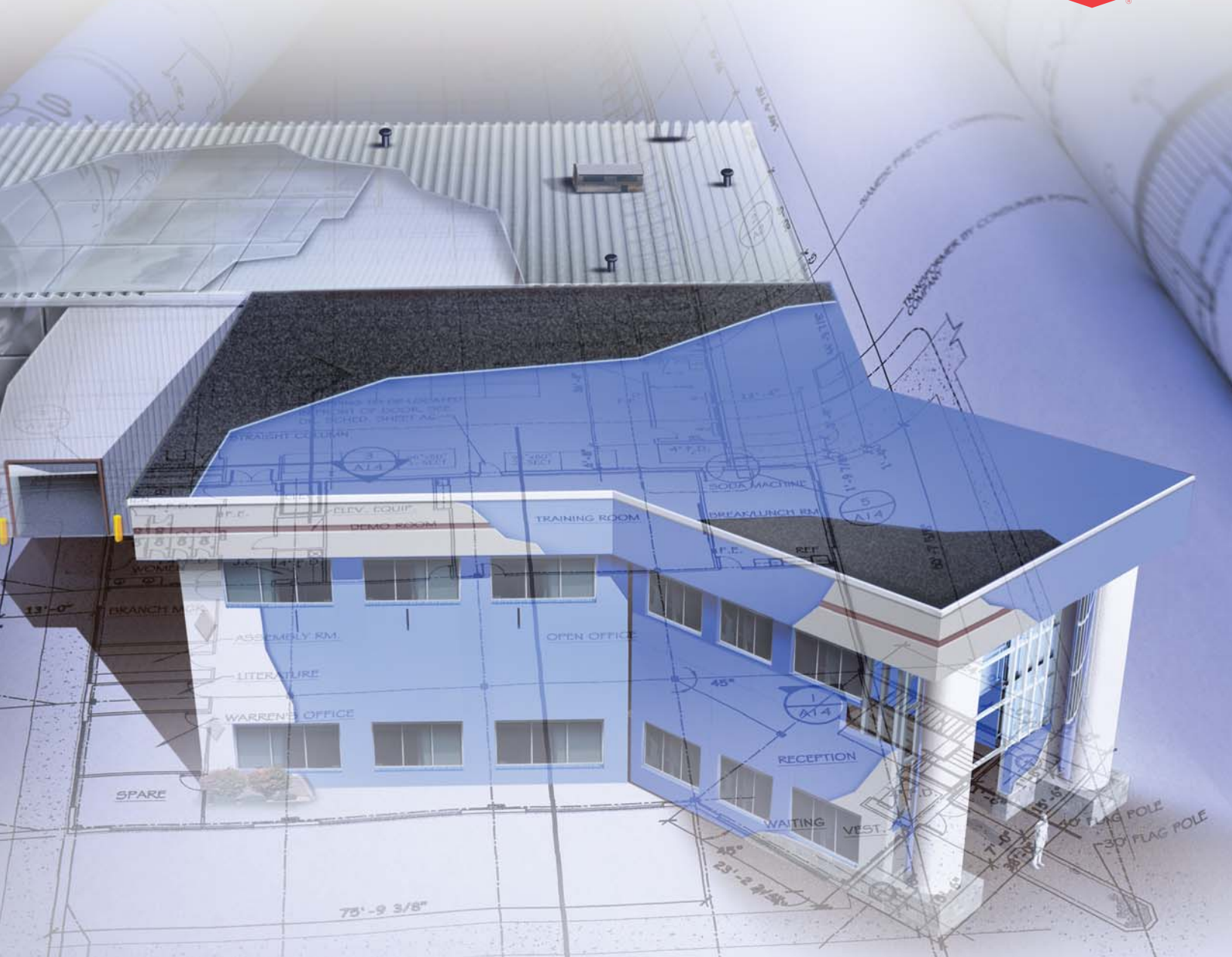


# Plan on Dow



## Insulation, Sealant and Adhesive Products

FOR COMMERCIAL WALL, FOUNDATION AND ROOF APPLICATIONS

FIRST FLOOR PLAN  
SCALE: 1/16"  
N

THE RIGHT SOURCE.

# The Right Solutions.



For nearly 60 years, The Dow Chemical Company (“Dow”) has been the recognized leader in extruded polystyrene insulation. Since developing STYROFOAM™ extruded polystyrene insulation, we’ve continued to build on our foam expertise and technical strength to provide our customers with the right building envelope product for any application. Today, Dow offers an extensive line of science-based building envelope solutions, including:

- STYROFOAM™ extruded polystyrene insulation
- Dow polyisocyanurate insulation
- INSTA STIK™ Quik Set Commercial Roofing Adhesive
- TILE BOND™ Roof Tile Adhesive
- FROTH-PAK™ Portable Spray Foam Kit
- GREAT STUFF™ Pro Gaps & Cracks Insulating Foam Sealant
- GREAT STUFF™ Pro Window & Door Insulating Foam Sealant
- STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation (2.0 pcf and 3.0 pcf) and the DOW™ SPF Roof System

## Better Buildings. Better Business.

Dow helps you improve the comfort and energy efficiency of your structures. And better buildings mean better business.

- Satisfied buyers
- Fewer callbacks
- Excellent return on investment
- Improved reputation

## Better Chemistry. Better Environment.

The Dow Chemical Company is committed to improving the things that are essential to human progress. As a dedicated steward of the environment, Dow embraces the Montreal Protocol and works diligently to meet regulations implemented by the Environmental Protection Agency based on the Protocol. To this end, Dow has replaced the blowing agent used in polyisocyanurate insulation, using hydrocarbons instead of HCFC-141b.

That’s just one way Dow uses chemistry to help maintain a better environment.

Dow insulation may help contractors and building owners achieve credits in the U.S. Green Building Council’s Leadership in Energy & Environmental Design\* (LEED) Program. For more information on LEED, visit [www.usgbc.org](http://www.usgbc.org) or call 1-866-583-BLUE (2583) and request Form No. 179-05497.



## Based on Science. Backed by Dow.

Behind our building envelope solutions are nearly 60 years of experience and the reputation of The Dow Chemical Company.

- Dow developed extruded polystyrene insulation – we know more about foam than anyone else
- Dow uses a unique free-rise polyisocyanurate technology in addition to restrained rise
- Quality and availability are ensured – we manage the entire process from raw materials to finished product

- Dow is committed to ongoing research and development
- Dow offers the most extensive marketing support in the industry

Dow's highly skilled professionals are on hand to provide technical assistance from the planning stage through completion. For product availability or the name of your local sales representative, contact Dow.

*For Technical Information:*

1-866-583-BLUE (2583)

*For Sales and Order Information:*

1-800-232-2436

[www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)



# Foundations and slabs.

## Above Grade and Below Grade

Rigid foam insulation products from Dow offer superior insulation and moisture protection in foundation and slab applications. STYROFOAM™ extruded polystyrene insulation offers a combination of benefits for every application.

- Long-term thermal performance
- High compressive strength
- Ease of use
- Superior moisture resistance

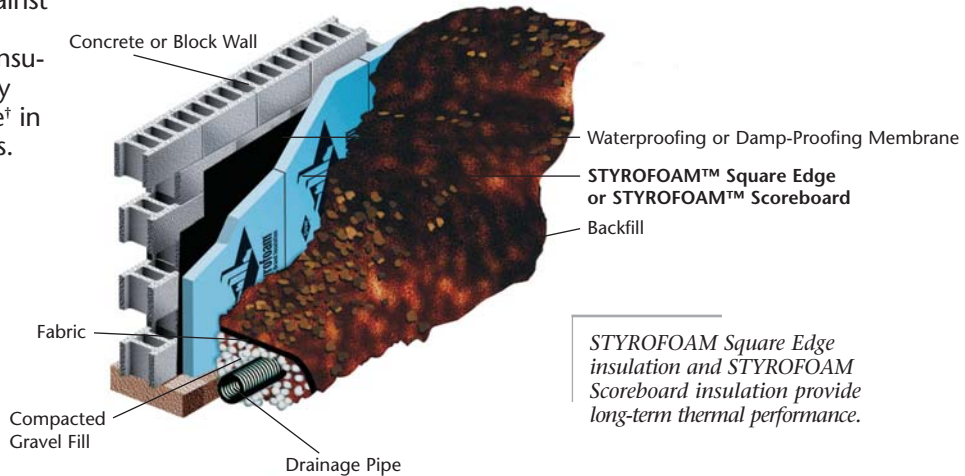
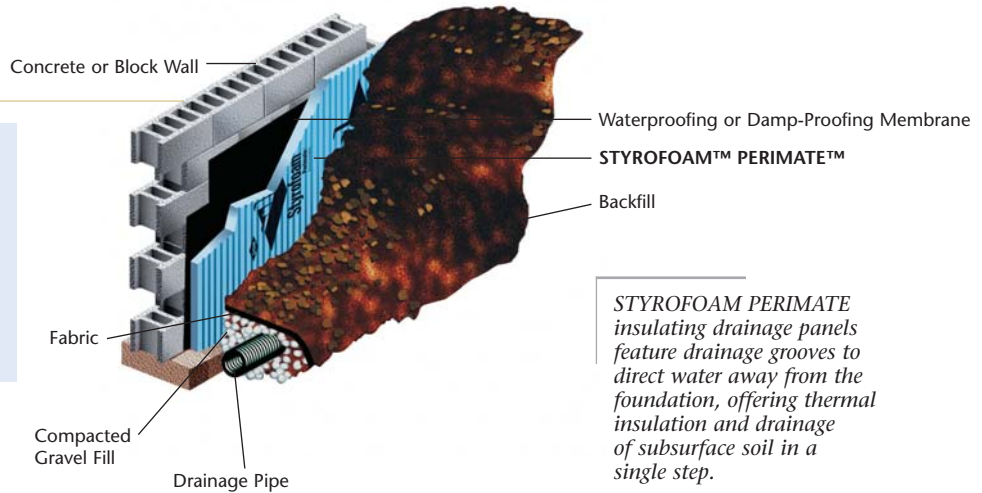
## Foundations

### PRODUCTS:

- STYROFOAM™ PERIMATE™\*\* Extruded Polystyrene Insulating Drainage Panels
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation
- STYROFOAM™ Scoreboard Extruded Polystyrene Insulation
- DOW™ Protection Board III

### APPLICATION:

Install STYROFOAM extruded polystyrene insulation or DOW Protection Board III against the exterior foundation wall. These extruded polystyrene insulations resist moisture, so they offer stable long-term R-value† in moist foundation applications.



*Fanfolded on 24" centers with plastic film on one side, DOW Protection Board III is durable yet easy to install and work with on the job site.*



®™ Trademark of The Dow Chemical Company

("Dow") or an affiliated company of Dow

\*\* U.S. Patent 5,511,346

† R means resistance to heat flow. The higher the R-value, the greater the insulating power.

## Radiant Floor – Under Slab

07 21 00/DOW

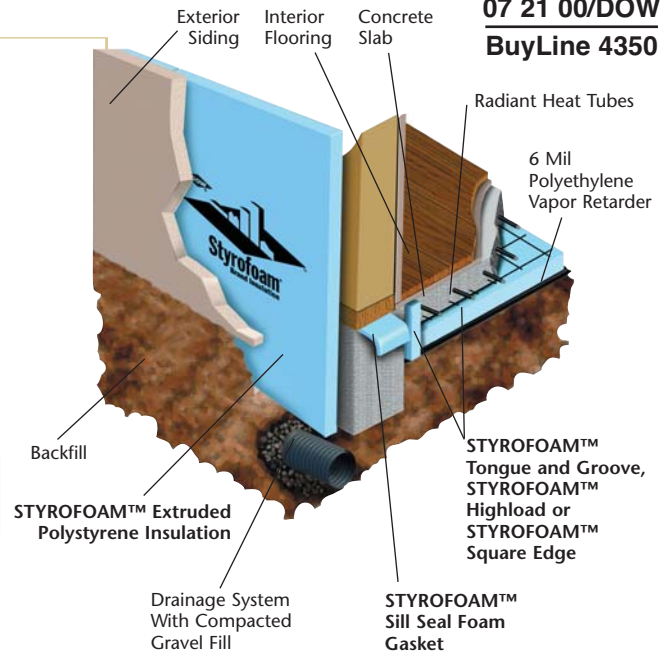
BuyLine 4350

### PRODUCTS:

- STYROFOAM™ Tongue and Groove Extruded Polystyrene Insulation
- STYROFOAM™ Highload 40 Extruded Polystyrene Insulation
- STYROFOAM™ Highload 60 Extruded Polystyrene Insulation
- STYROFOAM™ Highload 100 Extruded Polystyrene Insulation
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation

### APPLICATION:

Install STYROFOAM™ extruded polystyrene insulation under the slab to provide moisture protection and to prevent radiant floor heat from dissipating into the ground.



*STYROFOAM extruded polystyrene insulation offers superior moisture resistance and insulating power in slab-on-grade radiant floor applications.*

## Radiant Floor – Over Deck/Subfloor

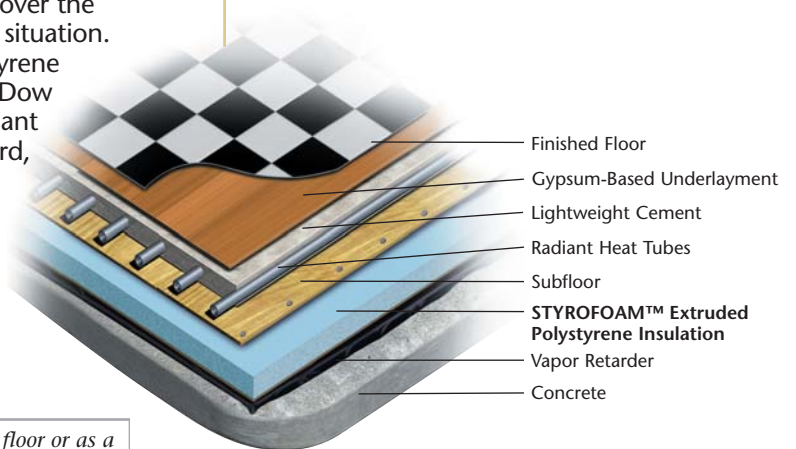
### PRODUCTS:

- STYROFOAM™ Scoreboard Extruded Polystyrene Insulation
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation
- STYROFOAM™ WALLMATE™ Extruded Polystyrene Insulation

### APPLICATION:

Use in upper floors in new construction or over the slab in a retrofit situation. Extruded polystyrene insulation from Dow helps direct radiant floor heat upward, into the room.

Consult your local building code official for construction specifics.



*Assembly for new construction for an upper level floor or as a retrofit over existing slab. If no vapor retarder was installed under the existing slab, it is recommended to add one between the slab and the rigid foam insulation. A vapor retarder is not needed if the deck is a second-floor application.*

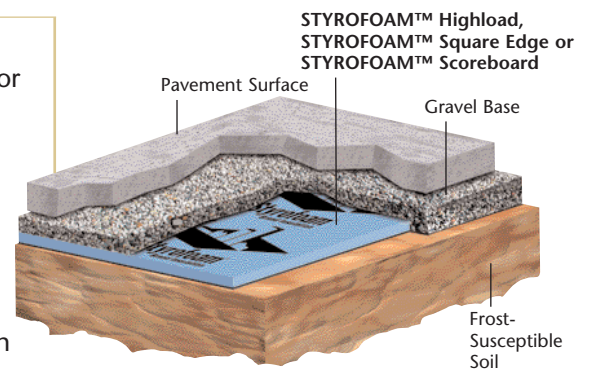
## Geotechnical

### PRODUCTS:

- STYROFOAM™ Highload 40 Extruded Polystyrene Insulation
- STYROFOAM™ Highload 60 Extruded Polystyrene Insulation
- STYROFOAM™ Highload 100 Extruded Polystyrene Insulation
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation
- STYROFOAM™ Scoreboard Extruded Polystyrene Insulation

### APPLICATION:

Use wherever you need superior load-bearing and insulating capabilities, including under building floor slabs; airport runways, taxiways and aprons; railroads; culverts; retaining walls; storage tank slabs; and swimming pools. Lay STYROFOAM extruded polystyrene insulation products on top of leveled soil. Top with a gravel base and pavement or other surface.



*STYROFOAM Highload insulation products have been developed specifically for in-ground applications.*

# Roofs.

## One- and Two-Component Polyurethane Foam Products for Roofs

Polyurethane foam insulation, sealant and adhesive products from Dow deliver the high quality and reliability professionals require in a wide range of commercial roofing applications, including:

- Flat and low slope roofs
- Steep slope roofs
- Barrel and dome roofs
- Roof recovery projects
- New and reroof projects

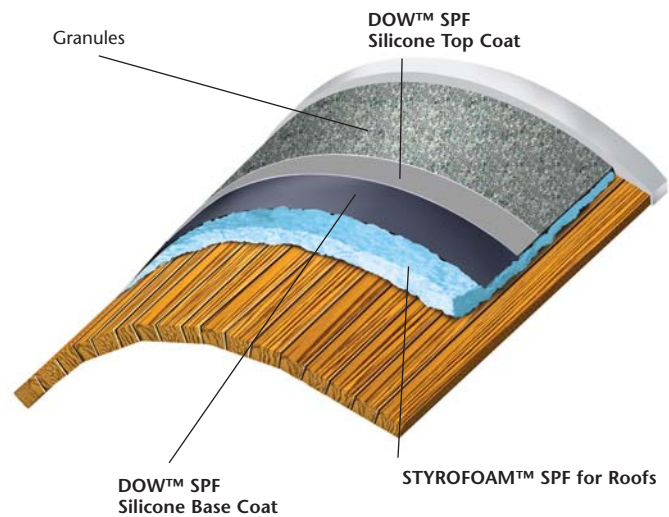
### Roof System

#### PRODUCT:

- DOW™ Spray Polyurethane Foam (SPF) Roof System
  - STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation for Roofs
  - DOW™ SPF Silicone Coating (two-coat system with granules)
  - DOW™ SPF Acrylic Coating (three-coat system)

#### APPLICATION:

Apply STYROFOAM Spray Polyurethane Foam (SPF) Insulation for Roofs directly on roof deck or over approved substrate or underlayment. Top with a DOW silicone or acrylic coating for a full system, with available 15-year warranty when applied by a Dow-approved applicator.



### Sealant

#### PRODUCTS:

- FROTH-PAK™ Portable Spray Foam Kit
- GREAT STUFF™ Pro Gaps & Cracks Insulating Foam Sealant

#### APPLICATION:

Use the FROTH-PAK Portable Spray Foam Kit (1.75 pcf density) to fill gaps or joints larger than 2". The spray forms an effective air sealant or insulation on most roofing materials. FROTH-PAK is also useful in sealing the ends of standing seam metal roofs.

GREAT STUFF Pro Gaps & Cracks is ideal for sealing smaller areas, such as the joints between walls and ceilings and small gaps around pipe penetrations.

### Adhesive

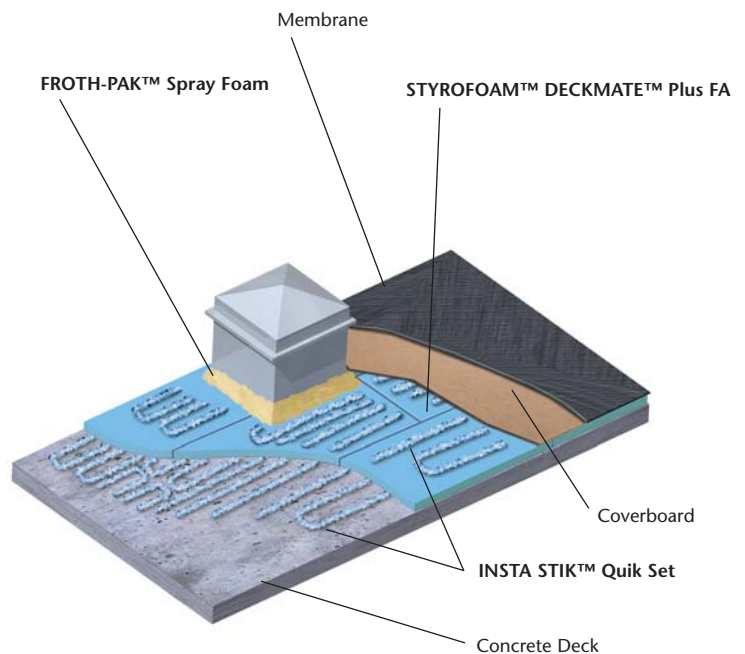
#### PRODUCT:

- INSTA STIK™ Quik Set Commercial Roofing Adhesive

#### APPLICATION:

Polyurethane adhesive products from Dow provide a fast, efficient method for securing foam insulation boards or roof tiles to appropriate roof deck or substrate.

INSTA STIK Quik Set has a limited 10-year warranty when applied to compatible materials or substrates by an approved applicator. Limited 15- and 20-year warranties are available at additional cost.



Refer to product packaging for applicable warranty and limitations.

# Plaza and Protected Membrane

STYROFOAM™ extruded polystyrene insulation offers exceptional performance in plaza and protected membrane roofing (PMR) applications.

- Excellent moisture resistance and stable long-term R-value
- Extends life of plaza or roof, providing protection from ultraviolet deterioration
- Protects membrane against weathering, physical abuse and damage
- Maintains membrane at a relatively constant temperature, minimizing effects of freeze-thaw cycling and excessive heat
- Reduces repair expenditures
- Easy removal and re-installation of ballast and insulation

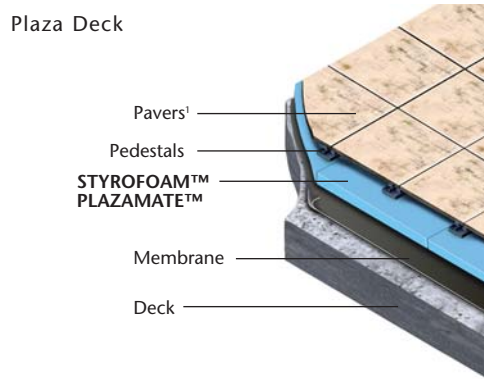
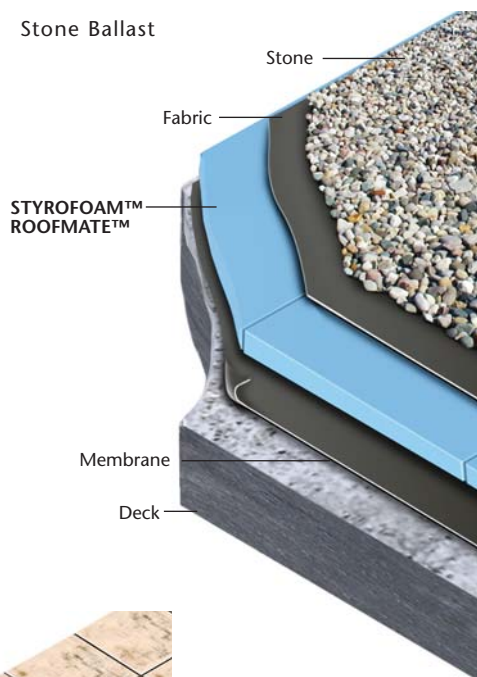
## PRODUCTS:

- STYROFOAM™ Highload 40, 60 or 100 Extruded Polystyrene Insulation
- STYROFOAM™ PLAZAMATE™ Extruded Polystyrene Insulation
- STYROFOAM™ ROOFMATE™ Extruded Polystyrene Insulation
- STYROFOAM™ Ribbed ROOFMATE™ Extruded Polystyrene Insulation

## APPLICATION:

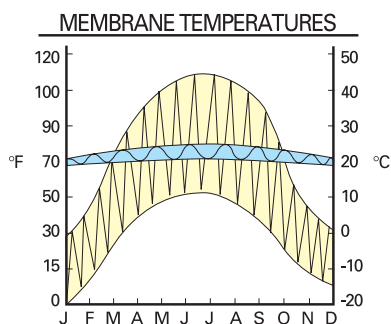
Install on top of the waterproofing membrane. Follow with approved fabric. For PMR construction, finish with a layer of crushed stone, gravel or pavers. For plaza decks where pedestrian or vehicular traffic is anticipated, cover fabric with gravel or pedestals for drainage, then top with pavers, poured concrete or other exterior topping.

- Year-round construction – roof is waterproofed first, then insulated
- Nearly 40 years of proven performance
- Thermal warranties available from Dow; full system warranties available from membrane manufacturers



*STYROFOAM PLAZAMATE insulation is designed to hold up under the heavy demands of plaza roof construction.*

<sup>1</sup>Pavers require pedestals unless STYROFOAM Ribbed ROOFMATE is used.



## MEMBRANE FIELD TEMPERATURE TEST

Membrane protection (PMR vs. conventional): Field studies have shown that a constant temperature can extend the life of the membrane. STYROFOAM ROOFMATE and STYROFOAM Ribbed ROOFMATE extruded polystyrene insulation offer superior temperature control.

- PMR (blue line) – the membrane temperature remains relatively constant
- Conventional roof (yellow line) – membrane temperature fluctuates widely

## Conventional – Mechanically Attached, Ballasted and Fully Adhered

In conventional roofing applications, STYROFOAM™ extruded polystyrene insulation and polyisocyanurate insulation products from Dow offer:

- Long-term R-value
- Moisture resistance
- High compressive strength for excellent durability and damage resistance
- Ease of use

STYROFOAM extruded polystyrene insulation and Dow polyisocyanurate insulation may be installed directly on metal decks according to Underwriters Laboratories Construction Nos. 260 and 440. Consult Dow and/or your local building code for installation requirements.

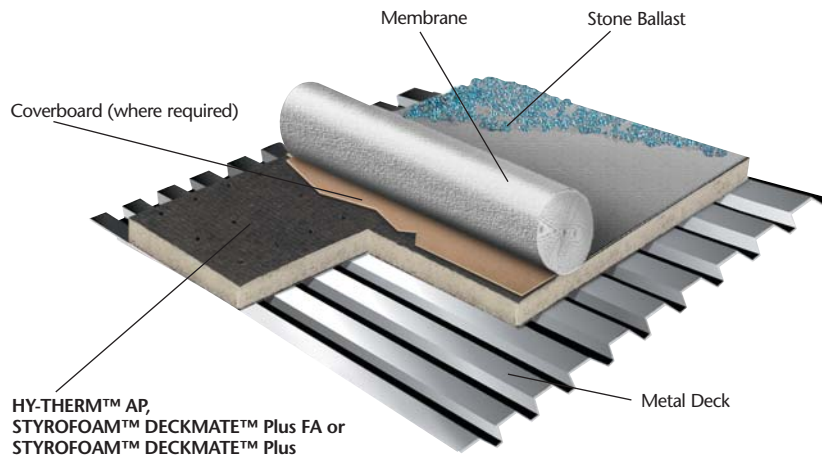
### PRODUCTS:

- STYROFOAM™ DECKMATE™ Plus Extruded Polystyrene Insulation
- STYROFOAM™ DECKMATE™ Plus FA Extruded Polystyrene Insulation
- STYROFOAM™ Tapered DECKMATE™ Plus FA Extruded Polystyrene Insulation
- HY-THERM™ AP Polyisocyanurate Roof Insulation††
- HY-THERM™ AP Tapered Polyisocyanurate Roof Insulation††

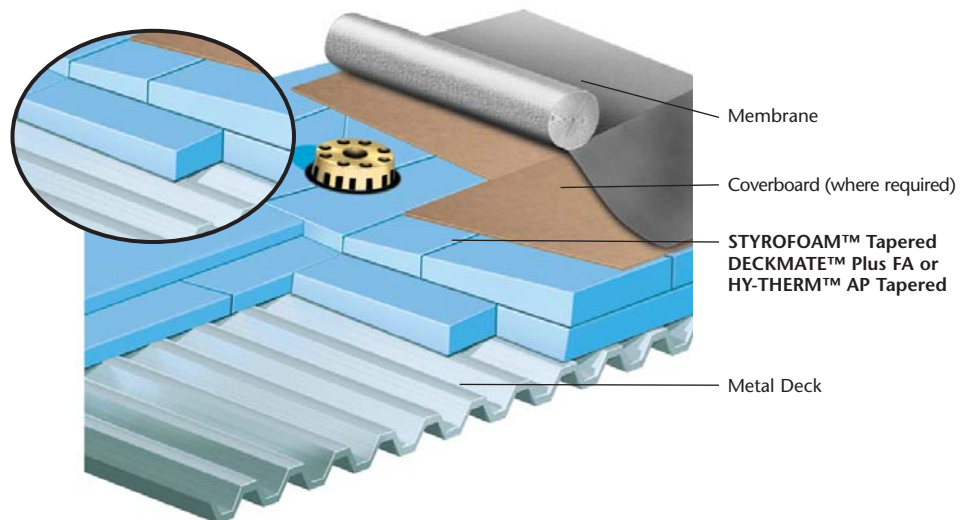
### APPLICATION:

Install insulation directly on structural deck, including metal decking. Any roofing membrane may be used with rigid board insulation from Dow.

In some cases a coverboard may be required between the insulation and the membrane for heat or chemical protection.



*STYROFOAM DECKMATE Plus and STYROFOAM DECKMATE Plus FA insulation are covered by a 15-year limited thermal performance warranty. A 30-year reuse warranty is also available.*



*STYROFOAM Tapered DECKMATE Plus FA and HY-THERM AP Tapered insulation provide a positive slope to improve roof drainage. Experienced custom fabricators provide exceptional job service. Consult Dow and/or your local building code for installation requirements.*

## Steep Slope

In steep slope roof construction, insulation and adhesive products from Dow offer high R-value, high compressive strength, durability and ease of use.

- For use on metal or wood decks
- Accept a variety of roofing materials, including shingles, slate, tile and metal membranes
- STYROFOAM™ DECKMATE™ Plus extruded polystyrene insulation offers outstanding moisture resistance
- TILE BOND™ Roof Tile Adhesive helps reduce tile breakage

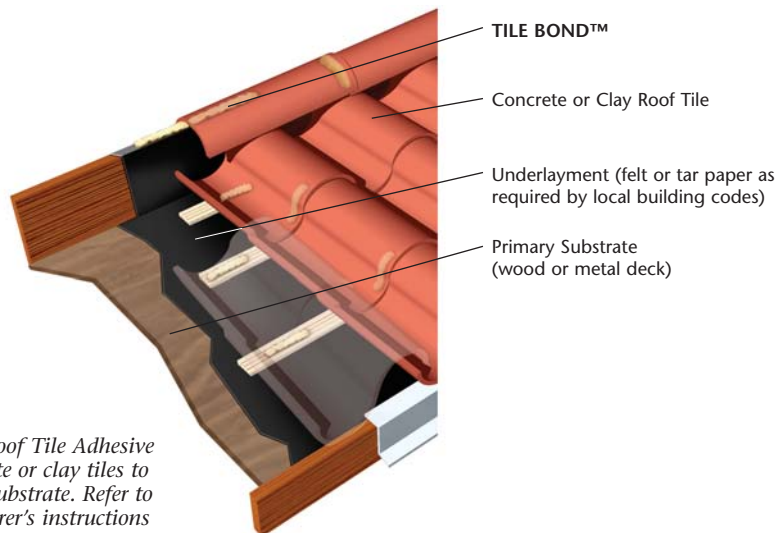
### PRODUCTS:

- STYROFOAM™ DECKMATE™ Plus Extruded Polystyrene Insulation
- TILE BOND™ Roof Tile Adhesive

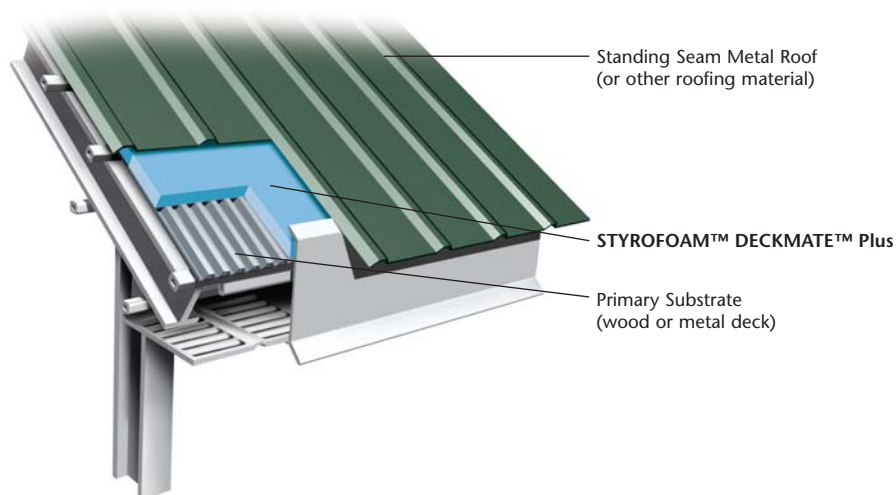
### APPLICATION:

Install insulation on clean, dry roof deck. Cover with an underlayment, such as tar paper, and a nailable surface where required. Finish with shingles, tile, slate, metal or other roofing material.

TILE BOND must be applied by an approved applicator to meet certain building code requirements. Consult local code authorities.



*TILE BOND Roof Tile Adhesive adheres concrete or clay tiles to the roof deck/substrate. Refer to tile manufacturer's instructions for details.*



*STYROFOAM DECKMATE Plus insulation provides superior moisture resistance and high R-value in a lightweight board.*

## Recovery

STYROFOAM™ RECOVERMATE CR insulation is designed especially for roof recovery applications:

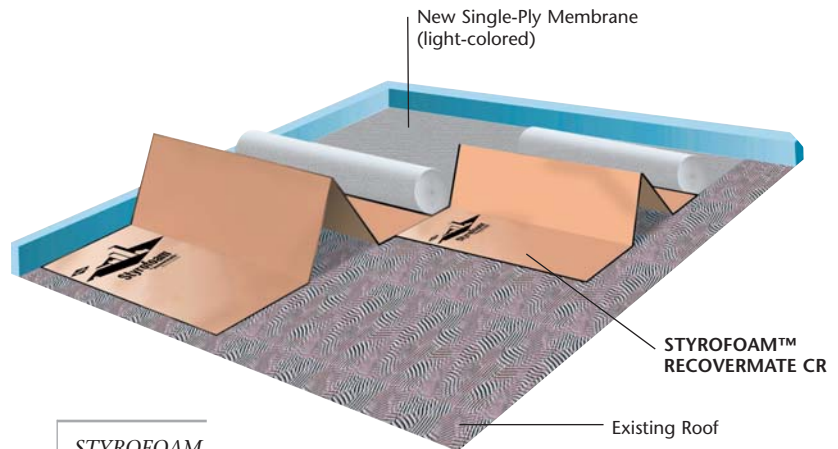
- Resistant to the effects of moisture
- Superior compressive retention
- Lightweight: easy to cut, handle, install and store
- Withstands temperatures to 165°F
- Chemical-resistant; useful for installation with plasticized membranes
- Fanfolded

### PRODUCT:

- STYROFOAM™ RECOVERMATE CR  
Extruded Polystyrene Insulation

### APPLICATION:

Install STYROFOAM RECOVERMATE CR insulation over entire surface of old roof, on top of existing membrane. Top with ballasted or mechanically attached sheet membrane.



*STYROFOAM  
RECOVERMATE CR  
insulation withstands  
temperatures to 165°F.*

## Reroof

The DOW™ Spray Polyurethane Foam (SPF) Roof System is an effective solution for roof replacement. It consists of STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation for Roofs coupled with a three-part acrylic coating or a two-part silicone coating with granules. A 15-year warranty is available. Advantages of the DOW SPF Roof System include:

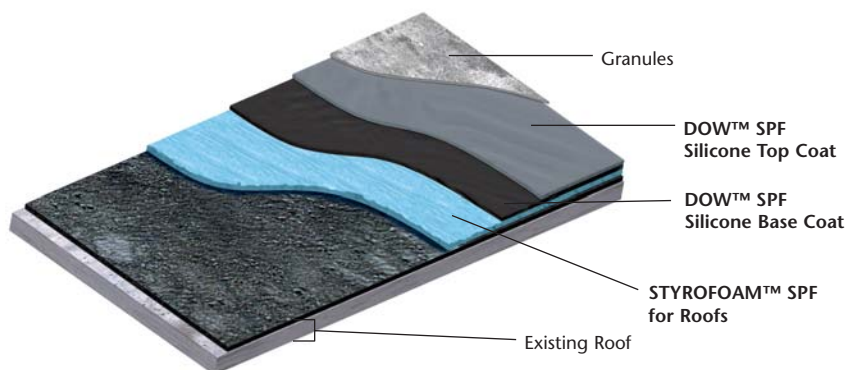
- Monolithic – no seams
- Fully adhered – eliminates fastener penetrations and saves labor
- May eliminate tear-off – saves disposal costs and optimizes use of labor
- Self-flashing – eliminates fabrication on site and saves labor
- Lightweight – ideal for many critical roof replacement applications

### PRODUCT:

- DOW™ Spray Polyurethane Foam (SPF) Roof System
  - STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation for Roofs
  - DOW™ SPF Silicone Coating (two-coat system with granules)
  - DOW™ SPF Acrylic Coating (three-coat system)

### APPLICATION:

Apply STYROFOAM SPF Insulation for Roofs to roof deck and top with DOW SPF Silicone Coating and granules or DOW SPF Acrylic Coating for a complete system.



*The DOW SPF Roof System is fully adhered and self-flashing, requiring no mechanical fasteners.*

## One- and Two-Component Polyurethane Foam Products for Walls

Increase energy efficiency and building quality with polyurethane foam products from Dow. Dow's energy and moisture management products deliver high thermal resistance and protection from air infiltration and water vapor.

### Insulation

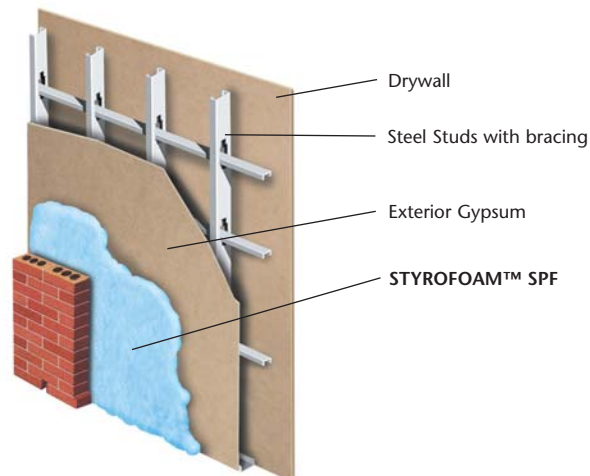
#### PRODUCT:

- STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation (2.0 pcf)

#### APPLICATION:

Insulate the exterior wall cavity with STYROFOAM SPF Insulation.

NOTE: STYROFOAM™ SPF Insulation contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the Material Safety Data Sheet carefully before use. Wear protective clothing, gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter is required to maintain exposure levels below applicable ACGIH, OSHA or WEEL limits. Provide adequate ventilation.



### Sealant

#### PRODUCTS:

- FROTH-PAK™ Portable Spray Foam Kit
- GREAT STUFF™ Pro Gaps & Cracks Insulating Foam Sealant
- GREAT STUFF™ Pro Window & Door Insulating Foam Sealant

#### APPLICATION:

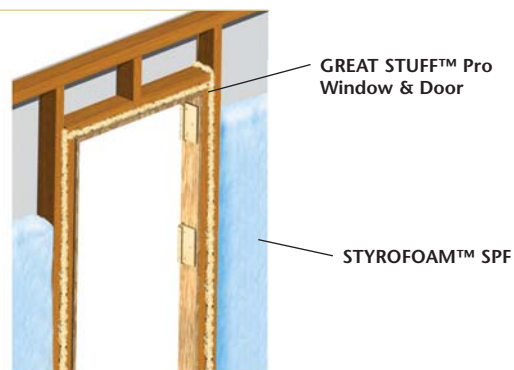
Insulate the wall cavity with STYROFOAM SPF Insulation.

FROTH-PAK is ideal for sealing larger areas, over 2", such as wall/roof junctions or large penetrations.

GREAT STUFF Pro Gaps & Cracks insulating foam sealant is ideal for sealing smaller areas, such as the joints between walls and ceilings and small gaps around pipe penetrations.

GREAT STUFF Pro Window & Door insulating foam sealant fills gaps around window and door frames without causing distortion.

NOTE: Dow polyurethane foam sealants and adhesives contain isocyanates, hydrofluorocarbon or hydrocarbon blowing agents and polyols. Read the Material Safety Data Sheet carefully before use. Wear protective clothing, gloves and goggles and provide adequate ventilation and/or wear respiratory protection.



## Interior and Exterior

With rigid foam insulation from Dow on the walls, your building performs more efficiently over time. These products offer:

- Superior long-term thermal performance
- Ease of use
- Moisture resistance
- Reusability in some situations

Note: Applicable codes may require a 15-minute thermal barrier between insulation and occupied space.

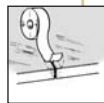
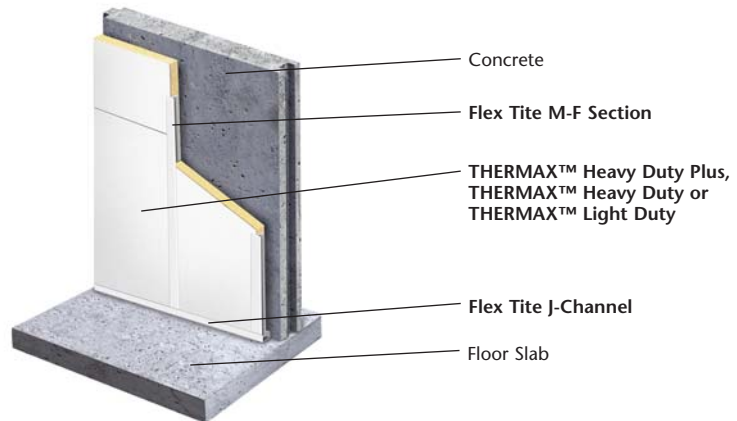
### Interior – Exposed Wall

#### PRODUCTS:

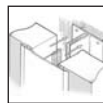
- THERMAX™ Heavy Duty Plus Polyisocyanurate Insulation
- THERMAX™ Heavy Duty Polyisocyanurate Insulation
- THERMAX™ Light Duty Polyisocyanurate Insulation

#### APPLICATION:

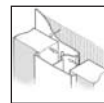
For best results, install against interior of structural wall with the Flex Tite M-F closure. Ask your seller about other installation methods. With THERMAX insulation, there is no need for drywall or gypsum board.



THERMAX White Foil or Aluminum Foil Tape



Flex Tite M-F Section



Flex Tite Clip Section



Flex Tite J-Channel

### Interior – Concealed Wall

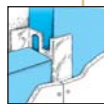
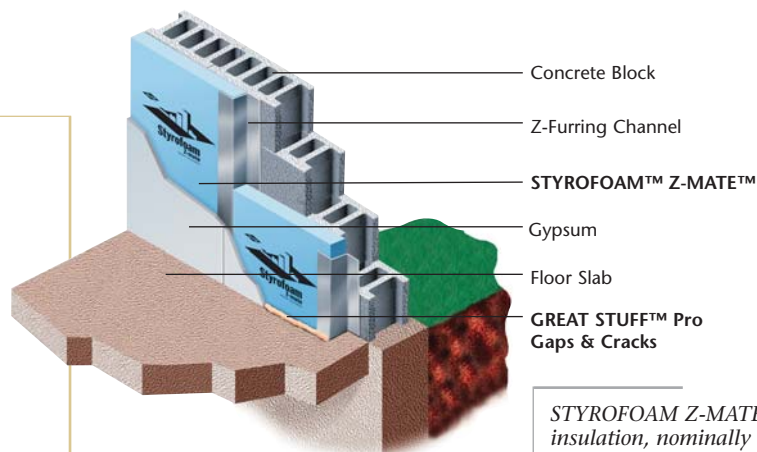
#### PRODUCTS:

- STYROFOAM™ Z-MATE™ Extruded Polystyrene Insulation
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation
- TUFF-R™ Commercial Polyisocyanurate Insulation
- Super TUFF-R™ Commercial Polyisocyanurate Insulation
- GREAT STUFF™ Pro Gaps & Cracks Insulating Foam Sealant

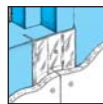
#### APPLICATION:

Install rigid foam insulation between furring strips. Cover with a minimum of 1/2" gypsum board.

A bead of GREAT STUFF Pro Gaps & Cracks insulating foam sealant seals the wall/slab joint.



Z-Furring Channel



Insulok<sup>§</sup>



T-Strip



L-Angle

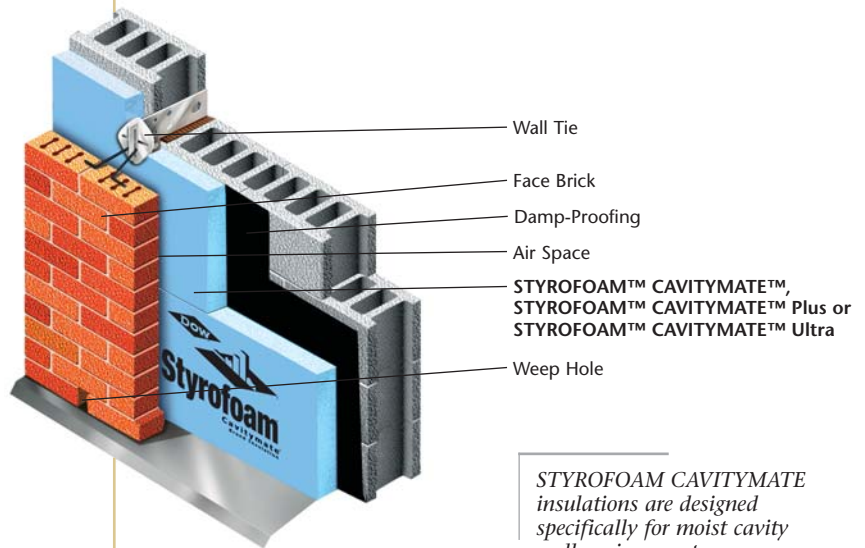
*STYROFOAM Z-MATE insulation, nominally 24" wide, is pre-cut to 23-7/8", so it can be installed between Z-furring channels placed on 24" centers.*

# Exterior Cavity Wall – Block Backed

**PRODUCTS:**

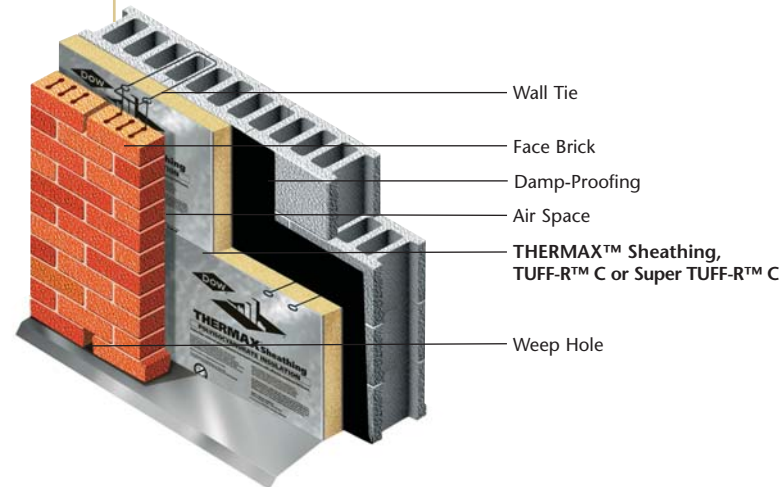
- STYROFOAM™ CAVITYMATE™ Extruded Polystyrene Insulation
- STYROFOAM™ CAVITYMATE™ Plus Extruded Polystyrene Insulation
- STYROFOAM™ CAVITYMATE™ Ultra Extruded Polystyrene Insulation
- THERMAX™ Sheathing Polyisocyanurate Insulation
- TUFF-R™ Commercial (C) Polyisocyanurate Insulation
- Super TUFF-R™ Commercial (C) Polyisocyanurate Insulation
- STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation (2.0 pcf)

**APPLICATION:**  
Install insulation on the exterior of block backed cavity walls.

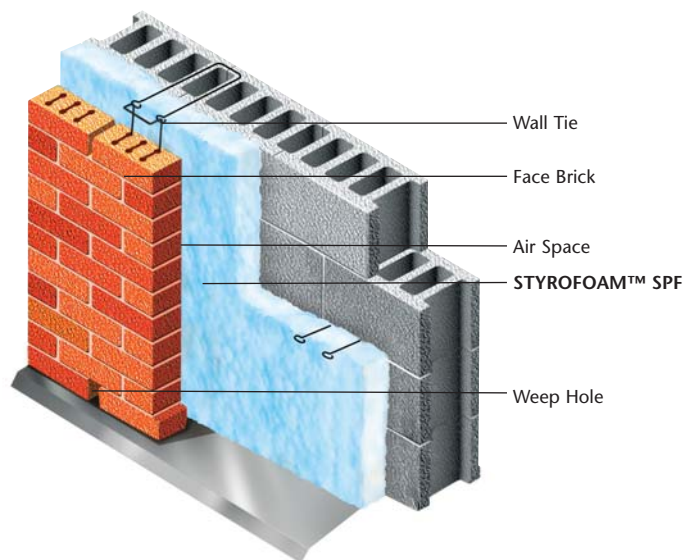


*STYROFOAM CAVITYMATE insulations are designed specifically for moist cavity wall environments.*

*The foil facer on THERMAX Sheathing contributes to improved moisture resistance, fire performance and insulating capability. TUFF-R C and Super TUFF-R C also provide exceptional thermal performance.*



*STYROFOAM Spray Polyurethane Foam (SPF) Insulation seals around wall ties and other penetrations to create a monolithic layer that also serves as an air barrier.*



# Exterior Cavity Wall – Steel Stud

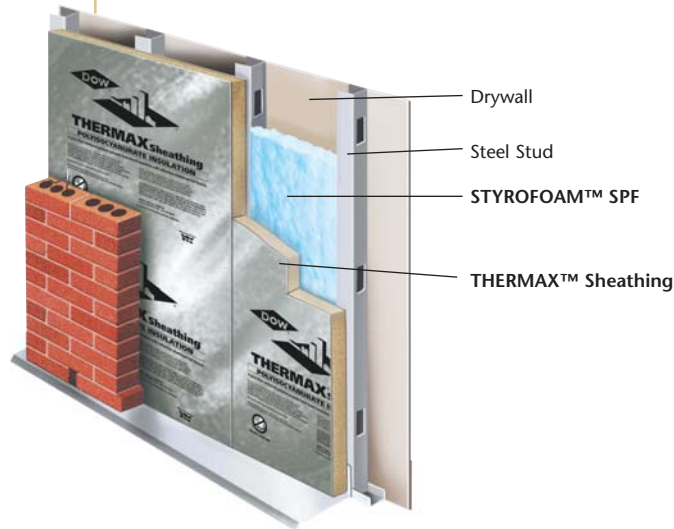
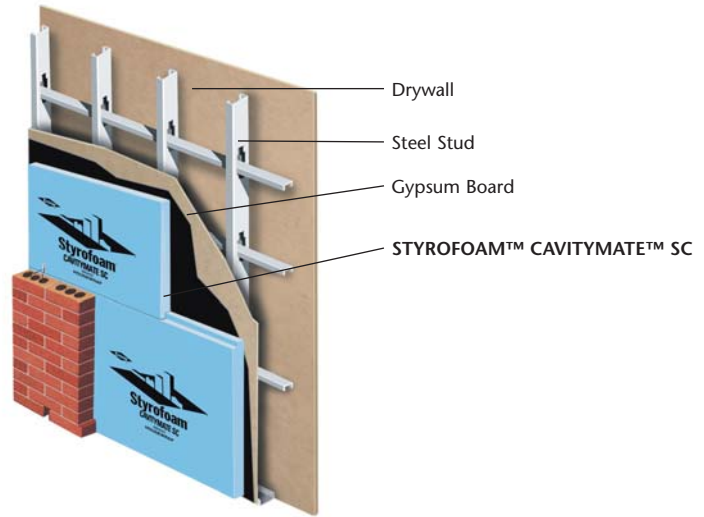
**PRODUCTS:**

- STYROFOAM™ CAVITYMATE™ SC Extruded Polystyrene Insulation
- THERMAX™ Sheathing Polyisocyanurate Insulation
- THERMAX™ Metal Building Board
- STYROFOAM™ Spray Polyurethane Foam (SPF) Insulation (2.0 pcf)

**APPLICATION:**

Install rigid foam insulation on the exterior of steel stud cavity walls and face with brick or other exterior cladding. Rigid foam insulation helps minimize thermal shorts through the steel studs and improves the performance of insulating batting, if used.

Insulate the wall cavity with STYROFOAM SPF Insulation.



*THERMAX Sheathing can help alleviate thermal short circuits and increase the R-values of properly designed steel stud walls.*



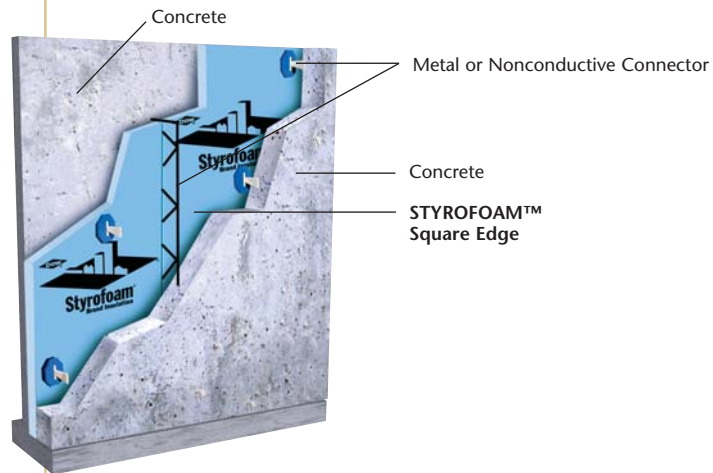
# Exterior Precast

**PRODUCTS:**

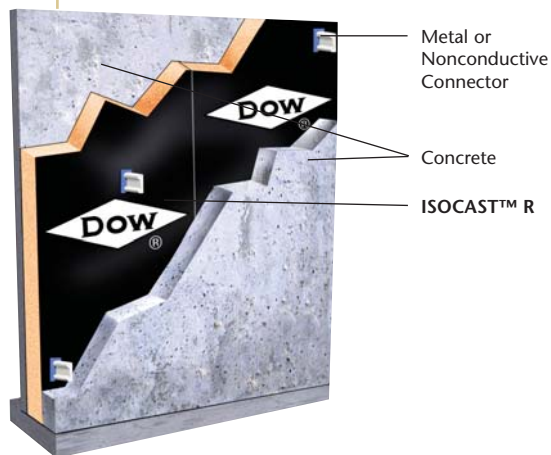
- STYROFOAM™ Square Edge Extruded Polystyrene Insulation
- ISOCAST™ R Polyisocyanurate Insulation

**APPLICATION:**

Used in insulated precast, prestressed or tilt-up construction, rigid foam insulation products from Dow combine unmatched insulating capabilities with the added strength of concrete. The foam is sandwiched between two wythes of concrete and held together structurally by metal or nonconductive connectors.



*ISOCAST R polyisocyanurate insulation features a trilaminate aluminum/poly/kraft facer for strength and high R-value per inch in precast concrete walls.*



# Pipe.

TRYMER™ 2000 XP pipe insulation and SARAN™ Vapor Retarder Film are ideal for pipe insulation applications from -297°F to 300°F, particularly chilled water lines.

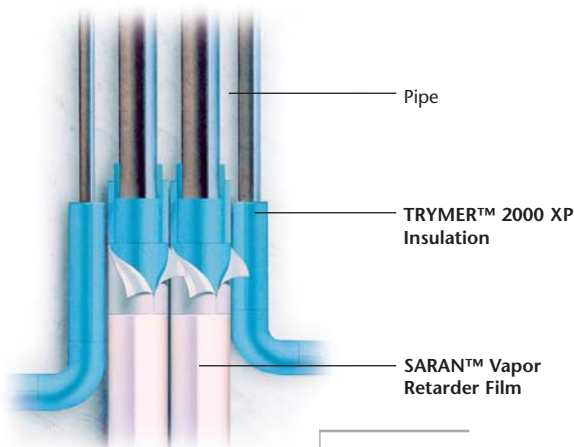
- They contain no known nutrients for growth of mold and fungus
- Superior moisture resistance
- Long-term insulation efficiency
- Lowest life-cycle cost
- TRYMER 2000 XP pipe insulation has a third-party laboratory listing of 25/50 flame spread/smoke developed index up to and including 1" thickness, 25/55 FS/SD up to 1.5" and 25/450 for 2" - 6"

## PRODUCTS:

- TRYMER™ 2000 XP Pipe Insulation
- SARAN™ Vapor Retarder Film and Tape

## APPLICATION:

Install TRYMER 2000 XP pipe insulation around pipes, like chilled water lines. Wrap SARAN Vapor Retarder Film around straight sections of pipe. SARAN Tape should be used around elbows, valves and fittings to help ensure long life span and a tight, water-resistant seal. Consult an experienced contractor, distributor or fabricator.



*TRYMER 2000 XP polyisocyanurate pipe insulation coupled with SARAN Vapor Retarder Film and Tape create a strong, effective insulation system.*

## TRYMER™ 2000 XP Polyisocyanurate Insulation

Property <sup>(1)</sup> and Test Method <sup>(2)</sup>	Value	Property <sup>(1)</sup> and Test Method <sup>(2)</sup>	Value
Density <sup>(3)</sup> , ASTM D1622, lb/ft <sup>3</sup>	2.05	Dimensional Stability <sup>(3), (5)</sup> , ASTM D2126	
Compressive Strength <sup>(3)</sup> , ASTM D1621, lb/in <sup>2</sup>		At -40°F (-40°C), 7 days	
Parallel to rise – thickness	25.0	Length, % change	0.4
Perpendicular to rise – width	24.0	Volume, % change	0.6
Perpendicular to rise – length	30.0	At -10°F (-23°C), 7 days	
Flexural Strength, ASTM C203, lb/in <sup>2</sup>		Length, % change	0.2
Parallel to rise	33.0	Volume, % change	0.2
k-factor, ASTM C518, 75°F mean temp., Aged 180 days at 75°F, Btu·in/hr·ft <sup>2</sup> ·°F	0.19	At 158°F (70°C), 7 days	
R-Value <sup>(4)</sup> /in., ASTM C518, hr·ft <sup>2</sup> ·°F/Btu Aged 180 days at 75°F	5.3	Length, % change	1.5
Closed Cell Content, ASTM D6226, %, min.	90.0	Volume, % change	3.0
Water Absorption, (24-hour immersion) ASTM C272, % by volume	<0.7	At 158°F (70°C)/97% R.H., 7 days	
Water Vapor Permeability, ASTM E96, perm-inch	4.0	Length, % change	1.6
		Volume, % change	3.4
		At 300°F (149°C), 7 days	
		Length, % change	2.7
		Volume, % change	4.5
		Service Temperature <sup>(6)</sup> , °F	-297 to +300
		Surface Burning Characteristics <sup>(7)</sup> , ASTM E84	
		Flame spread	
		1" through 6"	25
		Smoke developed	
		Up to 1.0"	50
		Up to 1.5"	55
		2" through 6"	450

- (1) All properties are measured at 74°F unless otherwise indicated.
- (2) Unless otherwise indicated, data shown are typical values obtained from representative production samples. These data may be used as a guide for design purposes, but should not be construed as specifications. For property ranges and specifications, consult your Dow representative.
- (3) Average value through insulation cross section.
- (4) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

- (5) Frequent and severe thermal cycling can produce dimensional changes significantly greater than those stated here. Special design considerations must be made in systems that cycle frequently.
- (6) Above 300°F, discoloration and charring will occur, resulting in an increased k-factor in the discolored area.
- (7) These numerical flame spread data are not intended to reflect hazards presented by this or any other material under actual fire conditions.

# STYROFOAM™ Extruded Polystyrene Insulation Products

Physical Properties	Property (units)	Thermal resistance (R-value) aged @ 75°F mean temp	Compressive strength (lb/in <sup>2</sup> ), min. (3)	Flexural strength (lb/in <sup>2</sup> ), min.	Water absorption (% by volume), max.	Water vapor permeance (perm), max.	Dimensional stability (% linear change), max.	Coefficient of linear thermal expansion (x10 <sup>-6</sup> in/in, °F)	Complies with ASTM C 578, Type (8)	Maximum use temperature (°F)	Flame spread (9)	Smoke developed	Width (inches)	Length (inches)	Typical thickness range (inches)
ASTM Method	C518	D1621	C203	C272	E96	D2126				E84	E84				
CAVITYMATE™	5.0	15	40	0.1	1.1	2.0	3.5	X	165	5	165	16	96	1-2	
CAVITYMATE™ SC	5.0	16	40	0.1	1.1	2.0	3.5	X	165	5	165	48	96	1-2	
CAVITYMATE™ Plus	5.0	25	50	0.1	1.1	2.0	3.5	IV	165	5	165	16	96	1-2	
CAVITYMATE™ Ultra	5.6	25	50	0.1	1.1	2.0	3.5	IV	165	10	160	16	96	1.75, 2.125	
DECKMATE™ Plus	5.0	25	50	0.1	1.1	2.0	3.5	IV	165	5	165	24	96	1-4	
DECKMATE™ Plus FA (Flat and Tapered)	5.0	25	50	0.3	1.1	2.0	3.5	IV	165	5	165	24	96	1-4 1/8", 1/4", 1/2" slopes	
FREEZERMATE™	5.0	30	50	0.1	0.8	2.0	3.5	IV	165	5	165	24 48	96 96	2-3 2-3	
PERIMATE™	5.0 <sup>(7)</sup>	30	50	0.1	1.1	2.0	3.5	IV	165	5	165	24	96	1.5, 2.125	
PLAZAMATE™	5.0	60	75	0.1	0.8	2.0	3.5	VII	165	5	165	24	96	1.5-3	
RECOVERMATE CR	1.4 <sup>(8)</sup>	15	-	0.2	1.8	<0.5	3.5	-	165	10	165	48	600	0.375	
ROOFMATE™	5.0	40	60	0.1	1.1	2.0	3.5	VI	165	5	165	24	96	1-4	
Ribbed ROOFMATE™	5.0 <sup>(9)</sup>	40 <sup>(10)</sup>	-	0.1	0.8	2.0	3.5	VI	165	5	165	24	96	2	
WALLMATE™	5.0	15	40	0.1	1.1	2.0	3.5	X	165	5	165	24	96	1.5, 2.0	
Z-MATE™	5.0	15	40	0.1	1.1	2.0	3.5	X	165	5	165	24	96	1.5, 2	
DOW™ Protection Board III	1.0 <sup>(11)</sup>	8	-	0.2	0.8 <sup>(11)</sup>	-	-	-	165	10	165	48	600	0.25	
Highload 40	5.0	40	60	0.1	0.8	2.0	3.5	VI	165	15	165	24 48	96 96	2-3 2-3	
Highload 60	5.0	60	75	0.1	0.8	2.0	3.5	VII	165	15	165	24	96	2, 3	
Highload 100	5.0	100	100	0.1	0.8	2.0	3.5	V	165	15	165	24	96	2	
Scoreboard <sup>(12)</sup>	5.0	25	50	0.1	1.1	2.0	3.5	IV	165	5	165	48	96	1-3	
Square Edge <sup>(12)</sup>	5.0	25	50	0.1	1.1	2.0	3.5	IV	165	5	165	24 48	96 96	1-4 1-3	
Tongue and Groove	5.0	25	50	0.1	1.1	2.0	3.5	IV	165	5	165	24 48	96 96	1-2 1-2	

**NOTES:**

- (1) Values are consistent with the criteria of ASTM C578 and the requirements of the FTC R-value rule (16 CFR Part 460). A 15-year limited thermal warranty is available.
- (2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft<sup>2</sup>•h•°F/Btu.
- (3) Vertical compressive strength is measured at 10% deformation (5% for STYROFOAM PLAZAMATE insulation and for STYROFOAM Highload 40, 60 and 100 insulation products) or yield, whichever occurs first. Since STYROFOAM extruded polystyrene insulation products are visco-elastic materials, adequate design safety factors should be used to

- prevent long-term creep. For static loads, 3-1 is suggested. For dynamic loads, 5-1 is suggested.
- (4) Water vapor permeance varies with product type and thickness. Values are based on the desiccant method, and they apply to insulation 1" in thickness. Thicker products have lower permeance.
- (5) Former Federal Specification HH-I-524C was cancelled in 1985 and replaced by ASTM Specification C578.
- (6) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
- (7) For 1½" thickness.
- (8) For ¾" thickness.

- (9) R-value is 10.0 for nominal 2" thickness and 15.0 for nominal 3" thickness.
- (10) Recommended load (psf) including 5:1 design factor.
- (11) For ¼" thickness; perm-inches.
- (12) If using these products for Z-furring applications, please contact your local Dow sales representative for exact product sizes.

Note: 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.

# Dow Polyisocyanurate Insulation Products

Physical Properties	Property (units)	Thermal resistance <sup>1,2</sup> hydrocarbon blowing agent	Compressive strength <sup>3</sup> (lb/in <sup>2</sup> ), min., core foam	Flexural strength (lb/in <sup>2</sup> ), min., for 1" core foam	Water absorption (% increase by volume, 2-hr. results), max., core foam	Water vapor permeance <sup>4</sup> (perm)	Dimensional stability (% linear change), max.	Complies with ASTM Type	Maximum use temperature (°F)	Flame spread <sup>5</sup> , max., core foam	Smoke developed, max., core foam	Width (inches)	Length (inches)	Typical thickness range (inches), core foam
ASTM Method		C518	D1621	C203	C209	E96	D2126	C1289		E84	E84			
HY-THERM™ AP (flat and tapered)		6.0 <sup>(6, 9)</sup>	20	40	1.5	<1	2.0	II Class 1	190	55	150	48 48	48 96	1.0-4.0
ISOCAST™ R		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	1.0	I Class 1 or 2 <sup>(7)</sup>	190	40	70	48	96	1.0
SuperTUFF-R™ Commercial		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	1.0	I Class 1 or 2 <sup>(7)</sup>	190	40	70	16 48 48	96 96 108	0.5-1
THERMAX™ Heavy Duty		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	0.1	I Class 2	250	25	250	48 48	96 120	0.5-3
THERMAX™ Heavy Duty Plus		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	0.1	I Class 2	250	25	250	48 48	96 120	0.5-3
THERMAX™ Light Duty		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	0.1	I Class 2	250	25	250	48 48	96 120	0.5-3
THERMAX™ Metal Building Board		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	1.0	I Class 2	250	25	250	48 48	96 120	0.5-4.25
THERMAX™ Sheathing		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	0.1	I Class 2	250	25	250	16 24 48	96, 108, 120 96, 108, 120 96, 108, 120	0.5-4
TUFF-R™ Commercial		6.5 <sup>(6)</sup>	25	55	0.05	<0.03	1.5	I Class 1 or 2 <sup>(7)</sup>	190	40	70	48	96, 108	0.75-2
VALUE-R™		6.3 <sup>(6)</sup>	20	-	0.3	<0.03	2.0	I Class 1	190	55	150	48 48	96 108	1.5-4 1.5-4

## NOTES:

- (1) Aged R-value per 1" of core foam @ 75°F mean temperature. R-values are expressed in ft<sup>2</sup>•h•°F/Btu.
- (2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-value determined by ASTM C518, unless otherwise specified.
- (3) Vertical compressive strength is measured at 10% deformation or yield, whichever occurs first. Since Dow polyisocyanurate insulation products are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3-1 is suggested. For dynamic loads, 5-1 is suggested.
- (4) Water vapor permeance varies with product type and thickness. Values are based on the desiccant method, and they apply to insulation 1" in thickness. Thicker products have lower permeance.
- (5) These numerical flame spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.
- (6) R-values determined by ASTM C518 using the aging process in ASTM C1289 (90 days @ 140°F).
- (7) Varies with thickness.
- (8) Only available west of the Rocky Mountains.
- (9) For 2½" thickness.

Note: 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.

# Dow Polyurethane Foam Insulations

07 21 00/DOW

BuyLine 4350

Physical Properties	Property (units)	Flexural strength (lb/in <sup>2</sup> ), parallel	Thermal resistance, R-value per inch	Compressive strength (lb/in <sup>2</sup> ), parallel	Tensile strength (lb/in <sup>2</sup> ), parallel	Shear strength (lb/in <sup>2</sup> ), parallel	Apparent core density (lb/ft <sup>3</sup> )	Water absorption (% by volume)	Water vapor permeance (perms)	Cure time	Application temperature (°F)	Sizes
ASTM Method	C203	C518	D1621	D1623	C273	D1622	D2842	E96				
FROTH-PAK™ (25 FS)	19.7	4.6 <sup>(1)</sup>	31.8	12.5	1774	2.0	18.58	4.5	Tack-free <sup>(2)</sup> <1 min.	60-90	Selection of kit sizes and refill systems available	
STYROFOAM™ SPF for Roofs (3.0 pcf) <sup>(3,4)</sup>	NA	6.0 <sup>(1)</sup>	52.3	84.4	NA	2.9	NA	NA	NA	NA	55 gal drums (one ISO, one polyol)	
STYROFOAM™ SPF (2.0 pcf)	3062	NA	6.5 <sup>(1)</sup>	26.0	55.0	NA	>2	3.2	1.1	NA	55 gal drums (one ISO, one polyol)	
	3049	NA	6.5 <sup>(1)</sup>	26.4	53.3	NA	>2	3.2	1.4	NA	55 gal drums (one ISO, one polyol)	

(1) Initial value

(2) Actual cure time will depend on temperature.

(3) The complete DOW™ SPF Roof System includes applying a DOW silicone or acrylic coating to STYROFOAM SPF Insulation applied to the roof deck.

(4) Consult your Dow representative regarding formulations with lower or higher viscosities to meet application requirements.

## DOW™ SPF Roof Coatings

Property and Test Method <sup>(1)</sup>	Value
DOW™ SPF Silicone Roof Coating: Solids Content, ASTM D2697, % by volume Permeability, ASTM E96, perms Elongation, ASTM D412, % Tensile Strength, ASTM D412, psi Volatile Organic Content, ASTM D3960/EPA Method 24, grams per liter Weathering, degradation observed Carbon arc, ASTM D822, 10,000 hours QUV, ASTM G53, 10,000 hours	62 3.7 150 400 220  None None
DOW™ SPF Acrylic Roof Coating: Solids Content, ASTM D2697, % by volume Permeance, ASTM D1653, perms Initial Elongation, ASTM D2370, % Elongation – Accelerated Weathering, ASTM D2370, % Initial Tensile Strength, ASTM D2370, psi Accelerated Weathering, ASTM D4798, 1,000 hours Initial Solar Reflectance, ASTM C1549 White Coating Bright White Coating	55 15 245 230 235 No cracking or checking  0.83 0.92

(1) For additional technical data on DOW SPF silicone and acrylic coatings, please call 1-866-583-BLUE (2583) or visit [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect).

## Dow Polyurethane Foam Sealants and Adhesives

Product	Cure Time	Size	Yield
FROTH-PAK™ (1,2)	Tack-free <1 min.	Selection of kit sizes and refill systems available	Kits: 1-50 ft <sup>3</sup> Refill systems: 160-3,600 ft <sup>3</sup>
GREAT STUFF™ Pro Gaps & Cracks <sup>(3)</sup>	Tack-free 6-7 mins, trim in 30; full cure 1 hour	24 oz can	equiv. to 26 quart tubes of caulk (1,000 linear feet @ 3/8" bead)
GREAT STUFF™ Pro Window & Door <sup>(3)</sup>	Tack-free 6-9 mins, trim 1 hour; full cure 12 hours	20 oz can	equiv. to 13 quart tubes of caulk
INSTA STIK™ Quik Set	Tack-free 3-7 mins, depending on humidity	30 lb complete 30 lb canister only	6 squares/tank
TILE BOND™	Tack-free 5-15 mins.	30 lb complete 30 lb canister only 20 oz can	6 squares/tank

(1) FROTH-PAK products are available in a selection of densities, formulations and sizes to meet a wide range of project specifications.

(2) Actual cure time will depend on temperature.

(3) Actual cure time will depend on temperature, relative humidity and size of foam bead.

Illustrations are not intended to replace the need for design by appropriate professionals such as architects or engineers.

Dow has manufactured STYROFOAM™ extruded polystyrene insulation for use in construction and specialty applications for nearly 60 years. Its dense closed-cell structure gives STYROFOAM extruded polystyrene insulation superior moisture resistance, long-term thermal performance and compressive strength. STYROFOAM extruded polystyrene insulation is CFC-free and reusable.

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**STYROFOAM™ Extruded Polystyrene Insulation, TRYMER™ Polyisocyanurate Pipe Insulation and Dow Polyisocyanurate Insulation Other Than THERMAX™ Products**

COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

**THERMAX Products**

COMBUSTIBLE: THERMAX products should be used only in strict accordance with product application instructions. THERMAX products, when used in a building containing combustible materials, may contribute to the spread of fire. For more information, consult MSDS and/or call Dow at 1-866-583-BLUE (2583). In an emergency, call 1-989-636-4400.

WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.

NOTE: STYROFOAM™ SPF Insulation contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the Material Safety Data Sheet carefully before use. Wear protective clothing, gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter is required to maintain exposure levels below applicable ACGIH, OSHA or WEEL limits. Provide adequate ventilation.

NOTE: Dow polyurethane foam sealants and adhesives contain isocyanates, hydrofluorocarbon or hydrocarbon blowing agents and polyols. Read the Material Safety Data Sheet carefully before use. Wear protective clothing, gloves and goggles and provide adequate ventilation and/or wear respiratory protection.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier, including Dow, can give assurance that mold will not develop in any specific system.

**THE DOW CHEMICAL COMPANY**

Building Solutions • 200 Larkin • Midland, MI 48674 • [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)

**FOR TECHNICAL INFORMATION: 1-866-583-BLUE (2583)**

**FOR SALES INFORMATION: 1-800-232-2436**

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Insulation, when installed according to ENERGY STAR guidelines, can save energy.

[www.energystar.gov](http://www.energystar.gov)

