Extruded Polystyrene Insulation
FOAMULAR®

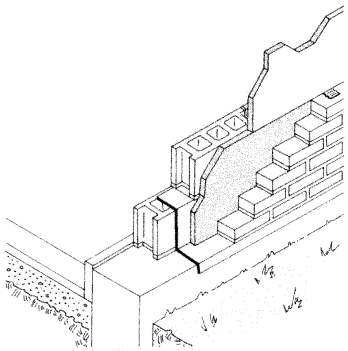
OWENS CORNING™

Resists moisture, whatever the source – Owens Corning's patented process technology makes it possible. The process gives FOAMULAR Insulation a tight, closed-cell structure and continuous skin surface, front and back, that's highly resistant to moisture of all kinds – water leakage, humidity, condensations, ground water, wet soil, freeze/thaw cycling, etc.

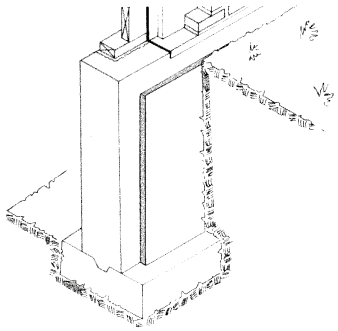
Year after year, FOAMULAR retains its high R-value – Because of FOAMULAR Insulation's unique closed-cell structure, it's R-value of 5 per inch of thickness won't dimish over time, as other insulations do. Year after year, FOAMULAR Insulation keeps on insulation - and saving - even after prolonged exposure to moisture.

FOAMULAR® Extruded Polystyrene Insulation
Typical Physical Properties

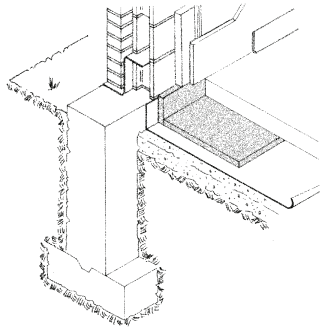
Property	ASTM Method	Product Values FOAMULAR 150	FOAMULAR 250	FOAMULAR 400	FOAMULAR 600	FOAMULAR 1000
Thermal Conductivity - "k" (Btu • in/sq ft • hr • °F, max)						
@ 75°F mean temperature	C 518	0.20	0.20	0.20	0.20	0.20
@ 40°F mean temperature		0.18	0.18	0.18	0.18	0.18
Compressive Strength minimum value (lb/sq. in.)	D 1621	15	25	40	60	100
Flexural Strength (Lb/sq. in., min.)	C 203	60	75	75	105	150
Water by Absorption (% by volume, max)	C 272	0.10	0.10	0.05	0.05	0.05
Water Vapor Permeance (perm, max.)	E 96	1.10	1.10	1.10	1.10	1.10
Water Affinity	–	Hydrophobic	Hydrophobic	Hydrophobic	Hydrophobic	Hydrophobic
Water Capillarity	–	None	None	None	None	None
Dimensional Stability (% linear change, max.)	D 2126	2.0	2.0	2.0	2.0	2.0
Linear Coefficient of Thermal Expansion (in/in/°F, max.)	–	2.7×10^{-5}	2.7×10^{-5}	2.7×10^{-5}	2.7×10^{-5}	2.7×10^{-5}
Flame Spread	E 84	5	5	5	5	5
Smoke Developed	E 84	45 - 175	45 - 175	45 - 175	45 - 175	175
Oxygen Index, min.	D 2863	24	24	24	24	24
Type Classifications	C 578	Type X	Type IV	Type VI	Type VII	Type V



Cavity Wall
Formular 150, 250



Perimeter Foundation
Foamular 150, 250

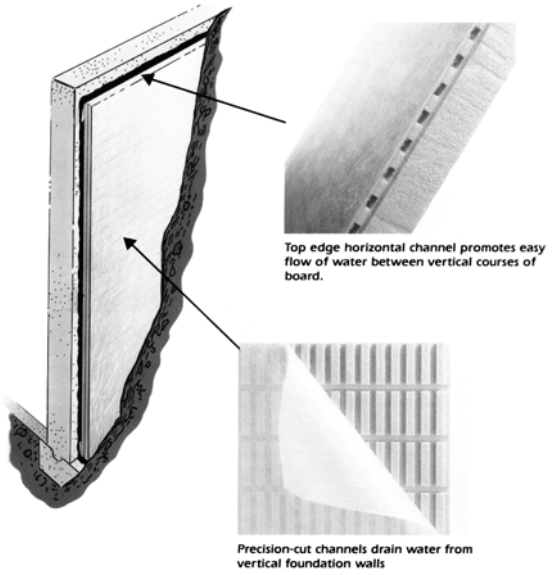


Under Slab
Foamular 250, 400, 600, 1000

INSUL-DRAIN™
A FOAMULAR® Extruded Polystyrene Insulation Product

OWENS CORNING™

Insul-Drain is a FOAMULAR extruded polystyrene product that incorporates the features of insulation, drainage and protection board in a single product. It's easy to install, without the need for special tools or equipment and the product's superior compressive strength and long-term moisture resistance properties mean years of reliable performance on below grade foundation walls even under extrememly harsh conditions.



Foamular Physical Properties

Property	Insul-Drain 1"	Insul-Drain 1-1/2"	Insul-Drain 2-1/4"
R-value, min °F x sq ft x h/Btu @ 75°F	4.4	6.9	10.6
Compressive Strength, min. (lb/sq ft)*	3600	3600	3600
Flow Rate, min. (gal/min/ln ft)	12	12	12

* Minimum foam core value. The bearing surface of the product should be considered when designing for specific applications.

PINKCORE™ XPS Rigid Foam Insulation & Ties

PINKCORE XPS rigid foam insulation and ties are specifically designed for use in site-cast or precast insulated concrete sandwich wall panels. These products provide a fast, efficient, cost-effective method of improving the thermal performance of commercial buildings. Typical concrete wall panels must be insulated after casting and erection. Using PINKCORE insulation and ties, the panel is insulated during casting, prior to erection. Thus, the insulation is integreal to the wall, which results in easier and faster construction.

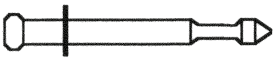
In addition, since the insulation is "sandwiched" between the interior concrete wythe and the fascia wythe, the panel maintains hard, durable concrete surfaces, both inside and out.

Installation

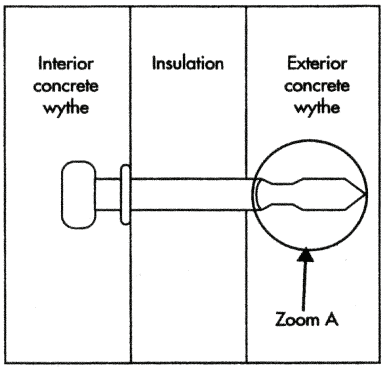
PINKCORE insulation and ties are specifically designed for fast, accurate installation. The PINKCORE insulation is clearly marked with a 16-inch on center dot pattern to ensure accurate placement of the PINKCORE connector ties into the insulation. After casting the exterior concrete wythe, the PINKCORE insulation and ties are placed in the fresh concrete. The design of the connector tip also ensures easy penetration through the foam, as well as a mechanical interlock into the concrete once it cures.

Once the PINKCORE insulation and ties are in place, construction of the inner concrete wythe continues. Reinforcement, imbeds and lifting inserts are all set in place on top of the PINKCORE insulation and then the concrete is poured. With a compressive strength of 25 psi (3600 psf).

Low-Conductivity Ties



For insulation thicknesss between 2" and 4". Pushed through the foam layer until properly seated, immediately after the bottom wythe of concrete is placed.



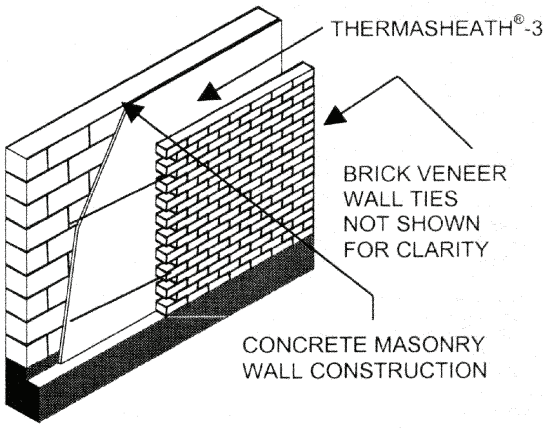
PINKCORE tie in concrete sandwich panel.

Thermasheath® - 3

Sheathing Insulation

Rmax Thermasheath®-3 is a rigid foam plastic thermal insulation board composed of polyisocyanurate foam bonded to reinforced aluminum foil facers on each side. Thermasheath®-3 utilizes a new HCFC free blowing agent. This sheathing insulation is suitable for use in walls and some limited roofing applications in new commercial, residential, agricultural and industrial buildings and in thermal retrofit construction within existing buildings.

Applicable Standards: Thermasheath®-3 is manufactured to conform to the physcial property requirements of Product Specification ASTM C1289, Type I.



Technical Data **Thermasheath-3**

TYPICAL PHYSICAL PROPERTIES:

Property	Test Method	Results
Density, Overall, Nominal	ASTM D1622	2.0 pcf
Compressive Strength	ASTM D1621	20 psi (Avg.)
Flame Spread, Core	ASTM E84	25
Smoke Developed	ASTM E84	75-160
Water Vapor Transmission	ASTM E96	< 1 perm
Water Absorption	ASTM C209	< 1% Vol.
Dimensional Stability	ASTM D2126 7 days, 158°F, 98% rh	< 2% Linear Change
Service Temperatures		-40°F to +250°F

Note: Physical Properties shown are based on data obtained under controlled conditions and are subject to normal manufacturing tolerances. Flame spread numbers are shown for comparison purposes only and are not intended to represent the performance of Thermasheath®-3 and related components under actual fire conditions.

THERMAL PROPERTIES/PRODUCT DATA
"R" means resistance to heat flow.
The higher the R-value, the greater the insulating power

Nominal Thickness	Thermal[1] R-Value	Bundle Data (48" x 96")		Truckload Data (48" x 96")	
		Pieces	Sq. Ft.	Pieces	Sq. Ft.
1.00"	5.9	48	1536	1536	36864
1.25"	7.7	38	1216	912	29184
1.50"	9.4	32	1024	768	24576
1.75"	11.2	27	864	648	20736
2.00"	12.9	24	768	576	18432
2.50"	16.4	19	608	456	14592
3.00"	19.9	16	512	384	12288
3.50"	23.3	13	416	312	9984
4.00"	26.8	12	384	288	9216

TSX-8500

Insulation for Exposed Use

Rmax TSX-8500 is a rigid thermal insulation board composed of a HCFC free, polyisocyanurate foam core bonded to a glass fiber reinforced 1.5 mil aluminum foil facer on the exposed side of the board. TSX-8500 is designed for use without a thermal barrier in pre-engineered metal buildings, laminate panel products and other similar applications.

TSX-8500's aluminum foil facer provides an attractive interior finish.

Applicable Standards: Product Specification ASTM C 1289 Type I, Class I.

ITW TACC

T108 All Purpose Construction Adhesive

A wateproof mastic for installation of a variety of wall panels to solid sub surfaces. Provides immediate grab yet allow sample positioning time.

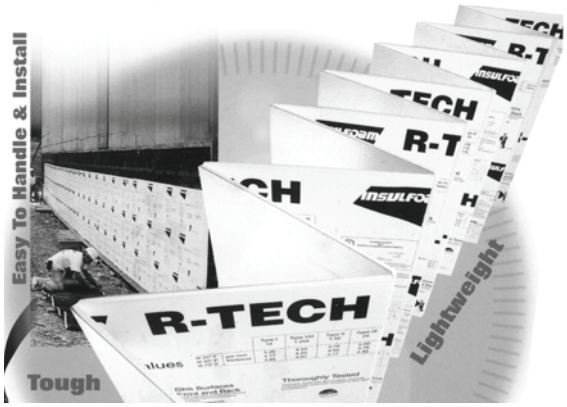
Coverage: 50 to 60 sq. ft./gallon with notched trowel; 1/4" x 1/4" x 3/4" or 3/16" x 3/16" x 5/16"; 3/8" bead - 39 linear feet per 29 oz. cartridge.

INSULFOAM

Compressive Strength 1872 PSF

R-TECH

EXPANDED POLYSTYRENE WITH POLYETHYLENE SKINNED SURFACE



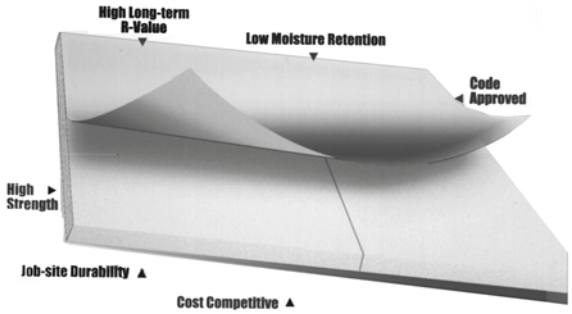
Fanfold Protection Board

R-TECH is expanded polystyrene foam laminated with two plastic facers. Comes in convenient fanfold configuration. Each bundle is 4' x 50' and available in 1/4", 3/8" and 1/2" thickness.

Compressive Strength 1440 PSF

R-GARD

EXPANDED POLYSTYRENE WITH POLYETHLENE SKINNED SURFACE



Perimeter/Foundation Cavity Wall

R-GARD is expanded polystyrene foam heat laminated to a polyethylene film face. Excellent resistance to moisture and a minimum compressive strength of 1440 psf.

R-GARD performs the specific job of insulating long term without overstating density and PSI strengths.

A Choice of Strengths

Expanded Polystyrene meets the requirements of ASTM C-578 Types I, II, VIII and IX.

Expanded Polystyrene

TYPICAL PHYSICAL PROPERTIES OF INSULFOAM EPS INSULATION

Specification Reference Property		Units	ASTM C578-91 ASTM Test	Type I 1#	Type VIII 1.25#	Type II 1.5#	Type IX 2#
Density, Minimum		(PCF)	C303 or D1622	0.90	1.15	1.35	1.80
Thermal Conductivity K Factor	at 25°F at 40°F at 75°F	BTU (hr.) (sq. ft.)(F/in.)	C177 or C518	0.23 0.24 0.26	0.22 0.235 0.255	0.21 0.22 0.24	0.20 0.21 0.23
Thermal Resistance Values (R)	at 25°F at 40°F at 75°F	per inch thickness	—	4.35 4.17 3.85	4.54 4.25 3.92	4.76 4.55 4.17	5.00 4.76 4.35
Strength Properties							
Compressive 10% Deformation		psi	D1621	10-14	13-18	15-21	25-33
Flexural		psi	C203	25-30	32-38	40-50	55-75
Tensile		psi	D1623	16-20	17-21	18-22	23-27
Shear		psi	D732	18-22	23-25	26-32	33-37
Shear Modulus		psi	—	280-320	370-410	460-500	600-640
Modulus of Elasticity		psi	—	180-220	250-310	320-360	460-500
Moisture Resistance							
WVT		perm. in	E96	2.0-5.0	1.5-3.5	1.0-3.5	0.6-2.0
Absorption (vol.)		%	C272	less than 4.0	less than 3.0	less than 3.0	less than 2.0
Capillarity		—	—	none	none	none	none
Coefficient of Thermal Expansion		in/(in.)(F)	D696	0.000035	0.000035	0.000035	0.000035
Maximum Service Temp.		°F	—				
Long-term				167	167	167	167
Intermittent				180	180	180	180

Properties based on data provided by Nova Chemical Co., BASF Corp. and Huntsman Chemical Company. Polyethylene skins provide a moisture barrier for the EPS at less than .11 perms.