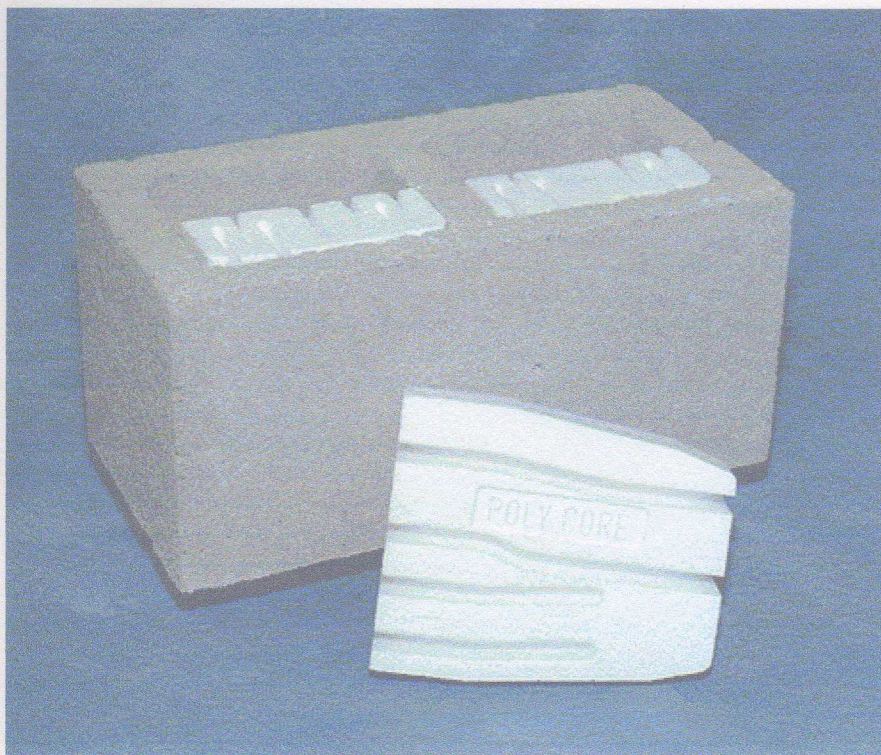


PolyCore



Call Now To Order
(508) 278-7255

Web Address: www.foamconcepts.com

Email Address: sales@foamconcepts.com

No CFC's

FOAM CONCEPTS, INC. uses only environmentally safe materials. All of our products are manufactured from molded expanded polystyrene, which does not use ozone-depleting chloroflourocarbons as a blowing agent.

ADDITIONAL INFORMATION

The use of pre-insulated masonry can significantly reduce the time and money required to erect and energy-efficient building.

While this brochure provides a brief overview of pre-insulated masonry, our manual will provide you with the details to quickly and accurately design with **POLYCORE** masonry units.

If you have any questions or comments, please contact us via any of the means below.

POLYCORE SPECIFICATION GUIDE

1. DESCRIPTION:

Insulation shall be **POLYCORE** brand, as manufactured by **Foam Concepts, Inc., Uxbridge, MA** (800) 235-0061. Insulation shall be individually molded of **modified** grade expanded polystyrene at a *minimum* density of 1.0 PCF, and a maximum water vapor transmission of 2.4 perm-inch, and shall conform to ASTM C578 Standard.

2. SCOPE:

The wall to be insulated shall be as noted and shown on drawings and schedules.

3. INSTALLATION:

POLYCORE brand insulation shall be installed in the cores of blocks at the Block Producer's Plant.

POLYCORE inserts shall fit firmly into each core to allow blocks to be handled and transported without danger of insert dislodgement.

4. PRECAUTIONS:

Like all foamed plastic, expanded polystyrene insulation is classified as combustible. Observe good fire safety practices during storage and installation. Blocks containing damaged or mutilated inserts will not be accepted.

RAW MATERIAL IS COMPLIANCE WITH

- * Fed Spec.: HH-I-542C, Type I, Class A and Type II, Class A materials
- * Military Specs: MIL-P-40619A, MIL-P-19644C
- * Allowable Flame Spread: UL Procedure 723 and ASTM Specification E-84
- * Federal Hazardous Substance Labeling Act Regulation Non-Toxic smoke by inhalation
- * ASTM Standard C 578
- * HUD Use of Materials Bulletin #71

Table 2

Approximate Weight of Masonry (lbs./ft²) / Heat Capacity (BTU/ft² F)

WALL TYPE	Density of Concrete Used in Block, lbs. Per Cubic Feet							
	80		100		120		140	
	WM	HC	WM	HC	WM	HC	WM	HC
8"	26	5.5	33	7	39	8.2	45	9.5
10"	31	6.5	38	8	46	9.7	53	11.2
12"	37	7.8	46	9.7	54	11.4	64	13.5

W/M - Weight of Masonry

HC - Heat Capacity

FEATURE

INSULATION METHOD

POLYCORE

Perlite/
Vermiculite

Foamed-
In-Place

Insulation
Board

Guarantees consistent insulation value; not dependent on installation.	4	-	-	-
Permits excess moisture to escape.	4	-	-	4
Does not increase the overall wall thickness.	4	4	4	-
Offers a variety of thermal performance levels.	4	-	-	4
Improves sound resistance.	4	4	4	4
Eliminates on-site delivery, handling & storage problems.	4	-	-	-
Eliminates lost time if inspection rejects the quality of on-site workmanship.	4	-	-	-
Reduces on-site waste, cleanup, theft and vandalism.	4	-	-	-
Does not interfere with work performed by other trades.	4	-	-	-
Will not emit harmful or annoying fumes or odors.	4	4	-	4
Improves the ability of blocks resist wind-driven rain.	4	-	4	4

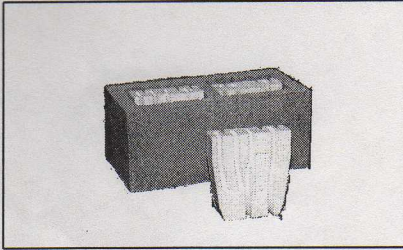
POLYCORE

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POLYCORE



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The three primary paths of heat flow through a block are the *Core Area*, *Web Area* and the *Mortar Joint Area*. **PolyCore** is designed to insulate the largest of these areas - the **Core Area**. By such, the overall thermal performance of the block is significantly improved.

PolyCore insulative inserts may be placed toward either side of the block. If the wall is going to be fully reinforced, however, an additional mass benefit can be achieved by placing the inserts towards the exterior faceshell. This *thermal mass benefit* is fully recognized by **ASHRAE and the Department of Energy**.

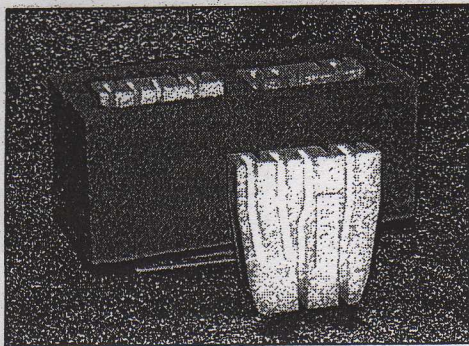
Using pre-insulated masonry means more effective retention of heat during winter, and coolness in the summer.

PolyCore inserts have a patented design that allows one size to fit many different block sizes. Since block producers can take advantage of reduced inventory requirements and lower production costs, blocks pre-insulated with **PolyCore** are very competitive with less reliable, field-installed systems.

Table 1

Physical Properties of Insulative Inserts

PROPERTY	ASTM TEST	TEST VALUE AT 1.0 PCF	UNIT
Thermal Conductivity at 40F (K-Factor at 75 F)	C 177 or C 518	0.24 or 0.26	BTU x in h x ft ² x F
Thermal Resistance at 40F (R-Value) at 75 F	—	4.17 3.85	h x ft ² x F BTU x in
Moisture Resistance Water Vapor Transmission Capillarity Absorption by Vol.	C 355 — C 272	<2.4 NONE <2.3	Perm-In. — %
Coefficient of Thermal Expansion	D 696	0.000035	in/in/F



POLYCORE

How To Use This Table

1. Use Table 3 in this brochure to determine the Annual Degree Days of the building's location.
2. Within the appropriate Degree Day section, choose between single inserts, or two inserts per core.
3. Move down the left to the correct block size, then across to the desired block density.
4. This is the R-Value that can be attained with this configuration.

1 INSERT PER CORE

2 INSERTS PER CORE

LESS THAN 4000 DEGREE DAYS

Block Size	Concrete Density (lbs/ft ³)			
	80	100	120	140
6"	7.6	6.2	5.3	4.4
8"	8.8	7.2	6.1	5
10"	9.4	7.4	6.4	5.4
12"	10.3	9	7.3	6.1

	Concrete Density (lbs/ft ³)			
	80	100	120	140
—	—	—	—	—
11.3	9.5	8.5	7.7	
12	10.6	9.7	8.7	
12.8	10.4	10.8	9.7	

BETWEEN 4000 AND 7500 DEGREE DAYS

Block Size	Concrete Density (lbs/ft ³)			
	80	100	120	140
6"	6.5	5.3	4.2	3.2
8"	7.8	6.2	5	3.9
10"	8.5	6.4	5.5	4.4
12"	9.4	7.9	6.2	5.1

	Concrete Density (lbs/ft ³)			
	80	100	120	140
—	—	—	—	—
10.2	8.6	7.6	6.7	
11.1	9.7	8.7	7.6	
11.9	10.5	9.8	8.8	

OVER 7500 ANNUAL DEGREE DAYS

Block Size	Concrete Density (lbs/ft ³)			
	80	100	120	140
6"	5.6	4.4	3.4	2.5
8"	6.9	5.4	4.2	3
10"	7.6	5.6	4.7	3.5
12"	8.3	7	5.3	4.2

	Concrete Density (lbs/ft ³)			
	80	100	120	140
—	—	—	—	—
9.3	7.7	6.8	5.8	
10.3	8.7	7.7	6.7	
10.9	9.5	8.9	7.7	

- NOTES: 1. Values listed are R-Values. U-Value = 1/R. Values listed include a standard 3/8" mortar joint.
 2. If used as part of a cavity wall construction, add R-2 to value in table.
 3. If 1/2" foil-back gypsum board is to be used, add R-3.1 to value in table.

The Thermal Performance Values in these tables are based on the ISOTHERMAL PLANES METHOD as recommended by ASHRAE 90.1.

Table 3
Yearly Degree Days (base 65°F)

STATE	CITY	YEARLY TOTAL
Alabama	Birmingham	2551
Alaska	Anchorage	10864
Arizona	Phoenix	1765
	Tucson	1800
Arkansas	Little Rock	3219
California	Los Angeles	2061
	Sacramento	2502
	San Diego	1458
	San Francisco	3015
Colorado	Denver	6283
	Pueblo	5462
Connecticut	Hartford	6235
Delaware	Wilmington	4930
D.C.	Washington	4224
Florida	Jacksonville	1239
	Miami	214
	Orlando	766
Georgia	Atlanta	2961
	Savannah	1819
Hawaii	Honolulu	0
Idaho	Boise	5809
Illinois	Chicago	5882
	Springfield	5429
Indiana	Indianapolis	5699
Iowa	Des Moines	6588
Kansas	Topeka	5182
Kentucky	Louisville	4660
Louisiana	Baton Rouge	1560
	New Orleans	1385
Maine	Portland	7511
Maryland	Baltimore	4654
Massachusetts	Boston	5634
Michigan	Detroit	6232
Minnesota	Minneapolis	8382
Mississippi	Jackson	2239
Missouri	Kansas City	4711
	St. Joseph	5484
Montana	Great Falls	7750
Nebraska	Omaha	6612
Nevada	Las Vegas	2709
	Reno	6332
New Hampshire	Concord	7383
New Jersey	Trenton	4980
New Mexico	Albuquerque	4348
New York	Albany	6875
	Buffalo	7062
	New York	4871
North Carolina	Raleigh	3393
North Dakota	Bismarck	8851
Ohio	Cincinnati	4410
	Cleveland	6351
Oklahoma	Oklahoma City	3725
Oregon	Portland	4635
Pennsylvania	Philadelphia	5144
	Pittsburgh	5987
Rhode Island	Providence	5954
South Carolina	Charleston	2033
	Columbia	2484
South Dakota	Sioux Falls	7839
Tennessee	Knoxville	3494
	Memphis	3232
	Nashville	3578
Texas	Dallas	2363
	El Paso	2700
	Houston	1396
Utah	Salt Lake City	6052
Vermont	Burlington	8269
Virginia	Richmond	3865
Washington	Seattle-Tacoma	5145
West Virginia	Charleston	4476
Wisconsin	Milwaukee	7635
Wyoming	Cheyenne	7381
Canada	Montreal	7899
	Quebec	8937
	Toronto	6827
	Vancouver	5515

Table 4
Available grout space dimension, in. x in.

P O L Y C O R E		BLOCK WIDTH		
	Inserts Per Core	8"	10"	12"
	1	3 x 6 1/4	4 3/8 x 6 1/8	6 3/8 x 6
	2	—	2 1/8 x 6 1/8	4 1/8 x 6