

THERMA bloc™



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You deserve the best products and the best service for your every masonry requirement. With this ideal in mind, we present to you "Therma Bloc". This metric insulated wall system allows the builder to achieve approximately R 0.97 (5.5) in the wall using lightweight block in one easy application. This R rating was established by the Ontario Research Foundation, performed in accordance with the procedure outlined in A.S.T.M. Standard C236-66 "Thermal conductance and Transmittance of Built-up sections by means of the Guarded Hot Box Method."

Installed in the masonry unit at the point of manufacture, the insulative molded one-piece polystyrene liner provides a Thermal Break in the web area. The liners which have a material grade of 24 kg/m³ (1.5 lb./ft.³) and water vapour permeability of 145 (2.5) or less, still allow easy accessibility for reinforcing rod and conduit.

On the job you receive pre-insulated block, poly wrapped for all weather protection and the insulated wall within a wall requires no special handling or installation procedures.

"Therma Bloc" is available in 25cm, 30cm, and 20cm upon special request, L/W or Concrete, Standard or Decorative, Plain or Coloured. The Architect, Engineer, Design Builder now has an opportunity to design with energy conservation in mind, and enhance the overall project, by using masonry insulated single wythe or cavity wall construction.

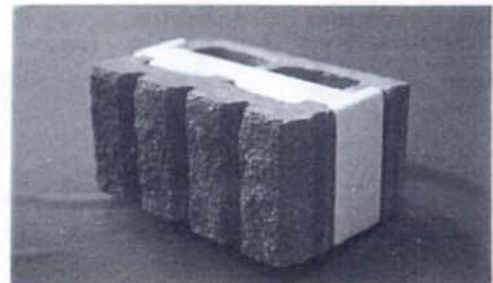
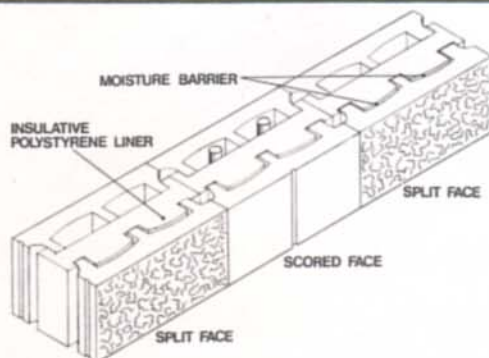
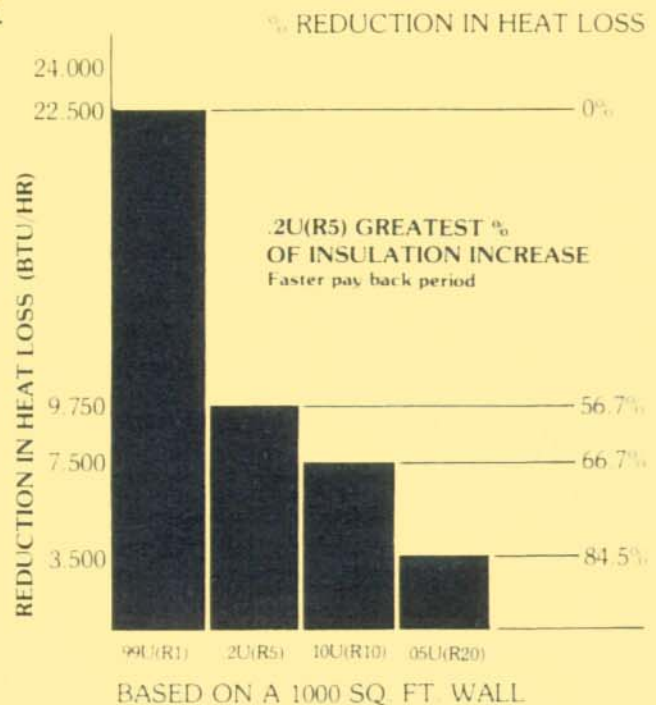
Our sales representatives will assist you in obtaining samples, literature, and methods of further cost savings in using "Therma Bloc."

We're ALWAYS GLAD TO HELP.

FEATURES

- REDUCE OVERALL CONSTRUCTION COSTS.
- MINIMIZE INSULATIVE PROBLEMS.
- MORE CONSISTENT INSULATIVE VALUES.
- METRIC UNITS ONLY.
- NO WASTE OR CLEAN-UP COSTS.
- BENEFITS RESIDENTIAL OR COMMERCIAL.
- EASY INSTALLATION OF PIPES, CONDUITS.
- ELIMINATE COLD SPOTS IN EXTERIOR WALLS.
- IMPROVE DEWPOINT.
- SPEED COMPLETION OF MASONRY PORTION OF JOB.
- IMPROVE SOUND RESISTANCE.
- WARMER WALLS IN WINTER.
- COOLER WALLS IN SUMMER.
- USE ABOVE OR BELOW GRADE.
- GREATER FUEL EFFICIENCY.
- ELIMINATE VANDALISM TO INTERIOR INSULATED WALLS.

BENEFITS



IMPORTANT: The information contained herein is presented in good faith and believed to be accurate and reliable and is intended for use by those qualified to evaluate the limitations of its content.

TABLE 1
COEFFICIENTS OF HEAT TRANSMISSION FOR VARIOUS WALL DETAILS

Metric Size - Units Only () Imperial Measure
20cm X 20cm X 40cm Two Core THERMA-BLOC (8")

WALL DETAIL 20cm BLOCK		Block Density kgm ⁻³ (1b.ft. ⁻³)					
		1280 (80)	1520 (95)	1680 (105)	1840 (115)	2000 (125)	2160 (135)
Standard Two Core	R*	0.53 (3.)	0.48 (2.7)	0.44 (2.5)	0.41 (2.3)	0.39 (2.2)	0.37 (2.1)
Uninsulated Block	U**	1.89 (0.33)	2.08 (0.37)	2.27 (0.40)	2.44 (0.43)	2.56 (0.45)	2.70 (0.48)
THERMA BLOC with	R	1.46 (8.3)	1.23 (7.0)	1.09 (6.2)	0.97 (5.5)	0.85 (4.8)	0.76 (4.3)
Insulative liner	U	0.68 (0.12)	0.81 (0.14)	0.92 (0.16)	1.03 (0.18)	1.18 (0.21)	1.32 (0.23)
THERMA BLOC plus ½" foil-	R	2.03 (11.5)	1.80 (10.2)	1.66 (9.4)	1.51 (8.6)	1.41 (8.0)	1.32 (7.5)
back Gypsum Board on	U	0.49 (0.09)	0.55 (0.10)	0.60 (0.11)	0.66 (0.12)	0.71 (0.13)	0.76 (0.13)
Furring Strips							
THERMA BLOC plus 1"	R	2.24 (12.7)	2.01 (11.4)	1.87 (10.6)	1.74 (9.9)	1.62 (9.2)	1.53 (8.7)
Expanded							
Polystyrene and ½" Gypsum	U	0.45 (0.08)	0.50 (0.09)	0.53 (0.09)	0.57 (0.10)	0.62 (0.11)	0.65 (0.11)
Board							
Face Brick with ¾"	R	1.71 (9.7)	1.48 (8.4)	1.34 (7.6)	1.20 (6.8)	1.09 (6.2)	1.00 (5.7)
Cavity plus THERMA BLOC	U	0.58 (0.10)	0.68 (0.12)	0.75 (0.13)	0.83 (0.15)	0.92 (0.16)	1.00 (0.18)

20cm AVAILABLE UPON SPECIAL REQUEST ONLY

25cm X 20cm X 40cm Two Core THERMA BLOC (10")

WALL DETAIL 25cm BLOCK		Block Density kgm ⁻³ (1b.ft. ⁻³)					
		1280 (80)	1520 (95)	1680 (105)	1840 (115)	2000 (125)	2160 (135)
Standard Two Core	R	0.53 (3.1)	0.49 (2.8)	0.46 (2.6)	0.42 (2.4)	0.41 (2.3)	0.39 (2.2)
Uninsulated Block	U	1.82 (0.32)	2.04 (0.36)	2.17 (0.38)	2.38 (0.42)	2.44 (0.43)	2.56 (0.45)
THERMA BLOC with	R	1.46 (8.3)	1.23 (7.0)	1.09 (6.2)	0.97 (5.5)	0.86 (4.9)	0.76 (4.3)
Insulative liner	U	0.68 (0.12)	0.81 (0.14)	0.92 (0.16)	1.03 (0.18)	1.16 (0.20)	1.32 (0.23)
THERMA BLOC plus ½" foil-	R	2.03 (11.5)	1.80 (10.2)	1.66 (9.4)	1.53 (8.7)	1.43 (8.1)	1.32 (7.5)
back Gypsum Board on	U	0.49 (0.09)	0.56 (0.10)	0.60 (0.11)	0.63 (0.11)	0.70 (0.12)	0.76 (0.13)
Furring Strips							
THERMA BLOC plus 1"	R	2.24 (12.7)	2.01 (11.4)	1.87 (10.6)	1.74 (9.9)	1.64 (9.3)	1.53 (8.7)
Expanded							
Polystyrene and ½" Gypsum	U	0.45 (0.08)	0.50 (0.09)	0.53 (0.10)	0.57 (0.11)	0.61 (0.11)	0.65 (0.11)
Board							

30cm X 20cm X 40cm Two Core THERMA BLOC (12")

WALL DETAIL 30cm BLOCK		Block Density kgm ⁻³ (1b.ft. ⁻³)					
		1280 (80)	1520 (95)	1680 (105)	1840 (115)	2000 (125)	2160 (135)
Standard Two Core	R	0.56 (3.2)	0.51 (2.9)	0.48 (2.7)	0.44 (2.5)	0.42 (2.4)	0.39 (2.2)
Uninsulated Block	U	1.79 (0.31)	1.96 (0.34)	2.08 (0.37)	2.27 (0.40)	2.38 (0.42)	2.56 (0.45)
THERMA BLOC with	R	1.41 (8.0)	1.20 (6.8)	1.06 (6.0)	0.93 (5.3)	0.83 (4.7)	0.74 (4.2)
Insulative liner	U	0.71 (0.12)	0.83 (0.15)	0.94 (0.17)	1.08 (0.19)	1.20 (0.21)	1.35 (0.24)
THERMA BLOC plus ½" foil-	R	1.97(11.2)	1.76 (10.0)	1.62 (9.2)	1.44 (8.2)	1.39 (7.9)	1.30 (7.4)
back Gypsum Board on	U	0.51 (0.09)	0.57 (0.10)	0.62 (0.11)	0.69 (0.12)	0.72 (0.13)	0.77 (0.14)
Furring Strips							
THERMA BLOC plus 1"	R	2.18 (12.4)	1.97 (11.2)	1.83 (10.4)	1.71 (9.7)	1.60 (9.1)	1.51 (8.6)
Expanded							
Polystyrene and ½" Gypsum	U	0.46 (0.08)	0.51 (0.09)	0.55 (0.10)	0.58 (0.10)	0.63 (0.11)	0.66 (0.12)
Board							

*The units of Thermal Resistance (R) are m². °C.W.⁻¹ (h. ft². °F. Btu⁻¹)

**The units of Thermal Transmittance U = $\frac{1}{R}$ are W. m⁻². °C⁻¹ (Btu. h⁻¹. ft². °F⁻¹)

R

DEFINITIONS OF INSULATION TERMS

Thermal insulation in construction is rated by the amount of heat that will flow through one square foot, per hour, per degree F temperature difference. This measurement is made in Btu and expressed as either "k", "C", or "U" values.

"k" (conductivity):

The measurement of heat flow through one-inch thickness of any single material per hour x °F" is technically written: $k = \text{Btu}/(\text{hr})(\text{sq.ft.}) (\text{°F}/\text{inch})$. "k" values are determined by laboratory tests and may be found in product manufacturers' literature.

Example:

"k" of Rigid Urethane Foam	0.14 Btu/(hr)(sq.Ft.) (°F/inch)
"k" of Glass Fiber	0.25 Btu/(hr)(sq.Ft.) (°F/inch)
"k" of Expanded Polystyrene Bead Board	0.28 Btu/(hr)(sq.Ft.) (°F/inch)
"k" of Fiberboard Roof Insulation	0.34 Btu/(hr)(sq.Ft.) (°F/inch)
"k" of Concrete (not dried)	12.00 Btu/(hr)(sq.Ft.) (°F/inch)

"C" (conductance):

The measurement of heat flow through any single material that is more or less than one-inch thick is expressed as: $C = \text{Btu}/(\text{hr})(\text{sq.ft.}) (\text{°F})$. To find "C", divide thickness (T) of the material into its "k" factor. Formula: $C = \frac{k}{T}$ (For one inch of material, "k" and "C" are the same).

"U" Factor:

The measurement, in Btu of heat flow, per hour-square foot (°F) ... through a combination of materials or structure, such as, hung ceiling and air space (if used), roof deck vapor barrier, roof insulation, built-up roofing and the air films below and above these combinations. Formula: $U = \text{Btu}/(\text{hr})(\text{sq.ft.}) (\text{°F})$.

"R" Factor:

Since "k" and "C" values decrease as insulation value increases, it is impossible to add "C" and "k" values. Therefore, it is necessary to use an additional factor to find the "U". This is called the "R" factor. "R" is the reciprocal of the material's "C" and is found by dividing "C" into 1. Therefore, the formula is: $R = \frac{1}{C}$.

"R" factors of each material in construction are added together to obtain total resistance (R_1). To calculate the thickness of insulation required to meet a specified "U", first determine the total resistance of the structure.

R_1 is the reciprocal of "U" and is found by dividing "U" into 1. Therefore the formula is $R_1 = \frac{1}{U}$.

"Degree Days"

The number of degrees the average temperature deviates from 65°F each day during the heating season.

BOEHMERS

ALWAYS GLAD TO HELP

Telephone 519-622-1131

1-800-265-3510