



# Industrial Insulation Group, LLC

A Calsilite/Johns Manville Joint Venture

## Pipe & Equipment Insulations

### Thermo-12® Gold

Pipe & Block Insulation

#### Description

Thermo-12 Gold is a molded, high temperature, abuse-resistant pipe and block insulation with exceptional structural strength, composed of hydrous calcium silicate for use on systems operating up to 1200°F (649°C). The gold color provides positive identification that it is asbestos-free. Thermo-12 Gold meets or exceeds the physical property requirements of ASTM C 533, Type I.

#### Applications

Because of its strength, low thermal conductivity and durability, it is the preferred product for application on high temperature piping and equipment. Thermo-12 Gold is especially recommended for use in the petrochemical and power generation industries where pipe and equipment operate up to 1200°F (649°C).

#### Advantages

- Superior resistance to breakage and physical abuse during shipping, fabrication and installation
- Fast, easy installation
- Large selection of sizes and forms

#### Available Forms and Sizes

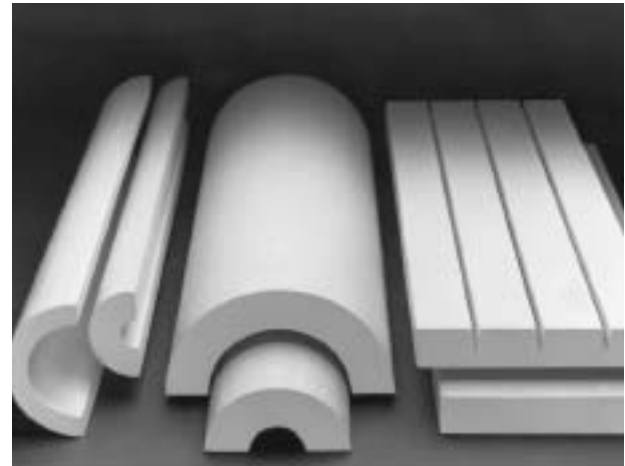
Pipe Sizes		Thermo-12 Gold Form
in.	mm	
½ - 24	15 - 600	Pipe Insulation
20 - 37	500 - 925	Quad Segments
21 - 52	525 - 1300	Molded Radius Block (Ruston Plant Only)
38 - 52	950 - 1300	Hex Pipe Covering (Ruston Plant Only)
30 - 250+	750 - 6350+	Scored Block [12" (305 mm) wide]
Flat Surfaces		Flat Block [6", 12" and 18" wide (152 mm, 305 mm and 457 mm wide)]

Thermo-12 Gold pipe insulation is 36" (914 mm) in length, and is available in thicknesses from 1" to 6" (25 mm to 152 mm) in ½" (13 mm) increments. Thick wall material is furnished in double layers.

Thermo-12 Gold flat block insulation is 12" (305 mm) wide and 36" (914 mm) in length, and is available in thicknesses from 1" to 4" (25 mm to 102 mm) in ½" (13 mm) increments. Non-standard widths of 18", 24" and 36" (457 mm, 610 mm and 914 mm) are available on request on a Special Product Price Inquiry (SPPI).

#### Scored Block Application Guide

Insulation Thickness		Minimum Diameter Triple Scored	
in.	mm	in.	mm
1½	38	30	762
2	51	40	1016
2½	64	50	1270
3	76	60	1524
3½	89	70	1778
4	102	80	2032



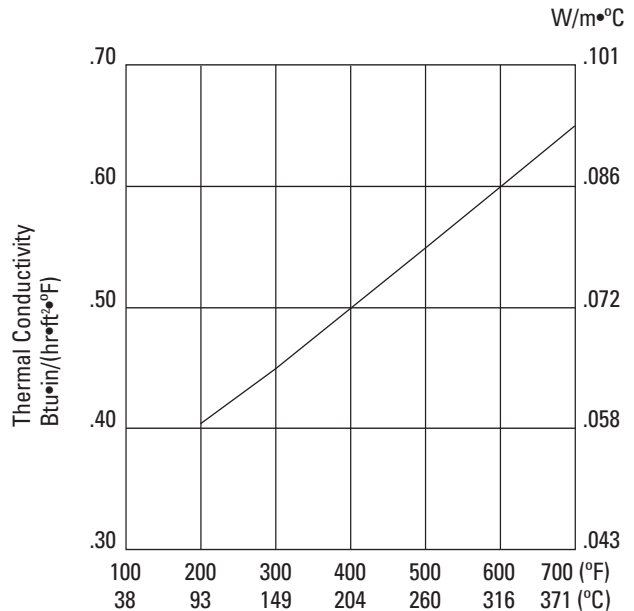
Operating Temperature Limit: 1200°F (649°C)

#### Fire Safety

**Surface Burning Characteristics.** When tested in accordance with ASTM E 84, NFPA 255, and UL 723, Thermo-12 Gold has flame spread/smoke developed ratings of 0/0.

**Hot Surface Performance.** Thermo-12 Gold passes ASTM C 411 to 1200°F (649°C).

#### Thermal Conductivity ("k")\*



Mean Temperature °F	200	300	400	500	600	700
Mean Temperature °C	93	149	204	260	316	371
Btu·in/(hr·ft²·°F)	.41	.45	.50	.55	.60	.65
W/m·°C	.059	.065	.072	.079	.086	.094

\* Thermo-12 Gold Pipe & Block Insulation as tested in accordance with ASTM C 177 and ASTM C 335.

# Thermo-12<sup>®</sup> Gold

## Pipe & Block Insulation

### Specification Compliance

ASTM C 533, Type I  
ASTM C 795  
ASTM E 136 (Noncombustible)  
MIL-I-24244  
MIL-I-2781F to 1200°F (649°C) [Pipe]  
MIL-I-2819F Class 2 to 1200°F (649°C) [Block]  
NRC 1.36

### Physical Property Requirements

#### ASTM C 533, Type I

Density (Dry) Average ASTM C 302	14.5 lbs. per cu. ft. (232 kg/m <sup>3</sup> )
Flexural Strength ASTM C 203	65 psi (448 kPa)
Compressive Strength ASTM C 165	100 psi (690 kPa) to Produce 5% Compression
Abrasion Resistance (% Weight Loss by Tumbling) ASTM C 421	After First 10 Min. - 15 After Second 10 Min. - 30
Linear Shrinkage ASTM C 356	Less Than 2.0% After 24-hr. Soaking Period at 1200°F (649°C)
Max. Service Temperature ASTM C 411	1200°F (649°C)
Surface Burning Characteristics ASTM E 84	Flame Spread - 0 Smoke Developed - 0

### Government Certification

When ordering material to comply with any government specification or any other listed specification, a statement of that fact must appear on the purchase order. Government regulations and other listed specifications require specific lot testing, and prohibit the certification of compliance after shipment has been made. There may be additional charges associated with specification compliance testing. Please refer to price page IIG-CSP-3 for Certification details and charges.

#### For Customer Service and Order Placement

(800) 334-7997  
Fax: (877) 758-6096

#### For Sales Information

(800) 866-3234  
Fax: (877) 758-6096

#### For Technical Information

(800) 872-0338  
Fax: (970) 858-9641



### Industrial Insulation Group, LLC

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IIG-300 2-05 (Replaces 4-04)

The physical and chemical properties of the Thermo-12<sup>®</sup> Gold Pipe and Block Insulation presented herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Customer Service Office to assure current information. **All Industrial Insulation Group products are sold subject to the IIG Limited Warranty and Limitation of Remedy. For a copy of the IIG Limited Warranty and Limitation of Remedy, call (800) 334-7997.**