



Industrial Insulation Group, LLC

A Calsilite/Johns Manville Joint Venture

Pipe & Equipment Insulations

Thermo-12® Gold

Pipe & Block Insulation

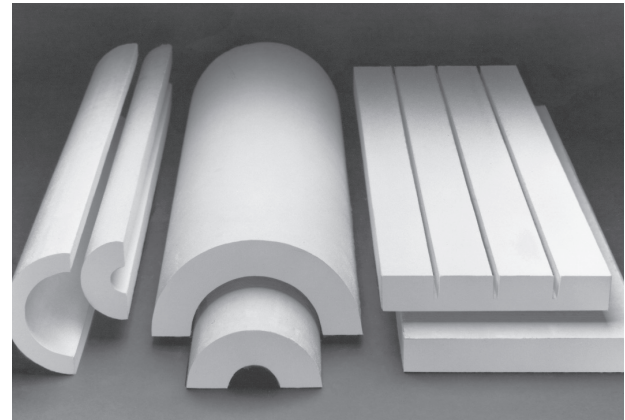


Description

Thermo-12 Gold is a pre-formed, 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). It is inorganic, non-combustible, asbestos-free and meets or exceeds the physical and thermal property requirements of ASTM C533, Type 1. Integral to Thermo-12 Gold is **XOX**, a distinctive formula and process that inhibits corrosion to outside surfaces of pipe and equipment.

Applications

Because of its low thermal conductivity, durability, compressive strength and corrosion inhibiting properties, it is the preferred product for application on high temperature piping and equipment. Thermo-12 Gold is especially recommended for use in the petrochemical, power generation and process industries where piping and equipment operate at temperatures up to 1200°F (649°C). The **XOX** corrosion inhibiting properties are not diminished by heating and cooling so the corrosion protection will continue for the life of the product. Thermo-12 Gold will not burn and may be used for fire protection in some applications. Please e-mail info@iig-llc.com for specific application information.



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

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 |

IIG SAFETY

Personnel · Process · Planet

Advantages

- Guards pipe and equipment surfaces against corrosion
- Excellent resistance to breakage and physical abuse
- No binders to burn out; No loss of insulation integrity.
- Excellent thermal performance to 1200°F
- Superior thermal performance from 450°F to 1200°F
- Resistant to mold growth
- 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 |
| 38 - 52 | 950 - 1300 | Hex Pipe Covering (Ruston Plant Only) |
| 30 - 250+ | 750 - 6350+ | Scored Block [12" (305 mm) wide] [18" (mm) wide (Mesa Plant Only)] |
| 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 150 mm) in ½" (15 mm) increments. Thick wall material is furnished in double layers.

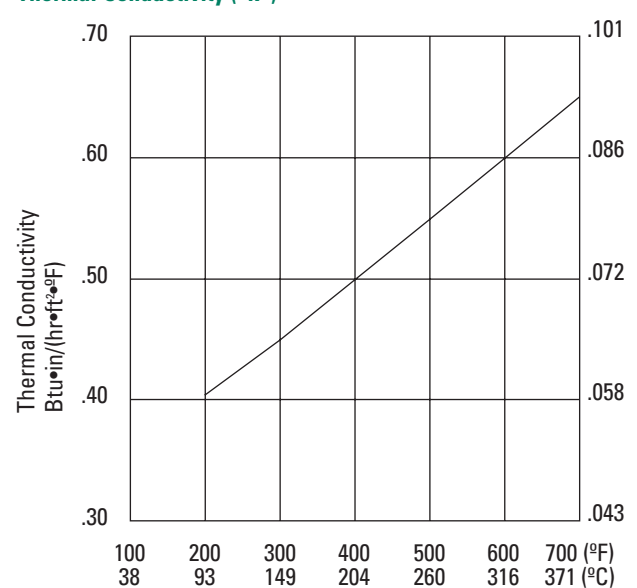
Thermo-12 Gold flat block insulation is 12" (305 mm) wide and 36" (914 mm) in length, and is available in thicknesses from 1" to 4" (25 mm to 100 mm) in ½" (15 mm) increments. Non-standard widths of 18", 24" and 36" (457 mm, 610 mm and 914 mm) are available on a made-to-order basis. Inquire for price and availability.

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[®] Gold

Pipe & Block Insulation

Specification Compliance

ASTM C 533, Type I
ASTM C 795
ASTM C 1338
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 Reg. Guide 1.36

Physical Property Requirements

ASTM C 533, Type I

| | |
|---------------------------------|---|
| Density (Dry) Average | 14.5 lbs. per cu. ft. ASTM C 302 (232 kg/m ³) |
| Flexural Strength | 65 psi (448 kPa) ASTM C 203 |
| Compressive Strength | >100 psi (690 kPa) ASTM C 165 to Produce 5% Compression |
| Abrasion Resistance | After First 10 Min. - 15 (% Weight Loss by Tumbling) After Second 10 Min. - 30 ASTM C 421 |
| Linear Shrinkage | Less Than 2.0% After 24-hr. Soaking Period at ASTM C 356 1200°F (649°C) |
| Max. Service Temperature | 1200°F (649°C) ASTM C 411 |
| Mold Growth | Does Not Support ASTM C 1338 |
| Surface Burning Characteristics | Flame Spread - 0 Smoke Developed - 0 ASTM E 84 |

Government Certification

When ordering material that requires Certificate of Conformance to ASTM, government, or other specifications, a statement of the fact must appear on the purchase order. These specifications require specific lot testing and prohibit the certification of the lot after the shipment has been made. There may be additional charges associated with compliance testing. Refer to customer service for more information.

ISO 9000 Certification

THERMO-12 Gold is designed, manufactured, and tested in our own facilities, which are certified and registered to stringent ISO 9000 (ANSI/ASQ 90) series quality standards. This certification, along with regular independent third-auditing for compliance, is your assurance that all our products deliver consistently high quality.

Industrial Insulation Group, LLC is a Calsilite/Johns Manville joint venture. IIG manufactures MinWool mineral fiber pipe, block and a variety of other insulations; Thermo-12[®] Gold Calcium Silicate pipe and block insulation; Super Firetemp[®] fireproofing board; Sproule WR-1200[™] Perlite pipe and block insulation; high temperature adhesives, and insulating finishing cement.

For Customer Service
and Order Placement
Phone: (800) 866-3234

For General and
Technical Information
Phone: (800) 866-3234



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The physical and chemical properties of the products 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, email - info@iig-llc.com.**