

# PRODUCT SELECTION GUIDE

## HIGH TEMPERATURE INSULATION SOLUTIONS



**Industrial Insulation Group, LLC**

*A Calsilite/Johns Manville Joint Venture*

## Product

### Thermo-12<sup>®</sup> Gold

Calcium Silicate Pipe & Block Insulation



Publication No. IIG-300

## Description

A molded, high-temperature, abuse-resistant pipe and block insulation composed of hydrous calcium silicate. Recommended for use in the industrial processing and power generation industries where pipe and equipment operate up to 1200°F (650°C).

**Operating Temperature Limit:** 1200°F (650°C)

## Available Shapes & Sizes

### \*Form

Pipe Insulation

Quad Segments

Hex Pipe Covering (Ruston Plant Only)

Scored Block [12" (305 mm) wide] & [18" (457 mm) wide (Mesa Plant Only)]

Flat Block [6", 12" and 16" wide & (152 mm, 305 mm & 457 mm wide)]

\*All pipe and block insulations are 36" (914 mm) in length.

\*\*Available in 1/2" (13 mm) increments.

### MinWool-1200<sup>®</sup> Pipe

High-Temperature Pipe Insulation



Publication No. IIG-401

Made of inorganic fibers derived from basalt, a volcanic rock, bonded with a thermosetting resin. Excellent performance in high-temperature thermal control and fire resistance applications for mechanical/power and process piping systems.

**Operating Temperature Limit:** 1200°F (650°C)

Pipe Sizes		**Thickness	
in.	mm	in.	mm
1/2 - 7	15 - 75	1	25
1/2 - 30	15 - 750	1 1/2	38
1/2 - 44	15 - 1100	2 - 4	51 - 102
1/2 - 42	15 - 1050	4 1/2 - 5	114 - 127

### MinWool-1200<sup>®</sup> Board

High-Temperature Board Insulation



Publication No. IIG-402

Made of inorganic fibers derived from basalt, a volcanic rock, bonded with a thermosetting resin. They can be directly installed on heated flat or curved surfaces in a variety of power and process piping applications.

**Operating Temperature Limit:** 1200°F (650°C)

Thickness		Sheet Size	
in.	mm	in.	mm
1-5	25-127	24x48	610x1219

\*Available in 1/2" (13 mm) increments.

### Super Caltemp<sup>®</sup> Gold 1700

Block Insulation



Publication No. IIG-305

Features a Xonolite crystal structure that results in exceptional strength and extremely low water of hydration. Applications include curved vessels and large diameter pipes, fireproofing of structural steel, and as refractory backer in furnaces, boilers and kilns.

**Operating Temperature Limit:** 1700°F (927°C)

Thickness		Sheet Size	
in.	mm	in.	mm
1/2-3	25-76	12x36	350x914

### Sproule WR-1200<sup>®</sup>

Perlite Pipe & Block Insulation



Publication No. IIG-200

A molded, high-temperature pipe and block insulation with exceptional corrosion-inhibiting properties. For use on systems operating up to 1200°F (650°C), it is recommended for industrial processing and power generating facility applications using stainless steel piping.

**Operating Temperature Limit:** 1200°F (650°C)

### \*Form

Pipe Insulation

Quad Segments

V-Grooved Block [12" (305 mm) wide]

Flat Block [6" (152 mm) wide]

Flat Block [12" (305 mm) wide]

\* All pipe and block insulations are 36" (914 mm) in length.

## Thermal Performance

	Pipe Sizes		**Thickness	
	in.	mm	in.	mm
	½-6	15-150	1	25
	½-19	15-475	1½	38
	½-24	15-600	2-3	51-76
	20-37	500-925	1½-3	38-76
	38-52	950-1300	1½-3	38-76
	30 minimum	750 minimum	1½-4	38-102
	Flat Surfaces		1-4	25-102

\*Block widths available from Mesa, CO. 6" & 12" (152 mm & 305 mm) block widths also available from Ruston, LA.

Mean Temperature			
°F	°C	Btu · in/(hr · ft <sup>2</sup> · °F)	W/m · °C
100	38	0.37	0.053
200	93	0.41	0.058
300	149	0.45	0.064
400	204	0.49	0.071
500	260	0.55	0.079
600	316	0.60	0.087
700	371	0.67	0.096

\*Thermo-12 Gold Pipe&Block Insulation as tested in accordance with ASTM C177, ASTM C518 & ASTM C335.

Mean Temperature			
°F	°C	Btu · in/(hr · ft <sup>2</sup> · °F)	W/m · °C
75	24	0.22	0.032
100	38	0.23	0.033
200	93	0.28	0.040
300	149	0.34	0.049
400	204	0.40	0.058
500	260	0.48	0.069
600	316	0.56	0.081
700	371	0.66	0.094

Mean Temp	Board Type { "k" (Btu·in/[hr·ft <sup>2</sup> ·°F]) }							
	°F	°C	1230	1240	1260	1280	1210	1212
25	-4	.21	.21	.22	.22	.22	.22	.22
75	24	.25	.24	.23	.23	.23	.23	.23
100	38	.27	.26	.25	.25	.25	.25	.25
200	93	.34	.32	.30	.30	.30	.30	.30
300	149	.43	.40	.36	.36	.35	.35	.35
400	204	.55	.49	.42	.42	.41	.40	.40
500	260	.70	.62	.53	.49	.47	.46	.46
600	316	.87	.75	.63	.56	.54	.52	.52
700	371	1.06	.90	.75	.67	.62	.59	.59

Mean Temperature			
°F	°C	Btu · in/(hr · ft <sup>2</sup> · °F)	W/m · °C
100	38	0.37	0.053
200	93	0.41	0.058
300	149	0.45	0.064
400	204	0.49	0.071
500	260	0.55	0.079
600	316	0.60	0.087
700	371	0.67	0.096

\*Super Caltemp Gold Insulation as tested in accordance with ASTM C177, ASTM C518 & ASTM C335

Mean Temperature			
°F	°C	Btu · in/(hr · ft <sup>2</sup> · °F)	W/m · °C
100	38	0.47	.068
200	93	0.51	.074
300	149	0.56	.081
400	204	0.62	.089
500	260	0.68	.098
600	316	0.74	.107
700	371	0.79	.114
800	427	0.85	.123

## Specification Compliance

SPECIFICATION COMPLIANCE	
ASTM C533 Type I Material Specification	Passes
ASTM C795/C871/C692 Corrosion	Non Corrosive
ASTM E136 Non Combustibility	Passes
MIL-I-24244 Military Specification	Passes
MIL-I-2781F to 1200°F(650°C) [Pipe] Military Specification	Passes
MIL-I-2819F Class 2 to 1200°F(650°C) [Block] Military Specification	Passes
NRC Reg. Guide 1.36	Passes

SPECIFICATION COMPLIANCE	
ASTM C547 Material Specification	Types I, II, IV
ASTM C585 Dimensional Pipe insulation	Complies
ASTM E84 Flame Spread/Smoke Developed	5/0
ASTM E136 Noncombustible	Passes
NRC Reg. Guide 1.36	Passes

SPECIFICATION COMPLIANCE	
ASTM C356 In-Service Shrinkage	0% at 1050°F (566°C); <2% at 1200°F (650°C)
ASTM C447 Maximum Service Temperature	1200°F(650°C)
ASTM C665 Corrosivity to Steel	Passes
ASTM C1104 Water Vapor Sorption	<1% By Weight, <.02% by volume @ 120°F(49°C), 95% RH
ASTM E84 Flame Spread/Smoke Developed	Unfaced 5/0 or less Faced 25/5 or less

SPECIFICATION COMPLIANCE	
ASTM C533 Material Specification	Type II
ASTM E84 Flame Spread/Smoke Developed	0/0
ASTM E136 Noncombustible	Passes
MIL-I-2819	Class 3

SPECIFICATION COMPLIANCE	
ASTM C610 Material Specification	Passes
ASTM C795/C891/C692	Passes
NRC Reg. Guide 1.36	Passes
Mercury Free	

Nominal Density	Type					
	1230	1240	1260	1280	1210	1212
lb/ft <sup>3</sup>	3	4	6	8	10	12
kg/m <sup>3</sup>	48	64	96	128	160	192

\* (See Table to the RIGHT): Sproule WR-1200 Pipe and Block insulation as tested in accordance with ASTM C177, ASTM C518 & ASTM C335.

## Super Firetemp®

High-Temperature Insulation



Publication No. IIG-103

Super Firetemp boards are a series of noncombustible, fireproofing products used in assemblies requiring one- to four-hour fire ratings with operating temperature limits from 1200 – 1800°F (649 – 982°C). Available in densities from 18-55 pcf (288-881 kg/m<sup>3</sup>), Super Firetemp is composed of hydrous calcium silicate and features a Xonotlite. Crystal structure, resulting in exceptional strength and

stability under fire conditions. Recommended for use on columns, beams, tanks, air and exhaust ducts and cable trays.

Thickness		Sheet Size	
in.	mm	ft	m
1½-3	13-76	4x8	1.22x2.44

## Insulkote® ET

Weather-Protective Coating



Publication No. IIG-10

Developed as a high quality protective coating, Insulkote ET is a compound of selected and processed bitumens, non-asbestos fibers and mineral fillers.

Recommended for weather-protecting insulated vessels, tanks, piping, equipment, and duct work, Insulkote ET is a non-vapor barrier, weather-proof coating for use over thermal insulation where “breathing” is required.

## CalBond® Gold

High-Temperature Glue



Publication No. IIG-11

CalBond Gold is a modified, silicate-based glue for thermal insulations. It sets quickly to provide a high-temperature bond for porous insulating materials. CalBond Gold is completely asbestos free.

CalBond Gold is useful for bonding sections of calcium silicate or perlite high-temperature pipe or block insulation, to make mitered elbows, large insulating sections or other special shapes.

## CalCoat-127®

1200°F (650°C) One Coat Finishing Cement



Publication No. IIG-12

CalCoat-127 is a proprietary blend of hydraulic cement, calcium silicate and inorganic mineral fibers, with corrosion inhibitors, that provides a smooth finish over high-temperature insulation.

CalCoat-127 is recommended for finishing use with calcium silicate or perlite insulation in high temperature piping and equipment applications.

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

The physical and chemical properties 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. Numerical flame spread and 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](mailto:info@iig-llc.com).

  
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