

Johns-Manville



REFRACTORY
PRODUCTS

Product Information

SUPEREX* BLOCK INSULATION

Calcium Silicate Insulation in Block Form

DESCRIPTION

SUPEREX BLOCK INSULATION products are manufactured from carefully selected combinations of diatomaceous silica, other types of silica, lime, clays, and fibers for reinforcement purposes. During processing, the lime and silicas react to form the calcium silicate bonding system. These products are characterized by very high strength both cold and at elevated temperatures, and high refractoriness so they can be used right up to their temperature use limits and even beyond should upset conditions occur. They uniquely combine low thermal conductivity and high stability at elevated temperatures to provide efficiency of construction and thermal performance, and long maintenance-free service. SUPEREX BLOCK products contain no asbestos fibers and are not soluble in water. Repeated wettings have no effect on this insulation.

AVAILABLE FORMS

SUPEREX 2000 - To achieve low shrinkage at 2000°F, the calcium content is reduced and density is increased. This assures that SUPEREX 2000 will perform reliably under the most rigorous high temperature conditions. Ever since its introduction, SUPEREX 2000 has demonstrated this reliability. Today for example, it economically insulates most of the blast furnace stoves in this country's steel-making plants.

SUPEREX 1600 - For this lower temperature product, the calcium silicate bonding reaction is increased, and density considerably reduced. As compared to SUPEREX 2000, it is a better insulator, it is stronger, and it is easier to handle and apply at its point of application. And, its readily reducible impurities such as iron and titania are lower than the most pure refractories. It can be used to insulate austenitic stainless steel.

SUPEREX 2000 SG & SUPEREX 1600 SG - These are composite insulation blocks of Superex bonded at the factory to a compressible blanket of fine, spun-attenuated glass fiber, 1000 SERIES SPIN GLASS*. SUPEREX 2000 SG was originally developed to aid steel

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Sect. 150 Part 10
Date 11/15/73



Johns-Manville Greenwood Plaza, Denver, CO. 80217

DEFENDANT'S
EXHIBIT

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SUPEREX BLOCK is good insurance, too. Any refractory construction can be expected to crack in service and allow full furnace temperatures into the back-up insulation. Its high refractoriness will help to prevent catastrophic failure of important equipment and allow operation until a more convenient rebuild or repair time is reached.

While SUPEREX 2000 is being used satisfactorily as the exposed hot face lining of gas fired cyclically operated furnaces, we do not normally recommend this type of installation. Applications of this type should be carefully evaluated and receive extensive field testing. SUPEREX 1600 in particular, should be limited to back-up insulation. We normally recommend J-M ceramic fiber products for exposed service in combustion atmospheres.

Some typical uses of SUPEREX BLOCK INSULATION are:

ovens	annealing furnaces
soaking pits	heat treating furnaces
high temperature mains and flues	combustion air piping
industrial boilers	bustle pipes
marine boilers	blast furnace stoves
regenerators	glass lehrs
kilns	car tops
roasters	forge furnaces
reverberatory furnaces	laboratory furnaces
reheat furnaces	cooking equipment

<u>PROPERTIES DATA</u>	<u>SUPEREX 2000</u>	<u>SUPEREX 1600</u>
Normal Service Temperature, °F (oxidizing atmosphere)	2000	1600
Marking	None	Green stripe on end
Density, lbs/cu ft	24	14
Modulus of Rupture, lbs/sq in	45	65
Compressive Strength, lbs/sq in to produce 5% deformation (2" thickness)	130	165
Linear shrinkage, % after 24 hours soaking heat	2.7 @ 2000°F	1.4 @ 1600°F
Chemical composition, %		
Silica, SiO ₂	74.8	49.6
Alumina, Al ₂ O ₃	4.3	1.2

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Recovery of 3" SUPEREX 2000 SG After Compression

Compressed Thickness		Thickness of SUPEREX SG after release (Percent of original thickness)			
Inch	%	As Received	Hot Face of SUPEREX (24 hour test)		
			1600°F	1800°F	1900°F
2.90	97	99	99	99	99
2.75	92	99	97	97	97
2.50	83	95	93	93	93

STANDARD SIZES - All dimensions in inches

	SUPEREX 2000 and 2000 SG	SUPEREX 1600 and 1600 SG
Thicknesses in ½ inch increments	1 to 5 SUPEREX 2000	1 to 4 SUPEREX 1600
	1½ to 6 SUPEREX 2000 SG	1½ to 5 SUPEREX 1600 SG
Widths and Lengths	12 x 36 6 x 36 12 x 18	18 x 36 12 x 36 6 x 36 18 x 18

Beveled blocks are tapered to specific requirements. Outside diameter of circle is to be specified on order.

The physical (and chemical) properties shown herein represent typical 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. Check the Johns-Manville district office to assure current information.

This is preliminary Product Information. It will be superceded by the Thermal Insulation Product Sheet when it is published.

*Registered trademark of Johns-Manville Sales Corp.

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J-M PACKAGE PRINTING LAYOUT

CANCELLATION: This layout cancels layout Form No. MG-1A dated 3/25/50

FORM NO. MG-1A
MG-2A
Dated 5/26/50 *
J-M Plants M, R & W.
* Revised to reins
MG-2A and delete Pa
Numbers

STAND ON END
USE NO HOOKS
LEADING INSULATION
FOR MORE THAN SIXTY YEARS
AUTHORITIES
PRODUCT

Johns-Manville

85%
**MAGNESIA
BLOCK
INSULATION**

Johns-Manville

STAND ON END
USE NO HOOKS

PRINTING FOR MG-1A IS
SAME AS FOR MG-2A EXCEPT
FRONT AND BACK PANELS
ARE PRINTED AS ABOVE.

STAND ON END
USE NO HOOKS
LEADING INSULATION
FOR MORE THAN SIXTY YEARS
AUTHORITIES
PRODUCT

Johns-Manville

**SUPEREX
BLOCK
INSULATION**

Johns-Manville

STAND ON END
USE NO HOOKS



**STORE
IN A
DRY PLACE**

THICKNESS _____
LENGTH _____
NO. of BLOCKS _____

STAND ON END
USE NO HOOKS
LEADING INSULATION
FOR MORE THAN SIXTY YEARS
AUTHORITIES
PRODUCT

Johns-Manville

**SUPEREX
BLOCK
INSULATION**

Johns-Manville

STAND ON END
USE NO HOOKS

**STORE
IN A
DRY PLACE**

THE ABOVE PRINTING IS FOR FORM NO. MG-2A

COLOR OF INK: - (For MG-2A) all printing on top of carton ("Number of Blocks", etc.) and the following printing on front & back, "Johns-Manville", the J-M block, "Products", "Johns-Manville", "Block Insulation", "Johns-Manville" are all printed in black ink. All other printing is in red ink. (For MG-1A) Color of ink for Magnesia Block carton is as same as the Superex carton, except that 85% Magnesia and Form Number is in black ink.