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DATE: 1951

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KAYLO
INSULATION PRODUCTS

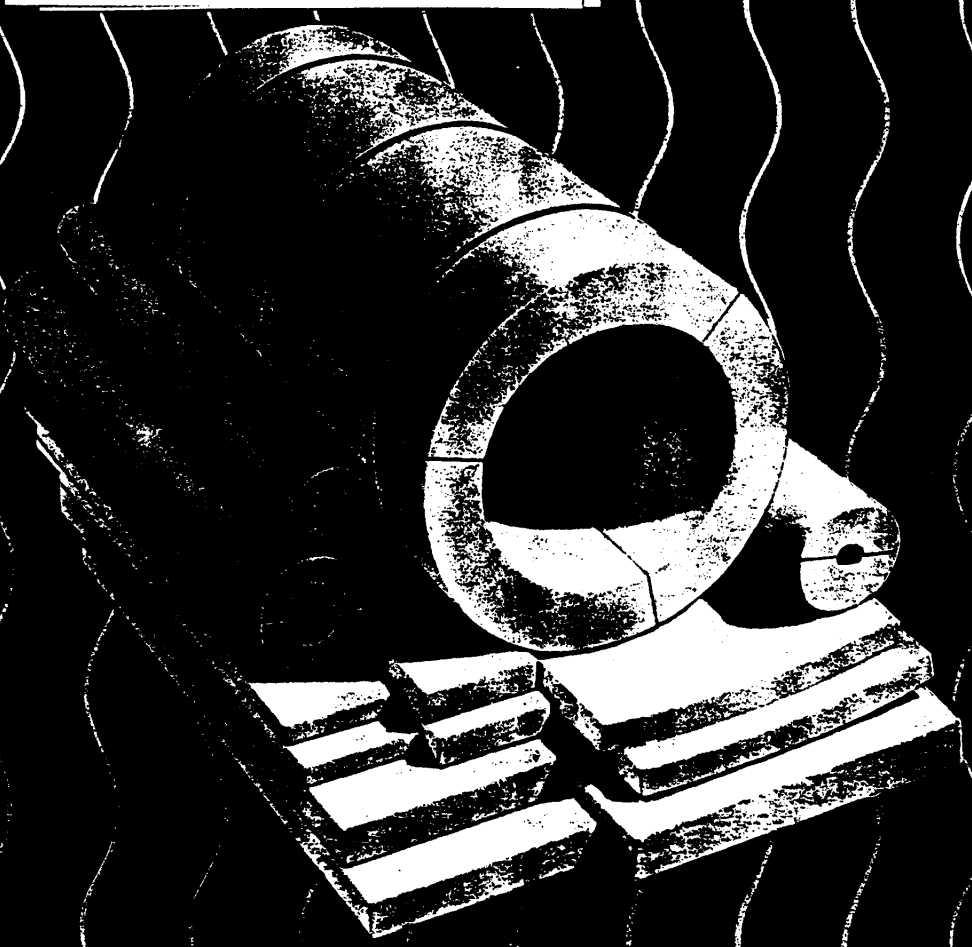
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CENTRAL RECORDS
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"IKE" KEITH

SALES ENGINEER
OWENS-ILLINOIS GLASS COMPANY
KAYLO DIVISION

601 CONTINENTAL BLDG.
ST. LOUIS 8, MISSOURI
TEL.: NEWSTEAD 7474-5-6-7

...resures up to 1200° F.



SOC-TM-0096

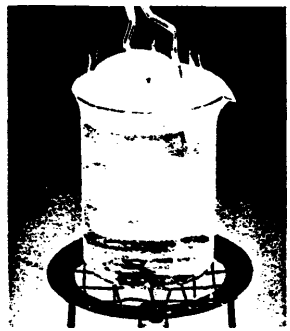
OWENS ILLINOIS
GLASS COMPANY, Toledo 1, Ohio

...first in calcium silicate

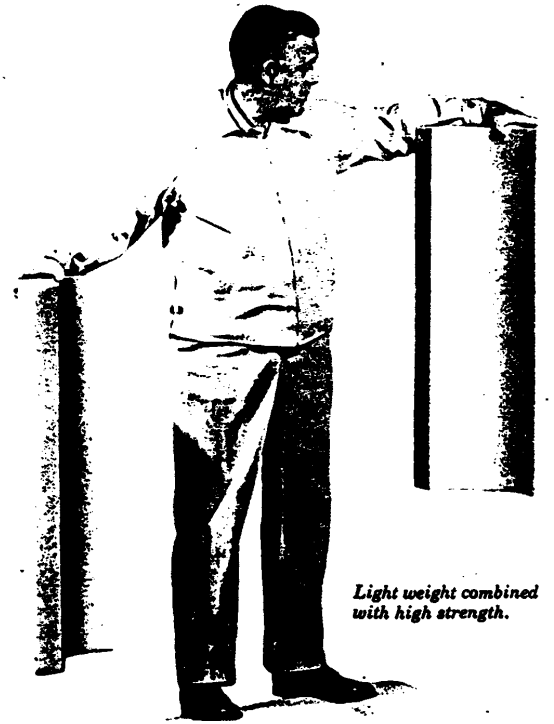
KAYLO®
HEAT INSULATION



Kaylo Heat Insulation is easily cut with ordinary tools.



Boiling water does not break it down.



Light weight combined with high strength.

KAYLO®

SOC—TM—0097

HEAT INSULATION | HYDROUS CALCIUM SILICATE

Kaylo Heat Insulation is made of a chemical compound of lime and silica developed by Owens-Illinois Glass Company. Although not glass, it is made of materials similar to those used in glass, and with which Owens-Illinois has had long experience. The technical name is hydrous calcium silicate. Since it is a chemically reacted material, it contains no added binder. For mechanical effects, a small amount of asbestos fiber is included at the time of manufacture.

Few materials have been so thoroughly tested. Owens-Illinois began work on hydrous calcium silicates in 1938, but no material was offered to the general market until 1943. Thousands of installations since that time have proved field superiority, yet research and product development are still continuing.

Kaylo Heat Insulation is made both as block and as molded pipe insulation, with the widest range of sizes, forms and thicknesses of any high temperature insulation available. Kaylo hydrous calcium silicate combines the most desirable physical characteristics of heat insulating materials to a degree not equalled by other materials on the market. This means outstanding performance and economical application for the user.

PERFORMANCE

Kaylo Heat Insulation is *effective up to 1200°F.*, performing efficiently on temperatures through the hot water and low pressure steam range and also through temperatures in the super-heated steam range. Therefore, a single material can be used for high temperatures which usually require combinations of two different insulating materials.

The *low coefficient of conductivity*, or "k", of Kaylo Heat Insulation places it among the most efficient insulations for temperatures up to 1200°F. (The name "Kaylo" is derived from the fact that "k" is low for the material.) Its high insulation value comes from the extremely small pore structure. So small and numerous are its insulating air spaces that they present a material internal surface of approximately 100 acres per cubic foot of insulation.

Water does not break down Kaylo Heat Insulation. Even when saturated, it retains about 85% of its strength. After being soaked for long periods of time and then dried, it returns to its original thermal efficiency and strength, without apparent shrinking or warping.

Kaylo Heat Insulation is effective after long service. It remains strong and efficient over the years and shows little shrinkage after exposure to temperatures up to 1200°F.

APPLICATION

With a weight of only *11 pounds per cubic foot*, handling, shipping and application are simplified.

Kaylo Heat Insulation has flexural strength, compressive *strength and resistance to abrasion far above normal requirements* for heat insulation. Breakage during installation, therefore, is usually negligible.

Block or pipe insulation *can be cut, scored or sawed with ordinary tools* of the trade. The material is *non-irritating to the skin* and non-toxic.

PHYSICAL CHARACTERISTICS

DENSITY.....Approximately 11 lb. per cu. ft.

FLEXURAL STRENGTH.....50 lb. per sq. in.

COMPRESSIVE STRENGTH (at 5% deformation)

Before heating.....150 lb. per sq. in.
After heating for 24 hours
- at 750° F.....144 lb. per sq. in.
- at 1000° F.....123 lb. per sq. in.
- at 1200° F.....117 lb. per sq. in.

After boiling for 24 hours (while wet).....74 lb. per sq. in.

LOSS IN WEIGHT

After heating for 24 hours
- at 750° F.....5.5%
- at 1000° F.....7.9%
- at 1200° F.....9.8%

After boiling for 24 hours (after drying)..0.2%

RESISTANCE TO ABRASION

(Conventional tumbling test-loss in weight after 10 minutes)
Before heating.....2.2%
After heating for 24 hours
- at 750° F.....3.7%
- at 1000° F.....5.7%
- at 1200° F.....6.9%

DIMENSIONAL STABILITY

Linear shrinkage after heating for 24 hours
- at 750° F.....0.8%
- at 100° F.....0.9%
- at 1200° F.....1.5%

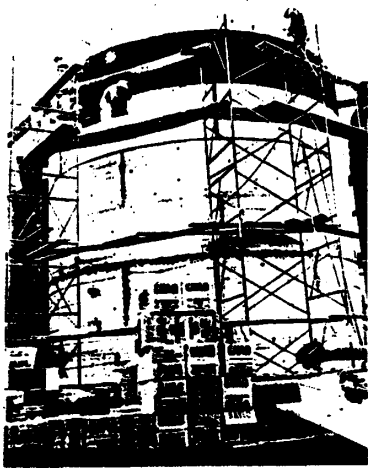
Elongation after saturation (max.).....0.04%

MOISTURE ABSORPTION (volume)

After 6 hours exposure in atmosphere of 120° F. and 90% Relative Humidity...0.9%

CONDUCTIVITY (K)

At 100° F. mean temperature.....0.41
At 500° F. mean temperature.....0.54

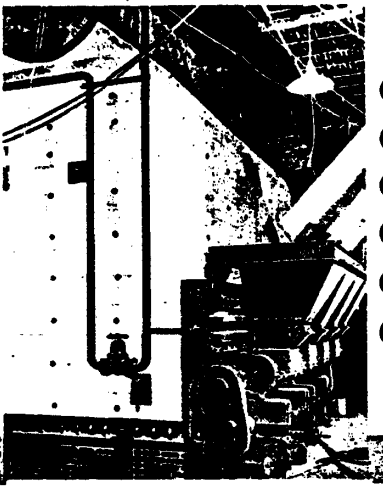


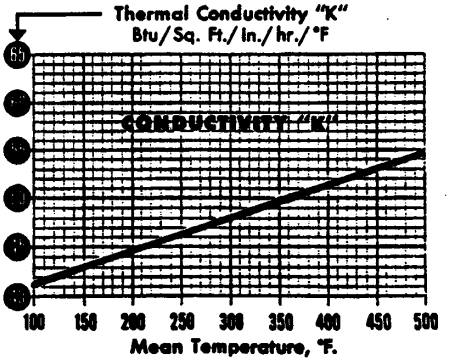
Applicators like its light weight and good "handleability".

TYPICAL APPLICATIONS

Inside or outside, for temperatures up to 1200°F., Kaylo Heat Insulation is used for such equipment as:

Autoclaves	Kilns
Boilers	Lehrs
Breechings	Locomotives
Chilling Pits	Ovens
Condensers	Precipitators
Dryers	Process Equipment
Evaporators	Steam Lines
Furnaces	Tanks
Heat Exchangers	Towers
Hot Air Ducts	Turbines
	Vessels

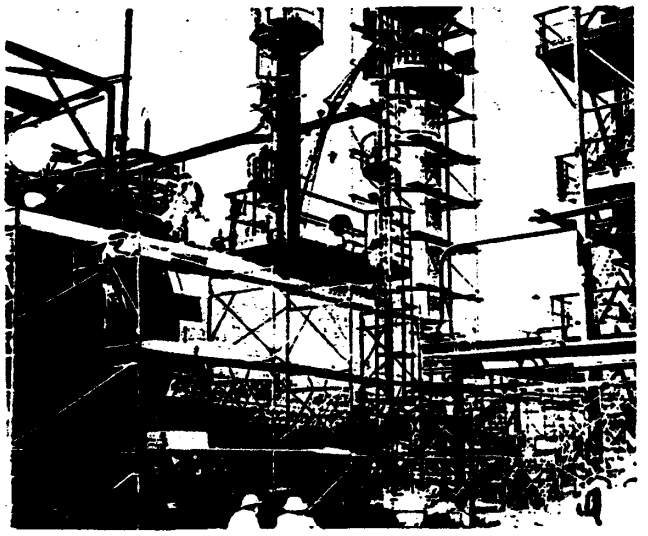


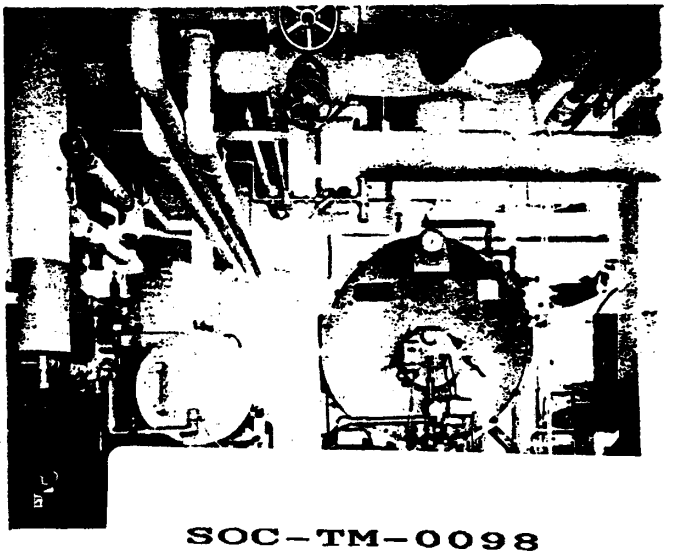


Strength of material and large units mean more economical application, less waste.

Neat, clean jobs result when Kaylo Heat Insulation Block is secured with studs.

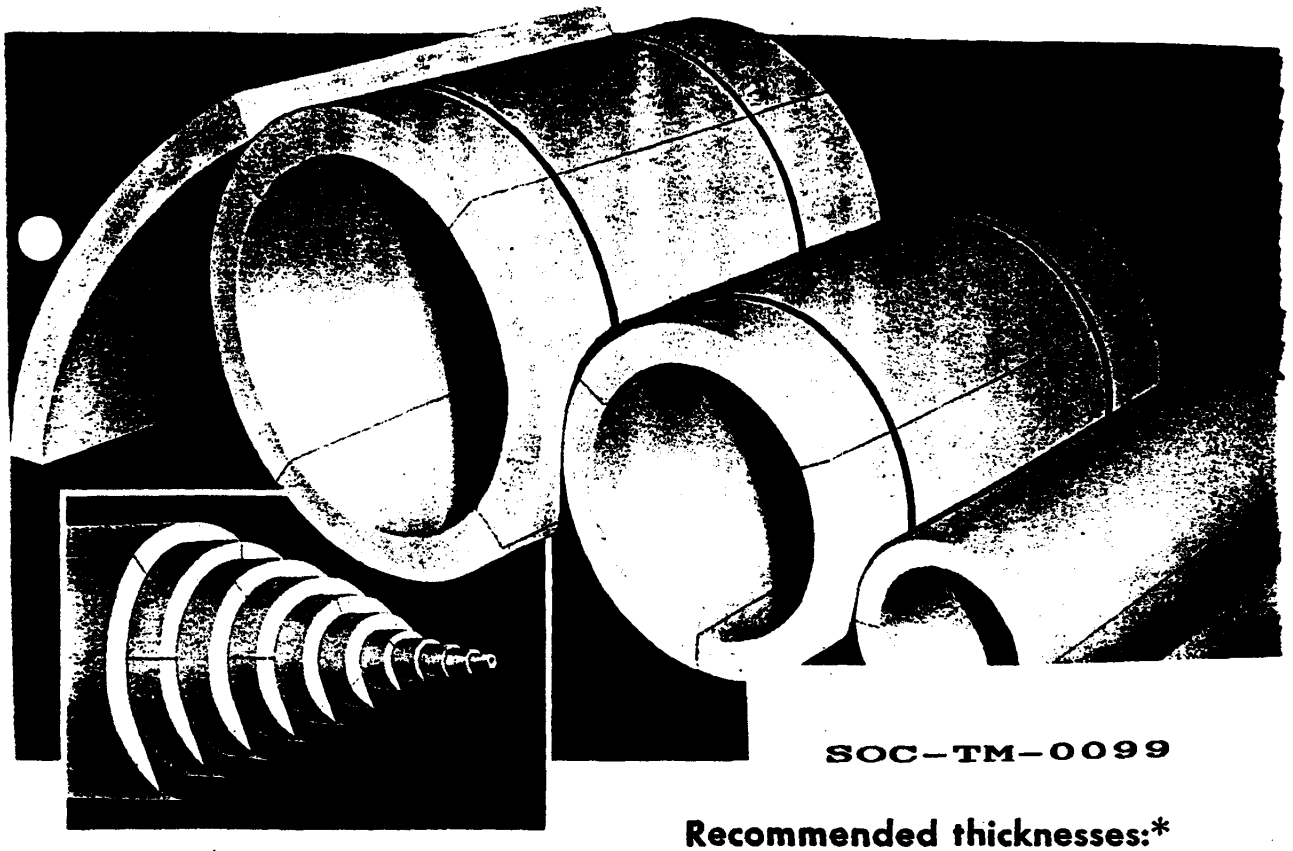
The smooth surfaces and straight edges of the material help make a neat finished job.





SOC—TM—0098

KAYLO® PIPE INSULATION



SOC–TM–0099

Kaylo Pipe Insulation reduces inventory requirements because of two features—its wide effective temperature range (up to 1200°F.) and its Simplified Dimensional Standards, which allow nesting.

Kaylo Pipe Insulation is produced in Simplified Dimensional Standards of thicknesses and diameters for pipe sizes from ½" to 72" and tubing down to ¼" in diameter. O. D.'s of insulation correspond to O. D.'s of standard pipes, assuring proper fit for each pipe size and for nesting, when necessary. With this system of snug nesting, Kaylo Pipe Insulation fits all operating conditions, requires less items—reduces maintenance stock.

Recommended thicknesses:*

NOMINAL PIPE SIZE—IN.	TEMP. DIFFERENCE HOT SURFACE TO AIR, DEG. F										
	200	300	400	500	600	700	800	900	1000	1100	1200
½	1	1	1	1½	1½	1½	2	2	2½	3	3
¾	1	1	1	1½	1½	2	2	2	2½	3	3
1	1	1	1	1½	1½	2	2	2	2½	3	3
1¼	1	1	1	1½	1½	2	2	2½	2½	3	3
1½	1	1	1	1½	1½	2	2½	2½	3	3	3
2	1	1	1½	1½	2	2	2½	2½	3	3	3
2½	1	1	1½	1½	2	2½	2½	3	3	3	3
3	1	1	1½	1½	2	2½	2½	3	3	3½	3½
3½	1	1	1½	2	2	2½	3	3	3½	4	4
4	1	1	1½	2	2	2½	3	3	3½	4	4
6	1½	1½	1½	2	2	2½	3	3	3½	4	4
8	1½	1½	1½	2	2	2½	3	3½	3½	4	4½
10	1½	1½	1½	2	2	2½	3	3½	4	4	4½
12	1½	1½	1½	2	2½	3	3	3½	4	4½	5
14	1½	1½	1½	2	2½	3	3	3½	4	4½	5
16	1½	1½	1½	2	2½	3	3	3½	4	4½	5
18 to 72	1½	1½	1½	2	2½	3	3	3½	4	4½	5

Unshaded = *surface temp. under 140°F.*
Light Shaded = *surface temp. 140°F. to 145°F.*
Heavy Shaded = *surface temp. 145°F. to 150°F.*