

IL050E.ASB
10/27/94

PLAINTIFF'S EXHIBIT

K-1935

STATE OF ILLINOIS
IN THE CIRCUIT COURT OF THE ELEVENTH JUDICIAL CIRCUIT
COUNTY OF MC LEAN

GEORGE and MYRA KROUTIL,)
Plaintiff,)
v.) No. 94 L 14
OWENS-CORNING FIBERGLAS CORPORATION,)
et al.,)
Defendants.)

**DEFENDANT, OWENS-ILLINOIS, INC.'S RESPONSES TO
PLAINTIFFS' FIRST REQUEST FOR DISCOVERY FROM
DEFENDANT, OWENS-ILLINOIS, INC.**

PRELIMINARY STATEMENT

Some of the events which may be relevant to the matters inquired about by Plaintiffs' Requests for Production apparently occurred more than thirty-five years ago. In addition, effective April 30, 1958, Owens-Illinois, Inc. disposed of the business involved in this action by way of sale of that business to Owens-Corning Fiberglas Corporation. Since that time, Owens-Illinois, Inc. has not engaged in the asbestos-containing insulation products manufacturing business. It does not now and it has not since that sale manufactured, distributed or sold any of its Kaylo asbestos-containing insulation products. As a result of the foregoing factors, many of the individuals who might have had personal knowledge of the matters to which plaintiffs' requests relate are deceased, or are otherwise unavailable to Owens-Illinois, Inc., and investigations to date indicate that at least some documents which relate to matters inquired about by these requests were transferred to Owens-Corning Fiberglas Corporation with the transfer of the business in question in 1958. Owens-Illinois, Inc. is engaged in a continuing investigation in an attempt to locate, confirm the transfer of, or confirm the absence of, such documents and is also engaged in a continuing investigation into the matters inquired about in these requests.

NOV 14 1994

Unless otherwise stated in a response to a specific request, the responses set out hereinafter are limited to the period during which Owens-Illinois, Inc. manufactured asbestos-containing Kaylo insulation products and to the facilities related to that business. The following is a part of and is incorporated by reference in every response provided hereinafter:

This response is accurate as of the date made. However, Owens-Illinois, Inc.'s investigation is continuing, and Owens-Illinois, Inc. cannot exclude the possibility that it may be able to obtain more complete information or even information which indicates that the response being supplied is incorrect. Owens-Illinois, Inc. objects to responding to this request in regard to any period of time other than the period during which it engaged in the manufacture and sale of the Kaylo products alleged to be involved in this case which ended in mid-1958 or concerning any facility not related to that business, on the basis that any such response would be irrelevant to the subject matter of the pending litigation, would not be reasonably calculated to lead to the discovery of admissible evidence, and would be burdensome and oppressive.

Commencing in 1963 and continuing through 1977, Kimble Glass Company, a unit of Owens-Illinois, Inc., offered for sale gaskets, inserts and spacers as accessory parts intended for use in conjunction with Kimble's conical end glass piping system. Some of these accessory parts contained asbestos as one of their ingredients. These accessory parts were not manufactured by Kimble, but were purchased from other suppliers. From approximately 1966 through 1977, the Kimble Division also offered for sale a field beading kit which included a small plate and a covering over each of two small hoses. The plate and hose coverings may possibly have contained asbestos, but Owens-

Illinois cannot yet confirm the ingredients of these materials based upon its business records presently reviewed. Kimble also sold Glass Lined Reactors manufactured by Schwelm for a period of time presently unknown which incorporated gaskets containing asbestos as one of their ingredients. At the end of 1977, Owens-Illinois transferred its interest in the glass pipe and Schwelm Reactor product lines and related assets to OI/Schott Process Systems, Inc. in exchange for 50% of the stock of the Corporation and, pursuant to a Sales Agreement dated May 24, 1990, sold its interest in OI/Schott Process Systems, Inc. to Schott Corporation. From 1982 through 1985, Kontes Glass Company, a subsidiary of Owens-Illinois during that time period, purchased certain asbestos-containing materials from other manufacturers and incorporated those materials into four of its products. Based upon the information available to Owens-Illinois to date concerning the nature of Plaintiff's claim, it is Owens-Illinois' understanding that the only Owens-Illinois asbestos-containing product to which the Plaintiff alleges exposure is Kaylo. Therefore, Owens-Illinois objects to responding to these requests in regard to the above described asbestos-containing products sold by Kimble Glass Company and Kontes Glass Company on the basis that any such response would be irrelevant to the subject matter of the pending litigation, would not be reasonably calculated to lead to the discovery of admissible evidence and would be burdensome and oppressive. In the event that Owens-Illinois is subsequently informed that the Plaintiff alleges exposure to asbestos-containing products sold by Kimble Glass Company or Kontes Glass Company, Owens-Illinois will supplement these responses to requests within a reasonable time after receiving such notice to the extent that a supplementation is necessary in order to respond to the requests in light of the alleged exposure to asbestos-containing products sold by either Kimble Glass Company or Kontes Glass Company.

REQUESTS

REQUEST NO. 1. all witness statements of any sort, whether signed or unsigned (together with all documents purporting to reflect the same), and a list of those statements for which a privilege from disclosure is claimed;

RESPONSE NO. 1. This defendant objects to this request in that it seeks information protected by the attorney-client and/or the attorney work-product privilege. Without waiving the above objection, neither this defendant nor its counsel is in possession of materials referred to in this request. This defendant reserves the right to supplement its response at any time in the future.

REQUEST NO. 2. all data as to the physical or mental condition of George Kroutil, excluding all documents provided you by plaintiffs' counsel;

RESPONSE NO. 2. This defendant objects to this request in that it seeks information protected by the attorney-client and/or the attorney work-product privilege. Without waiving the above objection, neither this defendant nor its counsel is in possession of materials referred to in this request. This defendant reserves the right to supplement its response at any time in the future.

REQUEST NO. 3. all pamphlets, brochures or other documents prepared, distributed or utilized by Defendant to advertise or promote any product containing asbestos;

RESPONSE NO. 3. This defendant objects to this request on the basis that it seeks information which is not

relevant to the subject matter of this litigation and is not reasonably calculated to lead to the discovery of admissible evidence, except as it relates to the period of time during which this defendant engaged in the manufacture, sale and distribution of its Kaylo asbestos-containing products. This defendant ceased the manufacture, sale and distribution of its Kaylo asbestos-containing products in 1958. Without waiving the above objection, refer to Exhibit I. This defendant ceased the manufacture, sale and distribution of its Kaylo asbestos-containing products in 1958.

REQUEST NO. 4. all documents reflecting or evidencing a summary of periodic chest x-rays or other medical examinations of the workers employed at any location wherein Defendant used asbestos at any time. Stated another way, Plaintiff is requesting the summaries or reports of the health surveys or employee health surveys, which were prepared or used to evaluate the health hazards, if any, arising from the use of asbestos;

RESPONSE NO. 4. This defendant objects to this request on the grounds that the phrase "health hazards" is vague, ambiguous, and overly broad, seeks information which is not relevant to the subject matter of this litigation, and is not reasonably calculated to lead to the discovery of admissible evidence, except as it relates to the period of time during which this defendant engaged in the manufacture, sale and distribution of its Kaylo asbestos-containing products. Without waiving the above objection, this defendant has found no documents in its business records responsive to this request for the relevant time period. The documents referred to in defendant's answer to Interrogatory No. 11 in the George and Myra Kroutil case filed simultaneously herewith may contain information related to the subject matter of this request. Further, this defendant has no

records indicating that any of its employees at its Kaylo manufacturing plants developed any asbestos related disease during the time defendant manufactured Kaylo.

REQUEST NO. 5. each policy of insurance which may be construed to provide coverage for the claim stated in the Complaint;

RESPONSE NO. 5. This defendant objects to this request on the ground that it seeks irrelevant and immaterial information which is not reasonably calculated to lead to the discovery of admissible evidence. Expressly reserving and without waiving its objections, and subject to them, this defendant states that the issues surrounding its insurance coverage for asbestos claims are complex. Because of disputes over possible insurance coverage, this defendant has engaged in litigation against certain insurance carriers which may provide coverage for asbestos claims. One such lawsuit resulted in a decision of the United States District Court of the District of Columbia in Owens-Illinois, Inc. v. Aetna Casualty and Surety Company, 597 F.Supp. 1515 (D.D.C. 1984).

The litigation between this defendant and Aetna Casualty and Surety Co. has been settled. The terms and conditions of the settlement agreement are confidential, and as a consequence, the parties are precluded from disclosing the terms or contents of the agreement. Litigation with other insurance carriers is ongoing.

REQUEST NO. 6. all documents reflecting payments or agreements for payments made under any of the policies described in the preceding paragraph which the carrier claims or could claim as a full or partial exhaustion of the policy limits or otherwise affect the amount of coverage available in this case;

RE **RESPONSE NO. 6.** Refer to this defendant's objection
and answer to Request for Production No. 5.

REQUEST NO. 7. each document authored by an employee
of Defendant in the course of his employment, dealing in whole or
in part with the consequences of exposure to asbestos;

RESPONSE NO. 7. This defendant objects to this
request as being cumulative, burdensome and oppressive, not
relevant to the subject matter of this litigation and not
reasonably calculated to lead to the discovery of admissible
evidence.

REQUEST NO. 8. all medical records of those present
or former employees of Defendant who have filed claims for
worker's compensation or occupational disease benefits alleging
an injury or disease from exposure to asbestos and all personnel
and employment records which evidence or reflect the duration,
quantity and quality of his or her exposure to asbestos while
employed by Defendant;

RESPONSE NO. 8. This defendant objects to this
request on the basis that it seeks information which is not
relevant to the subject matter of this litigation and is not
reasonably calculated to lead to the discovery of admissible
evidence, except as it relates to the period of time during which
this defendant engaged in the manufacture, sale and distribution
of its Kaylo asbestos-containing products. This defendant ceased
the manufacture, sale and distribution of its Kaylo asbestos-
containing products in 1958. Without waiving the above
objection, this defendant ceased the manufacture, sale and
distribution of its Kaylo asbestos-containing products in 1958.
During the period in which this defendant engaged in the

manufacture of its Kaylo asbestos-containing products, it received no workers' compensation claims for any asbestos-related disease.

REQUEST NO. 9. each written warning, caution or other document which was intended by Defendant to reach those persons who would breathe or ingest the asbestos from asbestos containing products manufactured and/or sold by Defendant;

RESPONSE NO. 9. This defendant objects to this request on the basis that it seeks information which is not relevant to the subject matter of this litigation and is not reasonably calculated to lead to the discovery of admissible evidence, except as it relates to the period of time during which this defendant engaged in the manufacture, sale and distribution of its Kaylo asbestos-containing products. This defendant ceased the manufacture, sale and distribution of its Kaylo asbestos-containing products in 1958. Without waiving the above objection, this defendant ceased the manufacture, sale and distribution of its Kaylo asbestos-containing products in 1958. This defendant has not found information in its records sufficient to enable it to answer this interrogatory. However, it does not appear that any warning concerning asbestos was given in that it does not appear that this defendant had reason to believe that the use of its products would result in a foreseeable risk of harm.

REQUEST NO. 10. a transcript (including exhibits) of each instance where an employee of Defendant testified at deposition or trial in asbestos disease litigation;

RESPONSE NO. 10. This defendant objects to this request as being vague, ambiguous, irrelevant, overly broad,

burdensome and oppressive, not reasonably calculated to lead to the discovery of admissible evidence and not limited to any issue which is the subject of this case.

REQUEST NO. 11. a transcript (including exhibits) of each instance where an individual whom Defendant listed, retained or called as an expert witness, testified at deposition or trial in asbestos disease litigation;

RESPONSE NO. 11. This defendant objects to this request as being vague, ambiguous, irrelevant, overly broad, burdensome and oppressive, not reasonably calculated to lead to the discovery of admissible evidence and not limited to any issue which is the subject of this case.

REQUEST NO. 12. all agreements to which defendant is a party and which relate to the manner in which this case shall be evaluated, delayed or defended;

RESPONSE NO. 12. This defendant objects to this request in that it seeks information protected by the attorney-client and/or the attorney work-product privilege. This defendant also objects to this request on the basis that it is vague, ambiguous, and overly broad, seeks information which is not relevant to the subject matter of this litigation and is not reasonably calculated to lead to the discovery of admissible evidence.

REQUEST NO. 13. all documents which Defendant provided or should have provided to the Environmental Protection Agency in response to the Asbestos Information Act of 1988 (15

USC §2607) and the regulations issued April 18, 1989 (54 CFR 15622) and August 7, 198 (54 CFR 32430).

RESPONSE NO. 13. This defendant objects to this request on the basis that this defendant's submission is a matter of public record, and therefore, plaintiff's counsel has equal access to same. This defendant objects to producing same. The documents are available from their proper source.

REQUEST NO. 14. an affidavit stating whether production is complete according to the knowledge of Defendant and Defendant's insurance carriers, attorneys, agents and employees.

RESPONSE NO. 14. Refer to the attached affidavit.

AFFIDAVIT

STATE OF OHIO)

)SS:

COUNTY OF WOOD)

H. G. BRUSS, being duly sworn according to law, deposes and says that he is an Assistant Secretary of Owens- Illinois, Inc., a defendant herein; that as such he is authorized to make an Affidavit on its behalf; and that the facts set forth in the foregoing DEFENDANT, OWENS-ILLINOIS, INC.'S RESPONSES TO REQUEST FOR PRODUCTION, are true and correct to the best of his knowledge, information and belief.



H. G. BRUSS

SWORN TO and subscribed before me this 10th day of November, 1994
My Commission Expires: January 4th, 1996
SEAL



Notary Public
MARY JANET CRAWFORD
Notary Public, State of Ohio
My Commission Expires 1-4-96

EXHIBIT I

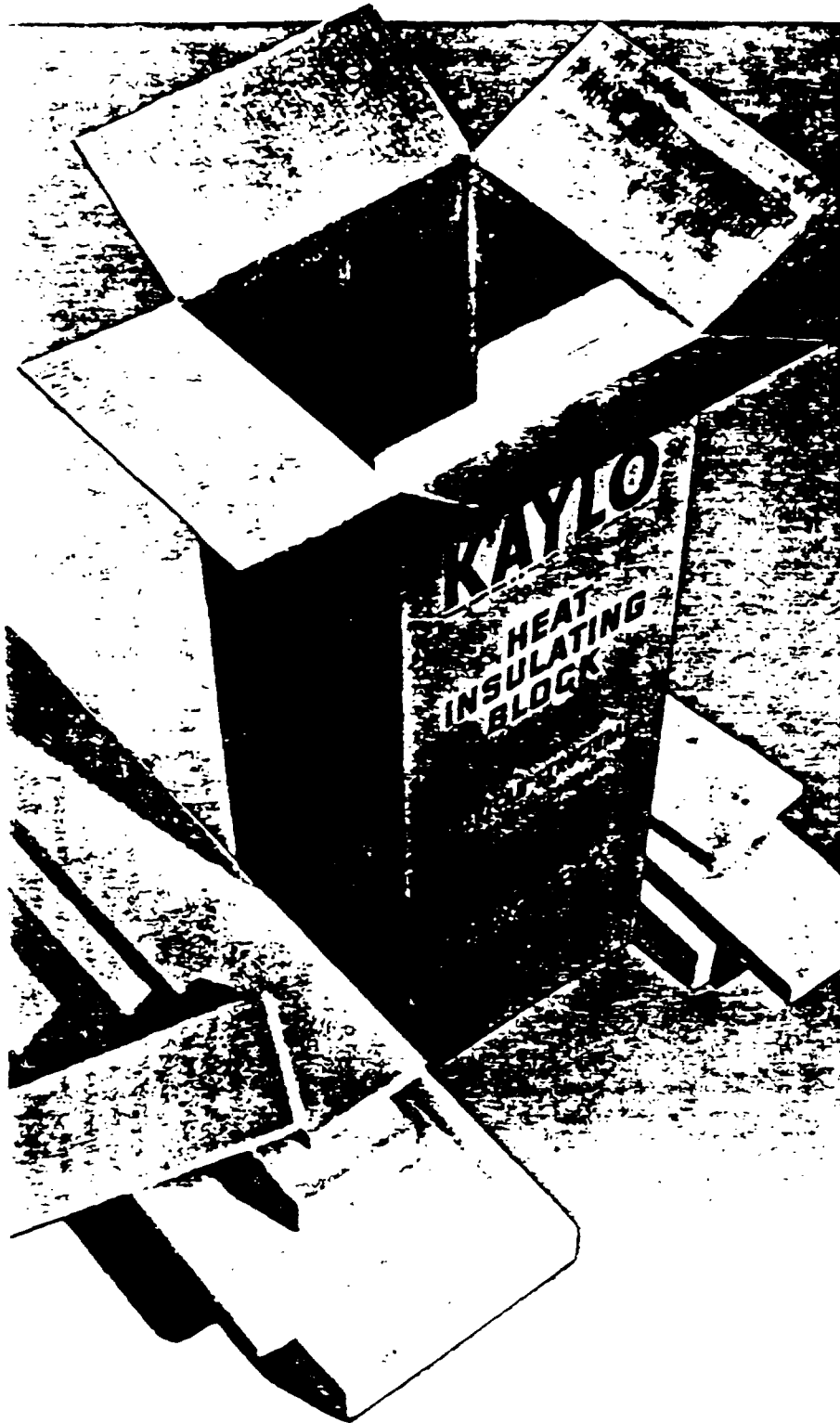
NEW

KAYLO

HEAT INSULATING BLOCK
For Temperatures up to 1200° F.

**AMERICAN STRUCTURAL
PRODUCTS COMPANY
TOLEDO, OHIO
OWENS-ILLINOIS GLASS COMPANY**

A NEW HEAT INSULATION WITH A REMARKABLE COMBINATION OF ADVANTAGES....



Kaylo Heat Insulating Block is a new type of lightweight mineral insulation that is *efficient* enough to be used at ordinary room temperatures and *resistant* enough to perform effectively up to 1200° F.

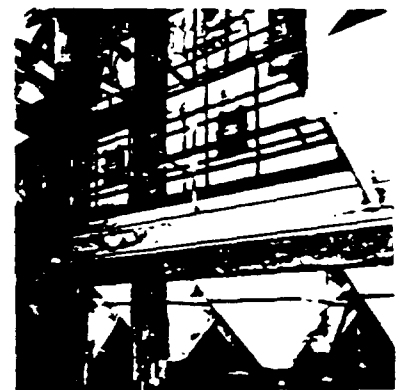
Few new products of any kind have been so thoroughly researched before being placed on the market. Kaylo Heat Insulating Block is the achievement of many years' work by Owens-Illinois Glass Company engineers, physicists and chemists.

No other material, new or old, effectively combines the most desirable characteristics of the ideal heat insulation.

For instance...

LOW DENSITY

Kaylo Heat Insulating Block weighs only 11 pounds per cubic foot. This light weight (less than one pound to the board foot) simplifies handling, shipping and application. It greatly reduces weight — an important advantage on ships, for an example.



Notice the clean, straight edge on these insulated precipitator hoppers. Applicators find it easy to do this kind of work with Kaylo Heat Insulating Block because they are so easy to cut and yet they have a relatively high flexural strength. The walls above the hoppers are also insulated with Kaylo Heat Insulating Block.

LOW THERMAL CONDUCTIVITY

The coefficient of conductivity, or K , of Kaylo Heat Insulating Block, is shown on the chart on page four, placing it among the most efficient insulations for medium high temperatures. Its insulation value comes principally from its fine, interlaced cellular structure. These cells are so tiny and so numerous that they present a material surface of approximately 140 acres per cubic foot of insulation.

Experience shows that the insulation value of Kaylo insulation improves when the material is put into service.

EFFECTIVE OVER WIDE TEMPERATURE RANGE

Kaylo Heat Insulating Block performs efficiently not only on temperatures in the low pressure steam and hot water range but on temperatures in the superheated steam range as well. This is shown by the flatness of the conductivity curve. One-material coverage with Kaylo insulation handles applications which often require two thicknesses of different materials.

HIGH COMPRESSIVE STRENGTH

compressive strength is unusually high for a mineral product of such light weight. Kaylo Heat Insu-

lating Block withstands compression values equivalent to those of a man's walking on it or even to those of a heel's being ground into it.

HIGH FLEXURAL STRENGTH

Its flexural strength is higher than the normal requirement for heat insulation of this type. This strength makes for easy handling and application, and contributes to long service with low maintenance.

NO ADDED BINDER

Kaylo insulation is an inorganic compound, containing no added binder. Its performance characteristics, therefore, are not affected by additives, which often reduce insulating value, modify effective temperature range or otherwise limit performance.

EASY TO APPLY WELL

Kaylo Heat Insulating Blocks are clean-cut and trim. They are easy to fit into place to make a good-looking installation. Their "feel" is pleasant and non-irritating. They can be cut, scored and sawed with ordinary wood-working tools. Finishes that go over the block, whether cement, cloth or other types, can be applied smoothly and with a minimum of effort. No special tools are needed.

LOW MOISTURE ABSORPTION

Moisture absorption is no problem with Kaylo insulation. Even when subjected to an atmosphere of 95% relative humidity and a temperature of 120° F., in standard tests, specimens absorb less than 1% moisture by volume.

RETAINS EFFECTIVENESS AFTER LONG SERVICE

Kaylo Heat Insulating Block remains strong, free from excessive powdering, and shows little loss in weight or shrinkage after long application to temperatures up to 1200° F. Even conventional rumbling tests, run after prolonged heating, produce relatively little crumbling or breakdown of the material.

STANDARD SIZES

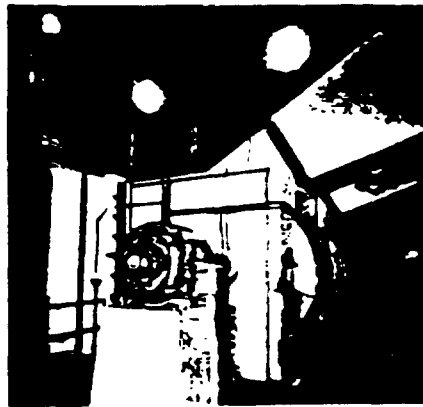
Lengths (inches)	Widths (inches)	Thicknesses (inches)
36	6	1
36	6	1 1/2
36	6	2
36	6	2 1/2
36	6	3
36	12	1
36	12	1 1/2
36	12	2
36	12	2 1/2
36	12	3

Other sizes are available on special order.

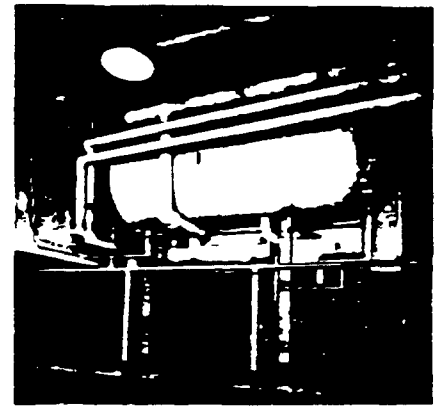
AND A REMARKABLE VERSATILITY



On large or small equipment, inside or out, Kaylo Heat Insulating Block performs efficiently and with a minimum of maintenance. Here it is being applied to the walls of a large precipitator. Workmen are laying block over 6" x 6" wire mesh welded to the stiffeners. The block is then covered with finishing cement and asphalt mastic weatherproofing.



Kaylo Heat Insulating Block covers both flat and curved surfaces on the power house equipment pictured here. At the right are fresh air intakes; the center compartments house induced draft fans; and at the left are conduits leading to a precipitator. Kaylo insulation means continuous fuel savings to this power plant.



Hot water is always ready when needed in the office building where this hot water storage tank is installed, thanks to Kaylo Heat Insulating Block. This permanent insulation holds water temperature constant with a minimum of power consumption.

Other applications for Kaylo Heat Insulating block are listed on the back page

PRINCIPAL FEATURES OF KAYLO HEAT INSULATING BLOCK

NON-ABRASIVE



EXTREMELY LIGHTWEIGHT



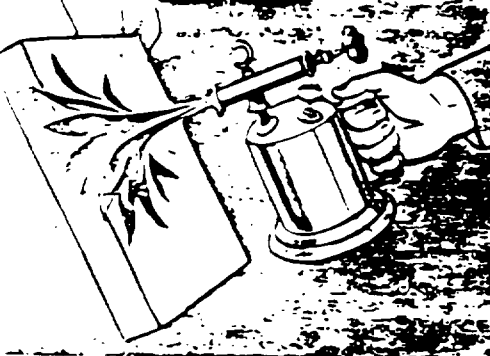
EASY TO APPLY



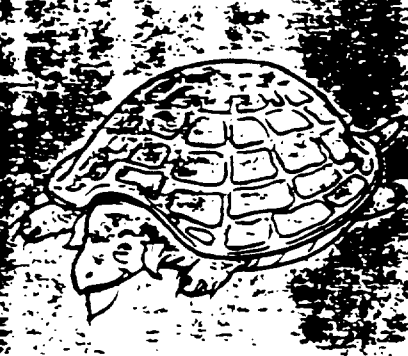
HIGH COMPRESSIVE STRENGTH



WATER-PROOF



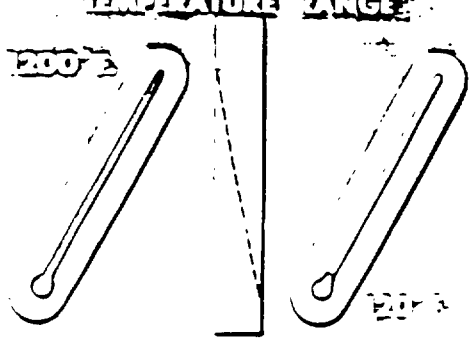
DURABLE



NO ADDED BINDER



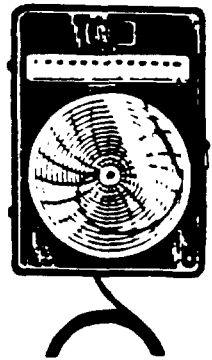
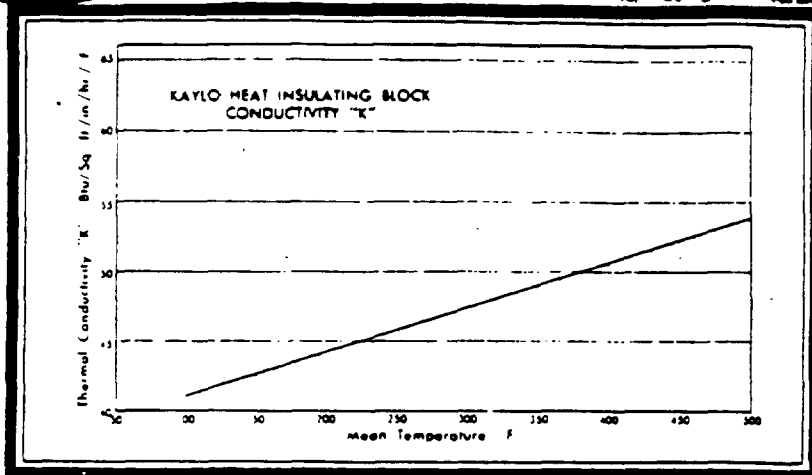
EFFECTIVE OVER WIDE
TEMPERATURE RANGE





HEAT INSULATING BLOCK

Heat Loss, Surface Temperatures
and Efficiencies...



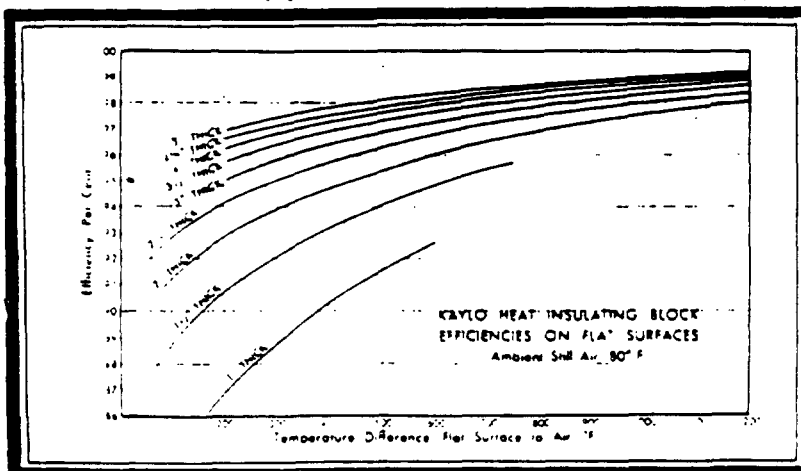
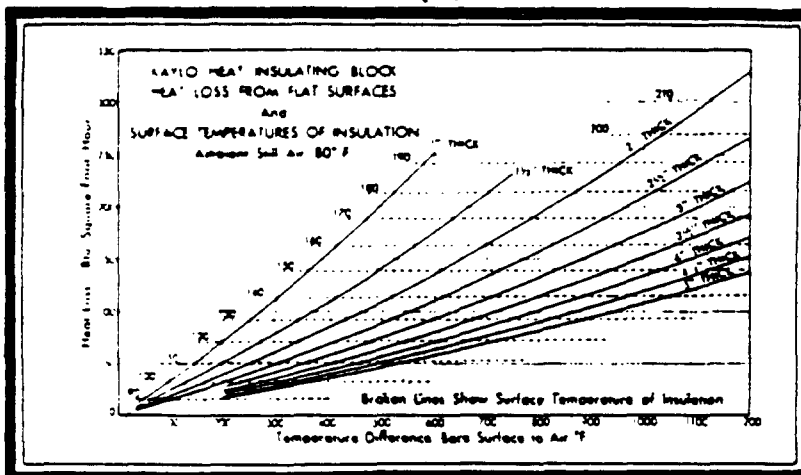
Inside or outside, for large installations or small, from 0 to 2000°F, use Kaylo Heat Insulating Block to insulate:

- | | |
|-----------------|---------------|
| Breechings | Lehrs |
| Hot Air Ducts | Autoclaves |
| Tanks | Ovens |
| Towers | Furnaces |
| Dryers | Turbines |
| Evaporators | Chilling Pits |
| Heat Exchangers | Boilers |
| Condensers | Precipitators |
| Locomotives | |

SOURCES OF TEST DATA

The data shown on these pages are supported by tests run at various laboratories, all well-known to the insulation industry. They are further supported by the performance of the product in service.

More detailed information on Kaylo Heat Insulating Block is available on request. American Structural Products Company, Toledo 1, Ohio. Subsidiary of Owens-Illinois Glass Company.



PHYSICAL CHARACTERISTICS AT A GLANCE

DENSITY Approximately 11 lb. per cu. ft.

FLEXURAL STRENGTH 50 lb. per sq. in.

COMPRESSIVE STRENGTH (0.5% deformation) 150 lb. per sq. in.

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 0.2%

TESTING TO ABRASION

(Conventional Tumbling Test—Loss in weight after 10 minutes)

Before heating 2.2%

After heating for 24 hours

at 750° F. 2.7%

at 1000° F. 2.7%

at 1200° F. 6.9%

DIMENSIONAL STABILITY

Linear Shrinkage after heating for 24 hrs.

at 750° F. 0.8%

at 1000° F. 0.9%

at 1200° F. 1.5%

Elongation after saturation (max.) 0.4%

MOISTURE ABSORPTION (volume)

After 6 hours exposure in atmosphere of

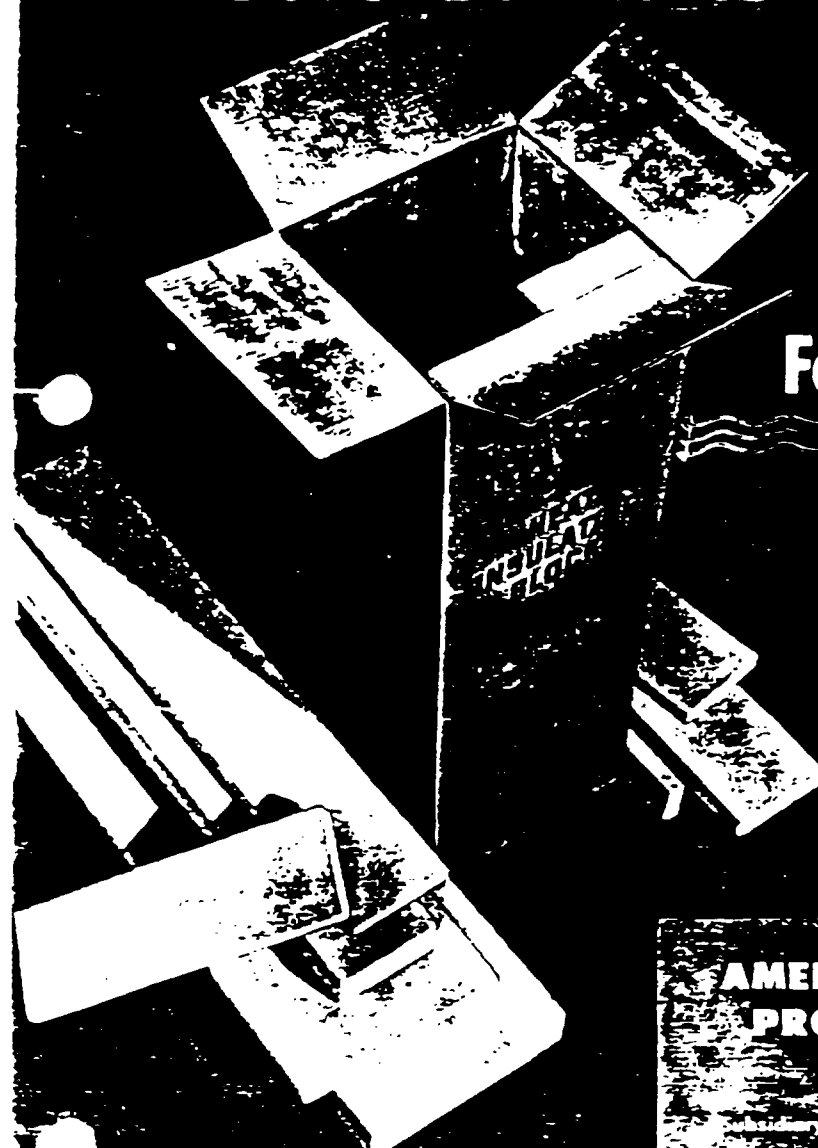
120° F. and 90% Relative Humidity 0.9%

At 300° F. mean temperature 0.474

NEW

KAYLO®

HEAT INSULATING BLOCK



For Temperatures
Up To 1200° F.

**AMERICAN STRUCTURAL
PRODUCTS COMPANY**

Toledo, Ohio

Subsidiary of OWENS ILLINOIS GLASS COMPANY

A new heat ins

WITH A REMARKABLE COMBINATION OF

KAYLO HEAT INSULATING BLOCK is a new type of lightweight mineral insulation that is *efficient* enough to be used at ordinary room temperatures and *resistant* enough to perform effectively up to 1200° F.

Few new products of any kind have been so thoroughly researched before being placed on the market. Kaylo Heat Insulating Block is the achievement of many years' work by Owens-Illinois Glass Company engineers, physicists and chemists. It combines the most desirable characteristics of the ideal heat insulation.

LOW DENSITY. Kaylo Heat Insulating Block weighs only 11 pounds per cubic foot. This light weight (less than one pound to the board foot) simplifies handling, shipping and application.

LOW THERMAL CONDUCTIVITY. The coefficient of conductivity, or *k*, of Kaylo Heat Insulating Block places it among the most efficient insulations for medium high temperatures. Its insulation value comes principally from its fine, cellular structure. These cells are so tiny and so numerous that they present a material surface of approximately 140 acres per cubic foot of insulation.

Experience shows that the efficiency of Kaylo insulation improves after exposure to service temperatures.

EFFECTIVE OVER WIDE TEMPERATURE RANGE.

Kaylo Heat Insulating Block performs efficiently not only on temperatures in the low pressure steam and hot water range but on temperatures in the superheated steam range as well. One-material coverage with Kaylo insulation handles applications which often require two thicknesses of different materials.

HIGH COMPRESSIVE STRENGTH. Its compressive strength is unusually high for a mineral product of such light weight.

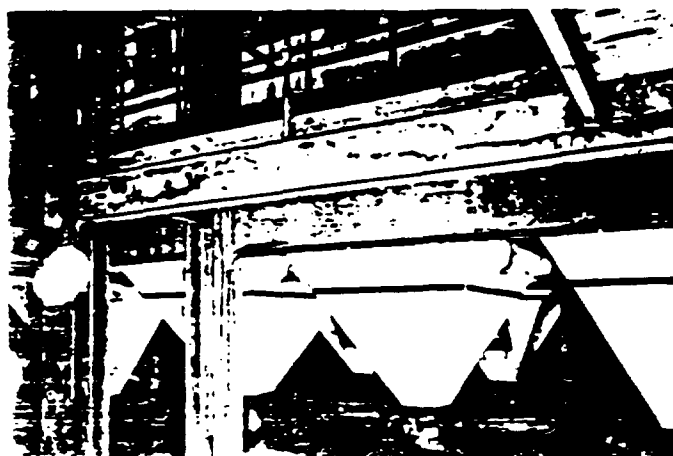
HIGH FLEXURAL STRENGTH. Its flexural strength is higher than the normal requirements for heat insulation of this type. This strength makes for easy handling and application, and contributes to long service with low maintenance.

NO ADDED BINDER. Kaylo insulation is an inorganic compound, containing no added binder. Its performance characteristics, therefore, are not affected by additives, which often reduce insulating value, modify effective temperature range or otherwise limit performance.

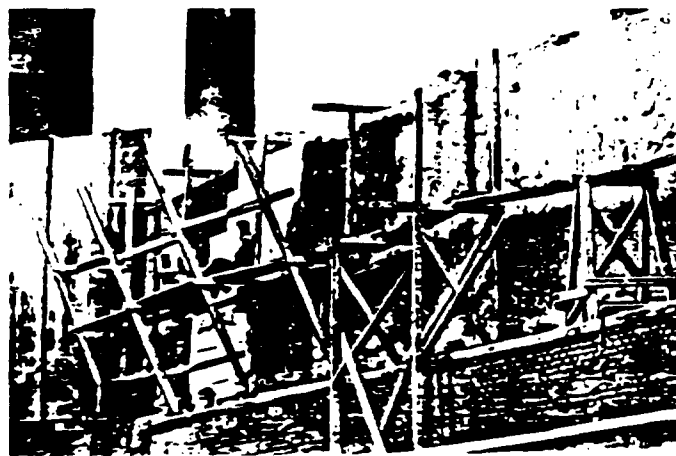
EASY TO APPLY. Kaylo Heat Insulating Blocks are clean-cut and trim. They are easy to fit into place to



Notice the clean, straight edges on these insulated precipitator boppers. Applicators find it easy to work with Kaylo Heat Insulating Block because they are so easy to cut and yet have a high flexural strength.



On large or small equipment, inside or out, Kaylo Heat Insulating Block performs efficiently and with a minimum of maintenance. Here it is being applied to the walls of a large precipitator.



Insulation

ADVANTAGES...

Make a good-looking installation. These "foam" insulations are pleasant and non-irritating. They can be cut, scored and sawed with ordinary woodworking tools. Finishes that go over the block, whether cement, cloth or other types, can be applied smoothly and with a minimum of effort. No special tools are needed.

LOW MOISTURE ABSORPTION. Kaylo Heat Insulating Block absorbs little moisture from surrounding humid air.

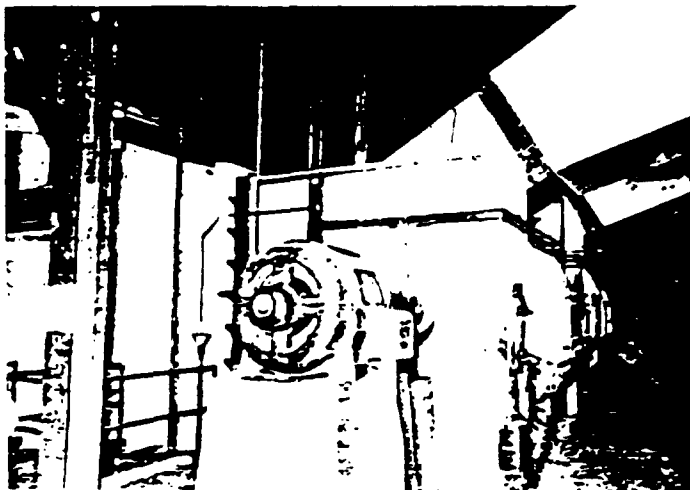
EFFECTIVE AFTER LONG SERVICE. Kaylo Heat Insulating Block remains strong, free from excessive powdering, and shows little loss in weight or shrinkage after long application to temperatures up to 1200° F. Even conventional rumbling tests, run after prolonged heating, produce relatively little crumbling or breakdown of the material.

TYPICAL APPLICATIONS:

For use outside, for large installations or small, up to 1200° F., use Kaylo Heat Insulating Block to insulate:

Breechings	Heat Exchangers	Turbines
Hot Air Ducts	Condensers	Chilling Pits
Tanks	Lehrs	Boilers
Towers	Autoclaves	Precipitators
Dryers	Ovens	Locomotives
Evaporators	Furnaces	

Kaylo Heat Insulating Block covers both flat and curved surfaces on the power house equipment pictured here. By minimizing heat loss, it saves fuel and keeps temperatures within the room at comfortable levels.



PHYSICAL CHARACTERISTICS

DENSITY	Approximately 11 lb. per cu. ft.
FLEXURAL STRENGTH	50 lb. per sq. in.
COMPRESSIVE STRENGTH (at 5% deformation)	150 lb. per sq. in.
Before heating	
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	5.5%
at 750° F.	7.9%
at 1000° F.	9.8%
at 1200° F.	0.2%
After boiling for 24 hours (after drying)	
RESISTANCE TO ABRASION	
(Conventional tumbling test-loss in weight after 10 minutes)	2.2%
Before heating	
After heating for 24 hours	3.7%
at 750° F.	5.7%
at 1000° F.	6.9%
at 1200° F.	
DIMENSIONAL STABILITY	
Linear shrinkage after heating for 24 hours	0.8%
at 750° F.	0.9%
at 1000° F.	1.5%
at 1200° F.	0.04%
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

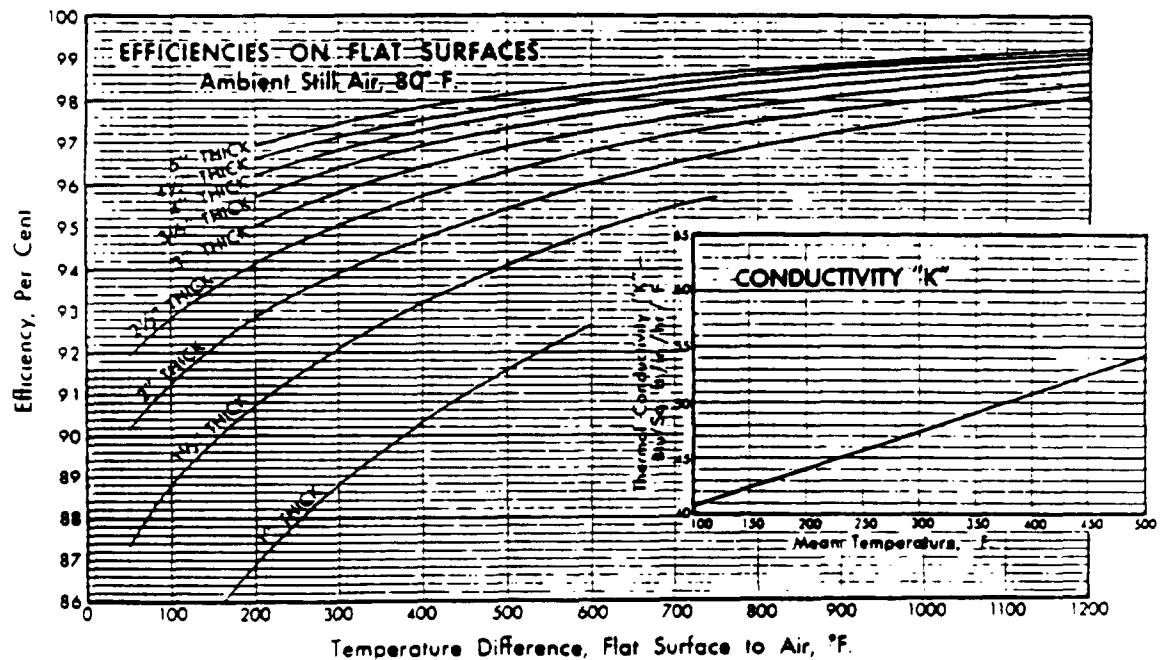
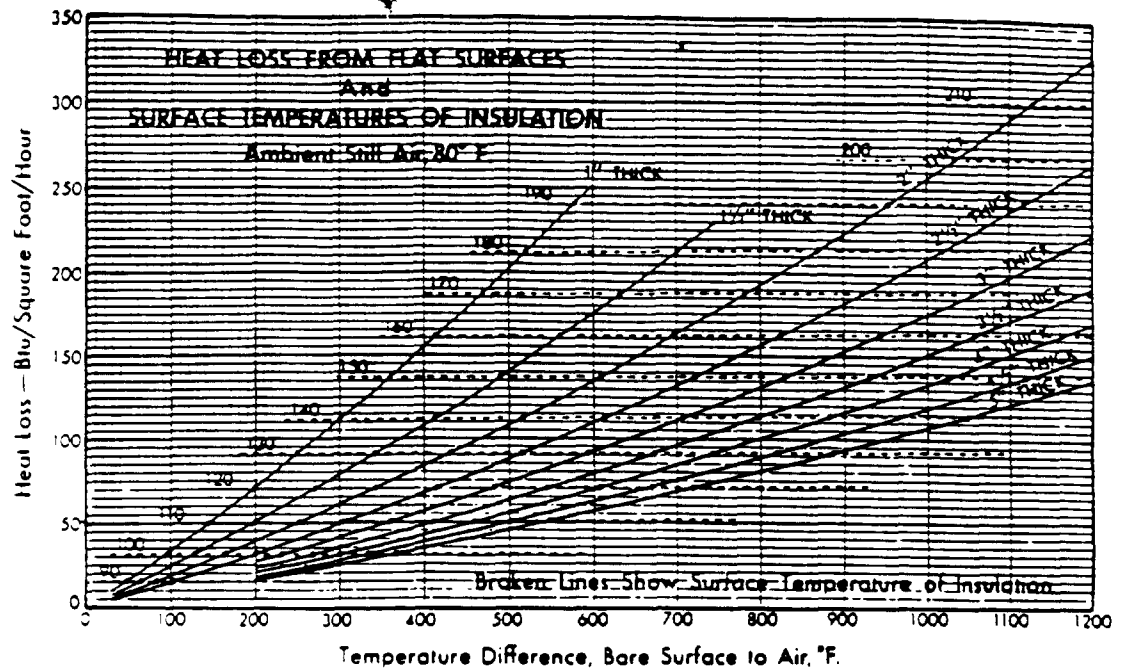
STANDARD SIZES

LENGTH (inches)	WIDTH (inches)	THICKNESS (inches)
36	6	1
36	6	1 1/2
36	6	2
36	6	2 1/2
36	6	3
36	12	1
36	12	1 1/2
36	12	2
36	12	2 1/2
36	12	3



HEAT INSULATING BLOCK

Heat Loss, Surface Temperatures, and Efficiencies



SOURCES OF TEST DATA: The data shown on these pages are supported by tests run at various laboratories, all well known to the insulation industry. They are further supported by the performance of the product in service.

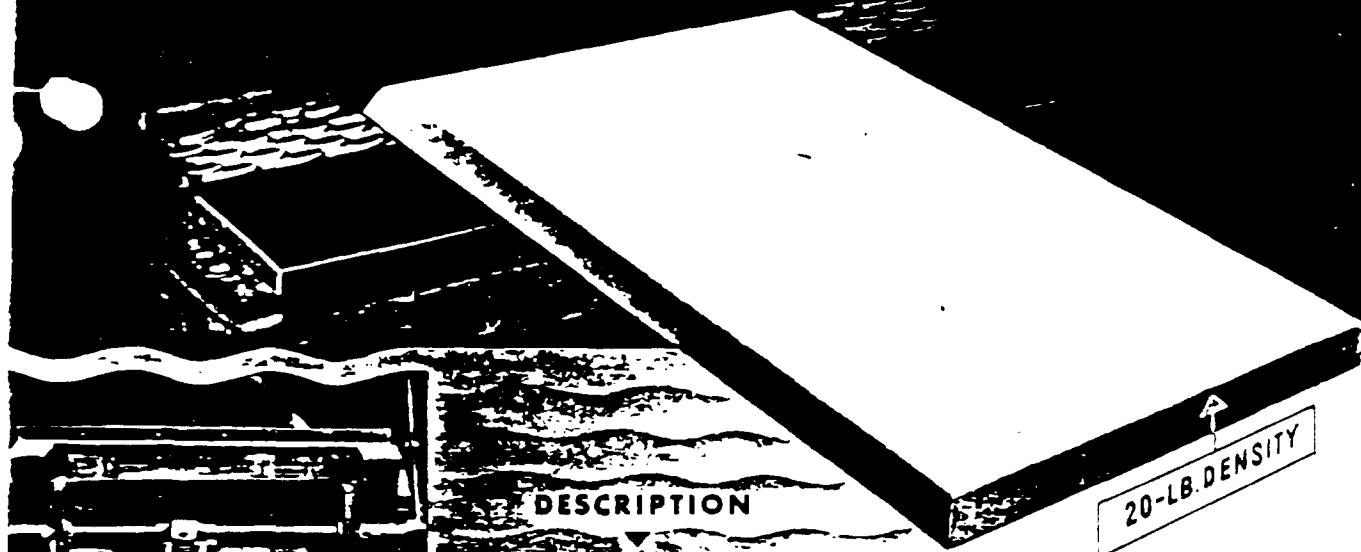
More detailed information on Kaylo Heat Insulating Block is available on request. American Structural Products Company.



KAYLO®

20-LB. DENSITY

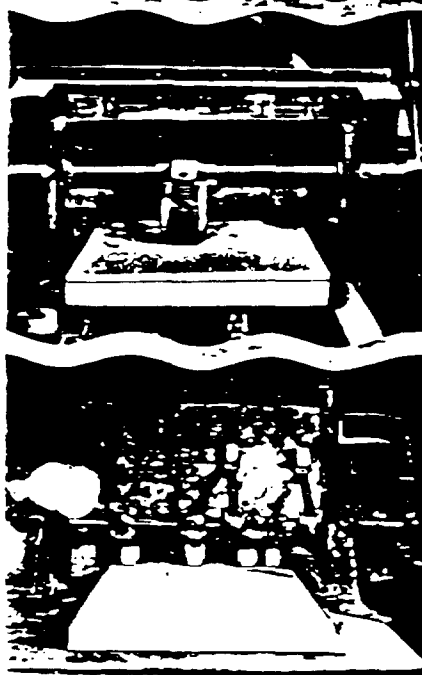
STRUCTURAL INSULATING BLOCK



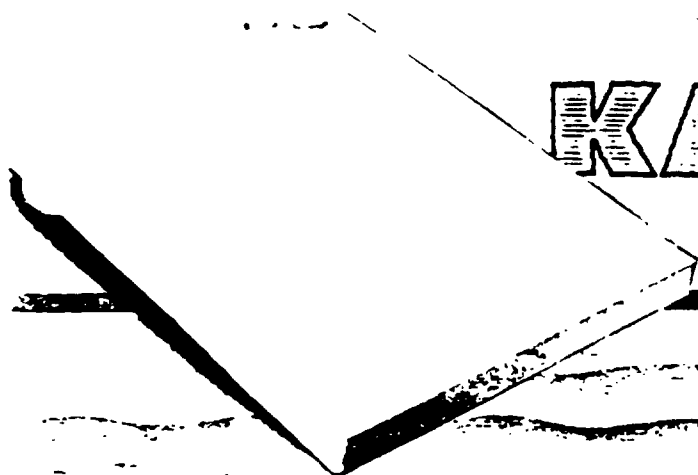
DESCRIPTION

Kaylo Structural Insulating Block—is a near-white, rigid mineral insulating material weighing approximately 20 pounds per cubic foot. It is composed principally of calcium silicate. Except for density and for those characteristics that are changed by density it is similar to *Kaylo Heat Insulating Block*, a lightweight insulation used to insulate against heat loss from hot surfaces. *Kaylo Structural Insulating Block* (20-lb. density) is designed to develop maximum strength and fire resistance without sacrificing its advantages of light weight and low thermal conductivity. In fact the practical combination of these four properties—strength, weight, insulating value and fire resistance—makes it almost unique as a building material.

It weighs nominally 20 pounds to the cubic foot (actually on an oven dry basis from 19.5 to 22 lb.), has a compressive strength of approximately 5,000 lb. per sq. in., a "K" of 0.66 at 100 mean and outstanding resistance to the travel of heat and flame at building fire temperatures.



KAYLO[®] STRUCTU



USES

Kaylo Structural Insulating Block is not a finished building material in itself and is not made for exposure to the weather. Its principal uses are as a structural roof tile, or roof deck unit, in which a steel reinforcing mat is inserted at the time of forming, and as a core material. In this latter use it serves as the core of laminated structures where the faces or laminates are applied with adhesives, and also as the core of structural shells or envelopes where the Kaylo core material is simply inserted in the open spaces and held by its own contact or by such conventional methods as clips or other attachments.

In any of these applications it adds rigidity to the structure and vastly increases insulation value and fire resistance.

PHYSICAL PROPERTIES

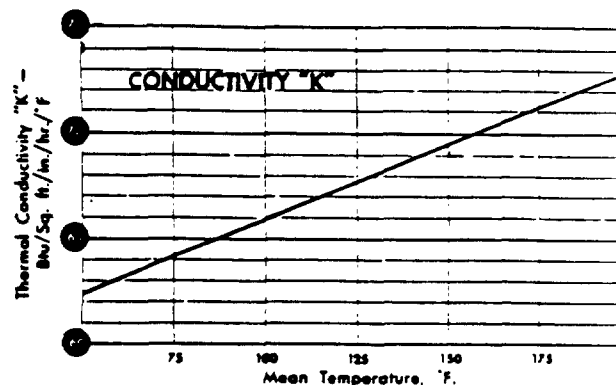
Light Weight—Nominal 20-lb. density Kaylo Block is about a third lighter than yellow pine. On an oven-dry basis it weighs from 19.5 to 22 pounds per cubic foot.

High Strength—Its compressive strength is approximately 500 lb. per sq. in. with a deformation of 5 per cent. Flexural strength is approximately 175 lb. per sq. in.

Fireproof—Kaylo 20-lb. density Structural Insulating Block has been tested at the Underwriters' Laboratories in Chicago and given the following rating, based on comparison with untreated Red Oak as 100.

Flame spread	0.0
Fuel contributed	negligible
Smoke produced	0.0

For use in fabrications that are to be Underwriters' Laboratories inspected, Kaylo Structural Insulating Block furnished bearing the Underwriters' label for fire hazard classification for building material.



Good Insulation Value—At low mean temperatures Kay Structural Insulating Block is one of the most efficient structural mineral insulations. At high mean temperatures it still compares favorably with heat insulating materials of its own weight.

High Light Reflectivity—Where left exposed and untreated (as with the underside of a roof deck) Kaylo Structural Insulating Block has high light reflectivity. Its light reflection factor is from 70 to 80 per cent.

Non-Abrasive Surface—Its surface is non-abrasive. It has a somewhat "soapy" feel that makes it pleasant to handle. At the same time it has a firm surface that assures good contact with surfaces applied over it.

No Added Binder—It contains no added binder, but it itself constitutes its own binder. Hence its characteristics are not modified as to temperature limit, solubility, insulation value, fire resistance or otherwise by "binding" limitations.



L INSULATING BLOCK (20-LB. DENSITY)

Good Workability—Kaylo Structural Insulating Block is responsive to wood working tools. It can be sawed with a hand saw or power saw, can be routed, tongue-and-grooved, sanded, and, in fact, run through most wood-working equipment.

High Modulus of Elasticity—The modulus of elasticity of 20-lb. density block is approximately 160,000 lb. per sq. in.

Low Specific Heat—The specific heat of Kaylo Structural Insulating Block is approximately 0.22.

Cellular Structure—Kaylo Structural Insulating Block is about 80 per cent inter-communicating air cells. The cells are extremely small, less than a micron in diameter.

Low Moisture Absorption—Kaylo Structural Block is hygroscopic. It will absorb moisture from humid air and will reach equilibrium at lower moisture contents when exposed to lower humidities. However, because of its extremely small pore size and other characteristics, its behavior with respect to moisture differs from that of most porous materials. It has unusual capacity to distribute moisture within its mass, and to give it off to surrounding air of lower moisture content.

Its moisture absorption when surrounded by humid air is low. Test specimens dried for 24 hours at 215° F., cooled and then exposed on all surfaces to an atmosphere of 90 per cent relative humidity and a temperature of 120° F. for six hours, absorbed less than one per cent of moisture by volume.

Consistent with the common practice for good construction involving porous insulating materials of high internal surface area, Kaylo Structural Insulating Block should be sealed against moisture on the warm side when it is subjected to extremely low temperatures.

High Wet Strength—Kaylo Structural Insulating Block, like most other insulating materials, is not intended to serve immersed in water or exposed to extremely damp or humid conditions, yet its flexural strength when wet (immersed 10 hours) is reduced only about 15 per cent.

Dimensionally Stable—The dimensions of Kaylo Structural Insulating Block change little with changes in moisture content. Experience has shown from the manufacture of thousands of units of laminated structures that they have unusual dimensional stability and unusual freedom from warping.

Available with and without Reinforcing—In the form of roof tile Kaylo Structural Insulation is available with a steel reinforcing mat. In the form of core material for various types of structure it is available without reinforcing.

Accepts Nails and Screws—Both nails and screws can be used with Kaylo Structural Block. Tables showing holding power of both are available on request. Nails should be of the cement-coated type without barbs that abrade the sides of the opening they make as they are driven into the block. Galvanized or non-ferrous nails may be used where greater resistance to corrosion is required. Screws may be inserted either with or without drilling a pilot hole.

Sizes—Kaylo Structural Insulating Block is made in a standard size of 18 x 36 inches.

Since most uses involve manufacturing operations, thicknesses that are practical can best be worked out with the manufacturer of Kaylo Insulating Products after approximate quantities needed are known. These will usually be between one and two inches thick.

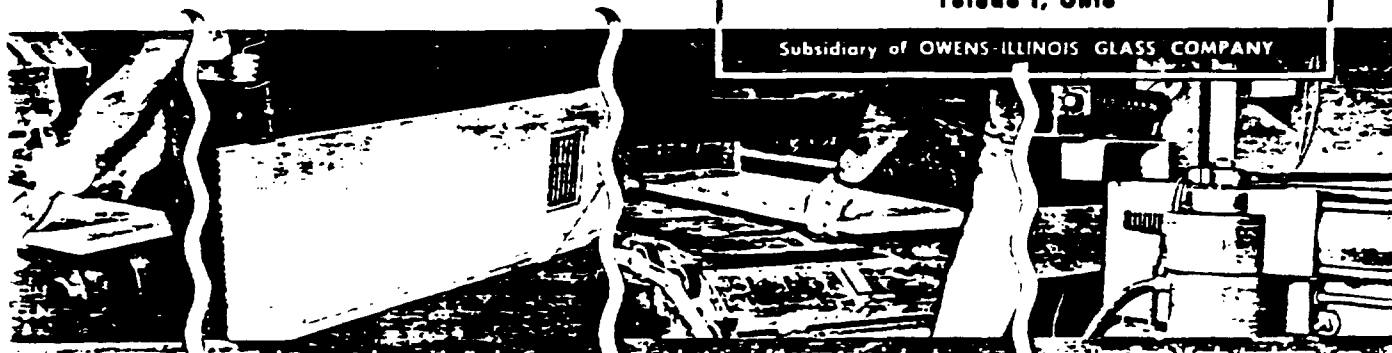
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20-Lb. and 11-Lb. Density Block Can Be Used in Combination. Where two thicknesses of insulation are used to build up an insulating structure it is possible to use the two densities in combination to develop the best insulation value strength and fire resistance.

AMERICAN STRUCTURAL PRODUCTS COMPANY

Toledo 1, Ohio

Subsidiary of OWENS-ILLINOIS GLASS COMPANY



LAMINATION

lamination over a Kaylo Insulating Core—Almost any face material may be bonded to Kaylo Structural Insulating Block surfaces. Bonding agents can be selected to meet the requirements of the particular facing—also to satisfy

the service requirements of the finished product—and still offer some choice in curing procedures.

Some adhesives which may be used with various types of face materials are listed below. (This list is not intended to be complete. Its only purpose is to identify a partial list of adhesives. These have been found to provide a tensile strength of 35 lb. per sq. in. and a minimum shear strength of 100 lb. per sq. in. when cured in the manner indicated.)

ADHESIVES FOR JOINING

KAYLO

STRUCTURAL INSULATING BLOCK TO:

Wood Veneer	Aluminum	Stainless Steel
Durite No. 3026A A	Durite No. 3026A A	Durite No. 3026 A
3026AWH207	Pecora 718 E	No. A, NH267
3026AWF	Weldwood A	M100 C
Penacolite A	Insulate No. 1 A	3 MEC C D E
G1131	Interlake C D	826
Pecora 718 E	4162	Weldwood A
Catabond 720 A	Vulcalock A B	Insulate No. 1 A
Vinylseal E	Dupont C D E	Interlake C D
MA 28-18	4633	4162
Amberlite D	Dupont C D E	Vulcalock A B
PR14	4646	Dupont C D E
Bestik 7026 D	G. E. 2142 C	4633 C D E
Redux D	G. E. 7031 C	Dupont C D E
Synco X-8348 D	Vinylseal E	4646
+ 130LW (DW)	MA 28-18	G. E. 2142 C
	Amberlite D	G. E. 7031 C
	PR14	Vinylseal E
	Bestik EXE 138 D	MA 28-18
	Redux D	Amberlite D
		PR14
		Bestik 7026 D
		Bestik EXE 138 D
		Sodium Silicate A
		Redux D
		Synco X-8348 D
		+ 130LW (DW)

ADHESIVES FOR JOINING LIKE MATERIALS:

Insulating Block to Insulating Block	Aluminum to Aluminum	Stainless Steel to Stainless Steel
Durite 3026A A	Vulcalock A B	Dupont C D E
Penacolite A	Dupont C D E	4633
G1131	4633	G. E. 7031 C
Weldwood A	Dupont C D E	Bestik 7026 D
Insulate 1 A	4646	Bestik EXE 138 D
G. E. 2142 C	G. E. 7031 C	Redux D
Plaskon 911 C D	Bestik 7026 D	
Seletron 3003 E	Bestik EXE 138 D	
Vinylseal E	Redux D	
MA 28-18		
Amberlite D		
PR14		
Bestik 7026 D		
Bestik EXE 138 D		
Sodium Silicate A		
Redux D		
Synco X-8348 D		
+ 130LW (DW)		

Symbols for method of cure:
For Maximum Strength

- A** Clamped at room temperature for 24 hours.
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- E** Clamped in oven at 250° F. for 10-30 minutes.

High-frequency curing has been tried successfully on an experimental basis with wood, aluminum and stainless steel bonded to a Kaylo insulating core. Many of the manufacturers making the above listed adhesives can provide adhesives suitable for high-frequency curing.

AMERICAN STRUCTURAL PRODUCTS COMPANY

TOLEDO 1, OHIO

Subsidiary of OWENS-ILLINOIS GLASS COMPANY

K83-3M-4812 Copyright 1948 American Structural Products Company Printed in U.S.A.

KAYLO[®]

**20-LB.
DENSITY**

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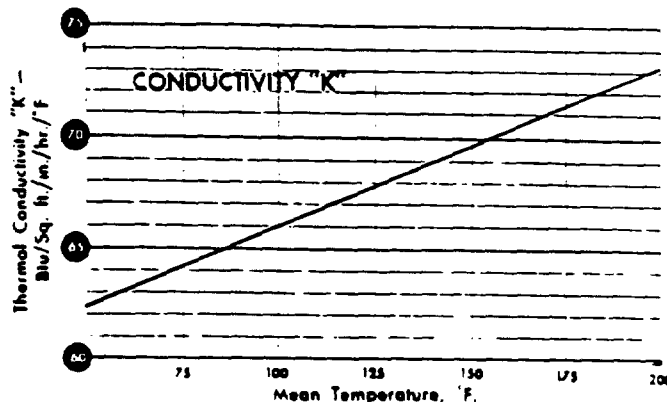
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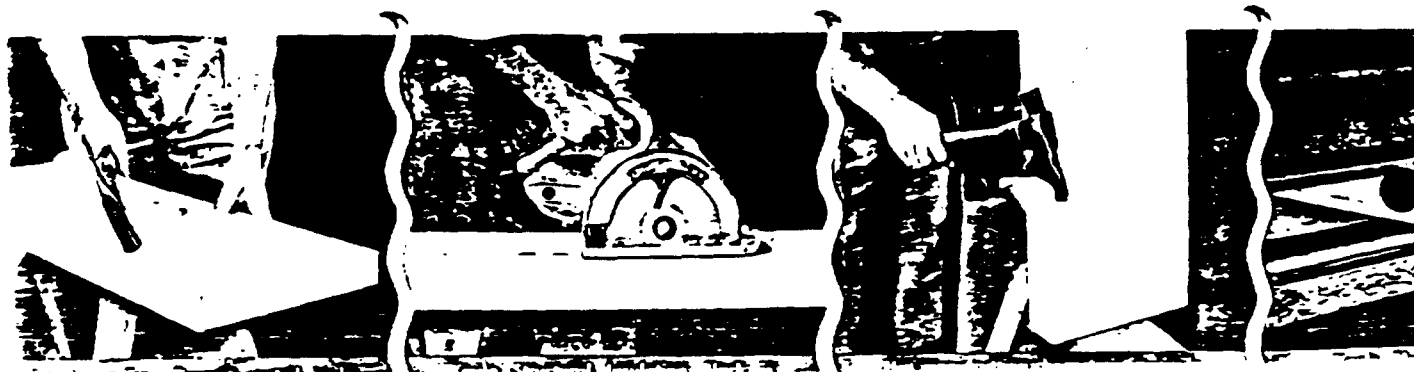


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**Kaylo Division
OWENS-ILLINOIS
GLASS COMPANY**

Toledo 1, Ohio



LAMINATION

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Some adhesives and primers which may be used with various types of face materials are listed below. (This list is not intended to be complete. Its only purpose is to identify a partial list of adhesives. An adhesive not listed does not imply that it is not suitable. These have been found to provide a tensile strength of 35 lb. per square inch and a minimum shear strength of 100 lb. per square inch when cured according to the manufacturer's recommendation. They are not listed in the order of their adhesive strength.)

ADHESIVES AND PRIMERS FOR JOINING



STRUCTURAL INSULATING BLOCK TO:

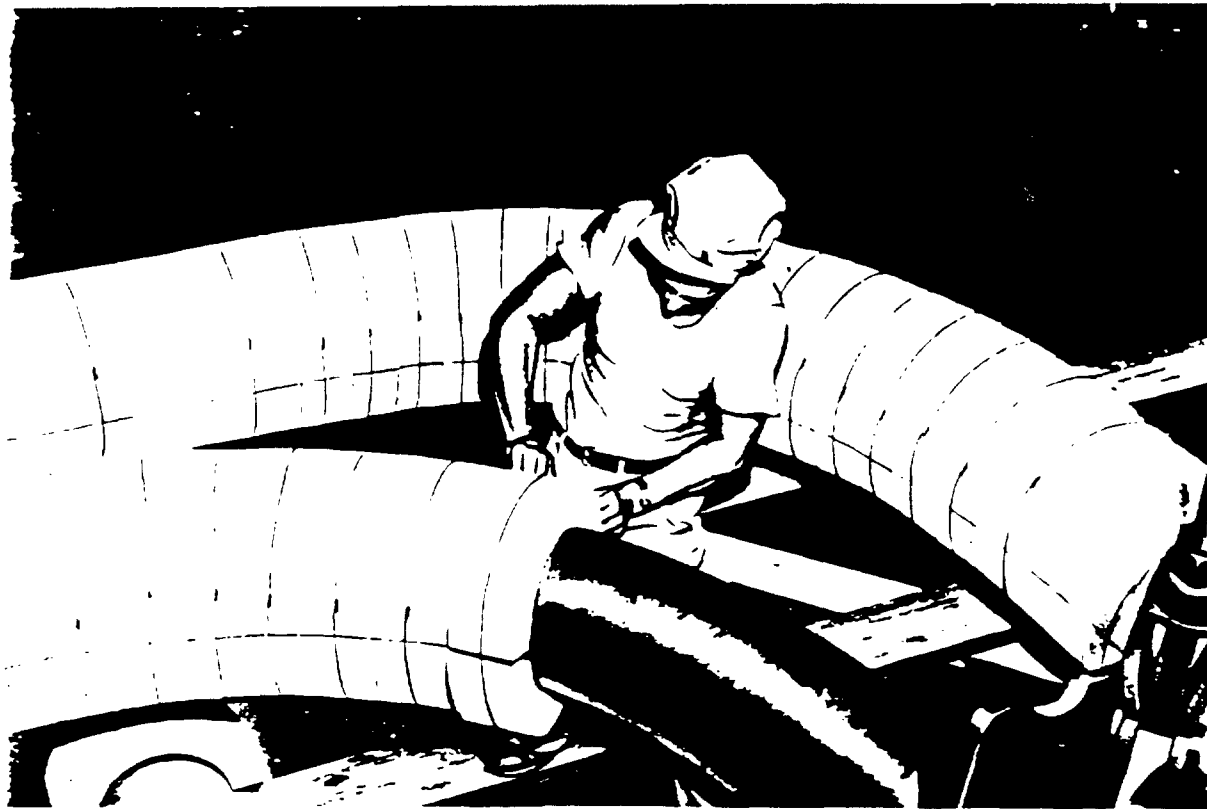
Wood Veneer or Paper or Plastics		Steel, Stainless Steel Galvaneal, or Aluminum		Kaylo Insulating Block or Cement-Asbestos Board	
Durite No. 3026A	A	Durite No. 3026A or No. A NH267	A	Durite 3026A	A
Penacolite G1131	A	N100	C	Penacolite G1131	A
Pecora 718	E	Pecora 718	E	Armstrong J 1162	D
Catabond 720	A	3MEC 826	C D E	Insulate 1	A
Vinylseal MA 28-18	F	Penacolite G1131	A	G.E. 2142	C
Amberlite PR 14	D	Insulate No. 1	A	Selectron 5003	F
Bostik 7026	D	Interlake 4162	C D	Vinylseal MA 28-18	E
Redux	D	Vulcalock	A R	Amberlite PR-14	D
Synco S-8348+130LW (DW)	D	DuPont 4653	C D E	Bostik 7026	D
Resorabond R-12	A	DuPont 4646	C D E	Bostik EXE 138	D
Armstrong J-1162	D	Resorabond R-12	A	Sodium Silicate	A
Tego	D	G.E. 2142	C	Redux	D
		G.E. 7031	C	Synco X-8348+130LW (DW)	D
		Bostik 7026	D	Resorabond R-12	A
		Bostik EXE 138	D	Tego	D
		Bostik 1007	A		
		Vinylseal MA 28-18	E		
		Amberlite PR-14	D		
		Redux	D		
		Armstrong J-1162	D		

Symbols for method of cure:
For Maximum Strength

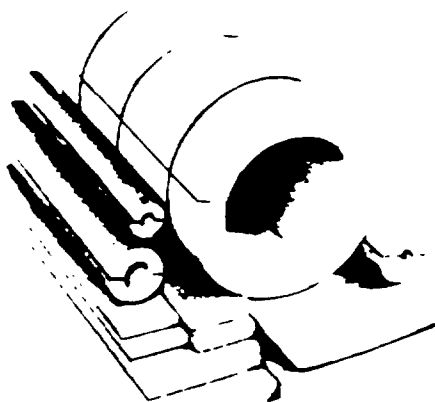
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Kaylo Division
OWENS-ILLINOIS
GLASS COMPANY
Toledo 1, Ohio



The Right Material... Expert Application



First, Kaylo Heat Insulation is *proved* a better material hydrous calcium silicate. Its light weight, strength, water-insolubility, low conductivity and wide temperature range give you extra advantages *at no extra cost*.

Second, Kaylo distributors have the technical knowledge and experience to provide you with a complete insulating service. Their trained applicators are skilled craftsmen who do neat and efficient installation.

To be *sure* of getting the most out of your insulating dollars for your next job, call the nearest Kaylo distributor. Chances are you can find him listed in the yellow pages of your phone book. If not contact us and we'll give you his name.

WRITE FOR FREE BOOK—"Kaylo Heat Insulation"
Address: Dept. N-370, Owens-Illinois Glass Company,
Kaylo Division, Toledo 1, Ohio.



KAYLO

... *first in calcium silicate*

...pioneered by OWENS  ILLINOIS Glass Company

MAIN OFFICE, TOLEDO 1, OHIO—KAYLO SALES OFFICES: ATLANTA • CHICAGO • HOUSTON • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS

Owens-Illinois Glass Company—Kaylo Division

Advertisement No. K-153 appearing in the following publications:

Chemical Engineering—Jan. 1953
Oil & Gas Journal—Jan. 12, 1953
Plant Engineering—Jan. 1953
Power—Jan. 1953
Petroleum Refiner—Feb. 1953
Chemical Processing—Feb. 1953
Combustion—Feb. 1953
Industrial Engineer—Feb. 1953

For Radii from $\frac{1}{4}$ Inch...

to

Infinity...

Nesting Kaylo Heat Insulation Requires Fewer Pieces Per Job

The complete range of Kaylo Insulation includes pipe covering in Simplified Dimensional Standards for diameters from $\frac{1}{4}$ in. to 72 in., curved block from 72 in. to 60 ft. and flat block for surfaces of less curvature whose radii approach infinity. With its wide selection of interchangeable sizes and shapes, Kaylo Insulation reduces the number of items needed per job and permits substantial savings in warehousing maintenance stock.

WRITE FOR FREE BOOK — "Kaylo Heat Insulation."
Address: Dept. N-371, Owens-Illinois Glass Company,
Kaylo Division, Toledo 1, Ohio.



KAYLO

... first in calcium silicate

... pioneered by OWENS  ILLINOIS Glass Company

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Owens-Illinois Glass Company
Advertisement No. K-154—appearing in the following publications:
Plant Engineering—March, 1953
Oil & Gas Journal—March 23, 1953
Chemical Engineering—March, 1953
Chemical Processing—April, 1953
Petroleum Refiner—May, 1953