

FILE NAME: Owens-Corning (OC)

DATE: 1989 Dec 19

DOC#: OC234

DOCUMENT DESCRIPTION: Memo with "Hot Owens-Corning Documents"
Attached

M E M O R A N D U M

TO: ALL ATTORNEY AND TECHNICAL FOLKS

FROM: ROGER G. WORTHINGTON

DATE: December 19, 1989

RE: HOT OCF DOCUMENTS

Jackie Rion and Tim Eble faxed to us today a number of smoking OCF documents. Rion recently hit OCF for a 5.4 million dollar verdict in Wheeling, West Virginia in one lung cancer and two disputed asbestosis cases. He is the first attorney we know of to get any of the recently discovered, deprived OCF documents admitted into evidence. Here is a summary of the admitted documents.

1. OCF Kaylo sales brochure dated July 1956.

Please note that Kaylo is a non-toxic material that is well liked by the workers and in fact contributes to their well being on the job. (page 13 and 15).

2. The Baumgardner letters.

Ed Ames informed on November 22, 1944 by an insulator's treating physician that the patient suffered from asbestosis which was not caused by exposure to fiberglass.

Note the letter from the safety advisor of the Division of Safety and Hygiene of the State of Ohio in which the writer concludes that while sawing pipecovering the insulator Baumgardner must of been exposed to dust within a range from 5 to 10 mppcf.

3. The Smock letter.

Dr. Gardner advises Mr. Ames on March 13, 1943 that OCF ought not employ Mr. Smock whose pre-employment x-ray films suggested asbestosis.

4. The Lotz memo.

Criticqueing OCF's dust count methods dated June 20, 1963. In this memo Mr. Lotz and the product testing division questions whether the procedures adopted by Mr. Peele in evaluating the dust counts generated from cutting Kaylo were "representative for the general case". The dust counts even under Peele's optimistic counts showed an average of 10 mppcf of dust using Kaylo.

Page Two

5. Pep talk letter to Kaylo salesman dated May 24, 1965.

Here the top brass at OCF challenged their salesman to get out there and sell more Kaylo. "Kaylo has a future!" "Kaylo is part of OCF and damn to be proud of one of the company's profit leaders! We intend to stay there! We need your help."

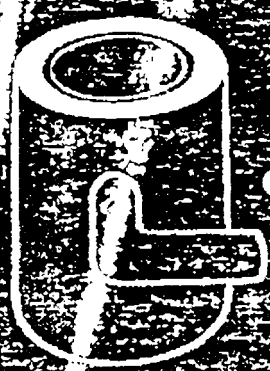
6. OCF's invoice dated March 7, 1977 in which purchases two hundred and ten pounds (210) of raw asbestos for use in a masstic product.

I will ask Pat to add these exhibits to our exhibit lists and see about serving interrogatories and/or request for admissions on OCF to authenticate all of the above.

RGW/teh
MEMO9/011(3)

PLAINTIFF'S
EXHIBIT
4349.0

DWEN-CORRINE
FIBERGLAS



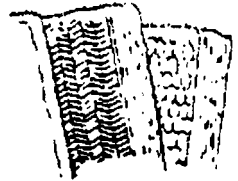
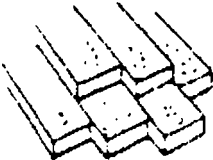
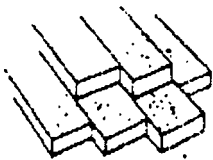
equipment insulations

IN6.A3, June 1956

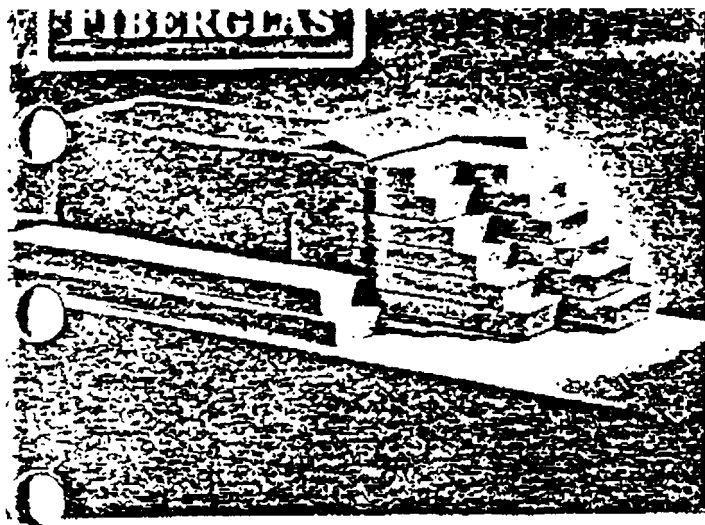
42 012 0722



equipment insulation guide index

uses	product	operating temperature	available thickness	standard sizes	page
for heated or cooled equipment	 PF Insulation	up to 400°F	PF 614— $\frac{3}{8}$ "- $4\frac{1}{2}$ " PF 615— $\frac{1}{2}$ "-3" PF 617— $\frac{1}{4}$ "-2 $\frac{1}{4}$ "	width—24" length—48"	3
for condensers, evaporator kilns and other high temperature equipment	 block insulation	up to 400°F	$\frac{3}{8}$ ", 1", 1 $\frac{1}{2}$ ", 1 $\frac{1}{2}$ ", 2"	widths—5", 12" length—36"	7
for tanks, ovens and other high temperature equipment	 metal mesh blankets	up to 1000°F	1"-6" in $\frac{1}{4}$ " increments	widths— 12" to 24" length— 24" to 96"	9
for very high temperature equipment	 Kaylo block insulation	up to 1200°F	1", 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", 3"	widths—3", 5", 12" & 18" length— 18" & 36"	13
for extremely high temperature equipment	 Kaylo-20 block insulation	up to 1800°F	1", 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", 3"	widths—3", 5", 12" & 18" length— 18" & 36"	15

42 012 0723



for the insulation of
medium temperature equipment
containing heated or cooled fluids
such as condensers
and evaporator kilns
operating at temperatures
up to 400°F.

Fiberglas block insulation

Fiberglas® Block Insulation, a Fiberglas PF insulation cut to logging sizes and sanded on one side to form semi-rigid blocks, offers high insulating effectiveness, versatility and economy for insulating irregularly surfaced heavy equipment. It presents the ideal solution for the insulating problems of such medium temperature equipment as condensers and evaporator kilns. Adaptable for equipment carrying cold or hot fluids at temperatures up to 400°F.

Fiberglas Block Insulation combines all the desirable properties of other inorganic Fiberglas insulations. Resists moisture, is noncombustible and possesses high insulating value. Low "K" averages .05 at 100°F. mean temperature.

An economy insulation, Fiberglas Block Insulation for high temperature equipment is competitively priced with other industrial insulations of its type. The lightweight and quick, easy application of Fiberglas Block Insulation lowers its total installed cost.

design considerations

The charts on page 6 have been compiled to furnish the latest recommended thickness data for applications of Fiberglas Block Insulation on Hot Equipment and Cold Equipment. The Hot Equipment chart indicates heat loss, efficiency and surface temperature values. The Cold Equipment chart contains heat gain values. Consult your local Fiberglas representative for application recommendations below 0°F.

sizes

width—6", 12"

length—36"

thicknesses—1/4", 1", 1 1/4", 1 1/2", 2"

form—block

© T. M. Owens-Corning Fiberglas Corp.

offers...

high insulating effectiveness—Its thermal conductivity is generally lower than that of competing block type insulating materials. Mass of glass fibers trap countless tiny air pockets to provide excellent heat control.

versatility—Offers insulating efficiency to large equipment vessels containing either hot or cold fluids. Suits irregularly shaped pieces of equipment.

fire safety—Will not support combustion.

superior appearance—Sanded smooth finish looks well for a long time.

easy application—Knife only tool needed to fabricate easy-cutting glass fiber blocks. Can be applied by qualified workmen following conventional methods.

long life—Fibers of glass can't lose physical characteristics due to aging. No tendency to spall or crumble under varying conditions of temperature.

corrosion protection—Inorganic glass fibers can't rot nor sustain corrosion. Won't cause or accelerate corrosion on steel or aluminum vessels. Vapor barrier available for complete protection when used on cold fluid carrying equipment.

moisture resistance—No loss of efficiency when briefly wetted and redried. Low capillarity reduces danger of water ruining insulation.

limitations

Fiberglas Block Insulation is designed for use on equipment carrying either cold or hot fluids up to 400°F. It should not be used on any equipment operating above that temperature. When used outdoors, it must be protected against the weather. A protective finish is required to withstand excessive maintenance or construction abuse. Use vapor barrier on the warm side of the insulation when used on equipment operating below 32°F.

42 012 0724

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physical properties

moisture adsorption:

less than 2% by weight

corrosion of steel, aluminum or copper:

does not cause nor accelerate

bacteria and fungus resistance:

does not breed nor promote

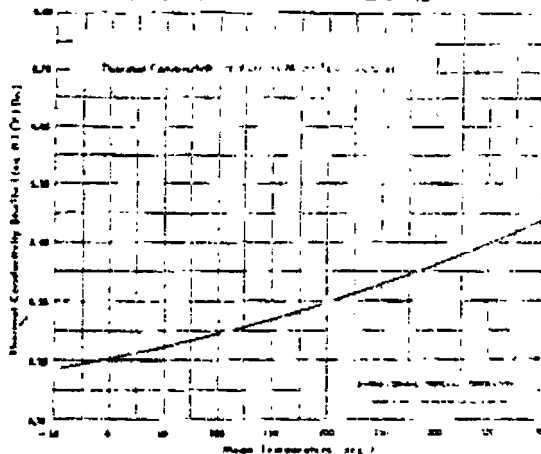
odor:

essentially odorless

humidity and temperature effects:

varying conditions will not cause spalling or cracking

thermal conductivity



specification compliance

HH-1-523a Insulation, Block, Pipe Covering and General, Thermal, Calcium Silicate

MIL-1-2819 Insulation, Thermal, Block

design data

recommended thicknesses

for hot equipment—indoors*

(ambient temperature = 90°F.)

°F	COMMERCIAL				POWER				PROCESS			
	RT	HL	EFF	ST	RT	HL	EFF	ST	RT	HL	EFF	ST
to 200	1 1/2"	35	87	100	1 1/2"	41	84.9	104	1 1/2"	41	84.9	104
200 to 300	1 1/2"	38	93.9	100	1 1/2"	50	88.8	119	1 1/2"	51	85.4	120
300 to 400	2 1/2"	38	96.7	100	1 1/2"	50	94.6	114	1 1/2"	112	89.8	120

for cold equipment—indoors*

(ambient temperature = 90°F.)

equipment temperature	90% RH		85% RH		80% RH	
	RT	HL	RT	HL	RT	HL
above 50°F	2"	4.6	1"	8.5	3/4"	11.2
-50°F to -35°F	3"	4.8	1 1/4"	8.3	1"	11.5
-24°F to 0°F	4"	5.0	2 1/4"	7.8	1 1/4"	11.2
-1°F to -30°F	5 1/2"	4.8	3 1/4"	8.0	2 1/4"	11.2
-31°F to -62°F	7"	4.8	4"	8.0	2 3/4"	11.2
-63°F to -100°F	8 1/2"	4.7	5"	8.0	3 1/4"	11.2

* For outdoor service see the Fiberglas Reinforcement Data Book (156-11)

* Glossary: RT—Recommended Thickness, HL—Heat Loss, EFF—Efficiency, ST—Surface Temperature, NS—Near Gas

specification

for the insulation of hot and cold equipment with Fiberglas Block Insulation

1: Insulating material

Heavy equipment such as condensers and evaporators operating at temperatures below 400°F. shall be insulated with 2" thick Fiberglas Block Insulation.

2: Attachment methods

ROUND EQUIPMENT

Insulation shall be cut where necessary to fit the shape and contour of the vessel and banded in place with 1/2" x 200" galvanized steel bands on 12-18" centers.

3: Surface finish—heated equipment

INDOORS

Apply suitable metal mesh, lacing edges. Apply 1/2" coat of hydraulic setting insulating cement. Adhere 3 oz. canvas in place with a resin base lagging adhesive.

The specification is recommended as written. Minor variations of application procedure may be made at the discretion and responsibility of the design engineer to meet specific job requirements.

OUTDOORS

Apply suitable metal mesh, lacing edges. Trowel on 1/2" of hydraulic setting cement. Apply two coats of asphalt or vinyl base weather-coat mastic with Fiberglas fabric reinforcement between coats.

4: Surface finish—cooled equipment

INDOORS

Apply suitable metal mesh, lacing edges. Apply 1/2" coat of hydraulic setting cement. Let dry. Apply 002" aluminum foil by brush coating back of foil with adhesive. Trowel or spray two coats of asphalt or vinyl base weather-coat mastic with Fiberglas fabric reinforcement between coats.

OUTDOORS

Apply suitable metal mesh, lacing edges. Apply 1/2" coat of hydraulic setting cement. Let dry. Apply 002" aluminum foil by brush coating back of foil with adhesive. Trowel or spray two coats of asphalt or vinyl base weather-coat mastic with Fiberglas fabric reinforcement between coats.

42 012 0725

for the insulation of heated equipment with Kaylo block insulation

physical properties

density: approximately 11 lb. per cu. ft.

flexural strength: 30 lb./sq. in.

compressive strength: (at 5% deformation)
 Before heating: 144 b./sq. in. at 1000°F., 123 lb./sq. in. at 1200°F.
 150 lb./sq. in. at 750°F., 117 lb./sq. in. after boiling for 24 hr. 74 lb./sq. in. while wet.

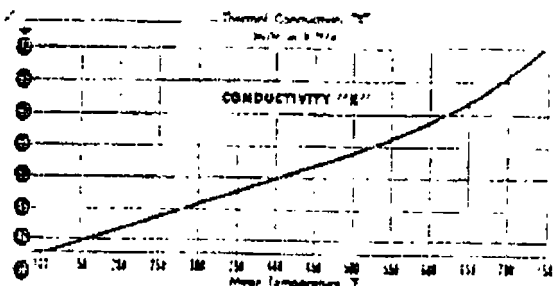
loss in weight: after heating for 24 hr.
 at 750°F.—5.5% at 1000°F.—7.9% at 1200°F.—9.8%
 after boiling for 24 hr. (wet dry)—0.2%

resistance to abrasion: (weight loss after 10 min.)
 before heating: 2.2%
 (after heating for 24 hr.)
 at 750°F.—3.7% at 1000°F.—5.0% at 1200°F.—6.9%

dimensional stability: linear shrinkage after heating for 24 hours
 at 750°F.—0.8% at 1000°F.—0.9% at 1200°F.—1.5%
 elongation after annealing (max.) 0.04%

moisture adsorption: volume
 (after 6 hours exposure in atmosphere at 120°F. and 90% relative humidity) 0.9%

thermal conductivity



specification compliance

HH-1-523a Insulation Block, Pipe Covering and Cement
 Thermal, Calcium Silicate

MIL-1-2819 Insulation, Thermal Block
 Class A or B

specification

for the insulation of heated equipment with Kaylo block insulation

- 1: Insulating material**
 All high temperature equipment shall be insulated with thick Kaylo Block Insulation as distributed by Owens-Corning Fiberglas Corporation.
- 2: Application methods**
FOR CURVED SURFACES OVER 36" O.D.—Hold in place with 1/2" galvanized steel bands on work up to 48" diameter and 1/4" bands on work over 48" diameter. Bands to be spaced on 10-15 inch centers. Point-up and then apply hexagonal wire mesh or metal lath, wiring to bands and laced edges. Note: The maximum temperature for the bands should be established by the metal band manufacturer due to the expansion of the equipment when heated.
FOR FLAT SURFACES—Hold in place with 8 gauge annealed wire or 1/2" wire cables attached to welded rods or studs. Point-up and then apply hexagonal wire mesh or metal lath over entire surface. Securely fasten down and lace the edges.
FOR IRREGULAR SURFACES—Apply a filler coat of insulating cement to cover the high points of a lumpy irregularities. Trowel to a

design data

recommended thicknesses

(ambient temperature 80° F.)

TEMP.	COMMERCIAL				POWER				PROCESS			
	RT	HL	E	ST	RT	HL	E	ST	RT	HL	E	ST
100	1	41	84.8	105	1	41	84.8	105	1	41	84.8	105
201-300	2	43	91.8	106	2	43	91.2	124	1	78	87.0	124
300-400	3	45	95.9	106	3	45	92.3	125	1	119	89	142
400-500	4	46	97.6	107	4	46	93.8	126	1 1/2	135	92.4	142
500-600	5	48	98.2	108	5	48	96.9	123	1 1/2	148	94.2	153
600-700					3 1/2	83	97.0	125	2	140	95	151
700-800	not applicable				4 1/2	79	98.4	124	2 1/2	137	97.2	150
800-900					5	84	98.9	126	3	135	97.9	149
900-1000					6	79	99.0	124	3 1/2	136	98.4	148
1000-1100					6 1/2	83	99.2	125	4	136	99.8	148
1100-1200					7	89	99.3	127	4 1/2	138	99.0	149

RT—Rec. Thick HL—Heat Loss E—Efficiency ST—Surface Temp

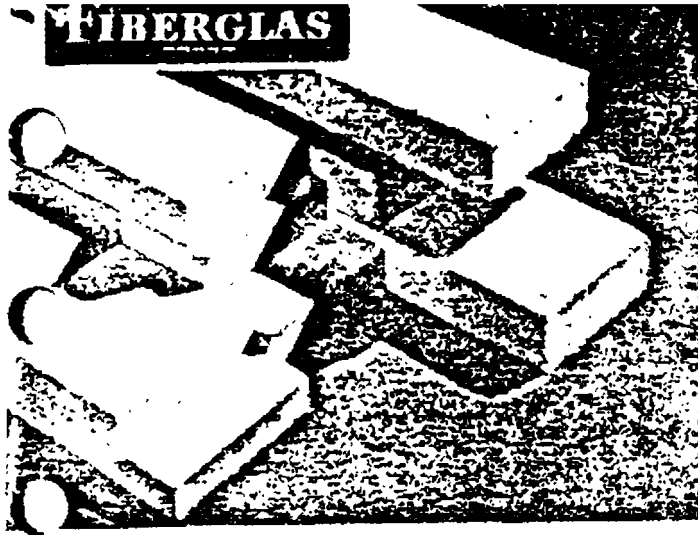
level surface before applying blocks. Then follow recommended specifications, above, for flat surfaces.

3: Finishing methods

- MINIMUM INDOOR FINISH—**base for further finishes. Apply 1/2" coat of mineral wool insulating cement. Let dry. Apply 1/2" coat of finishing cement.
- GOOD INDOOR FINISH—**does not require painting. To minimum finish, apply 6 or 8 oz. canvas between coats of white lagging adhesive.
- WEATHER RESISTANT FINISH FOR OUTDOOR WORK—**Over minimum finish trowel two coats of a suitable asphalt or vinyl base weather resistant mastic reinforced with Fiberglas fabric between coats. Each coat to be at least 1/8" thick. Reinforce coating with open weave glass fabric.

The specification is recommended as written. Minor variations of application procedure may be made at the discretion and responsibility of the design engineer to meet specific job requirements.

42 012 0727



*high temperature insulation
and fireproofing
for heated equipment
up to 1800°F.*

Kaylo-20 block insulation

This new high temperature calcium silicate block insulation developed and manufactured by Owens-Illinois Glass Co. extends the use of Kaylo Equipment Insulation to include temperatures up to 1800°F. This new product adds increased temperature tolerance to the properties of moisture resistance, high strength and superior heat insulation performance of standard Kaylo Block Insulation.

This new product which is colored a slight pink and in this way can be distinguished from standard Kaylo Insulation, brings the most desirable physical characteristics of heat insulation material in this high temperature range. It may be used as single layer insulation for flat surfaces up to 200°F. and in double layers from this temperature to 1800°F. or may be used as a first layer with standard Kaylo or Fiberglas Block.

The high temperature limit suits this product to all high temperature applications including refractory wall backing for furnaces and boilers and fireproofing of equipment and vessel skirts.

sizes

thicknesses: 1, 1½, 2, 2½, and 3 inches

widths: 1, 6, 12, and 18 inches

lengths: 15 and 36 inches

special forms: Curved block and thicknesses over three inches are available on special order.

Kaylo-20 beveled lags: For pipe sizes greater than those for which Kaylo-20 Pipe Insulation sizes are available, Kaylo-20 Beveled Lags may be used to insulate piping. These lags are blocks of Kaylo-20 Insulation, beveled to fit snugly on large standard sizes of heated piping. Lags beveled to fit pipes from 18" to 36" in diameter are available in thicknesses of 1½", 2", 2½" and 3". Lags are 36" long.

—T. M. Owens-Illinois Glass Company

offers...

high efficiency—The low coefficient of conductivity, or "K" of Kaylo-20 Block places it among the most efficient insulation in its temperature range.

water resistance—Kaylo-20 Block retains an appreciable percentage of its strength even when saturated with water. After soaking and then being dried, both in tests and in service, it returns to original efficiency and strength with no shrinkage or warpage.

high strength—Kaylo-20 Block combines light weight with superior flexural strength, compressive strength and resistance to abrasion. These properties, far above normal requirements for heat insulation, serve to reduce breakage during installation and in service. Even at 1800°F. this material retains its strength.

easy fabrication—Kaylo-20 Block can be cut, scored or sawed with ordinary tools of the trade. Light weight, pleasant handling and non-irritating and non-toxic nature contribute to worker well-being on the job.

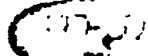
low shrinkage—Kaylo-20 Block will remain effective after long service at high temperatures. Dimensionally stable, it shows little shrinkage even after exposure to temperatures up to 1800°F. It will not crumble but retains its original form.

fireproofing—The resistance of Kaylo-20 block to high temperatures makes it extremely useful material for fireproofing metal work.

limitations

Kaylo-20 Block is designed for temperatures up to 1800°F. It should not be used when operating temperatures exceed this limit.

42 012 072S

it's the low  that counts

Properties and characteristics have been determined from laboratory tests. Data is subject to change without notice and is subject to normal manufacturing and testing tolerances.

physical properties

density:

approximately 12 lbs. per cu. ft.

flexural strength:

50 lbs. per sq. in.

compressive strength:

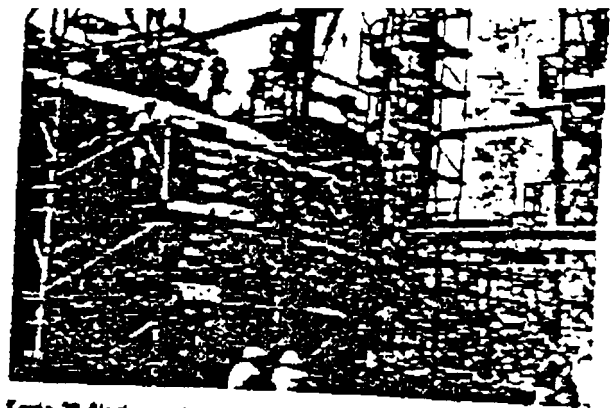
100 lbs. per sq. in. at 5% deformation.

dimensional stability: linear shrinkage after heating for 6 hours at 1200°F. less than 1.5%.

moisture absorption: for volume after 6 hours exposure in atmosphere of 120°F. and 90% relative humidity 0.9%.

working temperatures:

up to 1800°F.



Kaylo-20 Block may be attached to equipment with tie wires, laced tie wires or studs and spaced rings or other accepted attaching methods. Finish may be cement over wire mesh or other standard finish for insulated equipment.

design data

The table below presents recommended thicknesses of Kaylo Block for different temperatures of equipment. These are average figures and may be adjusted to meet special conditions encountered on specific jobs. Kaylo heat loss data is available for use where plant operating economics or other conditions may require special insulation engineering.

recommended thicknesses

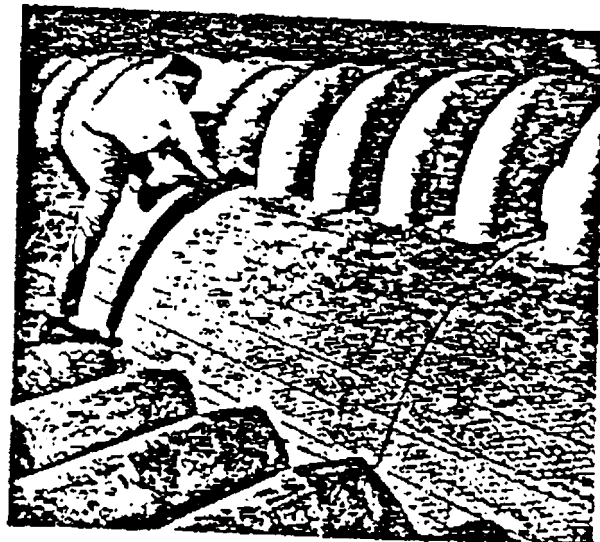
temp. diff. bet. surface to air deg. F.
—60°F. ambient temperature

temp. diff.	1100	1200	1300	1400	1500	1600	1700	1800
thickness	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9

For temperatures to 1200°F. use standard Kaylo block or recommended thicknesses.



Kaylo Block can be easily cut with ordinary tools of the trade to fit around any obstruction.



Here, Kaylo Pipe and Block Insulation are used to effectively insulate intricate high temperature equipment.

Owens-Corning Fiberglas Corporation

GENERAL OFFICES AND GENERAL PRODUCTS, Toledo, Ohio

PACIFIC COAST, Santa Clara, Calif.

TEXTILE PRODUCTS, New York, N.Y.

42 012 0729

PRINTED IN U.S.A.

November 21, 1944

Mr. Edward G. Ames
Public Relations Manager
Owens-Corning Fiberglas Corporation
Nichols Building
Toledo 1, Ohio

Dear Mr. Ames:

Mr. Albert Baumgardner of Holland, Ohio, has been a patient of mine for many years. He is approximately 55 years old, and during most of his adult life he has been a pipe coverer handling magnesite, asbestos and mineral wool products on industrial insulation jobs in and about Toledo.

During August 1944 he was under my care, and I hospitalized him in Mercy Hospital, Toledo. He was suffering from asbestosis, a condition that results from exposure to asbestos dust. The disease is a well recognized form of lung pathology that manifests itself in a diminution of lung capacity resulting in dyspnoea, or shortness of breath. This diagnosis is made through the use of X-rays, which were forwarded to me from an Akron hospital where Mr. Baumgardner had been treated some time before. His condition was complicated by a heart ailment which led me to advise him to leave his trade and seek work that was sedentary in nature so that he would not exert himself in such a manner that his heart would be unduly strained.

In my opinion his lung condition was not the result of exposure to Fiberglas materials, which he had been handling for a relatively short time before he left his trade. It is to be explained, rather, by his exposure to asbestos dust over a long period of years.

It is well established by the work of Dr. Leroy U. Gardner at Saranac and others that exposure to glass fibers involves no hazard to the lungs.

Yours very truly,

01 505 0004