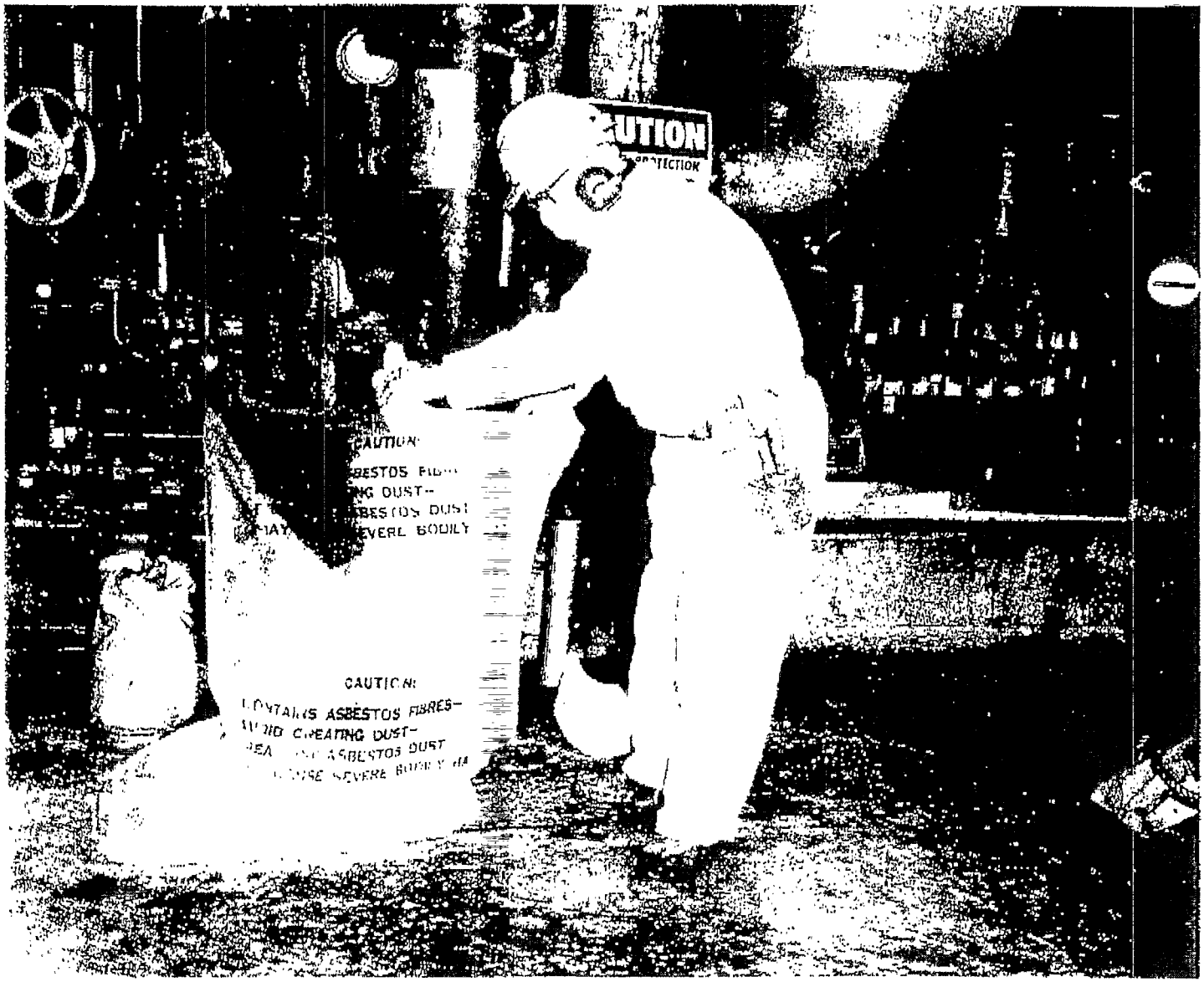
J. L. Schuller

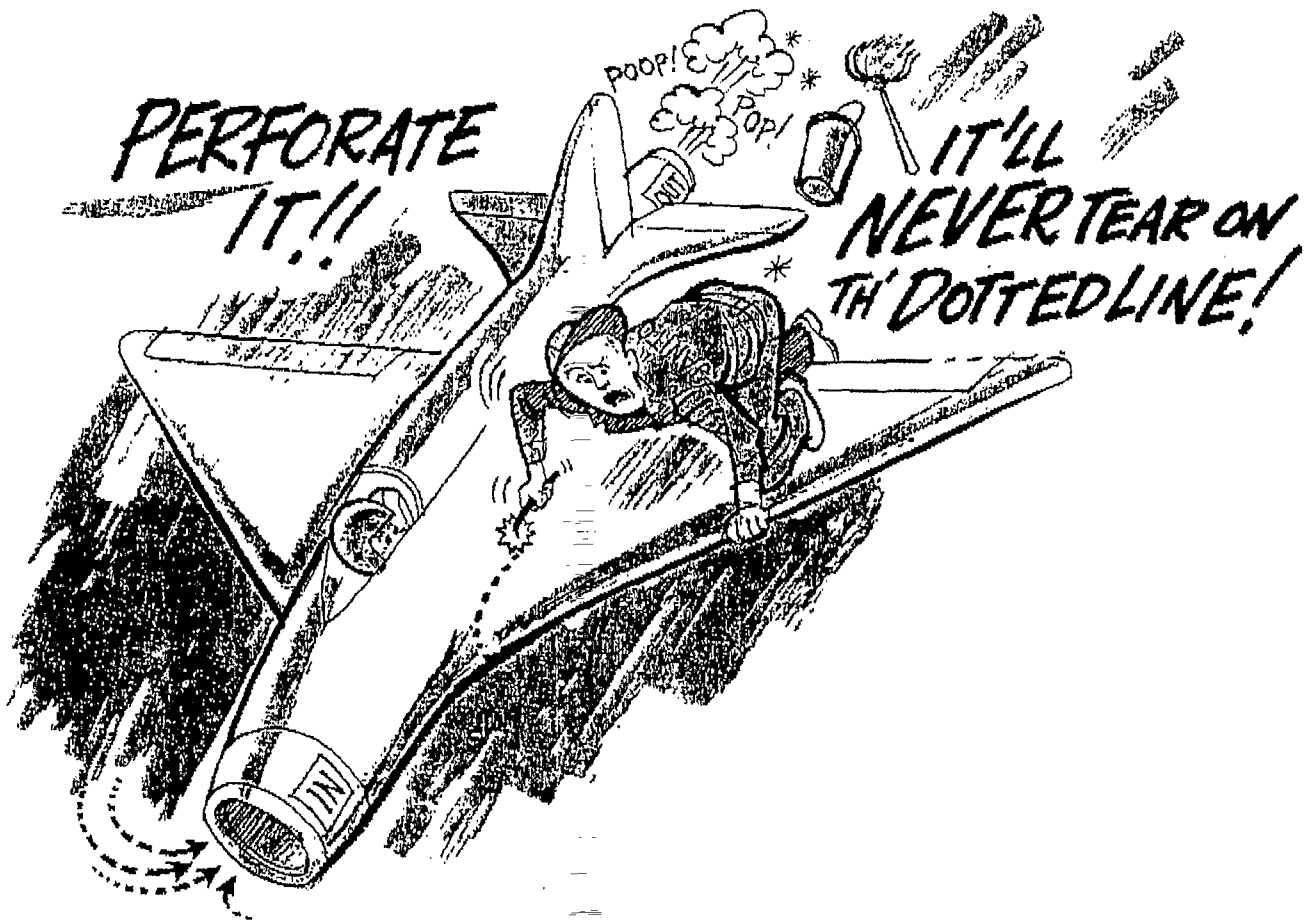
For the well-being
of Manufacturing People
everywhere
Winter 1974

NTIFF'S EXHIBIT
CHV-693

Safety and Health BROADCAST

Chevron





For the sake of argument

Towards the end of World War II the Nazis had jet fighters in use and our country was engaged in an all-out effort to get our own jets flying. There was a great deal of research and engineering work accompanied by heartbreak and failure before we made the grade.

The story is told of an engineering conference going well beyond midnight after the fifth successive wind tunnel failure where the wings sheared off. The janitor was coming through as the chief engineer was saying, "I don't know where we went wrong. Until we recompute those stresses, I really don't know what to do." "I'll tell you what to do," boomed the scavenger expert. "What's that?" asked the chief. "Perforate it," said the authority. "Why on earth do you say that?" asked the chief. "After 24 years in my business, you know it'll never tear on the dotted line," barked the knowledgeable one.

Today, anybody with an opinion seems to be an expert, from legislative "wind-tunnels" investigating whatever it is they are investigating to the wood whittler on the village green. They speak with authority on matters in which they are badly informed or without the facts.

There is no substiture for well-thought-out, proven, practical, safe methods for performing our jobs. This is why we have refinery instructions, operating standards, operating instructions, recommended safe practices, or whatever you have, where you work. To follow them is a much safer and more fruitful approach than to "perforate it."

IF IN DOUBT—ASK YOUR SUPERVISOR

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Working wi1

Asbestos represents the ultimate in heat and flame protection. If you want to protect something or somebody from damaging heat, you will usually think first of asbestos.

Asbestos also has come to mean danger--for we have found out that it is among the most toxic of dusts you can inhale.

For many years a disease called asbestosis, a scarring of the lungs, was known to occupational health specialists. It is a very debilitating disease which was not at all uncommon among asbestos workers in uncontrolled working environments. Studies were done, dust limits were set, and controls were installed to bring dust levels down. The number of cases went down, and not many people worried about asbestos hazards for many years.



A few years ago medical research scientists discovered that asbestos workers get bronchogenic carcinoma--lung cancer--more often than other people. They also discovered another disease which is virtually unknown except among people directly exposed to asbestos--mesothelioma, cancer of the lining of the chest or abdomen. Then the rumpus began. More studies were done to confirm these findings, debates raged, dust limits were reduced, and strict requirements were issued in an emergency OSHA standard. In addition, a great deal of information and misinformation has been published.

Since some of you may work with asbestos and asbestos products, you should know how this all applies to you.

What is asbestos?

Asbestos belongs to a whole group of silicate minerals that can be separated into relatively soft, silky fibers which have great tensile strength. Their strength, chemical inertness, and resistance to heat make them ideally suited for service in thermal insulation, safety clothing, floor tile, space capsule heat shields, asbestos-cement construction materials, welding screens and blankets, and many other products.



There are six common varieties of asbestos, but one of them, chrysotile, accounts for more than 95 percent of the asbestos used in this country.

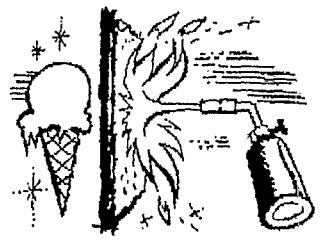
Where is asbestos used in Chevron plants?

The most common usage by far is in "cal silicate" thermal insulation on pipes and vessels. This chalky white material contains about 15 percent asbestos. Asbestos cloth "tape" is used for special insulating jobs.

Asbestos is an ingredient in certain asphalt products manufactured in our plants.

Asbestos-cement--usually called "transite"--paneling is used in lightweight-construction buildings, such as compressor houses.

Asbestos cloth gloves, blankets and fireproof clothing are used to protect you if you work around heat. These fabrics are specially treated to "lock-in" the asbestos fibers.



Asbestos has been used in making a multitude of other products around you both on and off the job, including: floor tile, brake linings, certain paints and varnishes, roofing cements, some plastics and electrical insulation. In all of these products the asbestos is locked-in so there is no hazard of inhaling.

What are the facts about the health hazards from asbestos?

The inhalation of excessive quantities of free asbestos fibers over a long period of time can increase

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:h asbestos

your risk of getting serious, even fatal, lung diseases. There is no disputing that fact.

Unfortunately, it took many years to discover just how hazardous asbestos is because of the long latent period of asbestos-related diseases (20 years or more). Over those years many people who worked where asbestos was mined and processed, who applied pure asbestos insulations, or who sprayed on asbestos insulation or fireproofing materials, were exposed to high concentrations of asbestos dust. Among these people we are seeing and will continue to see much suffering.

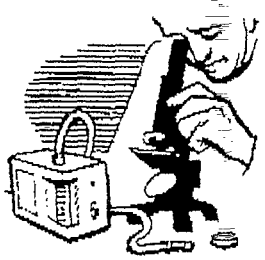
But this knowledge learned the hard way has enabled us to protect others from this fate. The dust limits which have been set provide a considerable margin of safety against asbestosis. There is some controversy as to whether the current limits are low enough to prevent lung cancer and mesothelioma, but there are two important facts which you should know:

1. Although the lung cancer rate for asbestos workers who smoke cigarettes is much higher than for non-smokers in the general public, *the rate for non-smoking asbestos workers is not higher than for other non-smokers.*

2. Mesothelioma is *extremely* rare, even among those with the worst exposures. And there are indications that chrysotile, the most common type of asbestos, is less likely to cause mesothelioma than some of the other types.

What is the Company doing about it?

Samples of working environment air have been collected and analyzed. Most of these have shown levels to be well within safe limits. Where results are not clearly safe, follow-up tests will be made periodically, and in some cases ventilation systems have been or will be improved.



For those operations where ventilation is not practical, respirators have been supplied for your protection.

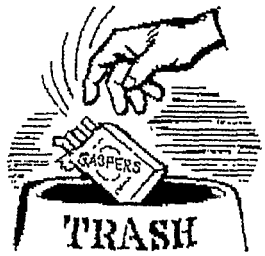
In some locations asbestos-free insulation has replaced the asbestos-containing types. Substitutes are also being sought for asbestos as an ingredient in our products.

Special medical tests are being done on those who routinely work with asbestos.

At least one unnecessary operation (sawing bolts of asbestos cloth into rolls of tape) was shut down when we found this was hazardous and tape could be purchased in the desired width.

What you can do:

- If you smoke—QUIT! The relationship between asbestos, smoking, and lung cancer is probably the most incriminating evidence against smoking to date.



- Wear a respirator for stripping off old thermal insulation, for cleaning up asbestos debris, and for other jobs where instructed by your supervisor.

- Work carefully to hold down unnecessary release of fibers into the air. Where possible, wet down the asbestos to limit the dust. Keep your work area clean of scraps and dust, and dispose of debris properly.

- If you find an asbestos garment that is worn or frayed, get a new one.



- If you are asked to take the special medical tests, your full cooperation is needed in order to get accurate data to protect you.

- If you have ideas on how to work more safely with asbestos, let's hear them.

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Men at work around asbestos





"Difference of opinion is what makes a horse race" so the old saying goes. What this means in our business is that there is more than one way to perform similar jobs and do them safely.

Plant Helper Don Gittings, Chevron Asphalt in Baltimore, wearing his dust respirator is putting asbestos into the hooded, augered hopper in the Laykold section. (Note warning sign on the hood.) Don says, "I don't believe in borrowing trouble so I wear my protective gear."

Insulator Joe Formica, at WOI's Richmond Refinery, is stripping insulation on a vessel in the PA plant. Joe is wearing a Dust-Fo 77 respirator and safety glasses. He is also wearing a Bendix C-115 vacuum pump which samples the atmosphere. Dust particles gather on a filter disc which then will be put under a microscope for a count. The insulation will be replaced with Epitherm 1200, a mineral wool material which contains no asbestos (see pages 4 and 5). Joe says, "on this job you have to suit up like a spaceman, but it assures you a safe splashdown."

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Journeyman Insulator Steve Trejo, at WOI's Richmond Refinery, is doffing his contaminated coveralls. A special barrel with plastic liner is used for coverall pick-up and a fresh suit worn each day. Steve says, "This is one job where cleanliness is really next to godliness. I've got good health and want to keep it so I don't sell safety short."





Strategically located around Richmond Refinery are special rubbish containers for the co-polymer bags of insulation scrap. (See page 8 cover story.) When the scavenger is notified to make a pick-up, he in turn notifies the dump. Dump operators see that the scrap gets to a designated area of disposal and is dirt covered.

Ed. Note: Additional information on materials or equipment is available upon request.

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Winter comes to the yard

The Frenchman says, "Il fait froid la bas" (It's cold down there). Stephen Foster said, "Massa's in the cold, cold ground." The now generation says, "Baby, it's cold outside."

Winter. It's a time of year when cold weather with snow, sleet, ice, heavy rains, and sometimes even flooding, does create additional hazards to cope with. If you drive back and forth to work, you have different conditions than driving the other seasons and you must adjust. Greater care is needed when walking from place to place. Lashing portable ladders is a must. Proper clothing and footwear are very important to protect you from the cold and wetness.



Photo shows canvas windbreak rigged along the west side of the Ammonia Unit at Chevron Chemical's Fort Madison Plant. Its function is to protect operators and heat exchanger equipment from the northwest winter winds.

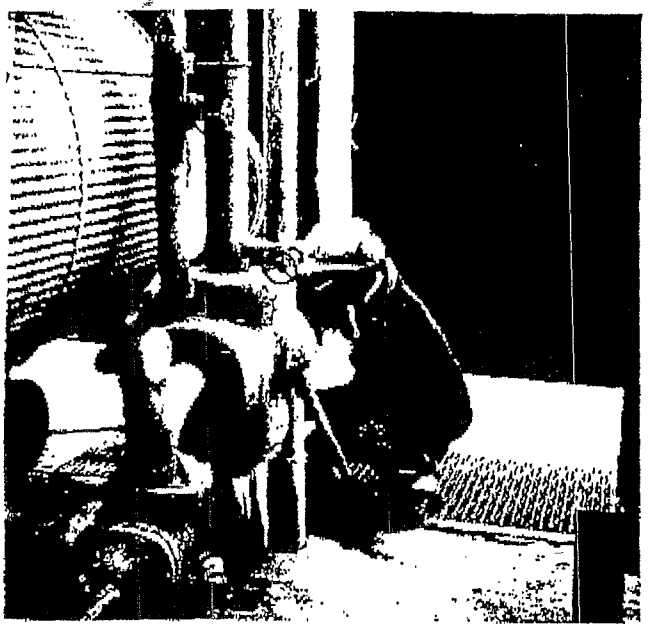

Photo shows Ammonia Plant Operator Gerry Woodsmall working on a pump in the lee of the windbreak. Gerry says, "You don't know what a difference that break makes. At 18°F., with a 15-mile wind, the chill factor makes it the equivalent of -7° with no wind. It's colder'n a harlot's heart; man, you'd go to a duck blind to get warm." Gerry is wearing a mackinaw, safety glasses, knitted hard hat liner for warmth, and gloves. Note, also, earmuffs attached to his hard hat for hearing protection.

Ed. Note: We tried to get other cold weather operations to show you but evidently their winters were so brutal the sled-dog teams could not get out; or should we blame the Post Office? We would like to hear from any of you about winter problems and how you handle them.

The Cover

Mason/Insulator Harry Hopp, at WOI's El Segundo Refinery, placing insulation scrap in the co-polymer bag made for this purpose. He is wearing safety specs and earmuffs because they are required at this location in No. 1 Boiler House (he is partially screening the sign). At the completion of the work he will also dispose of his throw-away coveralls, throw-away respirator and throw-away gloves in the bag with the scrap. Harry says, "I don't play Russian Roulette, and I see no reason to gamble with my personal safety. There's no payout with half fast methods."



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~~JLS~~ ~~[illegible]~~ JRW - File CO

MEMORANDUM GO-144

MR. ~~All Engrs~~ 3-15 1974

MR. MLB

SUBJECT: Asbestos-Free Insulation OUR FILE 220-177

YOUR FILE:

OSHA restraints on use of asbestos make it impractical to use insulation containing asbestos. Insulation manufacturers are now making calcium silicate type insulation which is asbestos free.

I talked to Bob Pichl, Matls Staff, Corp. Engrg Dept. and got the following list of acceptable trade names:

Pabco Super Caltemp, Type NA.
Kaylo 10 Asbestos Free Insulation
J-M Thermo-12

Please specify asbestos-free insulation per above list on all future jobs.

See attached copies of descriptive literature. I'm sending orig of this info to Cat Files (INSULATION - DRAWER 10I-19(E)).

cc: HRF w/1
JLS w/1
JKM w/1

WHEN REPLY IS REQUIRED, FORWARD ORIGINAL AND ONE COPY

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Physical Characteristics

PABCO PRECISION MOLDED SUPER CALTEMP®

Pipe and Block Insulation Type NA*

Description of Material

Super Caltemp is a reacted hydrous calcium silicate material made using uncalcined diatomaceous earth and fine blended with reinforcing fibers. It is manufactured under Pabco's unique patented PRECISION MOLDED process, and in simplified thickness standards. *THIS PRODUCT DOES NOT CONTAIN ASBESTOS.

Uses

Used for heat conservation, personnel protection, and process control in most high temperature applications by the process industries. Can be used individually or as inner or outer layer to form combination insulations.

Temperature Range

Super Caltemp Pipe and Block Insulations are recommended for temperatures from 100F to 1200F inclusive.

Thermal Conductivity

Mean Temperature F.	"K"
100	0.40
200	0.43
300	0.48
400	0.49
500	0.55
600	0.61
700	0.65

Weight

13 lbs. ≐ ½ lb. per cubic foot.

Compressive Strength

At 5% deformation—100 p.s.i. average
After water soaking 24 hours (while wet), approximately 50% of dry strength.

Flexural Strength

70 p.s.i. average.

Linear Shrinkage

24 hour heat soaking period at 1200 F.—1%.

Government and Industry Specifications

	Federal Specification Number	Military Specification Number	Qualified Products List	U.S. Coast Guard Number	ASTM Specification Number
Pipe Covering	HH-I-523c 28 Sept. 1966 Type II	MIL-I-2781D Amendment 3 1 March 1971		164.009/77/0	C533
		Grade I, Class b	EES-010078		
		Grade II, Class d	EES-010078		
		Grade III, Class e			
		Type I	EES-010078		
		Type II	EES-610551		
		MIL-I-24244 Amendment 4 9 January 1973			
Block	HH-I-523c 28 Sept. 1966 Type I	MIL-I-2819E 9 Nov. 1967		164.009/77/0	C533
		Classes 1 & 2	EES-610551		
		MIL-I-24244 Amendment 3 29 December 1970			

Figures quoted in respect of the thermo-physical properties of this material represent typical average values derived in accordance with accepted test methods subject to normal experimental tolerances and should not be regarded as constituting a specification.

CODE NO. IM 149

PABCO

San Francisco Houston Minneapolis Atlanta Columbus

PRINTED IN USA Rev 3 9/73

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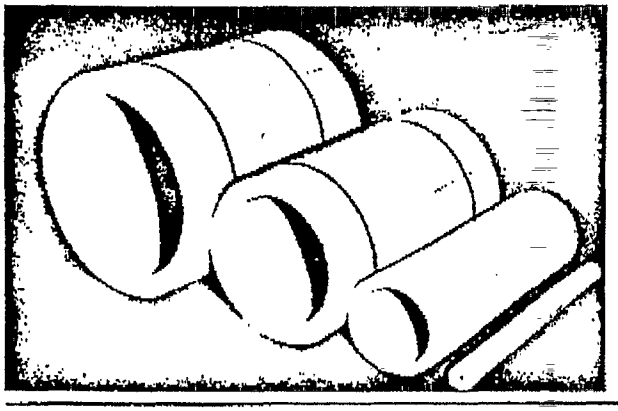
OWENS-CORNING FIBERGLAS

Commercial D-11
October, 1972

Kaylo 10 Asbestos Free Pipe Insulation

For hot water heating, high temperature hot water, steam condensate piping systems and all heated lines to 1200 F.



uses

Kaylo 10 Asbestos Free* is particularly suitable for use on high temperature piping systems where high performance and extended temperature range are required. Kaylo 10 Asbestos Free is widely used on hot piping where a great degree of physical abuse resistance is required, such as boiler and equipments rooms.

description

Kaylo 10 Asbestos Free Pipe Insulation is a rigid white hydrous calcium silicate insulation molded in sections for all types of indoor and outdoor piping that requires an abuse resistant, durable, efficient insulation, for temperatures up to 1200F. The insulation does not contain any asbestos fibers.

benefits

rugged—Kaylo 10 Asbestos Free Pipe Insulation is a strong and rigid material that resists mechanical damage during shipping, installation and service. It is well suited for riser piping in exposed locations.

versatile—Kaylo's extended temperature range offers broader use for all hot piping to 1200F.

no asbestos—Kaylo 10 Asbestos Free can be safely used and applied in conformance with proposed OSHA regulations.

will not cause stress corrosion cracking—Kaylo 10 Asbestos Free will not cause stress corrosion cracking of stainless steel because Kaylo 10 Asbestos Free contains an inhibitor and has a very low soluble chloride content.

unaffected by moisture—Kaylo can be completely saturated in water without appreciable loss of strength and regains its strength and thermal value after drying out.



Kaylo Pipe Insulation cuts cleanly with straight square edges. The final result is well insulated piping with a neat finished appearance. Mitered fittings are finished with insulating cement and covered with canvas.



Kaylo Klad Pipe Insulation combines weather-proofing and insulation in one application. Attractive, maintenance-free factory-applied jackets of stainless steel and aluminum are complete with longitudinal locking seams and end joint butt strips.

*Trademark of Owens-Corning Fiberglas Corp.

Performance characteristics

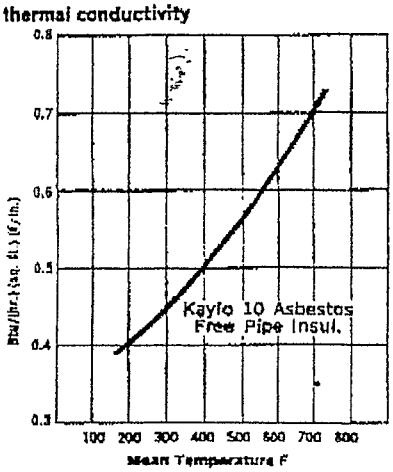
density (approx.)	11 lb. pcf.
modulus of rupture (ASTM C-446)	75 lbs./sq. in.
resistance to abrasion (Conventional tumbling test-loss in weight before heating) (ASTM C-421)	after 10 minutes, 20% max.
	after 20 minutes, 45% max.
corrosion resistance	does not cause or accelerate corrosion of steel, aluminum, or stainless steel
dimensional stability linear shrinkage after heating for 24 hours in a muffle (ASTM C-356)	
% length loss	1.4 (at 1200F)

specification compliance

HH-I-523c Insulation Block, Pipe Covering, Thermal, Calcium silicate (For temperatures up to 1200F) Type II (Pipe covering) Classes A thru F.

MIL-I-2781D Insulation Pipe Covering, Thermal, Grade 1, Class B; Grade 2, Class D; Grade 3, Class E, Type 1 and 2.

thermal conductivity



MIL-I-24244 (Ships)—Insulation Materials, Thermal, with Special Corrosion and Chloride Requirements, Type 1A, 1C, 1D, 1E.

ASTM C533-67

economic thickness—ambient air at 80F

Pipe Temp.	200			400			600		
Temp. Diff.	120			320			520		
IPS	ET	HL	ST	ET	HL	ST	ET	HL	ST
¼	1	17	95	1½	40	106	2	63	113
⅜	1	19	97	1½	47	110	2	71	117
1	1	20	95	1½	50	109	2½	70	107
1½	1	26	99	2	52	104	2½	81	111
1½	1	27	98	2	55	104	2½	84	112
2	1	32	98	2	61	104	2½	96	112
2½	1½	26	90	2	64	103	3	94	105
3	1½	33	93	2	79	104	3	111	110
3½	1½	33	91	2½	72	99	3	115	108
4	1½	40	94	2½	83	102	3½	118	106
4½	1½	36	93	2½	82	102	3½	120	107
5	1½	43	95	2½	94	105	3½	137	110

Pipe Temp.	200			400			600		
Temp. Diff.	120			320			520		
IPS	ET	HL	ST	ET	HL	ST	ET	HL	ST
6	2	46	91	3	98	100	4	140	104
7	2	47	92	3	104	103	4	155	107
8	2	55	91	3	115	100	4	169	106
9	2	56	92	3	123	102	4	182	110
10	2	65	91	3½	124	98	4	200	107
11	2	73	92	3½	133	98	4	205	107
12	2	81	92	3½	142	98	4½	210	105
14	2½	72	90	3½	157	99	5	213	103
16	3	70	88	4	159	97	6	207	99
18	3	73	88	5	147	92	6½	212	97
20	3	85	88	5	151	93	6½	229	98
24	3	100	89	5	176	93	6½	266	99

economic thickness

table key

ET—economic thickness (inches)
HL—heat loss (Btu/eff. hr)
ST—surface temperature (F)

importance of specifying economic thickness

Selection of insulation thicknesses for any specific application should take into consideration at least the following criteria. 1. Cost of insulation applied. 2. Cost of heat energy. 3. Cost of capital. 4. Cost of depreciation—plant and insulation. 5. Capital investment in heat production equipment. 6. Temperature differential. 7. Size of the pipe or surface. 8. Conductivity of insulation.

for hot piping, the tabulated thicknesses are optimum thicknesses calculated on an "Economic"* basis for heat conservation under average operating conditions and assure adequate temperature control. Special conditions may warrant the use of other thicknesses.

*From "How to Determine Economic Thickness of Insulation"—National Insulation Manufacturers Association.
economic thickness—Heated Piping to 1200F (80F ambient still air)

sizes

pipe sizes—Kaylo Pipe Insulation is available to fit nominal pipe sizes from ½" to 39" in diameter, and nominal copper tubing sizes from ⅜" to 3" in diameter. It is manufactured to Dimensional Standards Sizes to permit nesting in multiple-layer applications.

thickness—Kaylo Pipe Insulation is available in single layer thicknesses from 1" to 3" depending upon pipe size. Kaylo Copper Tubing Insulation is available in single layer thicknesses of 1" and 1½".

forms—Kaylo Pipe Insulation is available in sectional or multi-segmental form depending upon pipe size. All insulation is furnished in 3 ft. sections.

jackets

Jackets are factory-applied on Sectional Pipe and Tube Insulation. On Multisegmental forms they are furnished but not adhered.

canvas—Kaylo Sectional Pipe Insulation includes standard canvas jackets, at an additional charge, on thicknesses up to and including 3" depending on pipe size.

8 oz. canvas jacket is available for all types, sizes and thicknesses of Kaylo Pipe and Tube Insulation at an additional charge.

smooth and embossed aluminum—Kaylo is also available with smooth or embossed aluminum jacket .016" thick; or stainless steel .010". These weatherproof jackets provide greater resistance to mechanical damage and present a neat finished appearance to outdoor pipe lines. The longitudinal seam has a self-locking joint. Butt sealing strips are furnished with an integral weatherproof mastic for sealing end joints.

OWENS-CORNING FIBERGLAS

OWENS-CORNING FIBERGLAS CORPORATION
Mechanical Products Division
Fiberglas Tower, Toledo, Ohio 43659

Pub. No. I-IN-5952 Litho in U.S.A. October, 1972

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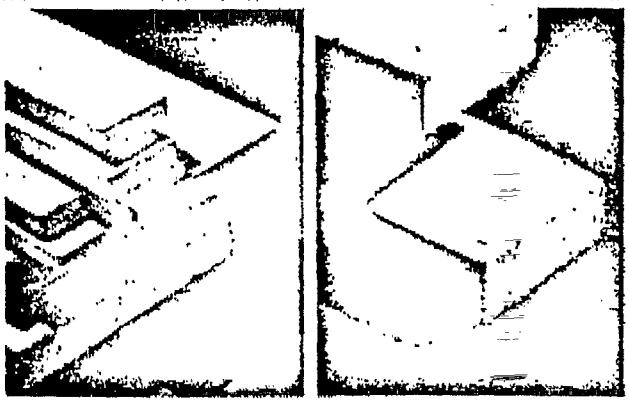
OWENS CORNING FIBERGLAS

Kaylo 10 Asbestos Free Block Insulation

rigid calcium silicate insulations for all types of heated equipment operating at temperatures up to 1200F.



uses

Kaylo 10 Asbestos Free* Block is for use on indoor or outdoor equipment operating at temperatures up to 1200F. Kaylo block is ideally suited for use on stainless steel vessels and equipment as it helps inhibit stress corrosion cracking. Typical applications are for boilers, breeching, tanks, vessels. Kaylo 10 Asbestos Free Block is white in color.

description

Kaylo 10 Asbestos Free Block Insulation is a rigid hydrous calcium silicate heat insulation. It is strong, efficient and highly resistant to abrasion and moisture damage.

benefits

High thermal efficiency—Kaylo 10 Asbestos Free offers excellent thermal efficiency coupled with high strength. A low k of .40 for Kaylo 10 at 200F mean temperature proves that Kaylo will provide significant savings in operating costs over the life of the equipment.

Resistant to abuse—resists mechanical damage because of hard, tough, reinforced structure.

Strong—less breakage in shipment and handling. High temperatures have little effect on strength characteristics.

Will not cause stress corrosion cracking—Kaylo 10 Asbestos Free will not cause stress corrosion cracking of stainless steel because it contains sodium silicate as an inhibitor, and has a very low chloride content.

No asbestos—Kaylo 10 Asbestos Free can be safely used and applied in conformance with proposed OSHA regulations.

Resistant to moisture damage—unlike many other insulations, Kaylo is not affected appreciably from moisture damage. It regains thermal efficiency and strength after drying out. Outdoor installations must be weatherproofed, however, for long continuous service.

Dimensionally stable—Kaylo does not shrink appreciably in service, even at elevated temperatures. This means less heat leakage at the joints. And Kaylo will not warp or crack in service.

Fabricates easily—ordinary insulators tools are all that is required to fabricate Kaylo. It cuts with a clean true edge for tighter fit at the joints. Fittings are neater and faster.

*Trademark Owens-Corning Fiberglas Corporation

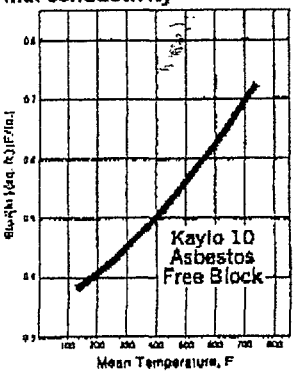
Performance characteristics

	KAYLO 10
density:	11 pcf approx.
flexural strength: (ASTM C-203)	60 psi average
compressive strength: (ASTM C-165) at 5% deformation	115 psi
hardness: (ASTM C-569)	.60 mm

resistance to abrasion:
(ASTM C-421)
after 20 minutes, 45% max.
after 10 minutes, 20% max.

dimensional stability:
(ASTM C-356)
linear shrinkage after heating for 24 hours in muffle at 1200F.—1.4%

thermal conductivity



economic thickness*
Selection of insulation thicknesses for any specific application should take into consideration the following important criteria. 1. Cost of insulation applied. 2. Cost of heat energy. 3. Cost of capital. 4. Cost of depreciation—plant and insulation. 5. Capital investment in heat production equipment. 6. Temperature differential. 7. Size of the pipe or surface. 8. Conductivity of insulation.

**From "How to Determine Economic Thickness of Insulation"— National Insulation Manufacturers Association.*

economic thickness—Kaylo 10 Asbestos Free block to 1200F—ambient still air 80F ET—economic thickness ST—surface temperature HL—heat loss Btu/hr sq. foot

THICK	200 F		300 F		400 F		500 F		600 F		700 F		800 F		900 F		1000 F		1100 F		1200 F	
	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.	HEAT LOSS	SURF. TEMP.
1.000	38	103	72	124	109	147																
1.500	27	96	51	111	78	127	107	145														
2.000	21	93	40	104	60	117	83	130	107	145												
2.500	17	90	33	100	49	110	68	121	87	133	109	146										
3.000	14	89	28	97	42	105	57	115	74	125	92	136	112	148								
3.500	13	88	24	95	36	102	49	110	64	119	80	129	97	139	116	150						
4.000	11	87	21	93	32	99	44	107	56	114	70	123	85	132	102	142	120	153				
4.500	10	86	19	91	28	97	39	104	50	111	63	118	76	127	91	136	107	145	125	156		
5.000	9	85	17	90	26	96	35	101	46	108	57	115	69	122	82	130	97	139	113	149	130	159
5.500	8	85	16	89	23	94	32	100	42	105	52	112	63	118	75	126	88	134	103	143	118	152
6.000	7	85	14	89	22	93	30	98	38	103	48	109	58	115	69	122	81	130	94	138	109	146

**calculated*

specification compliance
HH-I-523c Insulation Block, Pipe Covering, Thermal (Calcium Silicate for temperatures up to 1200°F) Type 1.

MIL-I-2819E Insulation Block, Thermal. Class 1 and 2. ASTM C533-67.

MIL-I-24244 (Amend. 3) (Ships) Insulating Materials, Thermal, with Special Corrosion and Chloride Requirements (Kaylo 10 only), Type 3A, 3B.

sizes
thickness—1", 1½", 2", 2½", 3½" and 4"
width—3", 6", 12" and 18"
length—18" to 36"
form—Block

beveled lags
For pipe sizes greater than those for which Kaylo 10 Pipe Insulation sizes are available, Kaylo beveled lags may be used to insulate piping. Lags beveled to fit pipes from 18" to 72" in diameter are available in thickness of 1½", 2", 2½", 3". Lags are 36" long and 3" wide.

application recommendations
Kaylo 10 Asbestos Free Block insulations are held in place by mechanically fastening with bands, welded rods or studs. The insulation may be finished with a trowel coat of insulating cement, canvassed and painted. Outdoor installations require weatherproofing with mastic or metal jacketing.

OWENS-CORNING FIBERGLAS

OWENS-CORNING FIBERGLAS CORPORATION
Mechanical Products Division
Fiberglas Tower, Toledo, Ohio 43659

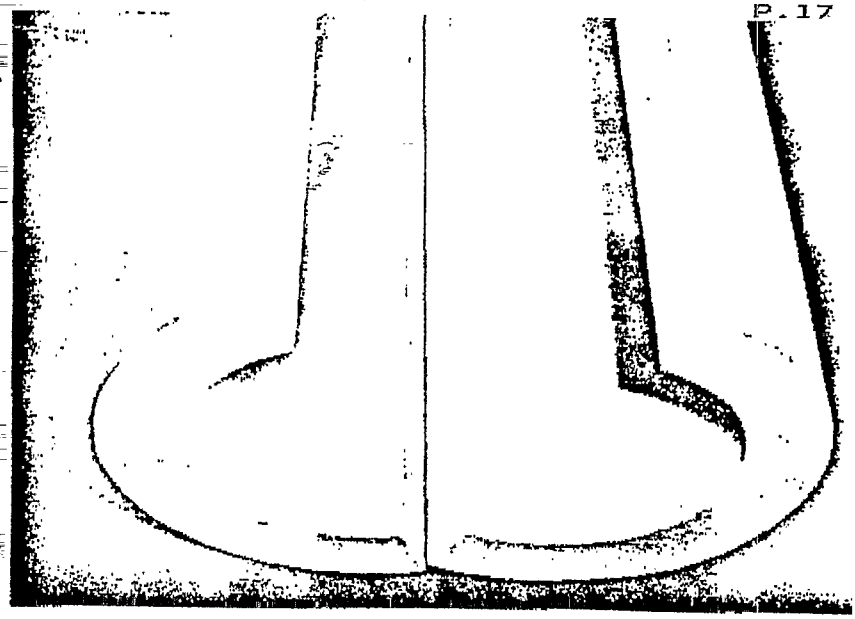
Pub. No. 1-IN-5953 Litho in U.S.A. Oct., 1972

Chevron BB
014965

Type: Pipe & Block

Temp. Limit: 1500F

Thermal Insulation Products



J-M THERMO-12*

asbestos-free pipe and block insulation

DESCRIPTION: A molded, high temperature pipe and block insulation, J-M Thermo-12 is composed of hydrous calcium silicate. It is an insulating material which, because of its light weight, low thermal conductivity, great structural strength and insolubility in water, is ideal for high temperature piping and equipment.

AVAILABLE FORMS: Thermo-12 is furnished in both sectional pipe insulation and block form. The pipe insulation comes in a complete selection of sizes up to 24" x 4" half sections. Pipe sizes 25" through 33" are available in quad segments. Scored blocks 12" x 36" in thicknesses from 1½" to 3½" are available for application on curved surfaces representing a diameter range from 34" through 180". Scored blocks are furnished with three equally spaced scores. Beveled blocks are also available in widths of 6", 12", and 18", by 36" lengths, in a full range of thicknesses.

USES: Especially recommended for use in the power generation and process industries on indoor and outdoor piping and equipment operating at temperatures to 1500F. Thermo-12 is light enough for easy handling and fast application. Repeated wettings have no permanent effect on it which makes it ideal for installations subjected to weather, or for insulating underground steam lines. Because it will not burn or carry flame, it may also be advantageously specified for use in the presence of inflammable gases and liquids.

ADVANTAGES:

Exceptional Strength

Similar in chemistry and composition to a very fine concrete, Thermo-12 will withstand unusual operating abuse without appreciable damage.

Extreme Lightness

Thermo-12 is as light as many insulating materials possessing a fraction of its strength and durability.

Not Damaged by Water

Can be soaked in water without damage. After drying, conductivity will be as good as new.

Easy Application

Thermo-12 is purposely made in large blocks and half-sections to facilitate handling and reduce number of joints.

Low Conductivity

Thermo-12 offers one of the lowest *k* factors of all insulations in general use throughout the power generation and process industries.

Low Chloride Content

Thermo-12 has a low chloride content and can be used on Austenitic stainless steel without problems since it meets MIL-I-24244 Amendment 3 for chloride content.

*J-M Trademark

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014966

PLAINTIFF'S EXHIBIT
CHV-694

MEMORANDUM GO-144-C

TO: MR. JK Murray 4/19 1974

FROM: MR. JL Schulter

SUBJECT: Asbestos Inhalation

OUR FILES:
YOUR FILES:

re; attached on "special medical tests" -

I believe all three inspectors should be given these tests. I myself have been working with asbestos for over 15 years - almost always without benefit of a respirator. I have worked in closed spaces (such as storm sheets) where the dust level was enough to cause some breathing discomfort. After a day of cutting holes in insulation for UT gaging, I have found my coveralls and body covered with insulation dust. In any case, I have had plenty of exposure and I am concerned over the possible damage to my lungs, and the long term consequences.

PLEASE REPLY AT ONCE ☐

REPLY:

NO ANSWER AS OF 6/25/74

REPLY DATE: SIGNED:

GO-144 C (7/01) PRINTED IN U.S.A.

Chevron BB
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