M.T.B 9-15-76

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DOW CHEMICAL U.S.A.

MIDLAND, MICHIGAN 48640

MICHIGAN DIVISION
September 14, 1976

PLAINTIFF'S EXHIBIT
DOW-200

Milt Strom,
General Services
49 Building

cc: T. J. Paquet, Division Engineering, 821 Building

HANDLING OF WEATHER-PROOF PAPER

Both the Johns-Manville and Phillip Carey weatherproofing paper used around insulation contain asbestos which can become air-borne. This type of paper should no longer be applied to insulation in the Michigan Division. It is no longer available from DVS. There are however many miles of pipe in the plant that are covered with this product. Since it does contain asbestos it should be treated essentially the same as asbestos insulation. These handling procedures can be found in Michigan Divison Safety Standard SS-140. These procedures include wetting the material before removal, bagging in plastic bags, labeling with proper labels and sending it to land fill.

It has been brought to my attention that some of these procedures are not being followed when the paper is removed from the insulation.

I would appreciate it if you would pass this reminder on to your maintenance network so they can get it back to their supervisors.

Thank you for helping in this communication.

Dick

Richard D. Olson
Industrial Hygiene Services
433 Building

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LIFE IS FRAGILE HANDLE WITH CARE

Trade Name(1)	Composition	Range	Available	Fac	Equivalent Cost(2)		Comments
Currently Available on DVS							
Aircell	Corrugated Asbestos Sheet	Ambient to 200° F.	Preformed Pipe	.75	3/4"x12"	$.22	A very poor insulating material. Very little used outside of Midland Division. Should only be used as protective pipe cove
Kaylo	Calcium Silicate	300° to 1200° F.	Molded Pipe & Block	.40	1"x12"	$.31	A good insulating material. Quite friable. Contains about 35% asbestos.
Fiberglas	Bonded Glass Fibers	-120° to 450° F.	Molded Pipe & Blankets	.29	3/4"x12"	$.34	A strong, semi-rigid & resilient insulating material. Availal with a variety of vapor barrier & weatherproof jackets.
Armaflex	Molded Foam Rubber	32° to 200° F.	Molded Pipe Covering	.26	1/2"x12"	$.30	An excellent covering for copper tubing having many bends. Recommended for use on dual temperature lines.
Styrofoam	Expanded Polystyrene	-200° to Ambient	Preformed Pipe & Boards	.24	1"x12"	$.46	Excellent for low temperature insulation.
Other Available Recommended Materials							
Unibestos	Molded Asbestos Fibers	300° to 1200° F.	Molded Pipe & Block	.30	1"x12"	$.40	A more durable form than Calcium Silicate. Generally used o high pressure steam transmission lines.
Careytemp 1500	Expanded Perlite	300° to 1500° F.	Molded Pipe & Block	.42			A brand new material from Phillip-Carey. Priced similar to Cal-Sil. Has a very low asbestos content--less than 5%.
Thurane	Polyurethane Foam	-200° to +200° F.	Preformed Pipe & Boards	.15	1"x12"	$.60	An excellent material for low temperatures. Must be protecte from sunlight. More fire retardant than styrofoam.
Sprayed Polyurethane	Foamed in Place Insulation	-200° to +200° F.	Sprayed or Form Poured	.15	1"x12"	$.30	We have had but little experience with this product. Vapor barrier protection will be very important.
Foamglas	Expanded Cellular Glass	-450° to +800° F.	Preformed Pipe & Blocks	.40	1"x12"	$.35	A high density, excellent dual temperature material. Quite time consuming to apply. Dow is entering this market with a new material called Ceramic Foam.

(1) The trade names are typical of several similar materials on the market.

(2) Costs are based on covering for 1-inch pipe size in the thickness listed and 12 inches long. A great number of jackets are available, both attached and separate. The cost of these would be in addition to the prices listed above.

Roy Anderson
5-20-69

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DISCUSSION

Men were found to be working almost exclusively with asbestos-containing mater. Their time-weighted exposures to dusts from the asbestos-cont. ing materials were in excess of the proposed TLV of 2.0 mppcf and barely under the present TLV of 5 mppcf. Steps should be taken to lower the time-weighted exposures to within proposed acceptable limits.

Several means of reducing the time-weighted exposures are apparent:

1. Cease using asbestos-containing materials. If use of asbestos-containing materials was stopped, exposures would be reduced to acceptable levels, even though some low-level exposure would be experienced until presently installed coverings have been replaced due to natural attrition.

2. Effective use of approved respiratory devices. Respiratory protection is practical for jobs which are of short duration and infrequent occurrence. It can be seen from Table 1 that jobs requiring respiratory protection are neither infrequent nor of short duration. Men encounter greatest exposures during the cutting and applying of Air cell and Kaylo. These two operations are done for 50% of the day -- sometimes 100% of the day. Many other operations listed in Table 1 could require

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use of respiratory devices. Attempts to lower exposures to 2 mppcf by using respirators seem futile.

3. Use local ventilation. This method would be effective if the ventilation could be kept close to the dust source. Pipe coverers' work routines make this difficult; e.g., working aloft, or in cramped areas.

In the event new types of covering materials are used, men should be instructed regarding the toxic properties of the materials and the hazards associated with using the material. Protective measures to prevent or lower undesirable but unavoidable exposures to the material should be well understood. Any education effort must precede or be concurrent with first usage of new materials.

During this survey, most men voiced strong objection to fiberglas, asserting that fiberglas insulation materials were far more hazardous than asbestos insulation materials. This contention is not supported by 25 years available field experience and independent laboratory testing on fiberglas.

The Environmental Research Laboratory will survey and evaluate upon request any proposed types of insulating materials and relate their usage to the health hazards associated with these materials.

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UNIT INDEX

Pipe covering operations were surveyed and evaluated. Men received time-weighted exposures to asbestos near the present Threshold Limit Value of 5 mppcf and in excess of the tentatively proposed Threshold Limit Value of 2 mppcf. Steps should be taken to reduce exposures to the proposed new standard.

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