



THE DOW CHEMICAL COMPANY

MIDLAND
July 24, 1969

**PLAINTIFF'S
EXHIBIT**

DOW-125

INSULATING MATERIALS AND ALTERNATES

We are principally concerned in this discussion with materials which may be substituted for some of our existing asbestos-containing insulation and how this will affect us economically.

The use of Aircell pipe insulation should be eliminated from the plant. It should never be used in any application over 200°F. and then for personnel protection only. It has a K factor of .61 as compared to .29 for Fiberglas. Fiberglas is about 25% more expensive to purchase; however, if aluminum foil is used with Aircell, as is the case many times, it is questionable whether one is more expensive than the other. (See table of estimated costs attached.) Temperature wise, Fiberglas is recommended up to 400°F. It is available either plain or with a number of factory applied jackets, some of which are self-sealing. Ordinarily, we would cover the plain Fiberglas insulation with the same JM paper that is now used over Aircell. - It is necessary to wire the paper onto Fiberglas inasmuch as staples will not hold. This procedure makes the process slightly more time consuming than with staples.

A completely dry piping system can be made up by using wedges of Fiberglas blanket for ells and fittings and covering these with preformed fittings of PVC. A waterproof tape can be used to seal the joints.

In the temperature range of 400° to 1200°F., calcium-silicate is still the standard insulating material. As a substitute, we are presently making a survey of Careytemp 1500. This is an expanded silicon (perlite) material with a temperature range up to 1500°F. It does not absorb water and has a very low chloride content. At the present time it contains about 6% asbestos; however, in the near future it may be available in an asbestos-free form. The K factor is almost identical to calcium-silicate.

Another alternate material for temperatures up to 800°F. is cellular glass. This material is more expensive than calcium-silicate and should be used only where its special properties merit the extra cost. It is more dense than calcium-silicate and non-absorbent. This property makes it especially valuable where there is danger of autoignition. It is ideal for dual temperature vessels or pipelines. The material is easily worn away by abrasion and for this reason tank heads should be adequately protected. Glass cloth imbedded in epoxy resin is excellent for this purpose.

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The material is available in preformed sections for both pipes and tanks. The K factor is very similar to calcium-silicate. The Dow Chemical Company has only recently entered this field with a material called Ceramic Foam.

If you have any questions or want further information on insulation, please feel free to contact me.

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THE DOW CHEMICAL COMPANY

Midland Division

July 17, 1970

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ASBESTOS CONTENT INSULATION

We wish to update plant wide information on asbestos content insulation as a follow up to our presentation to supervision, coverers and the Union one year ago.

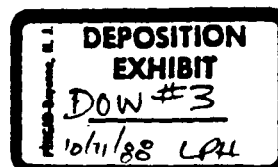
Since July 1969, the following has been accomplished:

1. AIRCELL:

Range of 100° F - 350° F has been discontinued and fiberglass is now being used.

2. CALCIUM SILICATE TYPE INSULATIONS:

Development of Careytemp 1500 (Engr. Practices M8-314, M8-470, M8-471) is to a point that we are insisting it be used in all applications up to 1500° F.



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3. HIGH TEMPERATURE INSULATIONS (+ 1500° F)

Present technology does not give us any substitute for asbestos type insulation at this time.

4. INSULATING CEMENTS (i.e. Webbers)

This is a problem area. Work is being done to eliminate the need. Until suitable substitutes can be developed, careful handling procedures must be followed.

One recommended procedure is to mix in a plastic bag to which water is added and the material mixed while the bag is kept tightly closed. Other pre-mixing techniques are under study.

Another source of exposure is the removal, transportation, and disposal of old asbestos type insulation. Wetting or other suitable procedure during these activities is a must.

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