



Interoffice Correspondence

To: Dr. R. F. Smith
Location: New York

From: P. S. Bettoli
Location: South Bound Brook

Date: April 9, 1980
cc: S. W. Kantor

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S. W. KANTOR

Subject: ASBESTOS REPLACEMENT

PLAINTIFF'S
EXHIBIT
GF-1554

Executive Summary

There are active R&D projects to develop non-asbestos alternates for all products now containing asbestos. At this time, there is reasonable expectation that acceptable substitutes could be ready for market introduction during the next twelve months, with the exception of the following: (a) Asbestos felt skins for Isotherm (Product C), (b) commercial asbestos paper requiring low smoke potential, (c) H. H. Robertson asbestos paper, (d) certain bituminous roof coatings. Various approaches to provide substitutes for each of these materials are under investigation. In most instances, the cost of the replacement is higher than the asbestos-containing product. Production machine modifications will be relatively minor or not necessary.

The status of the various replacement projects is as follows:

1. Asbestos Roofing Felt - BUR glass-based ply and cap sheets have been developed. Type 3 (southern and West Coast) has been released for marketing, and it is planned to introduce Type 4 plysheet (northern or Universal), based on Chester mat, in July 1980. By mid May, all intended plants will be equipped to produce glass BUR products. This excludes Millis and Minneapolis. There should be no cost disadvantage.
2. Automotive Heat Bondable Mastic - Mica-based mastic is now available; the price is 21% higher; also, alternate, lower cost fibrous compositions are being evaluated.
3. Bituminous Roofing Cements and Coatings - A program has been initiated to produce a complete non-asbestos "Black Line" at Mobile. The first item to be introduced during the fourth quarter will be flashing cement, and others will be added throughout 1981 as weathering data and production experience is obtained on these lower volume items. The only internal source in 1981 will be Mobile. At some point, we would have to initiate a program for formula conversion at our outside sources. The cost increase for the new Flashtite and Plastic Cements is about 24% (25¢/gal.) higher.
4. Asbestos Combination Flashing - Partial replacement of this material is expected to start in the third quarter with the release of the new elastomeric

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flexible flashing. Development of a glass/polyester based flashing mat will be initiated after more immediate projects at Chester are completed. Durability and other work will run into 1982.

5. Gasket Papers - Plant trial material is now being evaluated by a number of customers. The sheet properties measured in our laboratory appear to be adequate; however, the acceptance will not be known for at least 4-5 weeks. The composition and running characteristics should be adjustable to meet the requirements for the various types of latex-bonded gasket papers produced. Asphalt-bonded paper will be investigated next. It is anticipated that general gasket modification and development work will be required over the next six months. There do not appear to be any problems associated with a manufacturing capability. The cost of these substitutes may be as much as twice the standard.
6. Asbestos Papers - The amount of development work on replacing the variety of commercial asbestos papers has been limited. In some instances, the asbestos-free gasketing furnish should meet the requirements. With the available resources, it will probably take until the end of 1980 to determine the amount of current paper products that can be replaced. H. H. Robertson grade will be particularly difficult to resolve as well as felts that must not develop any initial scorch odor upon exposure to high temperatures.
7. Millboard - A recent millboard plant trial yielded material that appears to have good characteristics for consumer gasketing and other industrial uses. There may be some very high temperature service conditions that cannot be met. Customer sampling will proceed after secrecy agreements have been arranged. A judgment on the adequacy of this board should be possible by September. No problems are anticipated in undertaking manufacture. It is expected that the cost will be higher but considerably below J-M's announced product.
8. F.M. Class I Polyurethane "Isotherm" Insulation - The only method found to date that meets the stringent Factory Mutual fire resistance requirements for insulation is by the use of asbestos paper skins. Normal glass mats and non-asbestos mineral papers do not maintain sufficient integrity under the intense heat exposure. A "half pregnant" version with asbestos on one side only is being evaluated. Other approaches being explored are: Dense structure, fine fiber glass mats and glass mats with intumescent particles or coatings. It is difficult to project when or if a breakthrough will be achieved. The perlite board composite is, of course, an alternate.

In the course of these replacement programs, we have become aware of a rather reluctant attitude to consider a conversion to asbestos-free products if the cost is even a small amount more than current materials. There is considerable interest and encouragement for the effort, but unless there is strict legislation or government regulation, no one seems concerned other than to know there will be an alternative they can buy should a ban materialize. It would appear, therefore, that unless the alternates are advantageous from a cost and/or performance standpoint, we will not find a ready market for them. In all but a few instances they do not have these benefits.

P. S. Bettoli

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