FILE NAME: Raybestos-Manhattan (RBM)

DATE: 1973-1974

DOC#: RBM024

DOCUMENT DESCRIPTION: Memo RE McGill Study of Asbestos Safety Garments

Raybestos-Manhattan

Manheim

DIVISION and LOCATION

TO: Mr. J. H. Marsh - Bridgeport

DATE: March 7, 1973

PLAINTIFF'S EXHIBIT 207

SUBJECT: Testing Asbestos Cloth for Release of Airborne Fibres

Recently we talked on the telephone concerning the testing of asbestos cloth to determine the amount of airborne dust that may be released during handling and installation or fabricatin of cloth used to wrap thermal installation on piping. I believe I suggested having such tests performed by the same outfit that did the tests on the asbestos containing coats at the time this was being investigated by FDA. This probably was not a very good suggestion, inasmuch as my file indicates this test was performed by NIOSH, and I doubt that we would want to get them involved in investigation of our pipe covering materials.

At a recent ATI meeting there was considerable discussion by the Asbestos Advisory Committee concerning similar tests to determine the amount of fibre released during normal use of asbestos safety clothing. It was recommended that McGill University might be a suitable place to have such tests conducted. It was also suggested that the Abrado-Flex machine developed by the late Dr. Shaw while he was involved with research for ATI might be used for this purpose. However, Chairman Echerd of the ATI Technical Committee felt that his company (H. K. Porter) had developed a superior device for flexing fabrics that he thought would be better suited for testing for airborne fibre release.

Since I was not at this meeting, I don't know what conclusions were made regarding further action, but I know it was agreed that a third party, such as McGill, should certify the tests rather than ATI or any of the manufacturers involved. Perhaps Milt Scowcroft can fill you in on the latest ATI thinking or activities on this.

I. H. Weaver

IHW

DHM 19060

Raytheon Company

DIVISION | DEPT | LOCATION

TO: Messrs. P. G. Dolan
J. F. Maclachlan
M. W. Oliver
W. S. Simpson
I. H. Weaver

March 1, 1974

SUBJECT: McGill Study of Asbestos Safety Garments

The final report on Phase I of the McGill study and comments by Dr. Gibbs in response to questions I raised are attached. Two sets of photographs, not reproducible by Xerox, are available. John Magenheimer has one set, I have the other.

I call your particular attention to the recommendations on pages 11 and 12. Engineering improvements are essential if the products are to be acceptable under the existing federal asbestos standard.

The management of Plant 2, referred to in Dr. Gibb's report, has been advised that airborne asbestos fiber concentrations in the breathing zones of men wearing asbestos garments in their plant exceeded the threshold limit value of 5 fibers per cc for an 8-hour work day and that concentrations over 10 fibers per cc, which exceed the excursion level of 10 fibers per cc permitted for a 15-minute period by the U.S. Occupational, Health and Safety Administration standard, were also observed.

Immediate action, in the form of engineering improvements, is necessary to insure that R/M products comply with OSHA standards.

John H. Marsh

Attachments
CC: Messrs. J. J. Magenheimer
J. T. Trainor

PLAINTIFF'S EXHIBIT 85

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INTER ORGANIZATION COMMUNICATION

Raybestos R/M Manhattan

Advanced Research Laboratory
DIVISION and LOCATION

TO: J. H. Marsh - Bpt.

DATE: March 4, 1974

SUBJECT: McGill Study

I have discussed the possible direction of continuing work at McGill with Dr. Gibbs. He has a number of interesting proposals relative to the distribution of fiber size and fiber geometry to carcogenicity. This type of project would involve significant expenditures for information which will be of value at some indeterminable time in the future. This work should be done, but R/M is not in a position to fund this type of project from initiation to completion. I would think that R/M should definitely participate in this type of research as a member of AIA/NA, ATI or just as an interested party.

We do have access to the test chamber at McGill and a good working relationship with Dr. Gibbs. We also have a problem in that we know that safety garments are capable of producing unsatisfactory dust counts. We have documented the problem with Dr. Gibbs and he could document the solution either in the field or using the dust chamber.

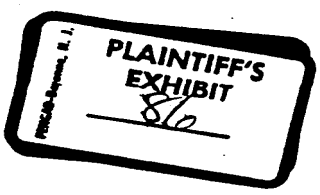
The only possible solution for conventional fabric appears to be aluminizing the inside of hoods and the outside shoulder area such that the breathing zone is not exposed to open asbestos fabric.

However, filled Novatex has demonstrated its low dustiness for which safety garments appears to be a perfect application. Besides a decrease in dust counts during use, I'm sure that the Novatex would decrease the asbestos contamination of workers clothing after the safety garments are removed.

I discussed the possibility of aluminized conventional with M. Scowcroft a few months ago; he felt that it would be too expensive and also make the hoods too hot. He thought an increase of chemical surface coating would help, but I don't think this would be satisfactory.

The use of filled Novatex does pose an additional problem in that the fillers themselves are capable of producing poisonous gases upon thermal decomposition, e.g., neoprene could produce hydrochloric acid or possibly phosgene and nitrile could give off hydrogen cyanide gas. I have asked Dr. Gibbs about testing fabrics for emission of these gases at a McGill laboratory. His initial feeling was that they could do it, but he is checking into it further.

I would recommend then, as you suggested in your memo of 3/1/74, that M. Scowcroft and J. Hawkins consider immediate engineering improvements of conventional fabric. However, we should produce a commercial aluminized and filled Novatex (as per J. Trainor's memo to J. Orzechowski of 3/4/74).



I would recommend with respect to McGill that we:

1. Use the mitt tester to examine the dustiness of various filled Novatex samples from Novatex.

2. Request Dr. Gibbs to test in the field the new safety garments - either conventional or Novatex.

3. Examine the possibility of testing for poisonous gases at McGill and at other possible locations.

4. Let the program (specifically money investment) lag until suitable samples have been produced.

John J. Magenheimer

/d

cc: J. T. Trainor
cc M G Seaweraft

INTER ORGANIZATION COMMUNICATION

Raybestos-Manhattan

NORTH CHARLESTON DIVISION and NORTH CHARLESTON, S.C. LOCATION

TO: Mr. John Marsh

DATE: March 6, 1974

SUBJECT: McGill Study of Asbestos Safety Garments

I have studied the "Asbestos Fiber Release From Safety Garments" report by Dr. G. W. Gibbs of McGill University which was received along with your letter of March 1, 1974. A report of this type must be carefully critiqued to be of value. I would be remiss if I did not advise that overall the research was poorly done, and I am disappointed in what the report is in comparison to what it could have been.

(1) British Procedure Used:

For sampling and counting the NIOSH procedure should have been used. Several differences may introduce new variables. NIOSH thinks that their procedure is superior, particularly dissolving the membrane.

(2) Unidentified Fabrics:

Of the 45 tests conducted 29 were on unknown materials. R/M material was compared against unknown products. It would have been very easy to identify these products to the extent of knowing the weight, finish, etc. They were identified as uncoated. Some coatings are difficult to distinguish, and I question in plant 1 whether the unknown fabrics were treated.

(3) Sampling Technique:

Filter over the coat but under the hood and unobserved (pg. 3). It is important to know how long the filter was under the hood, etc. We do not know the source of the dust, Dr. Gibbs implies it may come from the hood.

(4) R/M Treated Fabric Was Dustier:

R/M L-71-1173 was treated with an adhesive to hold the dust and lint in place. Visually the cloth is very clean. The McGill report indicates it to be about twice as dusty as unknown uncoated fabric. I question this, could samples be crossed up or 1173 not actually used? A serious problem here.

01642

PLAINTIFF'S EXHIBIT 84

(5) High Counts At Plant 2:

A count of 26.2 from a safety garment sounds unreal. If this count was obtained, the operator is working in a visual cloud of dust. It would take severe abrasion and abuse to obtain a count of 26.2 from a garment.

(6) Miscellaneous Areas:

Table A-1: Calculations are not correct for C_3 in many cases.

Table A-1: Dates of survey are incorrect.

Table A-2: Only one count given.

Table A-2: Footnotes about suits are not related to the rest of the report.

Table 6: > 4 weeks - 112.3 is incorrect.

I do not think that the report is worthy of being published in its present form.

If the dust originates from the hood, I would recommend that R/M offer a more highly coated product for this use. A product of this type could be made available immediately.

I think my comments may be of help to Dr. Gibbs in future work, and I would be glad to discuss them with him on the telephone.

John Hawkins
ch

If you have any disagreements, let me know.

John J. Magenheimer

/d

cc: J. Marsh
J. Orzechowski

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J. Marsh - Trumbull

INTER ORGANIZATION COMMUNICATION

Raybestos Manhattan

Advanced Research Laboratory
DIVISION and LOCATION

TO: J. T. Trainor - Trumbull — McGill

DATE: 6/17/74

SUBJECT: Size Distribution of Novatex Fibers
(J. Marsh's memo to you of 6/6/74)

I discussed the above memo with John last week in order to give him my opinion concerning the work being done at Edinburgh and Dr. Gibbs research proposal.

What I wanted to point out to John was the fact that at the present time the relationship between the inhalation of fiber and disease is not understood. This is demonstrated by the fact that Dr. Holmes in his letter to Mr. Hills used phrases such as: "...the effect of fibers must have been...", "...is not likely to be very hazardous...", "...must surely be...", and "...one would expect...". The work at Edinburg will help to increase our understanding of the problem, but we cannot expect it to state that Fortex fibers are safe. If research is continued in this area, we might expect sufficient information in five to ten years, but one study is not enough. This means that Dr. Gibbs study of Novatex fiber size distribution would, at best, give us a feeling concerning the problems with Novatex material.

The previous study at McGill has shown that filled Novatex releases fewer fibrils than treated conventional. Filled wet processed material is in all liklihood the safest asbestos textile possible with present technology both from production and use standpoint. An awful lot of research will pass under the bridge before this statement is modified.

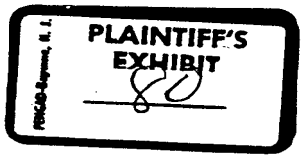
R/M is faced with a number of diverse asbestos dust problems, all of which demand significant capital expenditures at a time when capital is hard to come by. I feel that we have a responsibility to use this capital and the best present technology towards making our products safe both for our workers and our customers.

Considering these factors, I think the proposed study at McGill is ill timed. If, however, Dr. Curtiss at NIOSH wished to study fiber distributions, I think it would be to our advantage to cooperate.

I also told John that in my opinion, we must notify our customers in the safety garment industry of the McGill results at U.S. Steel and Irco. As he suggested, Dr. Gibbs report should be published as soon as possible and I would prefer to have R/M mentioned as a source of support.

We also discussed the fact that R/M at the present time does not make an asbestos fabric which is acceptable for use in safety garments. This would put us in an embarrassing position when the McGill results are published. The obvious answer as J. Orzechowski and I have discussed, is to get a filled Novatex on the market ASAP.

02495



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INTER ORGANIZATION COMMUNICATION

Raybestos-Manhattan

Advanced Research Laboratory
DIVISION and LOCATION

TO: J. Marsh - Trumbull

DATE: 7/15/74

SUBJECT: McGill Study of Asbestos Safety Garments
Ref.: M.Q. Scowcroft's Memo of 6/28/74.

I have read Milt Scowcroft's memo concerning the McGill Study and I discussed it further with him over the phone on Thursday.

Milt has brought out some important points which should help in determining the best approach towards Dr. Gibb's report. I would like to make some comments on this memo.

Our contract with Dr. Gibbs for the McGill Study in question stated as the objective, "To determine the exposure of a man to asbestos fiber during the normal use of asbestos safety garments in industry." The determination of the specific source of the i.e., hood, coat or mitts is an obvious extension of this study which was not pursued for a variety of reasons. There was also a lack of proper identification of the fabrics involved which was my responsibility. However, the objective of the report was to determine the dust levels under normal use and this was done in a scientific manner.

I agree with Milt's premise that most of the dust arises from the hood. Some of it probably does come from the coat and mitts as shown by Bamber and Butterworth (Ann. Occup. Hyg., 13, 77-80, 1970) but I agree that we should work under the assumption that the hood is the problem.

I think Dr. Gibbs article can be written in such a way as to imply that surface treatment of fabrics reduces the dust levels. Combining this with the Tribestos treatment and John Hawkins' present work on the hood fabric, I think we can obtain a possible salses advantage from the article.

Dr. Gibbs' report will, in all liklihood, be published. The only thing we can affect is the time of publication and possibly the tone. Until the article is published, Milt's program of informing his customers will assist in making this information public. I would suggest that he extend the caution to the use of any uncoated asbestos fabric for safety garments.

Once John Hawkins has engineered the textile fabric for the hoods, we should be prepared to set up a test to verify the improvements.

John J. Magenheimer

/dt

cc: M. Scowcroft - Charleston
J. Trainor - Trumbull

PLAINTIFF'S EXHIBIT 83

00624

Mr. M. Q. Scowcroft July 24, 1974

McGill Study of Asbestos Safety Garments

As John Magenheimer has previously commented on your letter of June 28 concerning the McGill study, I will limit my observations to the following:

1. The McGill study confirms earlier British studies showing that in normal use asbestos safety garments can release concentrations of asbestos fibers in excess of permissible limits.
2. There is evidence that aluminizing or otherwise treating the fabric will significantly reduce the amount of fiber released.
3. Asbestos safety garments are necessary for the protection of workers in essential industries.
4. The safety garment industry must take measures to insure that users of asbestos garments are protected from inhalation of asbestos fibers and that the use of such garments does not violate the OSHA Asbestos Standard.
5. R/M has the knowledge and capabilities needed to lead the industry in the development and marketing of asbestos safety garments. If there is further delay we will lose the advantage we now have.

Copies of two British studies and a memorandum from Stephen Holmes are attached.

John H. Marsh

Attachments
CC: Messrs. P. G. Dolan
J. F. Maclachlan
J. J. Magenheimer
W. S. Simpson
J. T. Trainor
I. H. Weaver

HAM 00621

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