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*Sent copy to
R. K. Petry
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Installer Exposure - Asbestos

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Problem: Determine the extent of asbestos exposure, if any, to installers during installation and removal of asbestos backed vinyl sheet goods.

Summary:

1. There is no significant asbestos exposure to installers during the actual installation procedure.
2. There is no significant asbestos exposure to installers when removing a completely cemented floor using the delamination technique.
3. There is excessive asbestos exposure to installers when removing perimeter installations using the current technique of sanding residual felt.

Problem: Any employer of an installer using the sanding technique is subject to the asbestos regulations.

Remarks and Recommendations:

Preliminary Nature of Report

Because of the delicate nature of this investigation it was performed with a minimum of involvement and, therefore, input, from other sources. Mr. A. Albertson and Mr. H. Toal of R & D performed the installations tested. They were consulted and relied on with regard to how the everyday installer works.

PLAINTIFF'S EXHIBIT

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A complete set of published installation instructions was obtained from Mr. Aspy and reviewed. They contained no mention of sanding asbestos felt. They did contain recommendations and photos of how to sand vinyl tile in preparation for perimeter installations.

It is believed the sanding technique is taught in the installation school.

1. Although the test data is limited and I believe it to be representative, additional testing should be performed to substantiate existing information.
2. An immediate program with the highest priority should be undertaken to develop a method of removing cemented asbestos felt without generating excessive fibers. Such methods as chipping, scraping, freezing, or use of a solvent may be effective.
3. If sanding is not immediately discontinued, all Congoleum employees should be required to wear approved respirators when engaged in this activity.
4. Congoleum employees involved in testing must receive a letter indicating over exposure to satisfy Federal Regulations (attachment 1).
5. Arrangements should also be made now, and annually thereafter, for these employees to receive a complete medical examination consistent with the requirements of the OSHA Act (1910.93,A).
6. Consideration should be given to dropping the perimeter installation technique and instructions changed to require complete adhesive application. This would allow future removal by the delamination technique (believed acceptable at this time).
7. If perimeter installations were discontinued, two problems would remain:
 - a. The pipe line is full of floors installed in this manner.

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b. The practice of sanding is widely used in the field.

8. I believe there is a need to provide installers with an adequate warning. This is a legal question and should be considered by counsel (see attachment 2). The question of an immediate warning; i.e., use of approved respirators should be considered.
9. If an acceptable substitute to the sanding technique were developed, a properly worded warning against sanding accompanied by a set of "safe work practices" which would maintain field operations virtually free of airborne fibers would be the ideal method of communicating the necessary information to installers and their employers.
10. If we can not eliminate all field exposures, the employers of installers will continue to be subjected to the full force of the Asbestos Standard (a situation I doubt they are aware of, and due to their size, would probably find intolerable).

Test data summary is attached.

Original Signed By
M. J. Sendeki

M.J. Sendeki

att.

cc: J.R. Stetson

TEST DATA SUMMARY

The first installation performed, required removal of a previously installed floor (Spring) which was completely cemented down.

Two personnel samples were taken while the installers were delaminating the old floor from its felt. The total time covered by the tests amounted to approximately 25 minutes.

Results of Test 1 indicated an exposure of .77 fibers/cc greater than 5 microns in length. Results of the second test correlated well with the first, indicating an exposure of .94 fibers/cc greater than 5 microns in length.

To place these results in perspective, one must understand the current federal regulations and the mechanics of their application. It requires that employee exposure be maintained below 5 fibers greater than 5 microns in length per cubic centimeter of air based on an 8 hour time weighted average, with a ceiling of 10 fibers, which cannot be exceeded at any time.

Example:

If the assumption were made that the average installer spent one hour a day stripping wearlayer from the felt, and that the test results reported above were representative, their eight hour time weighted average would be:

$$\frac{.77 + .94 \div 2 \times 1 \text{ Hr.}}{8 \text{ Hr.}} = \text{Say } .10$$

The second installation tested required removal of a previously installed floor (Spring) which was cemented only on the outside edge and under adjoining pieces (seams). Two personnel samples were taken while employees were engaged in sanding residual felt left, stuck under seams and around the parameter. It should be noted that the majority of the felt on the parameter comes off with the floor. This floor required much less sanding than normal, according to installers. Total test time was approximately 14 minutes and results were 56.1 fibers/cc and 36.7 fibers/cc respectively. A third test was taken after all sanding had been completed. This test lasted approximately 14

minutes and indicated a fiber level of 12.9 fibers/cc (a determination was not made on how long fiber levels remained high).

All three tests were in excess of the permissible ceiling concentrations and the question of compliance with the 8 hour time weighted becomes moot.

The installers, A. Albertson and H. Toal, who performed the above installations were exposed in excess of the federal standards. No further testing will be undertaken without the use of respirators.