bcc: T. F. Egan
J. R. McLeod
B. R. Williams
J. L. Wright
H. A. Brown
H. C. Duecker
O. M. Favorito

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WRG 0010E0

PLAINTIFF'S EXHIBIT WRG-697

January 5, 1973

Dr. John Olin, Deputy Director
Division of Air Quality
State of Minnesota Pollution Control Agency
717 Delaware Street, S.E.
Minneapolis, Minnesota 55440

Dear John:

Thank you for the meeting we had with you and Al Mitchell on Wednesday.

This letter is to summarize our discussion. Our comments should be considered as a supplement to the statement prepared by our Mr. Thomas F. Egan for delivery at the December 6, 1972 public hearing in Minneapolis.

With the understanding that one of the objectives of APC-17 "Emission Standards For Asbestos" is to minimize exposure to asbestos, we agree that this objective is important and necessary. Our most recent report indicates that Subsections (b)(2)(aa) and (b)(2)(bb) of APC-17 are similar if not indeed identical to the proposed (and forthcoming) Environmental Protection Agency's "National Emission Standards for Asbestos". Accordingly, for reasons of administrative consistency and uniformity of enforcement, we support the inclusion of the provision for acceptance of products containing one percent, or less, asbestos. In addition, the 1% limit proposed as we understand is based on extensive study by EPA with the conclusion that with this limit, no asbestos health hazard will exist.

The absolute prohibition of the spray application of any product containing asbestos would be arbitrarily severe and inconsistent with other sections of the proposed standard because it would fail to differentiate between wet spraying and dry spraying and would:

(a) Prohibit a material simply because it contained asbestos and was used for one of the three prohibited applications - acoustical insulating, thermal insulating, and fireproofing - and allow materials whose composition may contain large amounts of asbestos for uses other than the prohibited three, and

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(b) allow materials and manufacturing processes that resulted in airborne asbestos emissions far greater than the airborne asbestos emissions that would result from the material being prohibited.

Moreover, by specifying "asbestos" instead of "commercial asbestos", it could be interpreted that the spraying of materials containing stray amounts or minute traces of asbestos (not intentionally added) would be prohibited.

If, however, more protection is deemed essential in your regulations, we would suggest that you:

(a) Regulate the spraying of all asbestos-containing materials, regardless of their end-use, and thereby protect against asbestos emissions from all types of products, and

(b) Eliminate the need to have an arbitrary ban on materials used in three types of applications and the inconsistency that would permit the use of these same products (or minor modifications of them) for other spray-applied applications.

We would propose a new definition be added to Section (a) as follows: "'Wet spraying' means a process of spray applying any product which contains asbestos on any portion of a building or structure in slurry form, wherein the asbestos is blended with a liquid binder prior to the introduction of the slurry into the spraying mechanism, and the ratio of asbestos to binder solids in the slurry is less than ___ by weight." In addition, subsections (b)(2)(aa) and (b)(2)(bb) would be revised to read that the "spraying of any product which contains asbestos, other than by wet spraying, on any portion of a building or structure, is prohibited." This would accomplish the prohibition of objectionable "dry" spraying techniques, which have historically resulted in high air pollution of the mat[illegible] being sprayed. It would insure that all asbestos-containing materials [illegible] are sprayed have a minimum binder content to prevent asbestos emissions [illegible] during the spraying as well as after the material is in place, and would overcome the above cited inconsistencies.

We have the following additional comments to offer regarding the draft:

(1) The failure to differentiate between dry-type spray applications and wet spraying is also, in our opinion, the reason for Section (b)(3) of the draft. This section should be revised to be made inapplicable to the spraying of any product which is wet sprayed, by inserting the

phrase: "other than by wet spraying" after the first two words of Section (b)(3).

(2) The necessity of sealing or overspraying, while not included in the draft, was suggested at the December 6 meeting. Should this requirement be considered as necessary, we would suggest a performance type specification that would differentiate between the light, fluffy 6 to 11 pcf dry-fiber in-place products and the more dense wet sprayed materials. Enclosed as Attachment #1 is a report from Valentine, Fisher & Tomlinson on the "Evaluation for Presence of Asbestos Particles in an Office Building Ventilation System". Note that the MONOKOTE fireproofing tested was MK3 (i.e., formulated with approximately 12% commercial asbestos).

With respect to the data requested at our Wednesday meeting:

(3) As Attachment #2, I am enclosing a report, dated February 22, 1971, from Arthur D. Little, Inc. The products analyzed and identified as "East and West samples of New MONOKOTE" are MK4 formulated with vermiculite sources from Libby, Montana (west) and Kearney, South Carolina (east). The important aspects are that:

(a) "there was no evidence for the presence of any form of asbestos"

(b) "the fines, representing particle sizes of less than 44 microns and including the respirable dust fraction (0.1 - 10 microns), corresponded to approximately 4% of the original sample." Subsequent screening done by our own laboratory indicated that fines less than 25 microns represented approximately 1% of the original sample. (Attachment #3)

(4) The respirable mass fraction of airborne particulates from [redacted] spraying of MK4 will follow. Such data, although [redacted]loped for MK3, is not presently available for MK4. [redacted]ase note that the reports of the concentrations of [redacted]borne asbestos included with Tom Egan's statement are the findings with MK3 (12% asbestos--wet sprayed).

With the exception of the data referred to in item 4 above, the attached constitutes the information which we agreed to furnish following our Wednesday meeting. If you have any question or if we have any other data which you believe to be useful, please do not hesitate to telephone me.

Sincerely,

Thomas P. Feit

Thomas P. Feit - Manager
Fire Protection Products

TPF/jaj

Attachment

7003403

February 11, 1977

Zonolite Construction Products Division
W.R. Grace & Company
10[illegible] C Street N.W.
Auburn, Washington 98002

Attention: Mr. William V. Culver, District Manager

Dear Mr. Culver:

Re: Valentine, Fisher & Tomlinson's Findings on "Evaluation for Presence of Asbestos Particles in an Office Building Ventilation System"

Per your request, the subject report is enclosed for your information and [illegible] W.R. Grace's support of this evaluation project. Please note that although our evaluation is conclusive, we would like to conduct additional evaluations on other fire proofed buildings for comparison and [illegible].

The building return air plenum was sprayed with "Zonolite". No treatment was placed over the "Zonolite" to prevent against entrainment of asbestos-containing particles in the return air plenum. As the report states, no asbestos particles were found in the return or supply ducts of the building.

If we can be of further assistance, please let me know.

Yours truly,

VALENTINE, FISHER & TOMLINSON

[illegible]

[illegible], Manager
[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

PURPOSE

The purpose of this report is to determine if asbestos particles were present in the return and supply air ducts of an occupied office building. The building had the return air plenum sprayed with asbestos [illegible] the structural steel members which are [illegible] by brand name was "[illegible]".

SUMMARY

[illegible] asbestos particles were found on the [illegible] optical microscope and [illegible]. The [illegible] that was washed had been [illegible] asbestos particles were present during construction but the building has since been purged with fresh air to adequately [illegible] the construction [illegible].

[illegible] Division of [illegible] Grace Co.

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Discussion

The existing ventilation and fire protection systems [illegible] fire protection, noise suppression [illegible] (See Figure 1).

The return air duct was sampled on April 11, 1979 to determine [illegible] (i.e. weight/area). The sampling train used consisted of a 1/4 inch diameter nozzle, air flow probe, 2" diameter filter with Pall Gelman Science 2000% fiberglass filter paper, vacuum pump, dry gas meter, and calibrated orifice rate meter. 88.20 cubic feet of gas at 68°F, 29.92" Hg. dry was sampled with no measurable weight [illegible] on the filter. The filter [illegible] and based on the return air, the supply duct [illegible] would reduce the return air loading.

A portion of the supply air was sampled, the mesh evaporated, and the residue examined under a Polarizing Microscope. No asbestos material was found in the air. The filter has been in use at least 6 months prior to the test.

The prefilter was a 2" thick glass fiber media with a progressive density [illegible] on the air exit side. The roll was 60 mil. thick with a minimum of 12,000 micro fibers and 2bout 6 microns in diameter. The manufacturer rated efficiency was 90-95% based on ASHRAE Dust Spot [illegible].

The "Hollingsworth" filter (nominal 0.3 microns) was also used [illegible] of the air supply air [illegible] further [illegible] [illegible] [illegible]

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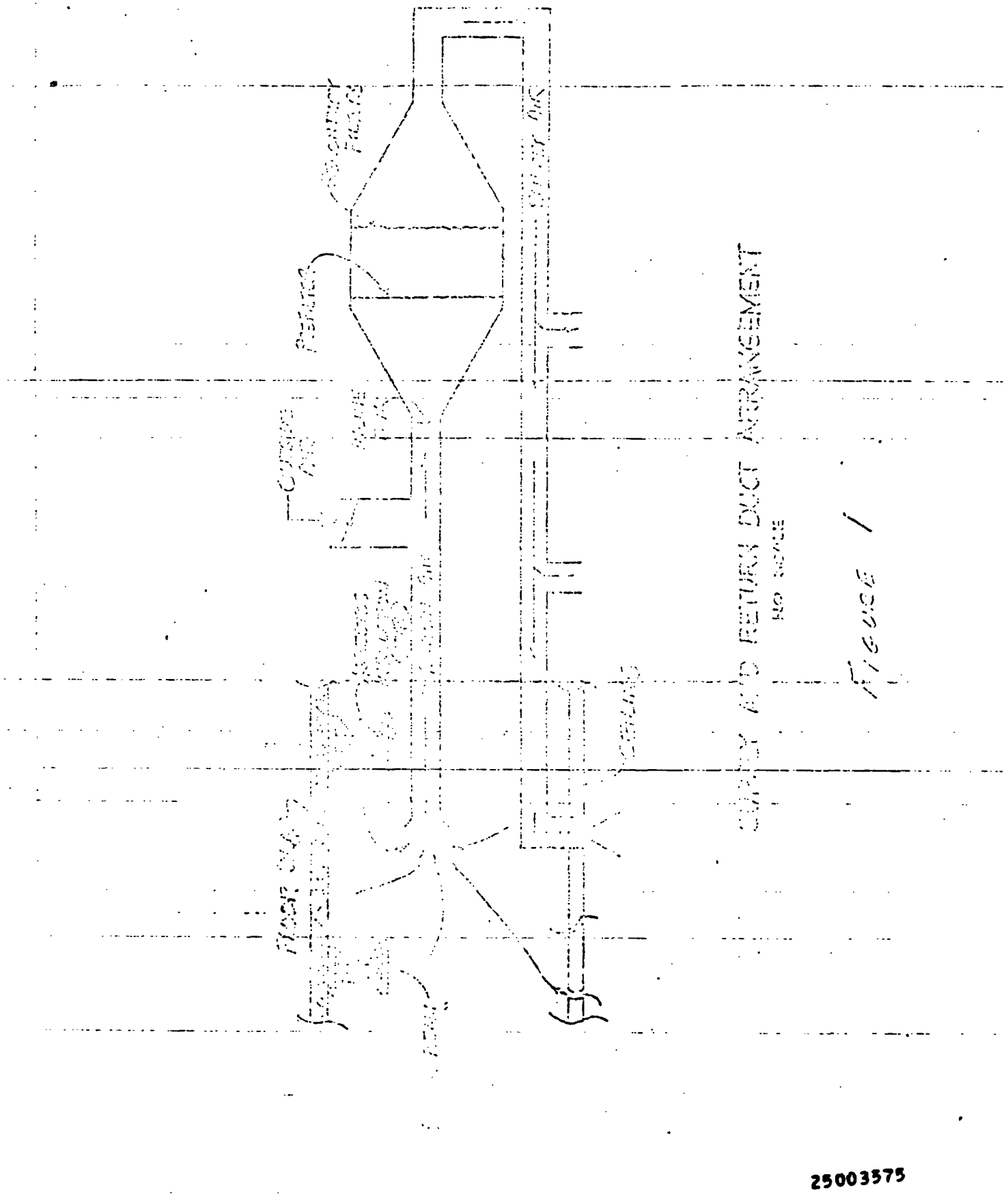

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SUPPLY AIR DUCT SIZING CHART
FIGURE 2

Arthur D. Little, Inc. ACORN PARK · CAMBRIDGE, MASSACHUSETTS 02140 · (617) 864-5770

February 22, 1971

Mr. Thomas F. Egan
Manager, Fireproof Products
W. R. Grace & Co.
Cambridge, Massachusetts 02140

Dear Mr. Egan:

East and West samples of New Monokote were analyzed by X-ray diffraction and petrographic optical-microscopy-methods to identify the component species. The samples were initially passed through 200- and 325-mesh screens; the fines, representing particle sizes of less than 44μm and including the respirable dust fraction (0.1 - 10μm), corresponded to approximately 4% of the original sample.

X-ray diffraction analysis of the fines yielded the following phase identifications for both East and West samples: $CaSO_4 \cdot 1/2\ H_2O$ (plaster of Paris), vermiculate, and quartz. There was no evidence for the presence of any form of asbestos.

Optical microscopy observations of the crystal morphology, index of refraction and birefringence properties of East and West fines yielded the following approximate assay:

Chemical Species	Percent of Sample
"Vermiculate"	30-40
$CaSO_4 \cdot 1/2\ H_2O$	40-50
Cellulose	less than 10
Quartz	less than 5
Opaque (unidentified)	less than 5

The cellulose was identified by appropriate staining techniques. No asbestos fibers were observed in any of the samples examined.

The coarser particle size fractions, 44 to 74μm and greater than 74μm, were also examined in the optical microscope. As the size (thickness) of most particles was sufficiently large to render them opaque, accurate

analyses were precluded. To a first approximation, the phase constituents appeared to be the same and were present in the same amounts as reported for the fines.

Very truly yours,

Edward T. Peters

mfc

TO: T. P. Feit

DATE: January 5, 1971

FROM: A. M. Rosenberg

SUBJECT:

CC: I. Adler
H. C. Duecker

We have determined the amount of MONO-KOTE® MK-4 passing a 25 micron sieve. We use a BMC micron mesh sieve manufactured by the Buckbee Mears Company, St. Paul, Minnesota.

It is a nominal 25-micron mesh sieve but in actuality it may vary from 23 to 27 microns. The weight of the sample used was 50.00 grams. The amount found in the pan after 30 minutes of shaking was .049 grams. From this we have deduced that the amount of material passing a 25 micron screen in MONO-KOTE MK-4 is less than 1%.

Arnold Rosenberg

Arnold Rosenberg

AMR:mlr