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FIBERGLAS CORPORATION

GENERAL OFFICES

TOLEDO, OHIO

April 17, 1947

Mr. J. A. S. Keay
Purchasing Department
Canadian and General Finance, Ltd.
25 King St. West
Toronto 1, Canada

Your Ref. 72753/13-2-7
13-4-18-Fiberglass

Dear Sir:

Your letter of March 14th, addressed to the attention of Mr. Bendixsen of Owens-Illinois Glass Company, has been referred to me. We appreciate your writing us about the handling difficulties being encountered at Rio de Janeiro Tramway, Light and Power Co., Ltd.

Years ago - long before Owens-Corning Fiberglass was formed, investigations were carried out to determine whether exposure to glass in fiber form involved any hazard to the lungs and respiratory tract. It is well known, of course, that exposure to sand particles of certain sizes in certain concentrations does involve the hazard of contracting silicosis. Because one of the principal ingredients of the glass base of which glass fibers are made is sand it is natural for some persons to conclude that exposure to glass fibers might entail a silicosis hazard. It was to explore this possibility that Dr. Leroy U. Gardner, Director of the Saranac Laboratory, Saranac Lake, New York engaged in a series of experiments lasting over a seven year period. Dr. Gardner reported in 1941, after ingestion, injection and inhalation tests:

"Exposure to dust of glass wool, a material to insulate buildings, involves no hazard to the lungs because this fibrous material is not inhalable."

Dr. Gardner might just as well have said:

"Exposure to continuous filament glass fibers, of the type used by the Rio de Janeiro Tramway, Light and Power Co., Ltd., involves no hazard to the lungs because this fibrous material is not inhalable."

No Free silica is present in glass. After fusion of the batch at high temperatures (on the order of 2400°F) the ingredients of the batch undergo a chemical transformation which produces a silicate. Glass is sometimes described as a super-cooled liquid made of amorphous silicates. Glass fibers therefore - unlike asbestos fibers, exposure to which does involve the danger of contracting the form of lung pathology known as asbestosis, are non-crystallizing in structure and

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contain no water of hydration. Dr. Gardner explained to us that they are unable, because of their physical structure, to penetrate the upper respiratory tract or to get into the lungs. His findings have been accepted as conclusive by the U. S. Navy's Bureau of Medicine and Surgery, by the U. S. Public Health Service, by industrial hygienists generally and by insurance underwriters. A reprint of the page from his 1941 report containing the quotations cited above is included among the items in the attached envelope.

We hope the foregoing information will be helpful to you in allaying concern over the possibility of contracting silicosis or any other form of lung pathology as a result of exposure to glass fibers.

Says W. G. Hazard of the U. S. Public Health Service:

"Breathing glass fiber dust is not harmful to the lungs..... Irritation of the skin is temporary, superficial, and not progressive.....No special personal protective devices need be worn, except that in overhead application of glass fiber, goggles are often desirable to protect against falling bodies.....Masks or respirators are not needed in the handling of Fiberglass Materials."

As to the possibility of skin irritation, investigations have been carried out by several eminent dermatologists. One of these is Dr. Marion B. Sulzberger who found in a clinical investigation that no allergy or sensitization results from the exposure to glass fibers even though a superficial mechanical irritation of the skin may result from handling glass fibers in the wool form. You are not concerned, however, with this nuisance characteristic which is peculiar only to Fiberglass insulating wool because these people are handling glass in textile form. We know, both on the basis of experience in our own plants and on the basis of experience of numerous fabricating plants throughout the country, that the textile fibers (yarns, tapes, braided sleeveings, cloths) can be handled without undue difficulty. Glass is an inert, inorganic, non-sensitizing, non-allergenic substance - as indicated by many medical applications to which the Textile products have been put. Some of these are described in reprints from medical literature which are among the items in the attached envelope. The average fiber diameter of the continuous filament in the products that your people are handling is 0.00022 inches, and the filament is controlled by manufacturing specifications within a range of .00021 to .00025 inches. Within this range the filament lacks sufficient structural strength to penetrate the skin - except, perhaps, the skin of persons abnormally sensitive to abrasive substances. We find, however, that most individuals become accustomed to handling these materials without difficulty if they follow good rules of hygiene. It is important that they use a mild soap, well lathered in warm water, to wash up before meals and at the end of the shift. Other handling recommendations, applying principally to Fiberglass wool products, applicable also to the handling of Fiberglass

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textile products, are contained in the reprint of remarks made by Mr. Edward C. Ames of our company some two years ago before the Marine Section of the National Safety Congress.

In addition we have included some further items that may be helpful to you. If you wish additional copies of any of them we will be glad to supply them to you and we hope that you will keep us informed of the progress of events.

Yours very truly,

OWENS-CORNING FIBERGLAS CORPORATION

K. O. Grove
Assistant to Vice-President for Sales

KOG/jib

Att: Gardner Report
Sulzberger Report
BUMED - BUSHIPS Memo
Anderson-Erickson Reprints
Hirshfeld Reprint
Buck Photostat
McMahon-Darby Reprint
Scholz-Mountjoy Reprint
Ames Reprint
W. G. Hazard Reprint
Health Aspects Brochure
Letter to Job Training Supervisor
Letter to Plant Physician
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