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March 25, 1969

Mr. W. J. Hahn
United Fire and Casualty Co.
4930 W. 77th St.
Minneapolis, Minn. 55435

Dear Mr. Hahn:

Your letter of March 18, 1969 to John Vyverberg
of our New York office has been referred to me for reply.

Enclosed are several reports of medical research studies
and investigations that were conducted for the purpose of
determining the biological effects of exposure to fibrous
glass particles.

Fibrous glass has not demonstrated, during the past
thirty years, that it has properties that cause lung disease.
It does not cause asbestosis and, to our knowledge, no case of
silicosis has resulted from exposure to air-borne fibrous glass.
This last statement frequently surprises those who are unfamiliar
with the physical structure and chemical makeup of glass.

Glass is a silicate and does not contain free silica. Silica
does cause silicosis. Glass is amorphous, whereas silica and
asbestos are crystalline in structure. The crystalline materials
have been shown to be more pathogenic than the amorphous
substances. Most of the fragmented and air-borne glass particles
from the glass insulations are too large to enter the lungs.
If the particles cannot enter the lungs, they cannot cause lung
disease. On the other hand, should the glass particles be milled or
impinged to form very small particles capable of being inspired by
laboratory animals (see "Glass Dust: A Study of Its Biologic
Effects", page 34/22, Summary and Conclusions), no serious lung or
bronchial disease was demonstrated.

*Det. Dr. Lorne (Wright)
Glass Dust (Cress)
L.H.F.
J.E. Lord*

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Mr. W. J. Hahn

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Therefore, exposure to fibrous glass can be dismissed as being a contributing factor in this case.

Did Mr. Herkal actually handle or install Kaylo or other asbestos containing products during the period from May, 1960 to August, 1961? If so, how much of his time was spent with these products and was he subjected to high concentrations of dust? Objective symptoms of asbestosis are seldom demonstrable in less than 12 to 15 years of exposure and may require as much as 30 to 35 years.

Kaylo is anhydrous calcium silicate containing approximately 15% asbestos. The asbestos is contained in the calcium silicate *matrix* material and very little of the asbestos fiber will be released except when the product is sawed into desired shapes or stripped from pipes, boilers, etc.

A typical composition is: quicklime, tripoli, diatomite, clay, calcium chloride and asbestos. These materials are mixed with water and then indurated in an autoclave at 400°F and 250 p.s.i. for three hours.

If there are additional questions, please call or write.

Sincerely,

F. H. Edwards
Director of Health & Hygiene

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