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ASBESTOS

Asbestos exposures and the possible health effects on workers and the public have been the subject of much publicity and have received a great deal of attention in both the popular and scientific press. Therefore, it seems appropriate to review asbestos, asbestos exposures and the possible health effects so that Loss Prevention personnel will have an appreciation of the facts as they are known and will neither ignore or over-react to situations where asbestos may be present.

Asbestos is the general name given to a group of silicate minerals that have crystalized in such a way that they are long narrow fibers. These minerals can often be separated into bundles of fibers (seemingly individual fibers) and in some grades can be woven into textile fabrics or laid to form a paper like product.

Asbestos is not a single mineral and the classification and identification of the minerals within this group is complex. Some of the asbestos minerals are chrysotile, crocidolite, amosite, anthophyllite asbestos and tremolite asbestos.

We can expect that where policyholders are using one of the asbestos minerals as a raw material in a relatively pure form, they will be aware of what they are dealing with and mineral identification will not be a problem for the loss prevention representative.

Asbestos has also been used as a component of a number of products including insulation and fire proofing materials, brake linings, floor tiles, asbestos shingles, etc. Materials such as insulation and fire proofing may or may not contain asbestos and identification may be a problem. The health hazards associated with asbestos have led to its removal from current production of many of these products these products but it is still used in other applications.

Health Hazards from Asbestos

Asbestosis

There are two types of health effects which may result from excessive exposure to asbestos dust. The first of these is a disabling lung disease called asbestosis. In many respects asbestosis is similar to other pneumoconioses, such as silicosis which may result from breathing silica dust. Scarring or thickening of lung tissue occurs which may eventually result in a decrease in lung capacity.

Asbestosis is the result of many years (usually over 15) of exposure to high concentrations of asbestos dust. This condition has been known to health professionals for at least 50 years. Because of the relatively high dust levels and long term exposures required to produce disability, new cases of asbestosis are only expected in industrial operations which are not properly controlled.

Because of the publicity given to asbestos by the OSHA standard and by the popular press since its recognition as a cancer producing material, it seems probable that industrial operations which comply with OSHA standards are unlikely to produce new cases of asbestosis.

Cancer

The second potential effect on health from asbestos exposure is cancer and this hazard has been recognized more recently. Mesothelioma is a rare cancer of the lining of the chest or abdominal cavity. It occurs more frequently among those with occupational asbestos exposure than among the general population. It may actually be limited to persons with a history of asbestos exposure.

The latent period for mesothelioma may be as much as 30 to 45 years which complicates any efforts to determine how much asbestos dust exposure is needed to cause it. Further, the number of cases being found, even today, is rather small and diagnosis and recognition are still considered to be problems among medical experts.

Lung Cancer is also associated with asbestos exposure and, while cases are few, they are almost always associated with other risk factors such as smoking cigarettes.

As with mesothelioma, the fiber concentration and length of exposure required to produce lung cancer is unknown at this time. Likewise, it is not possible to assess whether there is a level of exposure to asbestos below which an increased risk of cancer would not occur.

With such materials, where the safe "threshold" exposure is not known, it is reasonably prudent to keep airborne concentrations to the lowest practical level. Some persons believe this to mean the lowest detectable level.

It is such a level that health and safety professionals continuously strive to achieve in industry.

General Considerations

In order to properly react in our policyholder service or our day to day activities, there are some factors which should be kept in mind.

1. The present OSHA standard for airborne asbestos is 2 fibers per cubic centimeter of air. Achievement of this level during asbestos processing, application, or demolition calls for excellent controls in the form of enclosure, ventilation, isolation, wet methods, etc.

The standard also calls for exposure monitoring and medical surveillance for exposed workers.

2. The Standard is designed to protect workers who may be exposed for 8 hours per day, 40 hours per week for a working lifetime. In evaluating any occupational exposure, short term casual exposures must be figured in with periods of no exposure in order to reach an average.
3. Asbestos is a respiratory hazard. It is harmful only when inhaled which means it must become airborne. The mere presence of asbestos in a public or industrial building is not enough to constitute a hazardous condition. Some of the things which might cause asbestos to get into the air are:
 - a. Industrial operations such as sawing, drilling, grinding or handling the bulk asbestos.
 - b. Physical damage to asbestos insulation by maintenance workers, utility service people or school children.
 - c. Demolition or remodeling.

Asbestos insulation which is protected by its location or effectively encapsulated with a sealer is not harmful and does not necessarily need to be removed. The removal operations may introduce a total risk factor greater than would exist if the material were left undisturbed.

4. Where asbestos is used as insulation in buildings, extensive air sampling has rarely, if ever, indicated concentrations which exceed or even approach the OSHA standard. This is indicated not only by our own sampling but by discussions with regulatory agencies who have been involved in sampling programs.
5. There is no standard for permissible dustiness where the general public is involved (as opposed to occupational exposure). Because the public will include children, physically ill people and the elderly, it is generally accepted that there is a moral obligation to ensure a greater degree of protection than that for industrial workers.

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However, samples in asbestos insulated buildings have not shown concentrations above background unless some activity is underway which disturbs the insulation or unless the insulation has been damaged and is thus subject to becoming airborne.

Whenever you find asbestos in your service activities you should discuss the situation with your industrial hygienist to determine whether the operations are adequately controlled and further activity is appropriate.

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