

TECHNICAL

day or is the operation short term, or perhaps a 24 hour sample might be appropriate?

3. What is the purpose of the air monitoring? Is it to determine an eight-hour time weighted average of asbestos exposure, a short term (15 minute) exposure or to determine

background levels of asbestos in air?

4. If background levels of asbestos are sought, to what lower level of concentration is it desired to accurately measure the asbestos in air?

We will be talking in more detail about the types of filter, how air is drawn through them and how the

dust is analyzed. The importance of the answers to these questions will then become evident.

The Filter . . .

There are two types of filters being used today for asbestos monitoring. One is a 37 millimeter diameter (mm) filter in a three piece plastic cassette and the other is a 25 mm filter in a three piece cassette. A new NIOSH analytical procedure (method 7400) and the new OSHA standard for asbestos regulation require the use of the 25 mm system. The majority of sampling presently uses the 25 mm system and the new NIOSH method 7400.

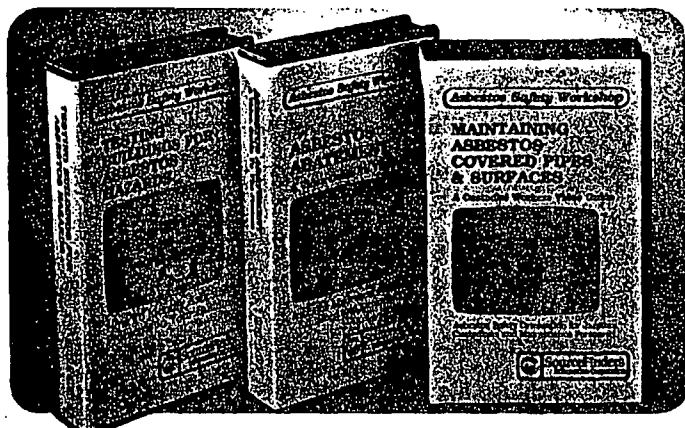
Both systems contain a cellulose filter and allow "open faced" sampling. In open faced sampling, the entire filter face is exposed so that air can be drawn uniformly through the entire surface area. Dust is then collected uniformly over the entire face. The cassette is designed with a ring center section. OSHA recommends this center section be "anti-static" treated, such as coated with graphite. Most manufacturers of the 25 mm cassette provide such a center section cowl. During sampling, the top section of the filter is removed and the center section cowl clamps the filter in place. After sampling, the top section is again attached to protect the filter.

The Pump . . .

Personal monitoring (measuring the asbestos in air concentration of a person while he or she works), is done using a battery operated air pump attached to the person. Air is drawn through a filter cassette system attached to the "breathing zone" of the person, usually attached to the collar. The pump is often clipped to a belt and connected to the cassette by a rubber hose.

Air pumps are manufactured by numerous companies (such as DuPont, MSA and SKC) and are similar in design. A battery pack, charged overnight, will run the pump for eight to ten hours. Air is drawn at the rate of 1 to 4 liters per minute (l/m). The air flow is maintained at a pre-set flow

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