

Appendix VI

Selection guide to approved respiratory protective equipment (RPE) for protection against asbestos dust

1. This selection guide serves as a reference for selecting the appropriate RPE for use in various jobs or in workplaces with known likely maximum concentration of asbestos dust. It is the responsibility of the proprietor to verify the likely maximum dust level in actual situations prior to selection from the approved list (refer to Section 4). Before using this selection guide, it is important to ensure that the guidance regarding control measures, safe practices, selection and proper use and maintenance of RPE set out in Sections 7 and 11 of the COP has been followed. To account for any unforeseeable circumstances, it is a good practice to select RPE which can offer better protection in order to prevent excessive exposure to asbestos dust.

2. Efficiency is a key factor to be considered in selecting the appropriate RPE for use. The efficiency of various types of RPE, in terms of the assigned protection factor, is illustrated in the following table. The maximum use concentration (MUC) represents the maximum fibre concentration in the air outside the respirator such that the air inside the respirator can be maintained to a level below 0.1 fibre/ml under optimal experimental conditions.

Types of Respiratory Protective Equipment	Assigned Protection Factor	MUC (fibres/ml)
Disposable, half-face particulate respirator	5	0.5
Half-face particulate filter (cartridge) respirator	10	1
Powered air-purifying, loose-fitting helmet or hood respirator	25	2.5
Supplied-air, continuous-flow, loose-fitting helmet or hood respirator	25	2.5
Full-face particulate filter (cartridge) respirator	50	5
Powered air-purifying, full-face particulate respirator	100	10
Supplied-air, positive pressure demand, full-face respirator	>1000	>100
Supplied-air, continuous flow, full suit	>1000	>100

- Note:
1. All supplied-air respirator should be equipped with escape respirator with HEPA filter.
 2. Any respirator considered to have efficiency superior to that listed in the table needs to be supported by field evaluation data.

3. Proper fit of the RPE and face-seal for individual workman is another factor to be considered. Spectacles, beards, moustaches, sideburns or even a visible growth of stubble will affect the face-seal, and workmen with these facial features will not be provided with adequate protection from asbestos when the RPE worn relies on a good face-seal. A solution to the problem of facial features is the use of equipment that does not rely on good face-seal for adequate protection, e.g. positive pressure powered RPE with blouse. There are two methods for testing the fitness of the RPE to individual workman:

- (a) Qualitative fit-test involves the introduction of a harmless odorous or irritating substance into the breathing zone around the RPE being worn. If no odor or irritation is detected by the wearer, a proper fit is indicated.
- (b) Quantitative fit-test offers more accurate, detailed information on fitness of RPE. It involves the introduction of a harmless aerosol to the wearer who is in a test chamber. While the

wearer performs exercise that could induce facepiece leakage, the air inside and outside the facepiece is then measured for the presence of the harmless aerosol to determine any leakage into the RPE.

4. The following tables are selection guide to approved RPE indicating the likely dust level in the workplace of certain typical jobs involving asbestos and the corresponding types of RPE required. The likely dust level represent concentration of airborne asbestos when the process is carefully carried out with implementation of good control measures and safe practices. Bad handling practices may result in higher value. These values are for reference only. It is the duty of a proprietor to verify the dust level in the actual situation by appropriate means such as air monitoring. The minimum types of RPE represent the types of respirator of minimum efficiency that are sufficient to provide protection of workman to asbestos dust. It requires that the respirators are properly used and maintained according to Section 11. Respirators assigned for high dust levels can be used for lower dust levels.

Selection guide to RPE for jobs involving asbestos materials

Job	Likely Dust Level (fibres/ml)	Minimum Types of RPE
simple short duration sampling; enclosure erection; clearance sampling	0 to 2	any approved respirator, including disposable or half-face cartridge respirators
some sampling operations; enclosure erection under adverse conditions	0 to 4	any approved respirator other than disposable respirator and half-face cartridge respirator
extensive sampling operations on friable lagging; some sealing operations; enclosure erection under adverse conditions and on friable lagging	0 to 20	any approved full-face respirator equipped with high efficiency filters
Removal work in progress		
certain forms of wet stripping in which wetting is prolonged and effective; certain small scale dry stripping operations	0 to 180	any approved full-face powered air-purifying or supplied-air respirator
ineffectively wet stripping (light wetting with inadequate time for saturation); dry stripping	>180	approved full-face, positive pressure demand respirator; or supplied-air, continuous flow, full suit

Selection guide to RPE for jobs involving asbestos-cement products

Job	Likely Dust Level (fibres/ml)	Minimum Types of RPE
stacking and removal of asbestos-cement sheeting; hand sawing of asbestos-cement products; hand drilling of asbestos-cement products	0 to 1	any approved respirator other than disposable respirator
machine* cutting of asbestos-cement products; machine* sawing of asbestos-cement products; machine* drilling of asbestos-cement products	1 to 20	any approved respirator, other than disposable respirator and half-face cartridge respirator

Note: * Machining of asbestos-cement products with powered tools should be avoided as far as reasonably practicable.