

NOTE ON EXHAUST VENTILATION IN ASBESTOS WORKS.

Some exhaust plants are carefully designed and reasonably efficient, but some are ill-designed and inefficient; others, again, do not effect removal of dust to a sufficient extent. The draught may not be applied as closely as possible to the dust-producing points, or may be too weak. The emission of a visible dust cloud at a point where exhaust is applied is a clear indication of inadequacy.

Extensive alterations of existing plants may produce serious loss of efficiency. Exhaust provision for new machinery and processes should, therefore, generally speaking, be made independently. While advantages result from dealing with many dust-producing points, by a single exhaust plant, a number of self-contained plants, with independent fans and settling apparatus, is often more effective.

Exhaust ventilation applied on a large scale entails continuous removal of a considerable volume of air from the room. The supply of fresh air must be ample or the efficiency of the exhaust ventilation may be reduced. In winter, the workers are liable to bring about this result by closing windows and doors. Plenum ventilation capable of supplying the volume extracted, the incoming air being warmed, may therefore be desirable, where extensive exhaust plants are installed.

Efficiency of an exhaust ventilation plant may be greatly reduced by inefficient dust-settling methods. Each fan should discharge into an independent settler. Settlers adopted in asbestos works include cyclones, large chambers connected with cyclones, large chambers enclosed with sacking or other filtering material, and bag filters. Cyclones and chambers are usually well separated from workrooms. Bag filters are now being commonly adopted, for small installations. These filters and "balloons" are sometimes placed inside workrooms, a bad practice. They are best placed in freely ventilated rooms, effectively separated from workrooms.

Filtering fabrics for settling dust gradually become clogged; and as this effect increases the exhaust plant becomes more and more inefficient, the volume of air moved by the fan being reduced. Such settlers must therefore be kept clean. The usual practice is to beat the filtering material. Arrangements for shaking bags from outside, or automatic shaking apparatus are not provided. Asbestos dust does not appear to be so difficult to detach from suitable filtering material as some dusts, but much dust is produced in beating. Efficient shaking arrangements, avoiding this exposure, should be provided if this method of settling is retained. Some firms strongly support the view that it should be given up because of the difficulty of maintaining the exhaust plant at the highest efficiency. The matter merits careful consideration. In particular, the efficiency of the exhaust plant should be kept under constant observation by a responsible person.

Cyclones should be of adequate dimensions. The combination of chamber and cyclone is used extensively, the fan discharging the air into the chamber, to which the cyclone inlet is connected. The efficiency of this arrangement should remain practically constant.

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