

HEALTH RISK ASSESSMENT AND DEVELOPMENT OF INTERVENTION PROGRAMME IN COTTAGE INDUSTRIES WITH HIGH RISK OF SILICOSIS (Quartz Crushing Units)

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Quartz stones are mined and crushed to powder, which is used as a raw material in the manufacture of glass. There are about 28 crushing units at Godhra, Gujarat and out of which 20 units are in operation at present.

Objective of the study was to evaluate the efficacy of control devices in three quartz-crushing units. The exposure occurs mainly at three locations viz, crusher, screening /bagging and disintegrator. Dust control systems have been installed in about 15 factories except crusher, which is usually outside the factory shade and requires separate control system.

Total and respirable dust samples were collected using personal samplers at a flow rate of 2 Litres per minute. Dust samples were collected before and after the installation of dust control devices and efficacy was computed.

Mean reduction in total dust was 85.17 – 86% (Figure 1) whereas the reduction in respirable dust level was 69.91 – 75.34% (Figure 2) at different locations like disintegrator, screening/Bagging processes. The dust levels however are still higher than the permissible level of exposure for quartz, which are 0.3 mg/m^3 for total dust and 0.1 mg/m^3 for respirable dust. Therefore workers were advised to wear

disposable masks also. Management, owners of the quartz factories were advised to use this engineering measures compulsorily and maintain properly. The dust control system on crusher is under installation. Dust levels for crusher with exhaust will be evaluated later on.

Fig. 1: Total dust concentrations before and after the installation of engineering control

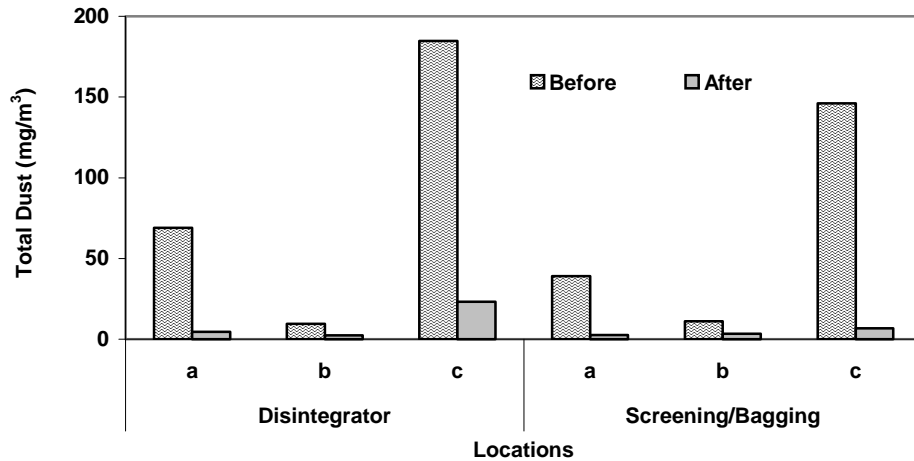


Fig. 2 : Respirable dust concentrations before and after the installation of engineering control

