

ISRP 1999 abstract

Presenter/author	Title	Abstract
Kimura, Kikuzi <i>The Institute for Science of Labor 2-8-14, Sugao Niyamae-ku, Kawasaki-shi Kawasaki 216- 8501 Japan</i>	Changes in the Performance of Dust Respirators in Actual Use	<p>The proper use of dust respirators is guaranteed by the provision of certified respirators and by securing their appropriate selection and usage by workers. The certification system of dust respirators in Japan requires an official approval of each type of dust respirators based on the standards established by the Ministry of Labor. The performance of dust respirators in actual use, however, depends on the changes in the efficiency of dust collection and in air flow resistance. The extent of these changes may vary in relation to the kinds of filters used, the characteristics and concentrations of dust and the individual conditions of workers. The performance of 22 dust respirators that had been used by workers engaged in stone processing and in quarries was examined. The majority of these respirators were found to have a performance level below the prescribed level. Then filter samples were collected from 40 workers, each worker presenting five samples each of which had been used for five consecutive days. Thus 200 samples were collected during the survey period of five weeks. The air flow resistance and dust collection efficiency were determined for them. The quantity of dust caught on the sample filters was further determined. A significant correlation was found between the increase in air flow resistance and the dust quantity. The individual levels of dust exposure were measured for some of the workers, and the relationship between the exposure levels and the performance changes of the dust respirators was discussed. These results indicated the need for proper maintenance of dust respirators and training of workers about their appropriate use.</p>