Respiratory effects in woodworkers exposed to wood and wood coatings dust: a regional evaluation of South East Asian countries

ABSTRACT

This study investigated the dust emission characteristics of different wood coatings and wood substrates and its effects on the lung function of woodworkers in the South East Asian region. The study revealed that harder coating films produced a greater proportion of finer dust particles compared to softer coatings films, although the latter resulted in higher dust concentrations. Medium density fibreboard produced higher proportion of respirable dust and amount of total dust compared to particleboard and solid wood during the sanding operations. The study also revealed that wood dust is more prone to cause irritant respiratory symptoms, while wood coatings dust is a potent cause of chronic respiratory diseases among woodworkers. Further, the application of a single dust exposure standard for all woodworking operations is not sufficient to mitigate the effects of dust from the various woodworking processes. It is apparent that woodworkersô safety and health was compromised in most South East Asian countries and the main factor that contributed to the prevailing safety climate was the lack of management involvement and the poor enforcement of occupational safety and health regulations within the industry. Inevitably, the prevailing poor safety climate within the industry encourages the employment of foreign contract workers, who appear to be less safety and health conscious compared to their local counterparts. In this context, a concerted effort must be undertaken within the woodworking industry in the region to ensure the safety and health of the workers, if the workersô productivity and welfare are to be improved.

Keyword: Wood coatings; Dust particles; Wood substrate; Respiratory function; Chronic diseases; Exposure level