

DUST EXPOSURE AMONGST PLASTER ROOM WORKERS – A COMPARATIVE STUDY

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Introduction: Occupational exposure to dust can cause hazardous health problems including breathing problems, gastrointestinal irritation, eye damage and skin irritation. Power tools are a recognised cause for producing occupational dust and the Health and Safety Executive (HSE) places limits on workplace dust exposure. Dust generated by the process of cast removal is a potential hazard to those in frequent contact, such as workers in the plaster room.

Aims: The purpose of this study was to compare the concentration of dust produced when using a traditional plaster saw compared to a novel plaster cutting shear (Casterpillar) tool.

Methods: Concentration (mg/m^3) of dust particles was measured using an IOM sampling head placed at the operator's head position whilst cutting standardised casts made from either fibreglass or plaster of Paris (POP) cast using both a traditional plaster saw and the Casterpillar device. Resultant exposure levels of inhalable and respirable dust, assuming 20 minutes of use per day, were calculated.

Results: Exposure levels of dust were lower with the use of the Casterpillar vs traditional plaster saw for both inhalable ($0.29 \text{ mg}/\text{m}^3$ vs $1.25 \text{ mg}/\text{m}^3$) and respirable ($0.01 \text{ mg}/\text{m}^3$ vs $0.06 \text{ mg}/\text{m}^3$) dust particles.

Conclusion: The Casterpillar produces lower levels of dust exposure compared to traditional plaster saws. Further study is required to determine the mean usage time of plaster saws by plaster room technicians.