

Assessment of Noise Exposure Among Workers at Manufacturing Industry in Shah Alam

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Structured Abstract

Background: Occupational noise exposure is a significant health risk in Malaysia's manufacturing industry particularly due to the high potential for Noise-Induced Hearing Loss (NIHL) among workers. According to the Department of Occupational Safety and Health (DOSH), more than 27% of occupational illnesses in Malaysia are caused by NIHL. Despite existing regulations, many manufacturing environments still exceed the recommended noise exposure limits. This study was conducted at a valve manufacturing facility in Shah Alam to assess the level of noise exposure among workers and evaluate high risk areas requiring intervention.

Methods: The study adopted a quantitative approach involving area monitoring and noise mapping techniques based on the Industry Code of Practice (ICOP) 2019. The primary tools used were the Larson Davis Sound Level Meter (SLM) and sound calibrator. Data was collected from three key operational zones: the Ball Grinding Area (Area X), Forklift Operation Area (Area Y) and Warehouse Area (Area Z). Noise levels were measured at 11 sampling points and colour coded noise maps were generated to visualize high, moderate and low risk areas. Measurements were categorized using three zones: white (≤ 82 dB(A)), yellow (> 82 dB(A) to ≤ 85 dB(A)) and red (> 85 dB(A)).

Results: The findings showed that 6 out of 11 sampling points recorded noise levels exceeding the Noise Exposure Limit (NEL) of 85 dB(A). The highest level recorded was 99 dB(A) from a portable nail gun in the warehouse area. The Ball Grinding Area also showed high noise exposure, with levels up to 98.4 dB(A). Noise mapping effectively highlighted red zones that require urgent control measures. Only one point was within the safe limit, while others fell into the yellow caution range.

Conclusion: The study confirms that workers at the valve manufacturing facility are exposed to potentially harmful noise levels. It recommends the implementation of engineering controls, scheduled maintenance, administrative strategies and the consistent use of Personal Hearing Protection (PHP). These findings support the need for stricter enforcement of the Occupational Safety and Health (Noise Exposure) Regulations 2019 to ensure safer working conditions.

Keywords: Occupational noise, Noise-Induced Hearing Loss, Manufacturing industry, Noise mapping, Malaysia

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