



**THE EFFECTS OF VIBRATED FOUNDATION ON MUSCLES  
ACTIVATION DURING PROLONGED STANDING JOBS**

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"I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree"

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## ABSTRACT

Many manufacturing require prolonged periods of standing. Many workers who perform jobs on the vibrated foundation may experience occupational injuries such as lower back pain, decrease of muscle performance and lead to whole-body fatigue. The study examined the effects of vibrated foundation on muscles activation during prolonged standing jobs. The purpose of this study was therefore to determine occupational injuries and discomfort experience by the workers when the performing jobs on the vibrated voundation. Second objective is to analyze muscles activity when they exposed to occupational risk factor. Third objective is to propose control measures to minimize muscle fatigue associated with vibration exposed. A high and long-term vibration may cause fatigue in the whole body workers especially tibialis anterior, erector spinae, and gastrocnemius. To complete this study, subjects/workers were asked to complete a questionnaire to evaluate the particular standing condition. Questionnaires were filled out every monday, wednesday, and friday when subjects rest in 10 minutes. The subjects/workers are measured by using Surface Electromyograpic. Five individuals stood for 8 hours while activation of tibialis anterior, erector spinae, and gastrocnemius were monitored over time. Statistical analysis using T-test, Analysis of Comparative and Regression were carried out to interpret the obtained data. Questionnaire results found all subjects have experienced muscle fatigue due to prolonged standing at vibrated foundation. From sEMG result found there is a positive correlation. To minimize the workers problems, fatigue floor mats is one technigue that can decrease muscle fatigue.

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