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KEY WORD : EMG / MUSCULAR FATIGUE / FEXIBLE MAT

SUTIDA U-TAPAN : A COMPARATIVE STUDY OF FLOOR MATS FOR
REDUCING MUSCULAR FATIGUE. THESIS ADVISOR : CHOMPOOSAK PULGET,
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It is quite common for workers who stand for prolonged periods to complain of discomfort at back and legs. The high risk of low back pain was associated with erector spinae fatigue. The comparative studies between two fexible mats and concrete floor for reducing leg and back fatigue were conducted to show the effectiveness of reducing fatigue. Ten healthy female workers, 18 to 22 years old, 45 to 55 kg. weight, and 155 to 165 cm. height were asked to become volunteers. The repeated measurement design was used in this study. Among the control factors in the study, the most important were menstruation, relaxing time, taking of some medicines and comfortable shoes. The study method consisted of EMG measurement at the medain frequency, psychophysical measurement and postural analysis.

The results of the study show that fexible mats could reduce muscular fatigue at erector spinae, but not gastrocnemius. Furthermore, the less compressible mat (0.5%) was found to show more effectiveness. The analysis of body movement at work revealed that when subjects started having fatigue, their body movements were also increased. The more compressible mat (2.9%) could activate more movements but there was no proof that the movements could reduce muscular fatigue. The majority of subjects appreciated this study performance and believed that the more compressible mat could relieve their feelings of fatigue at work. Both appreciation and belief are important factors in selection of mat type for continuous use. This study shows that the low back pain in prolonged standing work can be reduced by standing on a fexible mat.