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Construction Safety in China: Issues associated with working on wooden boards

Construction workplace safety is one of the most serious occupational safety problems in China. Working on wooden boards is reported to be highly associated with falling accidents of Chinese construction workers who are mostly from farms. Situations using wooden boards in China will be reviewed first in this presentation. Then introduced is our study focusing on whether and how wooden board parameters and installation and workers' experience influence Chinese construction workers' subjective perception with and body balancing on wooden boards. Totally 12 wooden board conditions were tested on a simulated scaffold with 20 inexperienced workers and 20 experienced workers. Several gait parameters and variability of body sway, represented by the trunk movement at the L5/S1 and C6/C7 locations, were collected by the motion tracking system. Step length and walking speed were both significantly affected by the interaction between experience and walking phase. The main effects of width and thickness were also significant on the walking speed. Trunk movement was affected by most factors. Both the experienced and novice workers adjusted but differently their gait when walking on various widths and thicknesses of wooden boards. The subjective ratings imply that no matter what experience a worker has, it is necessary to instruct them for careful work on wooden boards if he is a new worker at a workplace.

Biography

Zhizhong Li is a full professor at the Department of Industrial Engineering, Tsinghua University, Beijing, P. R. China. His current research areas include ergonomics issues in safety-critical systems, human error, 3D anthropometry, and occupational safety. Dr. Li has published more than 100 research papers, including more than 40 peer-reviewed international journal papers. Dr. Li served as Editorial Board Member for several international journals and academic member of National Standardization Technology Committee on Ergonomics (TC7), National Standardization Technology Committee on Personal Protective Equipments (TC112), Reliability Committee of Chinese Operations Research Society, and Committee member of Chinese Ergonomics Society.

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