

ABSTRACT

Material Handling Equipment (MHE) is a tool that functions to help lighten the workload on a job, however the stranding process at PT. Prysmian Cables Indonesia is still done manually, especially at the bobbin transfer stage. The process of moving a 310 kg bobbin is done repeatedly for a long time. So that workers have a high risk of developing Musculoskeletal Disorders (MSDs). This also creates a high physical workload and has the potential to cause disorders in body posture. Through the Nordic Body Map (NBM) and Rapid Entire Body Assessment (REBA), significant complaints were found in the neck, back, shoulders, and legs, with a REBA score reaching 11 which means it has a high risk. To overcome this problem, the Quality Function Deployment (QFD) method was used. The design process includes identifying needs, compiling ergonomic technical attributes, and 3D design modeling in the form of a "Bobin Roller" tool. Verification and validation of the design showed a decrease in the REBA score to 4, as well as an increase in work comfort. The final result is expected to improve work safety and productivity at PT. Prysmian Cables Indonesia.

Keywords: Material Handling Equipment, Musculoskeletal Disorders (MSDs), Quality Function Deployment (QFD), REBA, Bobin Roller