

ABSTRACT

PT. Indomarco Prismatama is one of the company's retail business, which has outlets scattered in the area of West Java with the primary activity such as material handling, warehousing and inventory control. The procurement activities of PT. Indomarco Prismatama when making procurement of supplies stock items into an outlet in one shipment per outlet requires 15-20 plastic container where the empty weight of the plastic container is 3,225 kg. The fill of plastic container consists of two categories of non-food and food which have a weight of between 10 kg to 40 kg. On the process of loading/unloading, plastic containers is done by three operators with a frequency of 3-4 lift/minute. The job can lead to musculoskeletal complaints to the operators because of the way and method of lifting the less ergonomic.

This research aims to improve the existing methods of work in order to become a design proposal by giving the ergonomic on the plastic containers which can help the operator in the process of loading/unloading plastic containers to reduce musculoskeletal complaints.

The approach used to improve working methods are Rapid Entire and Body Assessment and Lifting Equation recommended by NIOSH in the in the design of work facilities. As for the results of the design of the proposals that have been made are done testing with Finite Element method Analysis. Description of existing condition obtained are analyzed and evaluated so that the facility can produce a new ergonomic work so that the methods of work be better seen from the work of risk reduction by 60% for operators of 1 and 3, and 50% for the operator 2. While the results to limit the load on the operator's lifters 1,2, and 3 for condition 1 and 2 reduced by 15,23%, 15,75%, 15,68%, 15,51%, 14,23%, and 14,17%.

Keyword: manual material handling, rapid entire body assessment, lifting equation, finite element analysis