ABSTRACT

Retail business in Bandung city has grown so wide and can be found in almost all over the city. XYZ Ltd. is one of the companies that run business franchise supermarkets that distributes a variety of products from food to non-food. Inventory control XYZ retail outlets to be done by sending the items packed into plastic containers. Each plastic container has a weight ranging from 11 kg to 30 kg. Number of plastic containers being booked each outlet average to ≥ 20 pieces.

The new design of materials handling equipment which is plastic containers that have been designed in an earlier study that aims to design for minimizing musculoskeletal complaints are still not through simulation design feasibility. So in the present study the feasibility of the design will be simulated using the finite-element method analysis and motion study on software Solidworks 2012 Education Edition.

The new design proposal prior research has gone through a series of observations of the simulation in Solidworks 2012 software Education Edition. The obtained results are the design has been redesigned to eliminate the interference between the components that lead to the design could not be opened / closed properly. In addition, the number of components per product from an existing plastic container is reduced from 11 components to 5 components. Eliminate the proposed design wheels features because on the existing design has a malfunction while it was simulated by motion analysis study. Then the proposed design has also been successfully simulated the action of the force due to pressure acting on the pile of other plastic containers with finite-element analysis method in software Solidworks 2012 Education Edition.

***Keywords**: product design, FEA, finite-element analysis, motion study, Solidworks 2012 Education Edition, a plastic container.*