

## **ABSTRACT**

*Material handling Equipment (MHE) is a tool used to relieve the burden of a job. At PT. XYZ is especially in the receiving division there is the activity of loading and unloading cloth material that will be used in the manufacture of doll products. The material is a roll that has a weight of 20-25 kg and a length of 120-150 cm. There is a main operator in charge of the loading and unloading process, the operator is tasked to move and arrange the fabric material from the truck to the storage rack. The process is done by carrying the material on the shoulder and done repeatedly, thereby increasing the risk of the occurrence of Musculoskeletal Disorders (MSDs). Therefore, it is necessary to design a tool in the loading and unloading process so that the work can be done effectively and efficiently. This MHE design is done by Ergonomic Function Deployment (EFD) approach which implements the ergonomics aspect of EASNE (effective, safe, healthy, comfortable, efficient) to design an ergonomic tool. So, the research is obtained by MHE in the form of trolley that can help the process of loading and unloading materials. The Trolley is designed to have a capacity of 225 kg/baseplate so that it can move more than 10 rolls of material per period. The tool is also equipped with a hydraulic mechanism that enables the operator to assemble the material rolls up to the third-level shelf previously done manually using the ladder. From the results of the analysis and simulation using the software Jack 8.2 Then it can be noted that the proposed MHE is able to increase the productivity of the work and reduce the risk of occurrence of MSDS.*

**Key words:** *Material Handling Equipment, Ergonomic Function Deployment, EASNE, REBA.*