

ABSTRACT

PT.XYZ is a precarious producing industry, the process carried out by this industry is still applying manual processes. By 2020 in January - May there will be a precarious defect of passing inspections received by consumers, this impacts on the company's losses. Another problem is the precarious transfer process based on workload assessment using the Ovako Working Posture Analysis System (OWAS) method resulting in a category 4 value which means that the movement results in a clear and disturbing risk to the musculoskeletal system, so improvements are needed right now. From the problems that exist to solve it can be done the design of tools. Conveyor selection as a tool is based on process flow speed, product displacement can run automatically, and can be modified to the desired function. One method that can make the first step in designing a conveyor concept is the User Requirements Specification (URS) method. The URS method serves to perform an explanation of the concept functionality and the designed conveyor system. Using the URS method results in a design description process, electrical diagram, and control philosophy in the form of conveyor hardware specifications. The URS method is equipped with an ergonomic approach as well as belt and frame strength tests to form conveyors that can withstand capacity loads. conveyors designed for precarious displacement processes and precarious quality determination are fedder conveyors, top-looking inspection conveyors, flipping conveyors, and bottom-looking inspection conveyors. On conveyor usage, operator workloads are analyzed using the OWAS method and generate a category 1 value which means the conveyor usage is said to be safe. Based on the calculation of conveyor design design has a capacity of 16 kg. Then in the design of the conveyor used strength analysis on the belt with Nylon 66 material and frame with Aluminum 6061 material. The result of belt and frame strength assessment has stress maximum strength values of 48,7 Mpa and 0.1522 Mpa.

Keywords: Inspection, design, URS, conveyor