ABSTRACT

CV. XYZ is a business entity that runs the production of animal food raw materials , such as coffee skins, rice bran, onggok, and palm kernel. This research focuses on making a new model of bucket conveyor for the Feeding Hopper section. Feeding Hopper is one part that is connected with a bucket conveyor, whose function is to collect animal food ingredients that will be sent by the conveyor bucket machine to the hammer mill machine. The performance of the feeding hopper is using SolidWorks 2016 Simulation to gain a fundamental understanding of the hopper's design of capacity. The new design model was created with new dimension which is bigger than before. After the new design is made, a simulation that calculates stress on the hopper is carried out, using a screw connection and a welding connection. The purpose of this study is to design the proposed design by considering the volume capacity which is bigger than the previous machine. After that, find out how strong the feeding hopper is to withstand mass loads of more than 200 kg with the lowest stress test results with a value of 13.645 N/m^2. After that a prototyping will be made according to the working drawing that has been done.how to increase the hopper to withstand a load of more than 200 kg. An alternative screwed joint is used because the hopper is connected to the bucket conveyor using bolts and nuts. Whereas the welded joint is used because the hopper is made of 5 plates which are connected by welding techniques

Keywords : *Feeding Hopper, Bucket Conveyor, SolidWorks 2016 Simulation, Screwed Joint, Welded Joint*