

## **ABSTRACT**

*PT. XYZ was founded in 1982, with humble beginnings as a furniture subcontracting manufacturer. Now, with more than 20 years of experience in woodworking and furniture, PT. XYZ has been able to excel and grow into a well-established integrated wood processing and manufacturing company that provides quality and competitive prices to customers around the world. One of the products it produces is plywood. Based on 11.6mm plywood production data for the period February 2022 – April 2022, it was found that defective products exceeded the defect tolerance limit set by the company, which was 5%. From these data it can be seen that the production process is still not running well. The sanding process is a process stage in plywood production with a fairly high number of defects. Based on the CTQ process, there are process requirements that are not met at the sanding process stage, namely the use of sandpaper is not appropriate and exceeds the usage limit. Problem analysis was carried out using the 5 Why's and FMEA methods, and it was found that there was a problem that the operator did not know when to replace the sandpaper. Based on these problems, an alarm sensor is designed to minimize defects that occur in the sanding process. The method used to design the alarm sensor tool is the quality function deployment (QFD) method. The Quality Function Deployment (QFD) method is a product development method where the design specifications are made based on the wishes of the customer/user. The specifications of the alarm sensor tool based on the chosen alternative concept are Arduino Uno R3, pilot lamp, 95 db alarm, press button, 16 x 2 LCD, and Arduino proximity infrared sensor. This tool is expected to assist the operator in knowing when to replace the sandpaper on the sander machine, so as to minimize or eliminate sander and rough core defects in the sanding process of 11.6 mm plywood products.*

**Keyword: Plywood, Sanding, Proximity Sensor, QFD**