ABSTRACT

PT. XYZ is a company that produces two kinds of technical sportswear by implementing a make to order. The type of product that has a lot of defects is polyester technical sportswear period defect that is produced that exceeds the tolerance limit set by the company, which is 2%. One of the problematic processes is renting a flat felled seam because the process performance still does not meet the standard process requirements so that the output produced does not match the company's specifications. In the root cause analysis of unfulfilled process requirements using fishbone, 5 why's analysis and FMEA analysis, it is known that the influencing factor is the use of blunt needles because they are not replaced by the operator. To improve the problematic flat felled seam rental so as to minimize the frequency of defects, design an alarm timer that is integrated with the sewing so that the operator immediately replaces the needle when the needle's service life is 56 hours using Reverse Engineering. Reverse Engineering is a product development method by imitating existing products as the basis for designing new similar products with new ways of working by meeting user needs. The design of an alarm timer that is integrated with the sewing machine is expected to minimize defects that occur in the Sew a flat felled seam process as much as 57.5% of the number of previous defect products and process capability by measuring the existing sigma level of 4.152 sigma to 4.276 sigma.

Keywords— Polyester Technical Sportwear, Sew a Flat Felled Seam, Blunt Needle, Reverse Engineering, Timer Alarm