

## **ABSTRACT**

*PT. XYZ is a Company which produces nets, rope and twine with various materials, such as nylon, polyethylene and polypropylene.*

*This research is focused on rope products. Based on historical data in the period October 2018 to September 2019, rope products reached 1,910,108 kilograms, equivalent to 1.9 tons with a defect percentage of 8.47%. The conclusion is percentage of defects was still above the limit set by the Company which is equal to 1%.*

*In producing polyethylene, the excavation process goes through two processes namely extruder and twisting. In the process of twisting there are three types of defects namely bintit, less ply and less rotating with three CTQs. To fix a problematic process, which is a defect in the twisting process, using approved Define, Measure, Analysis, Improve (DMAI).*

*Proposed improvements made in the twisting process are devising the additional inter-wheel boundaries on the twisting machine, designing the maintenance of the wheel lining, and arranging the checksheets of the wheel lining maintenance.*

*Key word: Rope, Defect, Twisting Process, CTQ, Six Sigma, DMAI*