

Six Sigma in the textile industry

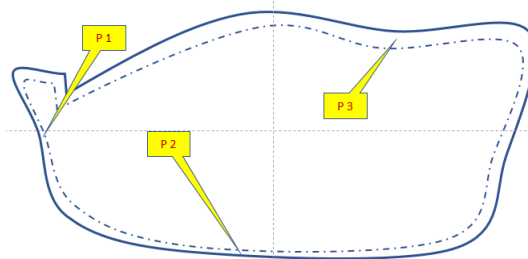
Six Sigma is a strategy of continuous quality improvement for an organization which is used in many areas of activity. Six Sigma is a data-driven systematic approach. **DMAIC** methodology - **Define, Measure, Analyze, Improve & Control** is used to improve the existing process. For the textile industry, quality of is essential and diversity of products is the same a critical concern.



The textile industry is an area with lots of variations and defects in manufacturing processes. So, applying Six Sigma is a must for this area.

An example of a successful project using Six Sigma is "Reducing the variations that occur during the seam of perimeter". The key indicator which give the performance of the process is seam allowance, which is the distance from the seam to the parts sewn edge.

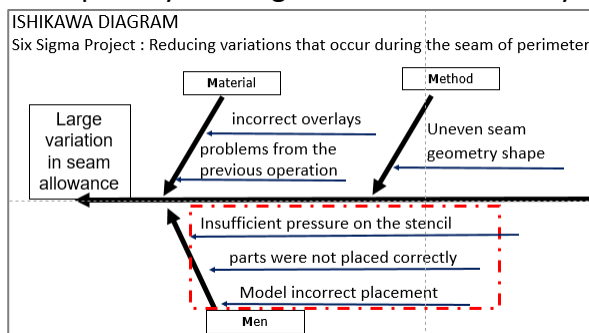
In **Define** phase was studied process (flowchart), Voice of the Customer, Project Map and other specific tools.



In **Measure** phase were randomly identified 50 pieces for which was measured the seam allowance. The instrument used for measuring was a metallic linear. To measure also the density of the stitching It was used a specialized stencil. Necessary statistical measurements were made three critical points (see picture below).

Data were introduced in the computer and then **Analysis** was made. Cpk for the 3 points was 0.7, 0.3 and 0.4. Also, density values were inappropriate results in terms of capability. Through Cause – Effect analysis the potential cases have been discovered - see picture below.

Root causes were: lack of flexibility in terms of design sewing stencil and unwieldy adjustment mechanism of the stencil during sewing of perimeter.



The solutions chosen in **Improve**, to resolve the issue were:

Changing of fixing sewing stencil and installation of hinges to sewing stencil and then operator training on the handling of stencil during sewing.

Design department modified the seam line and tooling department has installed two hinges for the new stencil model. Operator training was done using the project team members.

After implementing improvement solutions samples were collected and capabilities have grown over 1.33. In **Control** phase, has changed also the Control Plan.

We invite you to Six Sigma courses organized by Effective Flux to reap the benefits of this methodology.