

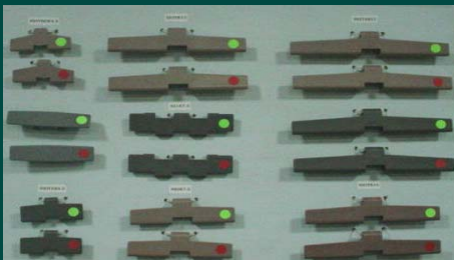
Case Study

Reduce gate splay defects

Project background

A Central American injection moulding division of a premier supplier of Power Transmission Components, Drives, and Conveying Equipment manufactured plastic conveyor belts.

Gate splay appearance defects were considered unacceptable for world wide customers.



Paloma Consulting Limited
Thorney House
26 The Barton
Cobham
Surrey
KT11 2NJ
United Kingdom

☎: +44 1932 867032

✉: info@palomaconsulting.com

www.palomaconsulting.com

Problem

Management sought to increase market penetration by reducing appearance defects which were causing over 40% of orders to be shipped late.

A Six Sigma project was set up. Four level Pareto analysis narrowed the project scope from overall plant scrap to gate splay. They identified that gate splay appearance defects on a particular series of products represented 30% of total plant gate splay defects costing \$30k per year in machining, grinding, moulding and rework. Defect levels were running at 52000 PPM.

The team were able to identify splay defects by material and individual press.

Measurement system analysis identified that acceptance criteria were not uniformly applied between operators.

Moulding and auxiliary tools and heater bands were not always ready to use.

Solutions

The team identified venting, sand blasting, clamping force, injection speed and manifold temperature as critical factors in influencing gate splay defect levels.

The team discovered blocked venting channels and water lines, tool cavity cleanliness issues, incorrect voltage on barrel heater bands and variation on heater band temperature and tool heater controls.

Gas venting channels were refreshed, waterlines were flushed with acid and tool cavities were sand blasted. Barrel heater bands voltages were adjusted.

Visual management boards showing acceptance and rejection criteria were set up to assist operators and the measurement system analysis was re-performed to confirm operator reproducibility.

Business benefits

Gate splay appearance defects were reduced by 94% saving \$28k per annum. Several replication projects were set up to apply the solutions to other product lines saving a further \$50k per year.