Operational Excellence in Plastic Manufacturing

Case Study
Africa

About Client

Client is one of the largest manufacturers & processors of plastics in Malawi. Client produces Blown Film for various application and also produces Injection & Blow Moulded items of domestic as well as industrial use. Client is the key player in the PET bottles market as well.

Client is one of the renowned household names and has strong client base in industrial as well as domestic domain. Client is famous for their promising quality and dedication.

**Objectives**

- To strengthen inventory management
- To improve overall equipment effectiveness
- To improve equipment performance
- OTIF delivery improvements
- To reduce changeover losses
- To improve visualization and physical workplace management

**Analysis**

After detailed analysis & discussion with the client, following analysis was made:

- Organization structure needs to be redesigned
- Lack of proper maintenance mechanism
- Lack of data management practices
- Breakdown rate was high
- Poor material and equipment handling
- Poor safety practices
- No standard material and process flow
- Stability and Skill of maintenance team needed immediate action
- Poor workplace management practices
- Need for OTIF (On Time In Full) deliveries improvement

**Approach**

**Project Initiation**

- Six S (Five S + Safety) Audit
- Why – Why analysis and training
- Structured inventory management practices
- Autonomous maintenance mechanism
- OTIF & Safety analysis
- SMED (Single digit minute exchange of Die)
- Robust Overall Equipment Effectiveness (OEE) Practices
- Daily Work Management
Project Implementation
- Conducted top management conclave for consensus building & trained all key stakeholders on operational excellence tools.
- Designed and rolled out Six S (Five S + Safety) organization structure and zone formation
- Deployed scrap management mechanism to reduce segregation at reprocessing area, resulting in saving manpower deployed
- Selected managers’ model machine and initiated implementation of AM step 1, Fugai tagging (Red & Green tag) and identification of abnormalities
- Designed and rolled out customized COTI (Cleaning, Oiling, Tightening and Inspection) checklist
- Conducted why-why analysis and trained maintenance team to identify root cause on all major breakdowns
- Initiated data management practices in production and maintenance department to capture all losses and production on daily basis
- Designed customized Overall Equipment Effectiveness (OEE) template for Extrusion, Printing, Bag making & Slitting section equipment wise
- Calculated OEE, trained team on data capturing
- Prepared customized Process, Product, Quantity (PPQ) sheet, started capturing process machine mapping for Value Stream Mapping (VSM) product wise and strengthen production planning
- Conducted training session on OTIF to sales and production team, collected data and analyzed OTIF
- Implemented Kaizens on material handling, material tracking and buzzer for meter count

Visit Faber at www.faberinfinite.com for more information and a complete list of regional contacts or send us e-mail: consulting@faberinfinite.com

Results Delivered

Production improvements by 54% in Extrusion, ~28% in Printing & 47% in bag making

OTIF improved by ~21%

Total time saved by ~76 hours & ~30 hours for machine HEM A & VK respectively

~1600 sq ft space created on shop floor & ~20% space created in stores

132 unsafe practices identified & resolved

Sustenance

Implemented results shall be sustained over a period using Systematic Audit & Improvement Loop (SAIL) & Daily Work Management (DWM)