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UNICOIL - Value Creation in Flat Steel Industry

Gopala Krishnaiah Bolisetty¹, Sanjay Roychoudhury²

¹Department Head (Technical Services), UNICOIL, Saudi Arabia

²Department Head (Operations), UNICOIL, Saudi Arabia

Introduction

UNICOIL (Universal Metal Coating Company Limited) was established in 1997 as a joint venture between BlueScope steel (erstwhile BHP steel), Zamil Group Holding Company and Rashed Al Rashed & Sons Group, for production of Pre-Painted Galvanized (PPGI) steel from Color Coating Line (CCL). In 2001, UNICOIL transformed into a 100 per cent Saudi owned company. In 2004, as a part of backward integration project, a facility for Pickling and Oiling of Hot Rolled Coils through a Push Pull Pickling Line (PPPL), Cold Rolling by 4-Hi Cold Rolling Mill (CRM) and a Continuous Galvanizing Line (CGL) was set up with an annual capacity to produce 250,000 MT of Galvanized steel. In 2007, UNICOIL acquired a Coil Coating company in Jeddah thereby increasing its capacity for production of Pre-Painted Galvanized steel to 210,000 MT per annum and achieving the status of largest manufacturer of Pre-Painted Galvanized steel in the Middle East.

All manufacturing units of UNICOIL are high quality customised automated plants provided by reputed equipment designers.

Saudi Arabia is the largest Arab country in Western Asia with a Gross Domestic Product (GDP) per capita of USD 18033 reported in 2013.

In line with stupendous growth in the economy of Saudi Arabia, the demand for steel in general and Pre-Painted Galvanized steel in particular has also gone up. The data of local production and domestic consumption show that there is an excess local production capacity of around 35 per cent than the estimated consumption. In spite of this fact, huge quantities of non-standard Pre-Painted Galvanized steel are flooding the Saudi Arabian market.

In the current challenging scenario for steel industry that threatens its survival, absence of regional safeguard makes the situation even worse; as a result, Middle East Flat Steel Industry is going through a critical phase. **The situation is Tough.**

UNICOIL firmly believes in the saying **"When the going gets Tough, Tough gets going"**.

Management was quick to realise that flat steel industry will tend to get saturated by high production capacities coupled with economic instabilities so 'Value Creation through Differentiation' was adopted as the best tool to combat these challenges.

The buzz word in UNICOIL is **Differentiation - on multiple fronts**

Differentiation in the form of Technical innovations, Product awareness, Customer service, Employee motivation and Sustainability initiatives.

The technical team focussed on following categories to achieve objectives:

Efficiency Improvement of Equipment:

Major efficiency improvement actions implemented were targeted to reduce equipment downtime, increase productivity and improve machine reliability.

Engineering Modifications/Upgradations:

UNICOIL engineers combine skill and experience to gain maximum advantage from available resources at limited cost.

Major Innovations include:

- Provision of adapter sleeves in bearing housing to control wear out of roll shafts.
- In-house development of customised Laboratory Information Management System (LIMS) and Aluminium calculator to arrive at a charging pattern based on aluminium drag out by strip exiting the pot and aluminium skimmed out through top dross-both projects developed at zero investment cost.
- Other significant milestones include modifications to increase rolling and galvanizing maximum thickness limit from 1.50 mm to 2.00 mm.

Yield Improvement of Product

Prime Yield is a significant parameter for any process,

especially in the steel industry, where the cost of raw material occupies close to 75 per cent of the product cost. Improvement targets are set based on field data and actions are implemented by cross functional teams through sharing of experiences, statistical techniques and brain storming. Systematic approach was adopted to target reduction of on-line generation of scrap and process defects.

Cost Savings

At UNICOIL, cost savings is classified into two categories:

- (1) Tangible savings through actions on shop floor, which include increasing the CRM work roll order-diameter by 3 mm for enhancing the usable roll life; in-house production of packing consumables like steel straps, edge protectors and donuts; in-house refurbishment of battery banks; and overhauling of motors up to 350 KW.
- (2) Development of local vendors in Saudi Arabia for import substitution viz. development of FRP impeller in PPPL; local fabrication of chrome plated pick-up roll for use in paint line in place of ceramic pick-up roll in CCL.

Sustainability Initiatives

UNICOIL promotes the culture of recycling and conservation of natural resources apart from working on reduction of effluents and Volatile Organic Compounds (VOC) in the stack emissions. As recognition to its efforts of sustainability, UNICOIL is certified under OHSAS 18001:2007 for Occupational Health and Safety Management System and ISO 14001:2004 for Environmental Management System.

The salient features of sustainability initiatives are –

- Acid Regeneration Plant to recycle the spent acid for re-usage in the pickling line, efficient after burners, and post combustion recuperator in CGL for low energy costs.
- UNICOIL is in the process of replacing the existing conventional thermal oxidizer to a Regenerative Thermal Oxidizer (RTO) for reduction of the natural gas consumption and to reduce the VOC in the Colour Coating Line.

UNICOIL has been awarded with the Best ‘Environmental Performance Award’ by the Royal Commission for all practices adopted for environmental activities during 2014 related to protection of internal

environment of the company and on-going awareness campaigns.

Product Awareness Campaign

Being the largest manufacturer of PPGI in the region, UNICOIL has undertaken a massive study of the materials being imported into the Kingdom by testing samples from different sources in its own laboratory and at three other accredited third party laboratories. Many imported samples were found to violate global and local specifications as the components of a PPGI sheet cannot be seen by naked eye. From this study, summarised behaviour of such imports is listed below and the extreme values observed against standards are presented in the Table below.

Summarised behaviour of Imports:

- Thickness tolerances of ASTM standard been implemented on the extreme end of the negative side.
- Thickness on labelled imported products does not match the actual measured thickness.
- Paint thickness is lower than ASTM standards for Pre-Painted Galvanized steel.
- Non-disclosure of zinc coating mass on product labels sold to end user.
- Presence of high lead levels in organic coating and zinc coating; far more than the safe lead limit of (90 mg/kg).
- No ‘Country of Origin’ declaration on the final sales unit sold to the end users (Linear Metre / Sheet).

Table: Summarised behaviour of imports and the extreme values observed against standards		
Parameter	Standard	Imported (Actual)
Sheet thickness	Declared on Product's Label (0.32 mm)	Detected 0.28 mm
Zinc Coating Mass	Recommended minimum (90 g/m ²)	Detected 18 g/m ²
Paint thickness	Recommended minimum (30 microns)	Detected 13 microns
Lead in Paint	Regulated maximum (90 mg/kg)	Detected 4,555 mg/kg
Lead in Zinc	Regulated maximum (90 mg/kg)	Detected 925 mg/kg

As UNICOIL realised the impact of the imported products on the consumer behaviour, it has taken few immediate actions as given below:

- 1) Printing of product details (thickness of product, zinc coating mass, paint dry film thickness, country of origin and the manufacturer name) on every linear metre of its products – an act of voluntary ‘Product Transparency Declaration’ both in Arabic and English.
- 2) The invoices were modified to cover the full product details and made Bilingual (English and Arabic).

UNICOIL launched a social education campaign under the title "Know Your PPGI Sheets - Shinko". This campaign aims at conveying a set of facts that are unrealised by those who are dealing with the PPGI coils & Roll-Formed PPGI sheets. Violations observed in the quality of imported PPGI sheet are highlighted in this campaign.

As many of the applications for Galvanized and Pre-Painted Galvanized steel involve contact with human beings especially children, UNICOIL focused its educational campaign by declaring the Social Responsibility statement – '*UNICOIL believes in its Quality Fundamentals and Manufacturing Responsibility*'.

Product and Service Value Creation

Quality Management System (QMS) is established and practiced as a mark of its adherence to norms. UNICOIL has achieved accreditation of Quality Marks from SASO (Saudi Standards, Metrology and Quality Organisation), ESMA (Emirates Authority for Standardisation and Metrology) of UAE, Jordan Quality Mark from Jordan Standards and Metrology Organisation apart from ISO 9001. UNICOIL is in the process of acquiring Quality Mark from Egyptian Organisation for Standards.

In line with the corporate vision, UNICOIL provides service beyond the expected levels:

- a) On-line customer order tracking system.
- b) On-line facility for Mill Test certificates on delivered shipments.
- c) On-line facility for the invoices and payment status.

UNICOIL: An Equal Opportunity Employer

UNICOIL employs multi-diversified workforce and has employees from 13 countries bringing in the best of skills and experiences. Leadership team methodically sets out policies and procedures that promote transparency across all levels of hierarchy, ethical conduct, motivation to deliver extra ordinary performance and reward for significant achievements. Top Management encourages employees to earn success and appreciation by focusing on creating a culture that generates a passion to exploit available resources for superior long-term results. Some of the tools used include,

E-Learning: An advanced E-Learning centre equipped with the best learning tools was set up in 2013 to provide training to trainees and regular employees across a variety of technical topics for personal development and to enhance competency.

Reward System: UNICOIL employs a reward system designed to reinforce teamwork, while at the same time, reward individual initiative. Achievements are recognised through verbal acknowledgements, company e-mail news bulletin, certificates, gifts and other similar methods.

A unique concept of 'Beyond the Job Award' has been introduced to honour the silent and sincere high achievers who consistently contribute over and above their defined job description by personal initiative and multi-tasking.

'Reveal Your Talent' program was launched to encourage original innovative ideas that have been successfully implemented and inspire other employees to think 'Out of the Box'.

Management fosters a family atmosphere by regularly scheduling social activities throughout the year and organising awareness campaigns through article writing competitions relevant to UNICOIL process like 'Effect of Lead on Human Health' and 'Recycling-Waste to Resources'.

Summary

World of steel is more dynamic than ever. UNICOIL implements the standard driving force for sustainability through technical innovations, product developments, continual improvements and cost saving actions without compromising on equipment efficiency and product quality that result in higher process efficiency, better product yield and wider market spread of new products. As a responsible private sector manufacturer of Saudi Arabia, well organised efforts are made to save energy and protect environment by controlling release of hazardous wastes.

UNICOIL has one of the best technologies available for production of Metallic and Organic coated steel and the management is equally focused to develop and implement strategies necessary to build a successful organisational culture that has paved the way for rapid success and provided strength as well as resilience to face tough times in line with vision to create value to the flat steel industry in Middle East.

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