

Saving copper on recycled cylinders by dechroming

Saueressig Jordan

Amman, Jordan

COMPANY IN BRIEF

Saueressig, Jordan, produces and delivers engraved cylinders and photopolymeric flexo printing plates for the local and international printing industry. They have been in the international market since 1953. They have currently 23 employees. Main raw materials are copper and steel cylinders.

The company has participated in a PREMA training programme, organized by EJABI and carried out in Amman from March to June 2008 with one participant (production manager, with long term experience in the company). The PREMA programme consisted of four workshops and company visits. Between workshops three Networks Meetings allowed an exchange of experience among the companies and each company was individually assisted by local trainers.

PROBLEM AND ITS CAUSES

Cylinders coming as rejects or as new orders from the customers need to be replated with copper and chrome. According to the original procedure the chrome and copper layer had been scraped off in a single process because the dechroming bath was out of operation.

This procedure caused the following problems:

- More copper than necessary was scraped off from the cylinders (0,4 mm).
- There was no possibility of separating the chrome and copper metal chips. Consequently, the mixed metal waste could only be sold at a lower price.
- The production process was delayed as the Acigraph machine was blocked for scraping the chrome layers, which takes double the time than scraping normal copper cylinders.
- More time was needed for re-plating the cylinder as more copper had to be added.

MEASURE(S) IMPLEMENTED IN THE COMPANY

Instead of scraping chrome and copper off the cylinder in one step, the chrome layer is now taken off in a dechroming bath. The bath was available but out of order and just had to be repaired. This allows a faster re-plating of the cylinder (15 instead of 30 min) and reduced material input. The separation of pure copper waste allows to sell it to recyclers at higher prices.



Situation before:

More copper than necessary has to be removed together with chrome. Low recycling value of chrome-copper chips mixture.



Situation after:

Chrome is removed in repaired dechroming bath. Less copper can be scraped off before replating. Pure copper chips have high recycling value.

ECONOMIC BENEFITS

The company was able to reduce the copper used for re-plating the cylinders by 50%, they are plating 0,2 mm now instead of 0,4 mm before. On the basis of the 2007 data (1300 cylinders per year) the estimated saving is 7,7 JD per cylinder for an average length of 1000mm. The estimated gross saving is 10,000 JD per year.

There are additional operational costs for the rough cutting tool of the Polishmaster, which needs to be sharpened twice monthly now instead of once. Extra sharpening costs 120 JD monthly extra (1440 JD per year). The dechroming bath consumes 150 JD yearly for making up the used chemicals and water.

The additional copper waste, which is now separated from the normal scrap metal, can be sold at 4170 JD yearly. This gives the company a net saving of 12.580 JD yearly. Investment for repairing the dechroming bath was 250 JD.

Annual net savings	12.580 JD	Less copper, more revenue from waste
Investment cost	250 JD	Rehabilitation of the dechroming bath
Payback period	Almost immediate	

This calculation includes the raw material savings only. It does not include the savings in the time (increase of efficiency) and labour costs.

ENVIRONMENTAL BENEFITS

Less copper needs to be exploited and transported. Less energy is consumed resulting in less emissions. The saving in materials results indirectly in less emissions in transport. Additionally, metal waste is separated and can be recycled in a more systematic way.

ORGANISATIONAL BENEFITS

Less copper needs to be sourced and purchased, which results time savings and less strain on the cash flow. The rehabilitation of the dechroming bath frees valuable machine capacity (Acigraph and copper plating tanks) for more productive runs. Customer requests can be met more quickly than before. This aspect has not been quantified yet.

FOR MORE INFORMATION

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