

## Surface treatment for steel

Staku-Anlagenbau GmbH has worked in the field of surface treatment for wire, strip and profiles for over thirty years.

The company is now a specialist in developing galvanic processes for pre-treatment and refinement of metallic semi-finished products.

Staku's Ephos technology is a continuous electrolytic zinc-calcium phosphating process used for coating of cold heading and steel wire material. The in-line production enables the user to perform the de-scaling and phosphating process in one pass.

Optimum cold forming and drawing results are obtained by the 100% coverage of the wire surface and the fine crystalline structure of the electrolytically deposited zinc-calcium-phosphate layer (coating weights are between  $6\text{g/m}^2$  and  $10\text{g/m}^2$ ).

In general, all wire diameters from 3mm to 20mm can be processed at drawing speeds of around 60m/min.

Cleaning and coating with Ephos technology is suitable for de-scaled and annealed wire rod, pre-drawn, annealed and patented steel wire.

De-scaling of the wire rod can be done by in-line shot blasting or a combination of mechanical bend de-scaling and an electrolytic pickling system.

Further advantages of Ephos over the traditional chemical phosphating are said to include:

- Installation of an Ephos line does not require governmental permission due to the avoidance of wastewater from a neutralising process
- There is no iron-phosphate-sludge, so avoiding bath cleaning shifts and saving on chemicals and sludge disposal
- Cost savings on heat energy due to smaller bath volumes (3,000 litres) and lower bath temperature at only  $50^\circ\text{C}$
- Low consumption of electrical power for the coating process

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▲ The Ephos process from Staku

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