

THERMAL SPRAY FACILITIES

COATING SYSTEMS FOR HVOF, PLASMA, FLAME SPRAY, ARC SPRAY & ROD SPRAY

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Surface Problems in Steel Industry

In the production of steel great demands are made on the surfaces of rollers, as they have a direct influence for the quality of the product

being manufactured. In operation, these rollers are subjected to various types of hazardous conditions, for example:



- In continuous strip galvanizing lines the liquid zinc attacks the rolls submerged in the galvanizing bath.
- Hearth rolls react with the furnace atmosphere at temperatures of up to 1100°C. In addition, heavy wear is caused by adhesion and abrasion. Another major problem is that slag and scale can stick to the rolls.
- Rolls of the roller apron and the roller table, as well as deflector and anvil rolls are subjected to both high thermal and mechanical stresses.

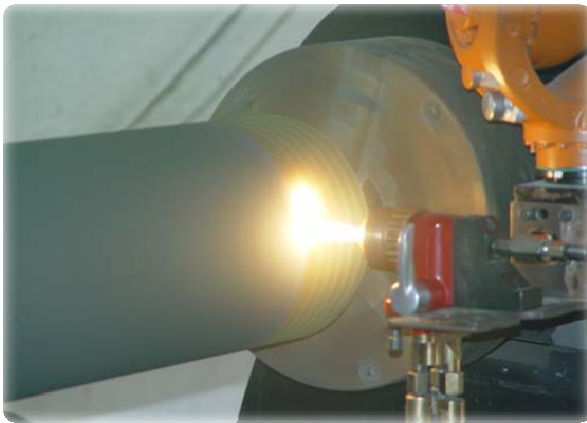
MEC's Solution

MEC has developed customised coating systems, which are perfect solutions for surface related issues. Coatings exhibiting optimum properties can be produced by simultaneously applying coatings of different materials. For example, oxides (Al_2O_3 , ZrO_2) or carbides (WC , Cr_3C_2) together with a high temperature resistant nickel or cobalt alloy. Sealing

as a post treatment may be suitable to further improve surface properties and the constitution of thermally sprayed coatings. NiCrBSi coatings can be fusion bonded and have properties similar to a hard weld-cladding. These coatings are best suited for applications with high bond strength requirement.



ROT Rolls used in Steel manufacturing line



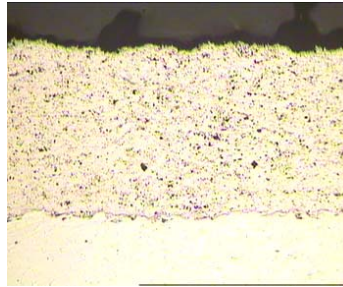
Cermet coating on CAL roll



HVOLF coating on Sink roll

Customer Benefits

- Consistent high steel quality level.
- Cost reduction in over all roll cost.
- Constant R & D.
- Coatings process under ISO 9001 Standards.
- In-situ coating works for heavy machineries.



COATING FEATURES

- * Porosity <1%
- * Hardness 1250VHN_{0.3}
- * High bond strength> 10,000PSI

Microstructure of WC-12% Co applied for abrasive wear resistance.

Steel Industry components at different stages of production line requires thermal spray are listed below.

- Bridle roll
- Sink roll
- Deflector roll
- Driver roll
- Pump casing
- Run out table(ROT) roll
- Rolling cones etc.

The Model MJP-5000 gun is applied for HVLOF coating on steel industry rolls. This is a rugged, simple design that minimizes maintenance and maximizes production.

MEC offers a complete portfolio of surface modification solutions & services requirements for steel industry.

For more information contact Dy. Gen. Manager, Marketing
0291-2747601, sales@mecpl.com



METALLIZING EQUIPMENT CO. PVT. LTD.

E-101, M.I.A, Phase-II, Basni, Jodhpur-342005 (India)

Ph.: +91 291 2747601 Fax: +91 291 2746359

E-mail: sales@mecpl.com

marketing@mecpl.com

Web : www.mecpl.com