CASE STUDY

Steel – Surface Treatment : Eliminated White Rust Claims

PRIMECOAT™ Z 838-4

The Challenge

A major North American steel producer of flat rolled, zinc/zinc alloy coated substrate was using a trivalent chromium, RoHS compliant, passivation product on a horizontal chemcoater. They encountered issues including:

- Multiple white rust claims on substrate from their hot dipped galvanize/galvanneal line
- A key stamping customer reporting an adverse interaction between this passivation product and their stamping lubricant leading to significant residue buildup in their stamping dies and tape adhesion issues
- Lack of the needed technical support from their current supplier

The Solution

Considering Quaker Houghton's excellent service provided at this steel producer's site and integrated product offerings, a trial opportunity for PRIMECOAT™ Z 838-4, a trivalent chromium passivate, resulted.

The Product

PRIMECOAT™ Z 838-4 is a water-based, trivalent chromium, RoHS compliant, passivation product that contains no toxic ingredients and is chromate and fluoride free. It forms a transparent layer on zinc/zinc alloy coated steel, even at higher coating weights while providing excellent corrosion protection, lubricity in light forming applications, and paint adhesion properties. PRIMECOAT™ Z 838-4 has next generation technology and proven field performance that sets it apart from competitive offerings on the market.

The Benefits

Quaker Houghton implemented the product, which demonstrated the following long-term benefits:

- Experienced zero white rust claims on the steel producer's galvanized/galvannealed substrate
- Exhibited chemical compatibility with the stamping lubricant with no issues reported
- Optimized their strip curing process to achieve recommended peak metal temperature
- Outperformed incumbent product in corrosion protection by neutral salt spray testing
- Outperformed incumbent product in chromium leaching testing proving its high stability with water exposure
- Reduced passivation bath usage concentration by 58%
- Decreased unit price by 25% resulting in significant cost savings
- Expanded service and technical expertise
- Involved in continuous improvement project to reduce applied coating weight without degrading performance for further cost savings

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