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**TEAM  
 SATP.MP/G**

**SPECIFICATION – MECHANICAL PLATING / GALVANIZING  
 (ZINC) AND POST PLATING TREATMENT**

Effective date: 09 December, 2016 all previous issues to be destroyed.

## 1.0 SCOPE

This Standard describes the Mechanical application of Zinc coatings and of post plating treatments on Iron and Steel components for corrosion protection.

## 2.0 DEFINITIONS

### 2.1 MINIMUM AVERAGE THICKNESS

Average of the readings taken on different areas of the plated article that is big enough for testing.

### 2.2 LOCAL THICKNESS

The mean of the thickness measurements, of which a specified number is made within a reference area.

### 2.3 MINIMUM LOCAL THICKNESS

The lowest value of the local thickness found on the significant surface of a single article.

### 2.4 REFERENCE AREA

The area within which a specified number of single measurements is required to be made.

### 2.5 SIGNIFICANT SURFACE

The part of the article covered or to be covered by the coating and for which the coating is essential for serviceability and/or appearance.

## 3.0 REQUIREMENTS & CHARACTERISTICS

### 3.1 COATING THICKNESS

CLASS – LIGHT	⇒	10 – 25 um
CLASS – MEDIUM	⇒	20 – 35 um
CLASS – HEAVY	⇒	30 um UPWARDS

### 3.2 APPEARANCE / COLOUR

Colour varies from a matte grey to a matte grey with a slight yellow tint.

Appearance shall be adherent, slightly granular and free from cracks, blisters, flaking and other defects that can adversely affect the function of the coating.

## **4.0 PROCESS SPECIFICATIONS**

- 4.1 Components are to be placed into a Mechanical Plating Barrel together with impact media (Glass Beads) and a dilute cleaning detergent.
- 4.2 Deposition of a thin Copper Coating of no specific thickness by the addition of appropriate solutions.
- 4.3 Deposition of the Zinc Metal by the addition of a Promoter, Zinc Dust (Powder) and liquid Medium, generally water.
- 4.4 Separation of the parts from the solid & liquid media.
- 4.5 Rinse
- 4.6 Supplementary treatments
  - 4.6.1 Chromate Passivation & the application of an Organic Sealant.
- 4.7 Drying

## **5.0 REJECTION**

- 4.1 Superficial staining and variations in colour or lustre shall not be cause for rejection
- 4.2 Defects and variations in appearance in the coating that arise from surface conditions of the substrate (scratches, pores, roll marks, inclusions, etc.) and that persist in the finish despite the observance of good metal finishing practices shall not be cause for rejection.
- 4.3 The powdery residue on articles and on fingers after handling shall not be cause for rejection.

## **6.0 SAMPLING & TESTING (IF REQUIRED)**

- 6.1 Random samples of the articles will be inspected by the plater for conformance to the requirements of this specification by the following methods:
  - 6.1.1 Visually for appearance
  - 6.1.2 Thickness Testing by means of magnetic induction or the eddy current method. The thickness can be affected by the size, shape or material that is not suitable for the test.(Only carried out on request)
  - 6.1.3 Salt spray Testing is available on request and all costs will be settled by the purchaser BEFORE the plated batches leave the premises of the electroplater.

Compliance by the samples will classify the lot from which they were taken as conforming or non-conforming to the requirements.

- 6.2 All further required testing will be carried out for / by the purchaser at his expense before the plated articles leave the plating premises after which the onus of satisfactory performance by the articles reverts back to the purchaser.

## **7.0 CERTIFICATION**

- 7.1 The purchaser may require in the purchase order or contract that the producer or supplier gives to the purchaser, certification that the finish was produced and tested in accordance with this specification and found to meet the requirements.

## **8.0 NOTES**

- 8.1 A major advantage of mechanical deposition is that it does not produce hydrogen embrittlement in hardened steel during the coating process.
- 8.2 Testing for embrittlement and corrosion resistance require a 48 hour waiting period subsequent to plating.
- 8.3 The effectiveness of the coating will be compromised by abnormal environmental conditions, incorrect packaging and handling prior to and during installation.
- 8.4 While every effort is made by the plater to minimise loss and destruction of the articles for plating no responsibility will be taken by the plater should the goods, during the normal process as mentioned above, be rendered unsuitable for the purpose for which it was manufactured.
- 8.5 Specification captures the main principles of the following International Specifications: ASTM B695-83