
Kalmar Group Standard

KGS 50523

Part

Method Standards

Name

Surface treatment - Requirements - Zinc + Thick films passivation with sealer

Group

Manufacturing Methods

1 Scope

This Kalmar Group Standard, hereinafter referred to as KGS, presents the manufacturing requirements for inorganic surface treatment, valid for zinc and thick films passivation with sealer.

2 Purpose

The purpose is to ensure high quality surface treatment for the specific manufacturing method.

3 Responsibilities

Design Engineers - when applicable, note the relevant information on the technical documents such as drawings and BOMs

Sourcing - for the purpose of informing relevant suppliers about this KGS.

Supplier Development Engineers - to inform suppliers about updates to this KGS and make sure that compliance is met.

4 Definitions

BOM - Bill of Material

5 References

KGS 50506	Accelerated corrosion test
ISO 9227	Corrosion tests in artificial atmospheres – Salt spray tests
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ISO 2819	Metallic coatings on metallic substrates – Electrodeposited and chemically [...]

6 Procedure description

The surface treatment shall comprise the following steps:

- Coating 1 - Precipitation of zinc
- Coating 2 – Thick film passivation with sealer

6.1 Appearance

Silver semi-matt to bright appearance, iridescent.

Document ID: IMS-K-009890
Last update date: 27/10/2022
Approver: lasse.eriksson@kalmarglobal.com
Version: 1

6.2 Surface

The following coating defects are not allowed:

- blisters
- erosion craters
- rough surfaces
- cracks
- bare base metal areas

6.3 Adhesion

The adhesion of the coating may not show any tendency to peel or flake off. For testing the adhesion, the "Peel test" referred to in ISO 2819 or similar test method shall be used.

The coating must not show any blisters.

6.4 Coating thickness

Minimum permitted coating thickness is 8 µm.

6.5 Corrosion resistance

The corrosion resistance should be tested according to KGS 50506 Accelerated corrosion test.
Time until white corrosion appears: 1 week

Alternatively, ISO 9227 or ASTM B117 Salt spray tests

Time until white corrosion appears: 120 hours.

Time until base metal corrosion: 240 hours

6.6 High yield strength material

Steel with tensile strength ≥ 1100 N/mm² must go through hydrogen embrittlement relief (heat treatment) before passivation in order to lower the risk of hydrogen embrittlement damages.