
Kalmar Group Standard

KGS 50525

Part

Method Standards

Name

Surface treatment - Requirements - Alkaline Zinc + Black passivation and Sealer

Group

Manufacturing Methods

1 Scope

Requirements for inorganic surface treatment, valid for alkaline zinc, black passivation and 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

Supplier Development Engineers - to inform suppliers about 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

6 Procedure description

The surface treatment shall comprise the following steps:

- Coating 1 – Alkaline precipitation of zinc
- Coating 2 – Black passivation
- After-treatment – Sealer

Alternative surface treatment (zinc/iron + black passivation) shall comprise the following steps:

- Coating 1 – Alkaline precipitation of zinc/iron
- Coating 2 – Black passivation

6.1 Appearance

Black semi-matt appearance.

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6.2 Surface

The following coating defects are not allowed:

- blisters
- erosion craters
- rough surfaces
- cracks
- bare base metal areas (exclusive ev hang impressions)

6.3 Coating thickness

Minimum permitted coating thickness (If nothing else is stated in the drawing) is 12 µm, where you can access with a 20 mm ball.

6.4 Corrosion resistance

The corrosion resistance should be tested according to KGS 50506 Accelerated corrosion test.
Time until white corrosion appears : 1.5 weeks

Alternatively, ISO 9227 or ASTM B117 Salt spray tests
Time until white corrosion appears: 200 hours

6.5 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.