
Kalmar Group Standard

KGS 50515

Part

Method Standards

Name

Surface treatment - Requirements - Hot dip galvanizing

Group

Manufacturing Methods

1 Scope

This Kalmar Group Standard, hereinafter referred to as KGS, presents the manufacturing requirements for inorganic surface treatment, valid for hot dip galvanizing.

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

ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles – [...]
KGS 50506	Accelerated corrosion test
ISO 9227	Corrosion tests in artificial atmospheres – Salt spray tests
ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and [...]
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus

6 Procedure Description

6.1 Surface preparation

Suppliers shall make sure that adequate surface preparations are executed before galvanizing. Preferably, caustic cleaning, pickling and fluxing shall be considered.

6.2 Galvanizing

Zinc, manufactured by electrolysis, shall be used in the zinc bath. The total of the other elements in the molten zinc shall not exceed 1.5 % by mass.

Threads and holes shall be cleaned after galvanizing.

6.3 Inspection

6.3.1 Appearance

At acceptance inspection, the surface shall appear bright or gray and shall be examined by normal or corrected vision from a distance of not less than 1 m.

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The following coating defects are not allowed:

- nodules
- uncoated areas.
- blisters (i.e. raised areas without solid metal beneath)
- sharp points (if either can cause injury)
- roughness
- jags

The following surface treatment defects are allowed if they do not affect the functionality of the article:

- lumps
- drops
- thick runnings

The following surface treatment defects are allowed:

- darker gray areas
- cellular patterns of dark gray lines between light gray areas
- smaller irregularities in surface
- white rust

6.3.2 Coat thickness

Minimum permitted coating thickness depends on the articles. ISO 1461 and ASTM A123 shall apply.

6.3.3 Adhesion

Determine adhesion by cutting or prying with the point of a knife, applied with considerable pressure in a manner tending to remove a portion of the coating. The adhesion shall be considered inadequate if the coating flakes off in the form of a layer of the coating so as to expose the base metal in advance of the knife point.

6.3.4 Corrosion resistance

The corrosion resistance should be tested according to KGS 50506 Accelerated corrosion test (alt ISO 16701 or ASTM G85).

Time until white corrosion appears : 2 weeks

Time until base metal corrosion appears: 6 weeks

Alternatively, ISO 9227 or ASTM B117 Salt spray tests.

Time until white corrosion appears: 240 hours

Time until base metal corrosion appears: 720 hours

6.4 Reporting

If requested, the supplier must be able to report compliance with ISO 1461 or ASTM A123.