

ICS 25.220.20

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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42544-2023

**Corrosion evaluation for anodic oxide coatings and organic
polymer coatings on aluminium and its alloys - Grid method**

Issued on: May 23, 2023

Implemented on: December 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

drafting:

This document was drafted with reference to ISO 8994:2018 "Grid Method for Evaluation and Grading System of Anodic Oxidation Pitting Corrosion of Aluminum and Aluminum Alloys":

degrees are not equivalent:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

1 Scope

This document describes a method for evaluating corrosion results of anodic oxide coatings and organic polymer coatings on aluminum and its aluminum alloys using the grid method:

This document is applicable to the grades of corrosion results of aluminum and aluminum alloy anodized film and organic polymer film corrosion test samples and service samples assessment:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 42514-2023 Corrosion assessment chart method for aluminum and aluminum alloy anodized film and organic polymer film

3 Terms and Definitions

The following terms and definitions defined in GB/T 42514-2023 apply to this document:

3:1

defective grid defectivesquare

Cover the effective surface of the corrosion sample with a transparent plate with a grid spacing of 5 mm, covering one or more corrosion defects (minimum diameter of 0.1mm) grid:

4 Determination of corrosion grade evaluation elements

According to the corrosion type of the sample and the source of the sample, determine the corrosion grade evaluation elements according to Table 1:

Table 1 Corrosion type, sample source and corrosion grade evaluation elements

corrosion type

Sample sourcea

Corrosion test sample

Corrosion performance test of anodized film

Corrosion performance test of organic polymer film

Anodized composite film powder spray film spray paint film

service sample

Corrosion grade

Assessment elements

pitting corrosion

Salt spray corrosion resistance (such as CASS, NASS,

AASS, etc:), chemical resistance (salt water resistance

resistance, acid resistance, etc:), resistance to sulfur dioxide moisture

Corrosive atmosphere, etc:

Salt spray corrosion resistance (such as

CASS, NASS, AASS

etc.), resistance to sulfur dioxide tide

Humid atmosphere corrosive etc:

Salt spray corrosion resistance (such as

CASS, NASS, AASS

etc.), resistance to sulfur dioxide tide

Humid atmosphere corrosion, alkali resistance

Resistance, resistance to nitric acid, etc:

in the natural ring

in use

produce corrosion

on the product

intercepted sample

corrosion point

size, distribution

and area

a The corrosion sample area should not be less than 5000mm², preferably 100mmx50mm:

Corrosion test samples should be taken from within 24 hours after the end of the corrosion test

sample: