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

GB/T 20854-2025

Replacing GB/T 20854-2007

**Corrosion of metals and alloys - Accelerated testing involving
cyclic exposure to salt mist, "dry" and "wet" conditions**

金属和合金的腐蚀 循环暴露在盐雾、“干”和“湿”条件下的加速试验

(English Translation)

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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 is required.

This document replaces GB/T 20854-2007 "Corrosion of metals and alloys cyclically exposed to salt spray, "dry" and "wet" conditions accelerated Compared with GB/T 20854-2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added "Terms and Definitions" (see Chapter 3);
- b) Changed "Concentration of test solution" (see 4.2, 3.2 of the 2007 edition);

- c) Changed the requirements for "sodium chloride for preparing solutions" (see 4.2, 3.2 of the 2007 edition);
- d) Added the requirement of "component protection" (see 5.1);
- e) Added the requirements for "test chamber" (see 5.2.1);
- f) Added the recommended pressure value for "spray device" (see 5.2.3);
- g) The requirements for "specimen" have been changed (see 6.1, 5.1 of the 2007 edition);
- h) Added "specimen placement" instead of the requirements for specimens (see 7.2);
- i) Added the "test condition" solution tank cover (see 8.6);
- j) The "Test Conditions" have been changed (see Table 1 in Chapter 8 and Table 1 in Chapter 7 of the 2007 edition);
- k) Changed "Continuity of testing" (see Chapter 9, Chapter 8 of the 2007 edition);
- l) Added "Overview of sample handling after testing" (see 11.1);
- m) Added "organic coating sample" (see 11.3);
- n) Changed "Evaluation of test results" [see Chapter 12c), Chapter 11c of the 2007 edition];
- o) "Test Report" has been changed (see Chapter 13, Chapter 12 of the 2007 edition);
- p) Changed the "Cyclic salt spray, "dry" and "wet" corrosion test equipment" (see Appendix A, Appendix A of the 2007 edition);
- q) The "Evaluation Method of Corrosivity of Test Equipment" has been changed (see Appendix B, Appendix B of the 2007 Edition);
- r) Added the preparation of organic coating samples for testing (see Appendix C);
- s) Added additional information on the organic coating samples used in the test (see Appendix D).

This document is equivalent to ISO 14993:2018 "Corrosion of metals and alloys by cyclic exposure to salt spray, "dry" and "wet" conditions". Speed Test.

Introduction

Whether protected or not, the corrosion of metal materials is affected by many environmental factors, which mainly depend on the type of metal material and the type of environment.

When designing a laboratory accelerated corrosion test, it is impossible to consider all environmental factors that affect corrosion. Therefore, the purpose of laboratory testing is to Simulate the effects of the most important factors that enhance corrosion of metallic

materials.

The accelerated corrosion test method described in this document is designed to simulate and increase the environmental exposure to outdoor salt contamination and accelerate corrosion. Designed for the impact of the atmosphere on metal materials.

The test method involves cyclic exposure of the specimen to salt spray, "dry" and "wet" environments. This test is a comparative test and the test results cannot predict The long-term results of testing the corrosion resistance of the same metal materials used in this environment are not obtained. However, this method can still provide the results of exposure to the same test conditions.

Valuable information on the relevant properties of materials in similar salt contaminated environments.

Corrosion of metals and alloys cyclically exposed to salt spray, Accelerated testing under "dry" and "wet" conditions WARNING. This document may contain hazardous materials, procedures, and equipment. This document does not claim to address all safety issues associated with its use.

It is the responsibility of the user of this document to establish safety and health practices and determine applicable regulatory requirements prior to use.

1 Scope

This document specifies the apparatus and test methods for accelerated corrosion testing of metallic materials for use outdoors in salt-contaminated environments.

This document specifies the cyclic exposure of specimens to neutral salt spray, Test methods for "dry" and "wet" test environments. The type of specimen and exposure time are not specified in this document.

Compared with conventional accelerated corrosion tests, such as the neutral salt spray test (NSS), the biggest advantage of this test is that it can better Corrosion now occurs in outdoor salt-contaminated environments. The accelerated corrosion tests in this document are applicable to.

- Metals and their alloys;
- Metallic covering (anodic and cathodic);
- Conversion covering layer;
- Anodic oxide coating;
- Organic coating on metal materials.

Note: GB/T 31588.1 gives the test method for the coating to determine the resistance of the coating to various cyclic corrosion conditions (including resistance to moisture (including condensation of

water on the specimen during humidity).

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

Note: GB/T 9271-2008 Standard test panels for paints and varnishes (ISO 1514:2004, MOD) ness)

Note: GB/T 13452.2-2008 Determination of film thickness of paints and varnishes (ISO 2808:2007, IDT)

ISO 4623-2:2016 Paints and varnishes - Filiform corrosion resistance of coatings on aluminium and aluminium alloys

Note: GB/T 26323-2010 Paint and varnish coatings on aluminium and aluminium alloys - Filiform corrosion resistance test (ISO 4623-2:2003, MOD)

Note: GB/T 10123-2022 Corrosion terminology for metals and alloys (ISO 8044:2020, IDT)

ISO 17872 Guide for marking metal panels with scratches for corrosion testing of paints and varnishes ting)

Note: GB/T 30786-2014 Guidelines for scratch marking of metal panels for corrosion testing of paints and varnishes (ISO 17872:2007, IDT)