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

GB/T 19747-2025

Replacing GB/T 19747-2005

**Corrosion of metals and alloys - Determination of bimetallic
corrosion in atmospheric exposure corrosion tests**

金属和合金的腐蚀 双金属大气暴露腐蚀评定

(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.

This document replaces GB/T 19747-2005 "Corrosion of metals and alloys - Bimetallic outdoor exposure corrosion test". Compared with GB/T 19747-2005, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Deleted the "General Principles" of the original standard (see Chapter 3 of the 2005 edition);
- Added Chapter 3 "Terms and Definitions" (see Chapter 3);
- Added Chapter 4 "Method Overview and Comparison" (see Chapter 4);
- Added an overview of sample types (see 5.1.1);
- Added the preparation method of gasket test specimens (see 5.1.2);
- Added the preparation method of wire wound bolt test specimens (see 5.1.3);
- Added exposure test methods for washer test and wire wound bolt test specimens (see Chapter 6, Chapter 6 of the 2005 edition);
- Deleted the provisions on the corrosion depth determination method, and added the weight loss evaluation method for the washer test and the wire wound bolt test specimens. In accordance with the provisions of the 2005 edition, the calculation method of the bimetallic effect is added (see Chapter 7, Chapter 7 of the 2005 edition);
- Changed the content of the test report (see Chapter 8, Chapter 8 of the 2005 edition);
- Deleted the sample list (see Appendix A of the 2005 edition);
- Deleted the record of appearance change results (see Appendix B of the 2005 edition);
- Deleted the record of corrosion depth test results (see Appendix C of the 2005 edition);

--- Deleted the record of mechanical properties change test results (see Appendix D of the 2005 edition);

--- Deleted the record of weight loss results (see Appendix E of the 2005 edition).

This document is equivalent to ISO 7441:2015 "Corrosion of metals and alloys - Assessment of corrosion by exposure to bimetallic atmospheres".

1 Scope

This document specifies and compares methods for the determination of bimetallic corrosion of metals and coated metals in atmospheric corrosion tests.

NOTE: In this document, the term "metal" refers to metals and their alloys, and the term "coated metal" refers to metals and their alloys with metallic or non-metallic coatings.

This document is applicable to the determination of the type and extent of corrosion occurring when dissimilar metals come into contact in natural atmospheric environments.

2 Normative references

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

For referenced documents with 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.

ISO 1456 Metallic and other inorganic coatings Nickel, nickel-chromium, copper-nickel and copper-nickel-chromium electroplated coatings

Note 1: GB/T 9797-2022 Metallic and other inorganic coatings Nickel, nickel-chromium, copper-nickel and copper-nickel-chromium electroplated coatings (ISO 1456:2009, MOD)

Note 2: GB/T 9799-2024 Metallic and other inorganic coatings - Treated zinc coatings on iron and steel (ISO 2081:2018, MOD)

ISO 6892-1 Metallic materials - Tensile tests - Part 1: Test methods at room temperature

Note 3: GB/T 228.1-2021 Tensile testing of metallic materials Part 1: Test methods at room temperature (ISO 6892-1:2019, MOD)

Note 4: GB/T 10123-2022 Corrosion of metals and alloys Basic terms and definitions (ISO 8044:2020, IDT)

Note 5: GB/T 16545-2015 Corrosion of metals and alloys - Removal of corrosion products from corrosion test specimens (ISO 8407:2009, IDT)

ISO 8565 Metals and alloys - Atmospheric corrosion tests - General requirements for field

tests

Note 6: GB/T 14165-2008 Atmospheric corrosion testing of metals and alloys - General requirements for field tests (ISO 8565:1992, IDT)

ISO 15510 Stainless steel chemical composition

3 Terms and Definitions

For the purposes of this document, the terms and definitions defined in ISO 8044 and the following apply.