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

GB/T 10127-2026

Replacing GB/T 10127-2002, GB/T 40314-2021

**Corrosion of metals and alloys - Test method for crevice
corrosion**

金属和合金的腐蚀 缝隙腐蚀试验方法

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 10127-2002 "Test Method for Crevice Corrosion of Stainless Steel with Ferric Chloride" and GB/T 40314-2021 "Metallic..." "Corrosion of Alloys Applicable to Disc Spring Crevice Corrosion Configuration of Stainless Steel Flat or Tubular Specimens", this document is based on GB/T 10127-Based on GB/T 40314-2021, this version integrates the content of GB/T 40314-2021. Compared with GB/T 10127-2002, the main differences are structural adjustments and editorial changes.

In addition, the main technological changes are as follows.

- a) Added terms and definitions (see Chapter 3);
- b) Added symbols (see Chapter 4);
- c) A normative appendix C has been added, applying GB/T 40314-2021 "Corrosion of Metals and Alloys" to stainless steel plates or tubes.

The "Disc Spring Crevice Corrosion Configuration of the Sample" is incorporated into this document (see Appendix C).

This document is modified to adopt ISO 18070:2015 "Corrosion of metals and alloys - Applicable to stainless steel plate or tubular specimens - Disc springs".

"Crevice Corrosion Configurations". This document has undergone significant structural adjustments compared to ISO 18070:2015, with changes in structural numbering between the two documents.

See Appendix A for a comparison table.

This document differs significantly from ISO 18070:2015 in several technical aspects. The relevant clauses are indicated in vertical margins.

Single lines (|) are indicated. A summary of these technical differences and their causes can be found in Appendix B.

The following editorial changes have been made to this document.

- a) The file name was changed;
- b) The table of contents and introduction have been removed;
- c) An informative Appendix D, "Recommended crevice corrosion specimens and their structures," has been added.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183).

1 Scope

This document specifies the scope, sample preparation and requirements, test apparatus, test solution, and test conditions for the ferric chloride crevice corrosion test method.

The components and procedures, the evaluation of test results, and the test report.

This document is applicable to determining the corrosion rate of stainless steel and chromium-containing nickel-based alloys in ferric chloride solution, and testing their resistance to crevice corrosion.

performance.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 622 Chemical Reagents - Hydrochloric Acid (GB/T 622-2006, ISO 6353-2:1983, NEQ) GB/T 1972 (all parts) Disc springs [ISO 19690 (all parts)] GB/T 2481.1 Determination and marking of abrasive grain size composition for bonded abrasives - Part 1: Coarse abrasive grains F4~F220 (GB/T 2481.1-2025, ISO 8486-1:1996, MOD) GB/T 6682-2008

Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, MOD) GB/T 9258.2 Abrasive particle size analysis for coated abrasives - Part 2: Determination of the size composition of coarse abrasive particles P12-P220 (GB/T 9258.2-2008, ISO 6344-2:1998, IDT) GB/T 9258.3 Abrasive particle size analysis for coated abrasives - Part 3: Determination of particle size composition of micro powders P240~P2500 (GB/T 9258.3-2017, ISO 6344-3:2013, MOD) GB/T 10123 Corrosion terminology for metals and alloys (GB/T 10123-2022, ISO 8044:2020, IDT) HG/T 3474-2014 Chemical reagent ferric chloride hexahydrate (ferric chloride)

3 Terms and Definitions

The terms and definitions defined in GB/T 10123 apply to this document.

4 Symbols

The following symbols apply to this document.

H0.Length before loading.

H1.Length after loading.

H2.Length after loading and exposure.

f1.Deformation amount before exposure.

f2.Deformation amount after exposure.

5 Sample preparation and requirements

5.1

This document specifies that the sample size is 50mm x 25mm x (2~3)mm.