Chinastandards.org

ICS 47.020.05
CCS H20

chinastandards.org - PREVIEW

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13671-2025

Replacing GB/T 13671-1992

Electrochemical test method for crevice corrosion of stainless steel

不锈钢缝隙腐蚀电化学试验方法

Issued on: April 25, 2025 **Implemented on: August 1, 2025**

Issued by: State Administration for Market Regulation;
Standardization Administration of China

Preview: page 1 of 4 shown, 11 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-13671-2025

Chinastandards.org

Table of Contents

chinastandards.org - PREVIEW

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 13671-1992 "Electrochemical Test Method for Crevice Corrosion of Stainless Steels". Compared with GB/T 13671-1992, In addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the.1992 edition);

b) Added the terms and definitions of "pitting potential", "pre-passivation potential", "induced crevice corrosion potential" and "crevice corrosion repassivation potential" (see 3.1~3.4);

c) The principle of the test method has been changed (see Chapter 4, Chapter 3 of the.1992 edition);

d) The technical requirements for test instruments have been changed (see Chapter 5, Chapter 4 of the.1992 edition);

e) The requirements for specimen size have been changed (see 6.1,

5.1 of the.1992 edition) and the wire connection method of the specimen has been changed (see 6.6, Version 5.6);

f) Added the provision that test solutions of other concentrations and temperatures can be used according to customer requirements (see 7.1);

Preview: page 2 of 4 shown, 11 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-13671-2025

g) Added the measurement of pitting potential (see 8.1);

h) The torque value of the tightening fixture for assembling the gap specimen is increased (see 8.3);

i) The selection criteria for induced crevice corrosion potential, description of induced crevice corrosion, current density-time curve and Figure 4 (see 8.5,

7.5 of the.1992 edition);

j) The description of the repassivation of crevice corrosion specimens and the current density-time curve have been changed (see 8.6,

1 Scope

GB/T 13671-2025 is the Chinese national standard on electrochemical test method for crevice corrosion of stainless steel, in the field of shipbuilding and marine structures. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 25 April 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 August 2025. Classification: ICS 47.020.05, CCS H20. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the principle of the electrochemical test method for crevice corrosion of stainless steel and specifies the test instrument, sample preparation, test conditions, test Steps and test report contents. This document is applicable to the evaluation of the crevice corrosion resistance of stainless steel in chloride environments, especially for different grades or different surface conditions. This document is also applicable to the evaluation of the crevice corrosion resistance of stainless steel and other passive metal materials for human surgical implants.

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.

GB/T 626 Chemical reagent nitric acid

GB/T 1266 Chemical reagent sodium chloride

Preview: page 3 of 4 shown, 11 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-13671-2025

GB/T 10123 Corrosion terminology for metals and alloys

GB/T 17899-2023 Corrosion of metals and alloys - Potentiodynamic method for measuring the pitting potential of stainless steel in sodium chloride solution

3 Terms and definitions

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

3.1 Pitting potential Eb100 The electrode potential value that can cause pitting corrosion on the stainless steel surface when the current density is 100μA/cm2.

3.2 The preset electrode potential value at which stainless steel can be passivated.

Note. i is a natural number.

3.3 Eic The electrode potential that can induce crevice corrosion of stainless steel.

Note. The induced crevice corrosion potential is not negative to the pitting corrosion potential.

3.4 Erp The most positive potential for stainless steel to undergo crevice corrosion and then passivate.

chinastandards.org PREVIEW

Preview: page 4 of 4 shown, 11 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-13671-2025