



BSI Standards Publication

Corrosion of metals and alloys - Alternate immersion test in salt solution

National foreword

This British Standard is the UK implementation of EN ISO 11130:2018. It is identical to ISO 11130:2017. It supersedes BS EN ISO 11130:2010, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/NFE/8, Corrosion of metals and alloys.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Corrosion of metals and alloys - Alternate immersion test in salt solution (ISO 11130:2017)

Corrosion des métaux et alliages -
Essai en immersions alternées en
solution saline (ISO 11130:2017)

Korrosion von Metallen und
Legierungen - Wechseltauchprüfung
in Salzlösung (ISO 11130:2017)

This European Standard was approved by CEN on 21 November 2017.

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European foreword

This document (EN ISO 11130:2018) has been prepared by Technical Committee ISO/TC 156 “Corrosion of metals and alloys” in collaboration with Technical Committee CEN/TC 262 “Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 11130:2010.

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Endorsement notice

The text of ISO 11130:2017 has been approved by CEN as EN ISO 11130:2018 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*.

This third edition cancels and replaces the second edition (ISO 11130:2010), which has been technically revised with the following changes:

- harmonization with ISO 9227;
- revision of the temperature and relative humidity of drying conditions.

Introduction

Corrosion of metals is influenced by factors which can vary significantly with environmental conditions. Therefore, corrosion resistance determined for metals during alternate immersion testing as described in this document can vary greatly with the test solution selected, the temperature during immersion and the temperature and humidity during the drying periods of the test.

Consequently, the result of an alternate immersion corrosion test is not taken as an indication of the corrosion resistance of the metal tested in all the different service environments where the metal can be used.

Nevertheless, results obtained by the method described in this document can indicate the relative corrosion resistance of different metals under in-service conditions, in particular when the service environment is similar to the test solution selected. The method can also be used to test metals under an applied tensile stress.

Corrosion of metals and alloys - Alternate immersion test in salt solution

1 Scope

This document specifies a method for assessing the corrosion resistance of metals by an alternate immersion test in salt solution, with or without applied stress.

The test is particularly suitable for quality control during the manufacture of metals including aluminium alloys and ferrous materials, and also for assessment purposes during alloy development.

Depending upon the chemical composition of the test solution, the test can be used to simulate the corrosive effects of marine splash zones, de-icing fluids and acid salt environments.

The term “metal” as used in this document includes metallic materials with or without corrosion protection.

This document is applicable to

- metals and their alloys,
- certain metallic coatings (anodic and cathodic with respect to the substrate),
- certain conversion coatings,
- certain anodic oxide coating, and
- organic coatings on metals.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8044, *Corrosion of metals and alloys — Basic terms and definitions*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Principle

The test consists of the immersion of a test specimen, stressed in accordance with ISO 7539-1 or unstressed, in a salt solution, followed by withdrawal and a period of drying.

The immersion and drying cycle is repeated at a given frequency for a given period. The extent of attack is then evaluated. For many materials, this provides a more severe corrosion test than simple continuous immersion.