

Corrosion of metals and alloys - Stress corrosion testing
- Part 6: Preparation and use of precracked specimens
for tests under constant load or constant displacement
(ISO 7539-6:2018, Corrected version 2018-11)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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EUROPEAN STANDARD

EN ISO 7539-6

NORME EUROPÉENNE

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Supersedes EN ISO 7539-6:2011

English Version

Corrosion of metals and alloys - Stress corrosion testing -
Part 6: Preparation and use of precracked specimens for
tests under constant load or constant displacement (ISO
7539-6:2018, Corrected version 2018-11)

Corrosion des métaux et alliages - Essais de corrosion
sous contrainte - Partie 6: Préparation et utilisation des
éprouvettes préfissurées pour essais sous charge
constante ou sous déplacement constant (ISO 7539-
6:2018, Version corrigée 2018-11)

Korrosion der Metalle und Legierungen - Prüfung der
Spannungsrisskorrosion - Teil 6: Vorbereitung und
Anwendung von angerissenen Proben für die Prüfung
unter konstanter Last oder konstanter Auslegung (ISO
7539-6:2018)

This European Standard was approved by CEN on 27 August 2018.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 19 December 2018.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 7539-6:2018) 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of an identical text or by endorsement, at the latest by March 2019, and conflicting national standards shall be withdrawn at the latest by March 2019.

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 7539-6:2011.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 7539-6:2018, Corrected version 2018-11 has been approved by CEN as EN ISO 7539-6:2018 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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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*, in collaboration with the National Physical Laboratory (United Kingdom).

This fourth edition cancels and replaces the third edition (ISO 7539-6:2011), which has been technically revised to revise [Figure 14](#).

This corrected version of ISO 7539-6:2018 incorporates the following corrections:

- in [Figure 2](#), the symbol “^” has been corrected to “≥” in two places.

A list of all parts in the ISO 7539 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Corrosion of metals and alloys — Stress corrosion testing —

Part 6:

Preparation and use of precracked specimens for tests under constant load or constant displacement

1 Scope

This document specifies procedures for designing, preparing and using precracked specimens for investigating susceptibility to stress corrosion. It gives recommendations for the design, preparation and use of precracked specimens for investigating susceptibility to stress corrosion. Recommendations concerning notched specimens are given in [Annex A](#).

The term “metal” as used in this document includes alloys.

Because of the need to confine plasticity at the crack tip, precracked specimens are not suitable for the evaluation of thin products, such as sheet or wire, and are generally used for thicker products including plate bar and forgings. They can also be used for parts joined by welding.

Precracked specimens can be loaded with equipment for application of a constant load or can incorporate a device to produce a constant displacement at the loading points. Tests conducted under increasing displacement or increasing load are dealt with in ISO 7539-9.

A particular advantage of precracked specimens is that they allow data to be acquired, from which critical defect sizes, above which stress corrosion cracking can occur, can be estimated for components of known geometry subjected to known stresses. They also enable rates of stress corrosion crack propagation to be determined. The latter data can be taken into account when monitoring parts containing defects during service.

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 7539-1, *Corrosion of metals and alloys — Stress corrosion testing — Part 1: General guidance on testing procedures*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7539-1 and the following apply.

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

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