Metallide ja sulamite korrosioon. Pingekorrosiooni teimimine. Osa 4: Ühe telje suunas koormatud tõmbeteimikehade ettevalmistamine ja kasutamine

Corrosion of metals and alloys - Stress corrosion testing - Part 4: Preparation and use of uniaxially loaded tension specimens

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 7539-4:2000 sisaldab Euroopa standardi EN ISO 7539-4:1995 ingliskeelset teksti. Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 7539-4:2000 consists of the English text of the European standard EN ISO 7539-4:1995. This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: ISO 7539 käesolev osa hõlmab ühe telje suunas koormatud tõmbeteimikehade konstrueerimis-, ettevalmistus- ja kasutusmetoodikaid metalli pingekorrosioonikindluse uurimiseks.	**Scope:**

ICS 77.060

Võtmesõnad: katsed, korrosiooniteimid, metallid, pingekorrosiooniteimid, sulamid

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Descriptors: Metals, corrosion test, testing, stress corrosion.

English version

Corrosion of metals and alloys

Stress corrosion testing

Part 4: Preparation and use of uniaxially loaded tension specimens
(ISO 7539-4:1989)

Corrosion des métaux et alliages; essais de corrosion sous contrainte. Partie 4: Préparation et utilisation des éprouvettes pour essais en traction uniaxiale
(ISO 7539-4:1989)

Korrosion der Metalle und Legierungen; Prüfung der Spannungsrißkorrosion. Teil 4: Vorbereitung und Anwendung von einachsig belasteten Zugproben
(ISO 7539-4:1989)

This European Standard was approved by CEN on 1995-04-08 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

International Standard

ISO 7539-4:1989 Corrosion of metals and alloys; stress corrosion testing; preparation and use of uniaxially loaded tension specimens,

which was prepared by ISO/TC 156 'Corrosion of metals and alloys' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 262 'Protection of metallic materials against corrosion' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by November 1995 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 7539-4:1989 was approved by CEN as a European Standard without any modification.

1 Scope

1.1 This part of ISO 7539 covers procedures for designing, preparing and using uniaxially loaded tension test specimens for investigating the susceptibility of a metal to stress corrosion.

The term "metal" as used in this part of ISO 7539 includes alloys.

1.2 Tension test specimens are adaptable for testing a wide variety of product forms, including plate, rod, wire, sheet and tubes, as well as parts joined by welding, riveting, or other methods. Notched specimens may also be used (see 5.1.3).

1.3 Uniaxially loaded tensile specimens may be stressed quantitatively with equipment for application of either a constant load, a constant strain or an increasing load or strain.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7539. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7539 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6892 : 1984, *Metallic materials — Tensile testing.*

ISO 7539-1 : 1987, *Corrosion of metals and alloys — Stress corrosion testing — Part 1: General guidance on testing procedures.*

ISO 7539-6 : 1989, *Corrosion of metals and alloys — Stress corrosion testing — Part 6: Preparation and use of pre-cracked specimens.*

3 Definitions

For the purposes of this part of ISO 7539, the definitions given in ISO 7539-1 are applicable.

4 Principle

4.1 The test consists in subjecting a specimen to constant load, constant strain or increasing load or strain with a view to determining stress corrosion susceptibility by reference to one or more of the parameters enumerated in clause 7.

4.2 Corrosive environments may cause a deterioration of the properties of stressed materials beyond those observed with the same combination of environment and material when the latter is not subjected to stress. This enhanced deterioration may be expressed in a number of different ways for the purpose of assessing stress corrosion susceptibility.

4.3 The commonest form of deterioration due to stress corrosion involves the initiation and growth of cracks, one or more of which may eventually lead to total failure of a specimen if the test is conducted for an appropriate time. In the absence of total failure, the mechanical properties of the specimens will be impaired by an amount depending upon the extent of crack development or the growth of pits or fissures.

4.4 Wide variations in test results may be obtained for a given metal and environment even when testing nominally identical specimens and the replication of tests is frequently necessary. If specimens are prepared to different sizes or orientations or are subjected to different stressing pressures, test results may be even more variable.

5 Specimens

5.1 General

5.1.1 Specimens of constant cross-section may be circular, square, rectangular, annular or, in special cases, of other forms.