

METALLMATERJALID. TÕMBETEIM. OSA 2:
TEIMIMEETOD KÕRGENDATUD TEMPERATUURIL (ISO
6892-2:2018)

Metallic materials - Tensile testing - Part 2: Method of
test at elevated temperature (ISO 6892-2:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 6892-2:2018 sisaldab Euroopa standardi EN ISO 6892-2:2018 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 6892-2:2018 consists of the English text of the European standard EN ISO 6892-2:2018.
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ICS 77.040.10

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EUROPEAN STANDARD

EN ISO 6892-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2018

ICS 77.040.10

Supersedes EN ISO 6892-2:2011

English Version

Metallic materials - Tensile testing - Part 2: Method of test at elevated temperature (ISO 6892-2:2018)

Matériaux métalliques - Essai de traction - Partie 2:
Méthode d'essai à température élevée (ISO 6892-
2:2018)

Metallische Werkstoffe - Zugversuch - Teil 2:
Prüfverfahren bei erhöhter Temperatur (ISO 6892-
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This European Standard was approved by CEN on 3 May 2018.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 6892-2:2018) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee ECISS/TC 101 "Test methods for steel (other than chemical analysis)" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by November 2018, and conflicting national standards shall be withdrawn at the latest by November 2018.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 6892-2:2011.

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 6892-2:2018 has been approved by CEN as EN ISO 6892-2:2018 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and designations	2
5 Principle	3
6 Test piece	3
7 Determination of original cross-sectional area (S_0)	3
8 Marking the original gauge length (L_0)	3
9 Apparatus	3
10 Test conditions	5
10.1 Setting the force zero point.....	5
10.2 Gripping of the test piece, fixing of the extensometer and heating of the test piece, not necessarily in the following sequence.....	5
10.2.1 Method of gripping.....	5
10.2.2 Fixing of the extensometer and establishing the gauge length.....	5
10.2.3 Heating of the test piece.....	6
10.3 Testing rate based on strain rate control (Method A).....	6
10.3.1 General.....	6
10.3.2 Strain rate for the determination of the upper yield strength (R_{eH}) or proof strength properties (R_p and, if required, R_t).....	6
10.3.3 Strain rate for the determination of the lower yield strength (R_{eL}) and percentage yield point extension (A_e), if required.....	6
10.3.4 Strain rate for the determination of the tensile strength (R_m), percentage elongation after fracture (A), percentage reduction area (Z), and, if required, percentage total extension at the maximum force (A_{gt}), percentage plastic extension at maximum force (A_g).....	7
10.4 Method of testing with expanded strain rate ranges (Method B).....	7
10.4.1 General.....	7
10.4.2 Rate for the determination of yield strength or proof strength properties.....	7
10.4.3 Rate for the determination of tensile strength.....	7
10.5 Choice of the method and rates.....	7
10.6 Documentation of the chosen testing conditions.....	8
11 Determination or calculation of the properties	8
12 Test report	8
13 Measurement uncertainty	9
14 Figures	9
15 Annexes	10
Annex A (informative) Addition to ISO 6892-1:2016, Annexes B and D	12
Annex B (informative) Measurement uncertainty	18
Bibliography	21

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 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 164, *Mechanical testing of metals*, Subcommittee SC 1, *Uniaxial testing*.

This second edition cancels and replaces the first edition (ISO 6892-2:2011), of which it constitutes a minor revision.

The main changes compared to the previous edition are as follows:

- a note has been added after the first sentence of [10.2.1](#);
- some references to subclauses of ISO 6892-1 have been deleted.

A list of all parts in the ISO 6892 series can be found on the ISO website.

Introduction

In this document, two methods of testing speeds are described. The first, Method A, is based on strain rates (including crosshead separation rate) with narrow tolerances ($\pm 20\%$) and the second, Method B, is based on conventional strain rate ranges and tolerances. Method A is intended to minimize the variation of the test rates during the moment when strain rate-sensitive parameters are determined and to minimize the measurement uncertainty of the test results.

The influence of the testing speed on the mechanical properties, determined by the tensile test, is normally greater at an elevated temperature than at room temperature.

Traditionally, mechanical properties determined by tensile tests at elevated temperatures have been determined at a slower strain or stressing rate than at room temperature. This document recommends the use of slow strain rates but, in addition, higher strain rates are permitted for particular applications, such as comparison with room temperature properties at the same strain rate.

During discussions concerning the speed of testing in the preparation of this document, it was decided to consider deleting the stress rate method in future revisions.

Metallic materials — Tensile testing —

Part 2:

Method of test at elevated temperature

WARNING — This document calls for the use of substances and/or procedures that can be injurious to health if adequate safety measures are not taken. This document does not address any health hazards, safety or environmental matters associated with its use. It is the responsibility of the user of this document to establish appropriate health, safety and environmentally acceptable practices.

1 Scope

This document specifies a method of tensile testing of metallic materials at temperatures higher than room temperature.

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 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 9513, *Metallic materials — Calibration of extensometer systems used in uniaxial testing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6892-1 apply with the following exceptions and supplements.

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 <https://www.iso.org/obp>

In general, all test piece geometries/dimensions are based on measurements taken at room temperature. The exception may be the extensometer gauge length (see 3.3 and 10.2.2).

NOTE The following properties are generally not determined at elevated temperature unless required by relevant specifications or agreement:

- permanent set strength (R_T);
- percentage permanent elongation;
- percentage permanent extension;
- percentage yield point extension (A_e);
- percentage total extension at maximum force (A_{gt});