

Destructive tests on welds in metallic materials -
Longitudinal tensile test on weld metal in fusion welded
joints (ISO 5178:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 5178:2019 sisaldab Euroopa standardi EN ISO 5178:2019 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 5178:2019 consists of the English text of the European standard EN ISO 5178:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.02.2019.	Date of Availability of the European standard is 27.02.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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EUROPEAN STANDARD

EN ISO 5178

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English Version

**Destructive tests on welds in metallic materials -
Longitudinal tensile test on weld metal in fusion welded
joints (ISO 5178:2019)**

Essais destructifs des soudures sur matériaux
métalliques - Essai de traction longitudinale du métal
fondu des assemblages soudés par fusion (ISO
5178:2019)

Zerstörende Prüfung von Schweißverbindungen an
metallischen Werkstoffen - Längszugversuch an
Schweißgut in Schmelzschweißverbindungen (ISO
5178:2019)

This European Standard was approved by CEN on 6 December 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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 5178:2019) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding and allied processes" the secretariat of which is held by DIN.

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 August 2019, and conflicting national standards shall be withdrawn at the latest by August 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 5178:2011.

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 5178:2019 has been approved by CEN as EN ISO 5178:2019 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 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

Any feedback, question or request for official interpretation related to any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 5 via your national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. Official interpretations, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

This second edition cancels and replaces the first edition (ISO 5178:2001), which has been technically revised. The main changes compared to the previous edition are as follows:

- the normative reference has been revised from ISO 6892 to ISO 6892-1;
- new mandatory [Clause 3](#) has been added;
- [Clauses 5](#) and [9](#) have been improved.

Destructive tests on welds in metallic materials — Longitudinal tensile test on weld metal in fusion welded joints

1 Scope

This document specifies the sizes of test specimens and the test procedure for carrying out longitudinal tensile tests on cylindrical test specimens in order to determine the mechanical properties of weld metal in a fusion welded joint.

This document applies to metallic materials in all forms of product with joints made by any fusion welding process, having joint sizes that are sufficient to obtain cylindrical test specimens with dimensions in accordance with ISO 6892-1.

Unless specified otherwise for specific points in this document, the general principles of ISO 6892-1 apply.

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*

3 Terms and definitions

No terms and definitions are listed in this document.

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/>

4 Symbols and abbreviated terms

The symbols and abbreviated terms to be used for the longitudinal tensile tests shall be as specified in ISO 6892-1.

5 Principle

An increasing tensile load is continuously applied until rupture occurs in a cylindrical test specimen taken longitudinally from the weld metal in a welded joint.

The test shall be carried out at room temperature between 10 °C and 35 °C, unless otherwise specified.

Tests carried out under controlled conditions shall be made at a temperature of 23 °C ± 5 °C.