ICS 25.160.01 SLOVENSKÁ TECHNICKÁ NORMA Február 2026

STN	**Tvrdé spájkovanie Špecifikácia a kvalifikácia postupov tvrdého spájkovania kovových materiálov (ISO 17779: 2021)**	**STN EN ISO 17779** 05 0048

Brazing - Specification and qualification of brazing procedures for metallic materials (ISO 17779:2021)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/26

Obsahuje: EN ISO 17779:2025, ISO 17779:2021

Oznámením tejto normy sa ruší
STN EN 13134 (05 0048) zo septembra 2002

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 17779

September 2025

ICS 25.160.01 Supersedes EN 13134:2000

English Version

Brazing - Specification and qualification of brazing procedures for metallic materials (ISO 17779:2021)

Brasage fort - Descriptif et qualification d'un mode opératoire de brassage fort pour les matériaux métalliques (ISO 17779:2021)

Hartlöten - Spezifizierung und Qualifizierung von Hartlöt-Prozessen für metallische Werkstoffe (ISO 17779:2021)

This European Standard was approved by CEN on 25 December 2022.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye 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

Ref. No. EN ISO 17779:2025 E

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European foreword

The text of ISO 17779:2021 has been prepared by Technical Committee CEN/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17779:2025 by Technical Committee CEN/TC 121 "Welding and allied processes" 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 March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

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 13134:2000.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 17779:2021 has been approved by CEN as EN ISO 17779:2025 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the requirements of EU Directive 2014/68/UE aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/601 "Mandate to CEN for standardization in the field of Pressure equipment" to provide one voluntary means of conforming to essential requirements of Directive 2014/68/EU "Pressure equipment".

Once this standard is cited in the Official Journal of the European Union under that Directive 2014/68/EU compliance with the normative clauses of this standard given in Table ZA.1 and application of the edition of the normatively referenced standards as given in Table ZA.2 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive2014/68/EU, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2014/68/EU

Essential Requirements of Directive2014/68/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
3.1.2, paragraphs 3, 4 and 5	4, 5, 6, 7 (without Table 1-footnote a), 7.1 2nd par., 7.2, 1st sentence, 7.3, 2nd & 3rd sentences, 7.4.2, 1st sentence, 7.4.3, 7.4.4, 1st par. 1st sentence and 2nd par., 7.4.5, 1st sentence, 7.6 2nd par., 2nd sentence, 8 (without 8.7, 1st sentence of the 1st and 2nd paragraphs , 8.11), 9, 10	Permanent joining. For pressure resistant components of pressure equipment in the categories II, III and IV the examiner/examining body is a competent third party.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Table ZA.2 — Normative references from Clause 2 of this document and their corresponding European publications

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 857-2	ISO 857-2:2005	*Welding and allied processes — Vocabulary — Part 2: Soldering and brazing processes and related terms*	None For applicable standard edition see Column 2
ISO 4063:2009	ISO 4063:2009	*Welding and allied processes — Nomenclature of processes and reference*	EN ISO 4063:2023
ISO 13585	ISO 13585:2021	*Brazing — Qualification testing of brazers and brazing operators*	EN ISO 13585:2024
ISO 17672	ISO 17672:2016	*Brazing — Filler metals*	EN ISO 17672:2016
ISO 18279:2003	ISO 18279:2003	*Brazing — Imperfections in brazed joints*	EN ISO 18279:2003
ISO 18496	ISO 18496:2020	*Brazing — Fluxes for brazing — Classification and technical delivery conditions*	EN ISO 18496:2021
ISO/TR 25901-1	ISO/TR 25901-1:2016	*Welding and allied processes — Vocabulary — Part 1: General terms*	None For applicable standard edition see Column 2
EN 12797	None	*Brazing — Destructive tests of brazed joints*	EN 12797:2000 EN 12797:2000/A1:2003
EN 12799	None	*Brazing — Non-destructive examination of brazed joints*	EN 12799:2000 EN 12799:2000/A1:2003

The documents listed in the Column 1 of Table ZA.2, in whole or in part, are normatively referenced in this document, i.e. are indispensable for its application. The achievement of the presumption of conformity is subject to the application of the edition of Standards as listed in Column 4 or, if no European Standard Edition exists, the International Standard Edition given in Column 2 of Table ZA.2.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

INTERNATIONAL STANDARD

ISO 17779

First edition
2021-12

Brazing — Specification and qualification of brazing procedures for metallic materials

Brasage fort — Descriptif et qualification d'un mode opératoire de brassage fort pour les matériaux métalliques

Reference number
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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

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 11, *Qualification requirements for welding and allied processes personnel.*

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.

Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Introduction

The purpose of this document is to provide a general set of rules for brazing procedure qualification independent of product or application.

All new brazing procedure tests are to be carried out in accordance with this document from the date of its issue. However, this document does not invalidate previous brazing procedure tests made to former standards or specifications.

Where additional tests need to be carried out to make the qualification technically equivalent, it is only necessary to perform the additional tests on a test piece which should be made in accordance with this document.

INTERNATIONAL STANDARD **ISO 17779:2021(E)**

Brazing — Specification and qualification of brazing procedures for metallic materials

1 Scope

This document specifies requirements for the specification and qualification of brazing procedures for brazing of metallic materials.

This document specifies requirements for brazing of the test piece, testing of the test specimen, essential variables and their range of qualification, acceptance criteria, brazing procedure qualification record (BPQR) and brazing procedure specification (BPS).

This document gives general provisions on quality requirements for brazing (see Annex A).

This document does not cover testing of residual stresses, corrosion resistance and impact properties.

This document applies to the following brazing processes according to ISO 857-2 and ISO 4063:2009 with local and global heating:

— 911 Infrared brazing;

— 912 Flame brazing, torch brazing;

— 913 Laser beam brazing;

— 914 Electron beam brazing;

— 916 Induction brazing;

— 918 Resistance brazing;

— 919 Diffusion brazing;

— 921 Furnace brazing;

— 922 Vacuum brazing;

— 923 Dip-bath brazing;

— 924 Salt-bath brazing;

— 925 Flux bath brazing;

— 926 Immersion brazing;

— 972 Arc weld brazing.

The principles of this document can be applied to other brazing processes and brazing of materials not listed.

This document does not apply to brazing for aerospace applications covered by ISO 11745.

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 857-2, *Welding and allied processes — Vocabulary — Part 2: Soldering and brazing processes and related terms*

ISO 4063:2009, *Welding and allied processes — Nomenclature of processes and reference numbers*

ISO 13585, *Brazing — Qualification testing of brazers and brazing operators*

ISO 17672, *Brazing — Filler metals*

ISO 18279:2003, *Brazing — Imperfections in brazed joints*

ISO 18496, *Brazing — Fluxes for brazing — Classification and technical delivery conditions*

ISO/TR 25901-1, *Welding and allied processes — Vocabulary — Part 1: General terms*

EN 12797, *Brazing — Destructive tests of brazed joints*

EN 12799, *Brazing — Non-destructive examination of brazed joints*