KÕVAJOODISJOOTMINE. METALLIDE JOOTMISPROTSEDUURIDE SPETSIFITSEERIMINE JA KVALIFITSEERIMINE

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

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 17779:2025 sisaldab Euroopa standardi EN ISO 17779:2025 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 17779:2025 consists of the English text of the European standard EN ISO 17779:2025.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.09.2025.	Date of Availability of the European standard is 10.09.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 25.160.01

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 17779

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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.

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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

Ref. No. EN ISO 17779:2025 E

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.

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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.

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 857-2, ISO/TR 25901-1 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
brazing
joining process using filler metal with a liquidus temperature above 450 °C

[SOURCE: ISO 857-2:2005, 3.1.2.]

3.2
brazing procedure specification
BPS
document that has been qualified and provides the required variables of the brazing procedure to ensure repeatability during production brazing

3.3
preliminary brazing procedure specification
pBPS
document containing the required variables of the brazing procedure which is not yet qualified

3.4
brazing procedure qualification record
BPQR
record comprising all necessary data from qualification of a *preliminary brazing procedure specification* (3.3).

3.5
manufacturer
workshop or site or both which is (are) under the same technical and quality management

3.6
examiner
person who has been appointed to verify compliance with the applicable standard

Note 1 to entry: In certain cases, an external independent examiner can be required.