



SLOVENSKI STANDARD
SIST EN 13134:2001
01-december-2001

Trdo spajkanje - Odobritev postopka

Brazing - Procedure approval

Hartlöten - Hartlötverfahrensprüfung

Brasage fort - Qualification de mode opératoire de brasage fort

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Ta slovenski standard je istoveten z: EN 13134:2000

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ICS:

25.160.50

SIST EN 13134:2001

en

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English version

Brazing - Procedure approval

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This European Standard was approved by CEN on 27 July 2000.

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS.

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of an identical text or by endorsement, at the latest by February 2001, and conflicting national standards shall be withdrawn at the latest by February 2001.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Approved brazing procedure specifications will frequently, but not always, be needed in order to provide a well defined basis for the planning of brazing operations and for quality control during brazing. Brazing is considered a special process in the terminology of standards for quality systems; such standards usually require that special processes be carried out in accordance with written procedure specifications.

This standard defines the content for the brazing procedure specifications which is considered to fulfil the requirements in current standards for quality systems as regards procedure specifications.

Preparation of a brazing procedure specification records the necessary instructions for evaluation but does not in itself ensure that the resulting brazes fulfil the service requirements. Some deviations can be evaluated by non-destructive methods on the finished product but others, e.g. metallurgical deviations, cannot. This has resulted in the establishment of a set of rules for approval of the brazing procedure prior to the release of the specification to actual production.

Guidelines for the practical application of brazing procedure approval are given in annex A.

Furthermore, this standard allows for brazing procedure approval to be related to previous experience of similar applications. Many manufacturers have considerable experience in fabricating brazed structures. Brazed components and structures may have been supplied for a variety of applications and have performed satisfactorily over a period of time in service. If this experience is traceable and verifiable, this standard provides a route for brazing procedure approval based on this experience.

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1 Scope

This European Standard specifies general rules (test procedures, test pieces) for the specification and approval of brazing procedures for all materials, metallic and non-metallic. It is anticipated that, where necessary, specific requirements for individual industries will be developed within this framework and detailed in the relevant application standard. The recommended format for the procedure approval certificate is given in annex B.

It assumes that the brazing procedure specifications are used in production and, in the case of manual flame brazing, by competent brazers approved in accordance with EN 13133, where relevant.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13133	Brazing - Brazer approval
EN 12797	Brazing - Destructive examination of brazed joints
EN 12799	Brazing - Non-destructive testing of brazed joints

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1

brazer

the person who performs the brazing in a manual operation, he guides the heating means and ensures the introduction of the brazing filler metal.

3.2

brazing procedure specification (BPS)

a document providing the designations or values of the required variables necessary to achieve consistent brazing for the defined application.

NOTE An example of the format to be used is given in annex C.

3.3

brazing procedure test

the making and testing of a brazed joint in order to prove the feasibility of a brazing procedure.

3.4

manufacturer

the person or organization responsible for the manufacture of the brazed joints.

3.5

examiner or examining body

a person or organization appointed to verify compliance with the applicable standard.

NOTE The examiner or examining body may be a notified body or recognized third-party, if required.

3.6

preliminary brazing procedure specification (pBPS)

a tentative BPS, which is assumed to be adequate by the manufacturer, but which has not been approved. Brazing of test pieces needed for the approval of a BPS has to be carried out on the basis of a pBPS.

3.7

test piece

the assembly which is brazed together during the approval test.

3.8

test specimen

a sample taken from a test piece.

4 Information and requirements to be agreed and to be documented

The following information and requirements shall be agreed and documented prior to the contract.

- a) The application standards to be used, if any, together with any supplementary requirements (see clause 1).
- b) The specification of the parent materials.
- c) The types of test, if any, to be carried out on brazing consumables.
- d) The brazing process to be used.
- e) The brazing filler metal and flux (if any) to be used, if not specified elsewhere.
- f) The relevant brazing variables (see clause 5 and annex A).
- g) The pBPS, based on the information detailed in this clause (see clause 6).

- h) The joint/assembly design if it is not specified in the relevant application standard (see 8.1).
- i) The number of test pieces, the number of test specimens and the number of further test specimens for re-testing (see 8.2, 8.3 and 9.5).
- j) The extent of visual testing, the details of metallographic examination and additional testing requirements for non-destructive and destructive tests (see clause 9).
- k) The acceptance/non-acceptance criteria, including (where appropriate) the level of confidence (see 9.5 and annex A).
- l) The range of approval, where this is possible (see clause 10).
- m) Records and documentation

NOTE Examples of the formats to be used are given in annexes B, C and D.

5 Brazing variables

The relevant brazing variables shall be selected (see 4 f) and annex A).

6 pBPS

A pBPS shall be prepared which it is believed will meet the requirements for the brazed assemblies (see 4 g)). This shall be approved by one of the methods given in clause 7 to become an approved BPS (see 3.2).

7 Approval of BPS

A BPS can be suitably approved in one of three ways:

- a) by submitting documentary evidence to verify that a relevant procedure that has been proven by experience is available for approval by an examiner or examining body;
- b) by submitting a relevant procedure previously accepted by another examiner or examining body;
- c) by carrying out appropriate brazing procedure tests for approval by an examiner or examining body.

In the case of manual hand torch (flame) brazing, the brazer who undertakes the brazing procedure test satisfactorily in accordance with this standard is thereby approved by EN 13133.