Brazing - Non-destructive testing of brazed joints

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12799:2000 sisaldab Euroopa standardi EN 12799:2000 ingliskeelset teksti. Käesolev dokument on jõustatud 18.12.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12799:2000 consists of the English text of the European standard EN 12799:2000. This document is endorsed on 18.12.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard describes non-destructive examination procedures and test piece types necessary to perform the tests on brazed joints.	**Scope:** This standard describes non-destructive examination procedures and test piece types necessary to perform the tests on brazed joints.

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Võtmesõnad:

EUROPEAN STANDARD
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English version

Brazing

Non-destructive examination of brazed joints

Brasage fort – Contrôles non destructifs des assemblages réalisés par brasage fort

Hartlöten – Zerstörungsfreie Prüfung von Harlötverbindungen

This European Standard was approved by CEN on 2000-07-02.

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.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Contents

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 January 2001, and conflicting national standards shall be withdrawn at the latest by January 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.

1 Scope

This European Standard describes non-destructive examination procedures and test piece types necessary to perform the tests on brazed joints.

The non-destructive examination methods described are as follows:

a) visual examination (see clause 4);

b) ultrasonic examination (see clause 5);

c) radiographic examination (see clause 6);

d) penetrant examination (see clause 7);

e) leak testing (see clause 8);

f) proof testing (see clause 9);

g) thermography (see clause 10).

The brazed joints to which these tests are applied can either be test samples manufactured to obtain brazed joint design data, or manufactured as part of the approval testing of a brazing procedure, or parts of a brazed assembly. The type of test piece described for each test can be quoted or incorporated in engineering application standards that deal with brazed assemblies.

This European Standard does not recommend the number of samples to be tested or the repeat tests allowed. Neither does it specify methods of sampling brazed joints, except to give guidance regarding the precautions necessary, nor does it comment on the acceptance criteria applicable to any of the tests. No attempt is made to define which test or tests, if any , should be applied in any situation. This is a matter to be established before any particular method of test is selected.

The methods of non-destructive examination are not associated with any particular type of brazed assembly but lay down the general principles of the types of testing described. It is emphasised that a satisfactory examination method can only be developed and used after taking into account all the relevant factors regarding the equipment to be used and the characteristics of the test piece being examined.

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 444	Non-destructive testing - General principles for radiographic examination of metallic materials by X- and gamma-rays
EN 473:1993	Non destructive testing - Qualification and certification of NDT personnel - General principles
EN 571-1	Non destructive testing - Penetrant testing - Part 1: General principles
EN 583-1:1998	Non-destructive testing - Ultrasonic examination - Part 1: General principles
prEN 583-2:1997	Non-destructive testing - Ultrasonic examination - Part 2: Sensitivity and range setting
EN 583-3	Non destructive testing - Ultrasonic examination - Part 3: Transmission technique
EN 1593	Non-destructive testing - Leak testing - Bubble emission techniques
EN 1779	Non-destructive testing - Leak testing - Criteria for method and technique selection
EN 12668-1	Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 1: Instruments
prEN 12668-2:1998	Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 2: Probes
EN 12668-3	Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 3: Combined equipment
prEN 13184:1998	Non destructive testing - Leak test - Pressure change method
prEN 13185:1998	Non destructive testing - Leak test - Tracer gaz method

3 General principles

Imperfections may be observed when brazed joints are examined non-destructively. They may reduce the quality and performance characteristics of the joint or the brazed assembly.

This European Standard does not give guidance regarding the cause of the imperfection or its effect upon the joint quality or the effects of single or multiple imperfections upon the performance characteristics of the brazed assembly. This will