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Destructive tests on welds in metallic materials - Torsion of resistance spot welds

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Torsion of resistance spot welds

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 17653:2003 sisaldab Euroopa standardi EN ISO 17653:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 06.06.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 17653:2003 consists of the English text of the European standard EN ISO 17653:2003.</p> <p>This document is endorsed on 06.06.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This European Standard is applicable to spot welded test specimens with single sheet thicknesses ranging from 0,5 mm to 3,0 mm in steels. It may be used for non-ferrous materials in certain circumstances, see annex A</p>	<p>Scope: This European Standard is applicable to spot welded test specimens with single sheet thicknesses ranging from 0,5 mm to 3,0 mm in steels. It may be used for non-ferrous materials in certain circumstances, see annex A</p>
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ICS 25.160.40

Võtmesõnad: destructive testing, materials, materials testing, metallic materials, metals, resistance spot welds, spot welding, strain, test specimens, testing, torsion testing, welded joints, welding, welding engineering, welds

ICS 25.160.40

English version

Destructive tests on welds in metallic materials
Torsion test of resistance spot welds
(ISO 17653 : 2003)

Essais destructifs des soudures sur
matériaux métalliques – Essai de
torsion de soudure par résistance
par points (ISO 17653 : 2003)

Zerstörende Prüfung von Schweiß-
verbindungen an metallischen
Werkstoffen – Torsionsversuch an
Widerstandspunktschweißungen
(ISO 17653 : 2003)

This European Standard was approved by CEN on 2002-11-21.

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 Management Centre 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 Management Centre 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

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Foreword

This document (EN ISO 17653:2003) has been prepared by Technical Committee CEN/TC 121, "Welding", the secretariat of which is held by DS, in collaboration with ISO/TC 44 "Welding and allied processes".

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 September 2003, and conflicting national standards shall be withdrawn at the latest by September 2003.

In this European Standard annex A is informative.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard is applicable to spot welded test specimens with single sheet thicknesses ranging from 0,5 mm to 3,0 mm in steels. It may be used for non-ferrous materials in certain circumstances, see annex A.

The aim of this test is to determine the influence of different steel types, welding parameters and other factors on the deformation characteristics of a spot weld. Using this test, it is possible to determine the weld diameter and the fracture type from fractured specimens. Additionally, the maximum torsion moment (torque) and the corresponding torsion angle can be determined.

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).

prEN ISO 14329:1999, *Welding — Destructive testing of welds — Failure types and geometric measurements for resistance spot, seam, and projection welds (ISO/DIS 14329:1999)*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in prEN ISO 14329:1999 apply.

4 Specimens

Specimens for torsion testing are welded individually. In the case of the non-instrumented torsion test, the minimum distance of the spot weld from the edge shall be greater than 10 mm. When using an instrumented torsion device, the minimum distance shall be 20 mm. The specimen dimensions shall be adjusted to the test equipment but shall be adequate to ensure test specimen rigidity (see Figure 1). The spot weld shall be located in the centre of the test specimen (see 5.2.2).