Resistance welding - Destructive testing of welds - Specimen dimensions and procedure for tensile shear testing resistance spot and embossed projection welds (ISO 14273:2016)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14273:2016 sisaldab Euroopa standardi EN ISO 14273:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14273:2016 consists of the English text of the European standard EN ISO 14273:2016.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.03.2016.	Date of Availability of the European standard is 23.03.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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

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EUROPEAN STANDARD

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EN ISO 14273

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English Version

Resistance welding - Destructive testing of welds - Specimen dimensions and procedure for tensile shear testing resistance spot and embossed projection welds (ISO 14273:2016)

Soudage par résistance - Essais destructifs des soudures - Dimensions des éprouvettes et mode opératoire pour l'essai de traction-cisaillement des soudures par résistance par points et par bossages (ISO 14273:2016)

Widerstandsschweißen - Zerstörende Prüfung von Schweißverbindungen - Probenmaße und Verfahren für die Scherzugprüfung an Widerstandspunkt-, Rollennaht- und Buckelschweißungen mit geprägten Buckeln (ISO 14273:2016)

This European Standard was approved by CEN on 13 December 2015.

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

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European foreword

This document (EN ISO 14273:2016) has been prepared by IIW International Institute of Welding in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” the secretariat of which is held by DIN.

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 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 14273:2001.

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

Endorsement notice

The text of ISO 14273:2016 has been approved by CEN as EN ISO 14273:2016 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).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/IIW, *International Institute of Welding*, Commission III.

This second edition cancels and replaces the first edition (ISO 14273:2000), which has been technically revised.

Requests for official interpretations of any aspect of this International Standard should be directed to the ISO Central Secretariat, who will forward them to the IIW Secretariat for an official response.

Introduction

This edition of ISO 14273 no longer includes figures showing failure types and modes for tensile shear and cross tension testing in accordance with ISO 14329.

ISO 14273 has been revised to align it with ISO 17677-1.

Resistance welding — Destructive testing of welds — Specimen dimensions and procedure for tensile shear testing resistance spot and embossed projection welds

1 Scope

This International Standard specifies specimen dimensions and a testing procedure for tensile shear testing of spot and embossed projection welds, in overlapping sheets, in any metallic material of thickness 0,5 mm to 10 mm, where the welds have a maximum diameter of $7\sqrt{t}$ (where t is the sheet thickness in mm).

The object of tensile shear testing is to determine the tensile shear force that the test specimen can sustain.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17677-1 and the following apply.

3.1
tensile shear strength
TSS
maximum (tensile shear) force obtained from this test

3.2
tensile shear force
force applied on test specimen during tensile shear testing

3.3
saturated strength condition
<resistance welding> condition where beyond a certain specimen width and overlap length, the weld strength does not increase

4 Test pieces and specimens

The configuration of the test specimen is shown in Figure 1 and Table 1.

The test specimen dimensions given in Table 1 are for testing in the saturated strength condition for weld diameters up to $5\sqrt{t}$.

For weld diameters between $5\sqrt{t}$ and $7\sqrt{t}$, tensile shear strength values can be underestimated when using the values given in Table 1 (see Annex A). When testing weld diameters over $5\sqrt{t}$ in the saturated