

## **Specimen dimensions and procedure for shear testing resistance spot, seam and embossed projection welds**

Specimen dimensions and procedure for shear  
testing resistance spot, seam and embossed  
projection welds

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 14273:2002 sisaldab Euroopa standardi EN ISO 14273:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.04.2002 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 14273:2002 consists of the English text of the European standard EN ISO 14273:2001.</p> <p>This document is endorsed on 19.04.2002 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>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p><b>Käsitlusala:</b></p> <p>This standard specifies specimen dimensions and a testing procedure for shear testing of spot, seam 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 <math>7t</math> (where <math>t</math> is the sheet thickness in mm).</p>	<p><b>Scope:</b></p> <p>This standard specifies specimen dimensions and a testing procedure for shear testing of spot, seam 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 <math>7t</math> (where <math>t</math> is the sheet thickness in mm).</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**ICS** 25.160.40

**Võtmesõnad:** cross tension test, definition, definitions, dimensions, projection seam welds, projection welding, resistance projection welds, resistance seam welds, resistance spot welds, resistance welding, shear testing, test specimens, welded joints, welding

ICS 25.160.40

English version

**Specimen dimensions and procedure for shear testing  
resistance spot, seam and embossed projection welds (ISO  
14273:2000)**

Dimensions des éprouvettes et mode opératoire pour  
l'essai de cisaillement des soudures par résistance par  
points, à la molette et par bossages (ISO 14273:2000)

Probenmaße und Verfahren für die Scherzugprüfung an  
Widerstandspunkt-, Rollennaht- und Buckelschweißungen  
mit geprägten Buckeln (ISO 14273:2000)

This European Standard was approved by CEN on 3 October 2001.

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.

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 Management Centre 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.



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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

CORRECTED 2002-01-02

## Foreword

The text of the International Standard from Technical Committee IIW has been taken over as a European Standard 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 April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

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.

## Endorsement notice

The text of the International Standard ISO 14273:2000 has been approved by CEN as a European Standard without any modifications.

NOTE Normative references to International Standards are listed in annex ZA (normative).

**Annex ZA**  
(normative)**Normative references to international publications  
with their relevant European publications**

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).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 7500-1	1999	Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines	EN ISO 7500-1	1999

---

---

## Specimen dimensions and procedure for shear testing resistance spot, seam and embossed projection welds

*Dimensions des éprouvettes et mode opératoire pour l'essai de  
cisaillement des soudures par résistance par points, à la molette et par  
bossages*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.ch](mailto:copyright@iso.ch)  
Web [www.iso.ch](http://www.iso.ch)

Printed in Switzerland

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14273 was prepared in collaboration with the International Institute of Welding, which has been approved by the ISO Council as an international standardizing body in the field of welding.





# Specimen dimensions and procedure for shear testing resistance spot, seam and embossed projection welds

## 1 Scope

This International Standard specifies specimen dimensions and a testing procedure for shear testing of spot, seam 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). With welds of diameter  $> 5\sqrt{t}$  and  $\leq 7\sqrt{t}$ , the value of shear strength can be underestimated when using the recommended test specimen dimensions.

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

## 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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.*

## 3 Terms and definitions

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

### 3.1

#### **shear force**

maximum force obtained from the test

### 3.2

#### **plug diameter**

$d_p$

⟨plug failure⟩ mean diameter of the plug

See Figure 1 a).

### 3.3

#### **weld diameter**

$d$

⟨partial plug failure⟩ mean diameter of the fused zone measured at the interface omitting the corona bond area and the maximum diameter of the plug component of the failure

See Figure 1 a).

NOTE Measurement of the minimum diameter of the plug component should be quoted separately.