
**Porušitveno preskušanje zvarnih spojev na kovinskih materialih -
Preskus trdote - 2. del: Preskus mikrotrdote na zvarnih spojih
(prevzet standard EN 1043-2:1996 z metodo platnice)**

Destructive tests on welds in metallic materials - Hardness test - Part 2:
Micro hardness testing on welded joints

Essais destructifs des soudures sur matériaux métalliques - Essai de
dureté - Partie 2: Essais de microdureté des assemblages soudés

Zerstörende Prüfung von Schweißverbindungen an metallischen Werkstoffen
- Härteprüfung - Teil 2: Mikrohärtprüfung an Schweißverbindungen

Deskriptorji: varjenje, obločno varjenje, zvarni spoji, kovina, porušitveni preskus, preskus
trdote, preskus mikrotrdote

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Referenčna številka
SIST EN 1043-2:1998 ((sl),de)

Nadaljevanje na straneh od II do III in od 1 do 11

NACIONALNI UVOD

Standard SIST EN 1043-2 ((sl),de), Porušitveno preskušanje zvarnih spojev na kovinskih materialih - Preskus trdote - 2. del: Preskus mikrotrdote na zvarnih spojih, prva izdaja, 1998, ima status slovenskega standarda in je z metodo platnice prevzet evropski standard EN 1043-2 (de), Zerstörende Prüfung an Schweißverbindungen an metallischen Werkstoffen - Härteprüfung - Teil 2: Mikrohärteprüfung an Schweißverbindungen, 1996-10-00.

NACIONALNI PREDGOVOR

Evropski standard EN 1043-2:1996 je pripravil tehnični odbor Evropskega komiteja za standardizacijo CEN/TC 121 Varjenje.

Prilagobo tega standarda sta CEN poverila Evropska komisija in Evropsko združenje za prosto trgovino. Ta evropski standard ustreza bistvenim zahtevam evropske direktive 97/23/EEC.

Odločitev za prevzem tega standarda po metodi platnice je dne 1997-05-14 sprejel tehnični odbor USM/TC VAR Varjenje.

Ta slovenski standard je dne 1998-03-03 odobril direktor USM.

ZVEZA S STANDARDOM

S prevzemom tega evropskega standarda veljajo poleg standardov, navedenih v izvorniku, še naslednje zveze:

SIST EN 1043-1:1998 ((sl),de) Porušitveno preskušanje zvarnih spojev na kovinskih materialih - Preskus trdote - 1. del: Preskus trdote na oblačno varjenih spojih

SIST ISO 6507-1:1995 ((sl),en) Kovinska gradiva - Preskus trdote - Preskus trdote po Vickersu - 1. del: HV 5 do HV 100,

OPOMBI

- Povsod, kjer se v besedilu standarda uporablja izraz evropski standard, v SIST EN 1043-2:1998 to pomeni slovenski standard.
- Nacionalni uvod in nacionalni predgovor nista sestavni del standarda.

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EUROPEAN STANDARD

EN 1043-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1996

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Descriptors: welding, arc welding, welded joints, metals, destructive tests, hardness tests, microhardness tests

English version

**Destructive tests on welds in metallic materials -
Hardness test - Part 2: Micro hardness testing on
welded joints**

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2: Mikrohartprüfung an Schweißverbindungen

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SIST EN 1043-2:1998

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This European Standard was approved by CEN on 1996-05-23. 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.

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CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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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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 April 1997, and conflicting national standards shall be withdrawn at the latest by April 1997.

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

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1 Scope

This standard specifies micro hardness tests on transverse sections of welded joints of metallic materials with high hardness gradients. It covers Vickers hardness tests in accordance with ISO/DIS 6507-1, normally with test loads of 0,98 N to less than 49 N (HV 0,1 to less than HV 5).

Testing should be carried out to ensure that the highest and/or the lowest level of hardness of both parent metal (in the case of dissimilar metal both parent metal) and weld metal is determined.

The type and extent of testing shall be as specified by an application standard or by agreement between the contracting parties.

This standard does not cover the hardness test as described in EN 1043-1.

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.

EN 1043-1 Destructive test on welds in metallic materials - Hardness testing - Part 1: Hardness test on arc welded joints

<https://standards.iteh.ai/catalog/standards/sist/01946c15-6953-4019-86c1->

ISO/DIS 6507-1:1995 Metallic materials - Vickers Hardness test - Part 1 : Test method

3 Principle

Micro hardness testing shall be carried out in accordance with ISO/DIS 6507-1.

The micro hardness tests may be carried out in the form of rows of indentations, R, or as individual indentations, E.

When types of weld are not shown in the examples, the test procedure shall be appropriate to the welded joint.

Unless otherwise specified, the test shall be carried out at ambient temperature (23 ± 5) °C.

4 Denominations and symbols

The denominations and symbols to be used are specified in table 1 and represented on figures 1 to 3.

Table 1 : Denominations and symbols

Symbol	Designation	Unit
E	Individual indentation	
R	Row of indentation	
HV	Vickers hardness	1)
L	Distance between the centrepoint of the indentations in heat affected zone	mm
H	Distance of rows of indentations from the reference line (surface or fusion line)	mm
t	Thickness of test specimen	mm

1) The unit of symbolisation for Vickers hardness is given in ISO/DIS 6507-1.

5 Preparation of test specimens

The preparation of the test specimen shall be in accordance with ISO/DIS 6507-1.

A cross-section of test piece shall be taken by mechanical cutting, usually transverse to the welded joint.

This operation and the subsequent preparation of the surface shall be carried out carefully so that the hardness of the surface to be tested is not affected metallurgically.

The surface to be tested shall be properly prepared and preferably etched, so that accurate measurements of the diagonal of the indentations can be achieved in the different zones of the welded joint.

6 Test procedure

6.1 Rows of indentations (R)

Figures 1 to 3 give examples of hardness indentations made in rows including the distance from the surface so that these rows or parts of them permit an assessment of the welded joint. If required by the contracting parties, additional rows of indentations and/or different locations may be made. The location shall be stated in the test report.

In metals such as aluminium, copper and their alloys, the rows on the root-side of butt welds (see figure 1) can not be necessary.

The number and spacing of indentations shall be sufficient to define hardened or softened regions due to welding. Recommended distance between the centrepoint of the indentations in the heat affected zone (HAZ) is given in table 2.