
**Porušitveno preskušanje zvarnih spojev na kovinskih materialih -
Prelomni preskus (prevzet standard EN 1320:1996 z metodo platnice)**

Destructive tests on welds in metallic materials - Fracture test

Essais destructifs des soudures sur matériaux métalliques - Essai de
texture

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Zerstörende Prüfung von Schweißverbindungen an metallischen
Werkstoffen - Bruchprüfung

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Deskriptorji: zvarni spoj, kovina, talilno varjenje, sočelno varjenje, kotno varjenje,
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ICS 25.160.40

Referenčna številka
SIST EN 1320:1998 ((sl),de)

Nadaljevanje na straneh od II do III in od 1 do 14

SIST EN 1320 : 1998

NACIONALNI UVOD

Standarda SIST EN 1320 ((sl),de), Porušitveno preskušanje zvarnih spojev na kovinskih materialih - Prelomni preskus, prva izdaja, 1998, ima status slovenskega standarda in je z metodo platnice prevzet evropski standard EN 1320 (de), Zerstörende Prüfung von Schweißverbindungen an metallischen Werkstoffen - Bruchprüfung, 1996-10-00.

NACIONALNI PREDGOVOR

Evropski standard EN 1320:1996 je pripravil tehnični odbor Evropskega komiteja za standardizacijo CEN/TC 121 Varjenje.

Pripravo 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.

ZVEZE S STANDARDI

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

- SIST EN 25817:1996 ((sl),de) Obločni zvarni spoji na jeklu - Smernice za stopnje sprejemljivosti napak
- SIST EN 30042:1995 ((sl),de) Obločni zvarni spoji na aluminiju in njegovih varivih zlitinah - Smernice za stopnje sprejemljivosti napak (ISO 10042:1992)
- JUS C.T3.051 Tehnika varjenja metala - Ispitivanje kvaliteta zavarenih spojev - Ispitivanje razaranjem čeličnih spojeva zavarenih elektrolučno ili plinski

OPOMBI

- Povsod, kjer se v besedilu standarda uporablja izraz evropski standard, v SIST EN 1320:1998 to pomeni slovenski standard.
- Nacionalni uvod in nacionalni predgovor nista sestavni del standarda.

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EUROPEAN STANDARD

EN 1320

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1996

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Descriptors: welded joints, metals, fusion welding, butt welds, fillet welds, tests, texture, defects, visual examination, test specimen, designation

English version

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This European Standard was approved by CEN on 1996-09-27. 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, 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 European Standard specifies the sizes of test specimen and the procedures for carrying out fracture tests in order to obtain information about types, sizes and distribution of internal imperfections such as porosities, cracks, lacks of fusion, lacks of penetration and solid inclusions on the fracture surface.

This European Standard applies to metallic materials in all form of product with joints made by any fusion welding process with a thickness greater or equal to 2 mm.

This European Standard is used if required by the application standard or by the agreement between the contracting parties.

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.

pr EN 970	Non-destructive examination of fusion welds - Visual examination (standards.iteh.ai)
EN 25817	Arc-welded joints in steel - Guidance on quality levels for imperfections (ISO 5817:1992) https://standards.iteh.ai/catalog/standards/sist/0f8e970a-1d8c-4bfd-a40a-a9e57e69f03/sist-en-1320-1998
EN 30042	Arc-welded joints in aluminium and its weldable alloys - Guidance on quality levels for imperfections (ISO 10042:1992)

3 Definitions

For the purposes of this standard, the following definitions apply :

- 3.1 examination length (L_f):** Length of the test specimen measured along the weld axis between any side notches (see figure 6).
- 3.2 total examination length (ΣL_f):** Sum of the lengths of all the test specimens composing the test piece, measured along the weld axis, of the fracture faces between the side notches of the test specimens (see figure 6).
- 3.3 examination thickness (a_f):** Thickness of the fracture area for each test specimen (see figures 7 and 8).
- 3.4 examination area (A_f):** Product of the examination length and the examination thickness for each test specimen.
- 3.5 total examination area (ΣA_f):** Sum of all examination areas.

4 Principle

Fracture the joint through the weld metal in order to examine the fracture surface. The fracture can be induced by bending or tension, static or dynamic loading. Furthermore, notch dimensions and temperature can be varied to induce the fracture.

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

5 Denominations and symbols

The denominations and symbols to be used for fracture tests are specified in table 1 and represented in figures 5 to 8.

Normally, it is sufficient to give the basic denomination, but for special application, additional denominations about the notching and test method can be requested.

Table 1 : Denominations and symbols

Denomination	Symbol	Unit
Butt weld	BW	-
Fillet weld	FW	-
Test specimen and test piece		
- Examination length	L_f	mm
- Examination thickness	a_f	mm
- Examination area	A_f	mm ²
- Area of imperfections	A_i	mm ²
Side notch	S	
- square (q)	Sq	-
- round (r)	Sr	-
- sharp (s)	Ss	-
Longitudinal notch		
- Face notch	F	-
- square (q)	Fq	-
- round (r)	Fr	-
- sharp (s)	Fs	-
- Root notch	R	-
- square (q)	Rq	-
- round (r)	Rr	-
- sharp (s)	Rs	-

EXAMPLE 1 : Test specimen taken from a fillet weld with an examination length of 40 mm and examination thickness of 10 mm.

. without any requirement about notching and test method :

Basic denomination : FW / $L_f \times a_f$
EXAMPLE : FW / 40 x 10

. with additional requirement (square face notching and test method) :

Comprehensive denomination : FW / $L_f \times a_f$ / Fq / Figure 8
EXAMPLE : FW / 40 x 10 / Fq / Figure 8

EXAMPLE 2 : Test specimen taken from a butt weld with an examination length of 40 mm and examination thickness of 10 mm.

. without any requirement about notching and test method :

Basic denomination : BW / $L_f \times a_f$
EXAMPLE : BW / 40 x 10

. with additional requirement (round side notching and test method) :

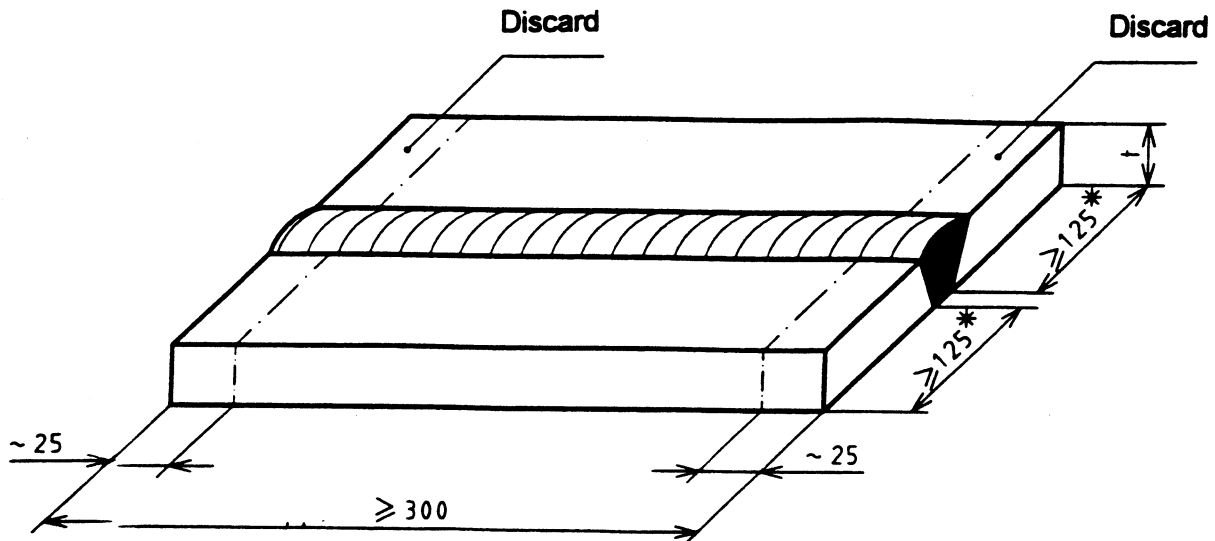
Comprehensive denomination : BW / $L_f \times a_f$ / Sr / Figure 6
EXAMPLE : BW / 40 x 10 / Sr / Figure 6.

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6 Dimensions of test pieces

Unless otherwise specified by the application standard or by agreement between the contracting parties, test pieces dimensions shall be in accordance with figures 1 to 4. The test piece shall provide sufficient test specimens for the required total examination length (ΣL_f) and area (ΣA_f).

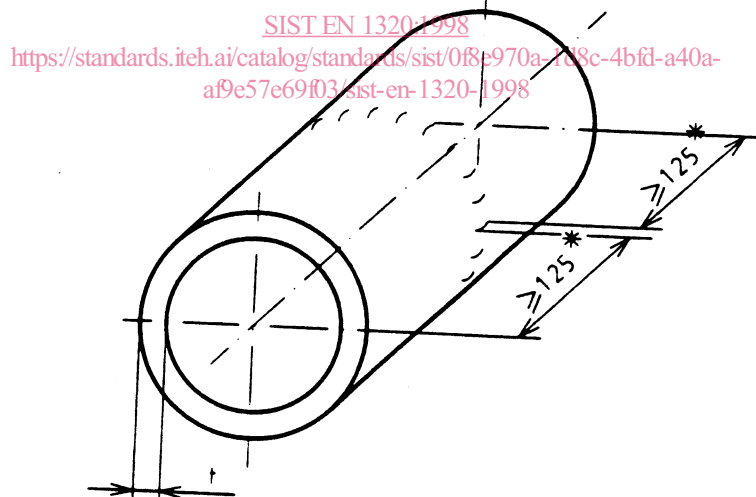


NOTE : * ≥ 150 mm for materials of high thermal conductivity (e.g. aluminium and copper)

t is the thickness of the test piece

Figure 1 : Test piece for butt welds in plate
(dimensions in mm)

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NOTE : * ≥ 150 mm for materials of high thermal conductivity (e.g. aluminium and copper)

t is the thickness of the test piece

Figure 2 : Test piece for butt welds in pipe
(dimensions in mm)