



SLOVENSKI STANDARD

SIST EN 12814-6:2000

01-december-2000

Preskus zvarjenih spojev plastomernih polizdelkov - 3. del: Trgalni preskus pri nizki temperaturi

Testing of welded joints of thermoplastics semi-finished products - Part 6: Low temperature tensile test

Prüfen von Schweißverbindungen aus thermoplastischen Kunststoffen - Teil 6: Zugversuch bei tiefen Temperaturen

Essais des assemblages soudés sur produits semi-finis en thermoplastiques - Partie 6: Essai de traction a basse température

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Ta slovenski standard je istoveten z: **EN 12814-6:2000**

ICS:

25.160.40 Varjeni spoji in vari Welded joints

SIST EN 12814-6:2000 en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12814-6

January 2000

ICS 25.160.40

English version

Testing of welded joints of thermoplastics semi-finished products
- Part 6: Low temperature tensile test

Essais des assemblages soudés sur produits semi-finis en
thermoplastiques - Partie 6: Essai de traction à basse
température

Prüfen von Schweißverbindungen aus thermoplastischen
Kunststoffen - Teil 6: Zugversuch bei tiefen Temperaturen

This European Standard was approved by CEN on 27 November 1999.

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.

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 Central Secretariat 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.

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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 249 "Plastics", the secretariat of which is held by IBN.

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 July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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.

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1 Scope

This standard specifies the dimensions, the method of sampling and the preparation of the test specimens, also the conditions for performing the low temperature tensile test perpendicular to the weld in order to determine the low temperature tensile welding factor.

A low temperature tensile test may be used in conjunction with other tests (e.g. bend, tensile creep, macro, ...) to assess the performance of welded assemblies, made from thermoplastics materials.

The low temperature tensile welding factor and the appearance of the fracture surface provide a guide regarding the ductility of the joint and the quality of the work.

The test is applicable to co-axial or co-planar welded assemblies made from thermoplastics materials filled or unfilled, but not reinforced, irrespective of the welding process used.

The test is not applicable for tubes of nominal diameter less than 20 mm.

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 standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 5893: 1993, *Rubber and plastics test equipment - Tensile, flexural and compression types (constant rate of traverse) - Description*.

EN 13100-1, *Non destructive testing of welded joints of thermoplastics semi-finished products – Part 1: Visual examination*

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3 Symbols and designations

Symbols and designations are given in table 1.

Table 1 - Symbols and designations

Symbols and abbreviations	Designations	Units
a	Minimum measured thickness of the test specimen within calibrated and parallel length	millimetre
a_n	Nominal thickness of the test piece	millimetre
b	Width of calibrated and parallel length of the test specimen	millimetre
b_1	Width of shoulder of the test specimen	millimetre
D_n	Nominal outside diameter of the tube	millimetre
F_r	The value of force of the unwelded test specimens taken from the same test piece, used in the calculation of f_t	Newton
f_t	The low temperature tensile welding factor	
F_w	The value of force of the welded test specimens used in the calculation of f_t	Newton
L	Total length of the test specimen	millimetre
L_i	Minimum distance between the clamping jaws	millimetre
r	Radius of machining of the test specimen	millimetre
σ_r	The value of stress of the unwelded test specimens taken from the same test piece, used in the calculation of f_t	N/mm ²
σ_w	The value of stress of the welded test specimens used in the calculation of f_t	N/mm ²

4 Principle of the test

The test consists of subjecting a test specimen to a constant rate of displacement at low temperature until fracture occurs.

5 Sampling procedures

Welded and unwelded test specimens shall be taken from the same test piece.

The test specimens (welded and unwelded) shall be cut perpendicular to the welded joint at least eight hours after welding.

Each test specimen shall be marked so that its original position in the test piece can be identified.

No heat treatment or mechanical straightening operations shall be carried out on the test specimen.

6 Dimensions of test specimens

The dimensions for the test specimens are given in figure 1 and table 2 and table 3.

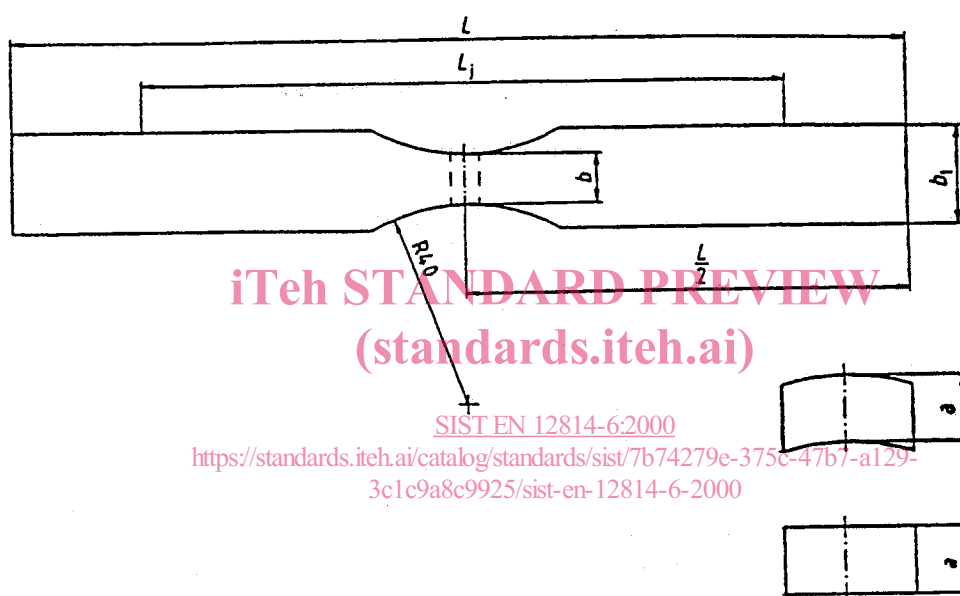


Figure 1 - Low temperature tensile test specimen

Table 2 - Dimensions of test specimens from tubes

Dimensions in millimetres

D_n	L	b_1	b
20	160	10	5
25	160	12	6
32	160	12	6
40	160	12	6
50	160	12	6
63	160	12	6
75	160	14	7
90	160	14	7
110	160	14	7
125	180	16	8
140	180	16	8
160	180	16	8
200	180	18	9
225	180	20	10
250	180	20	10
280	180	22	11
315	180	22	11
355	180	24	12
400	180	26	13
450	180	28	14