

Testing of welded joints of thermoplastics semi-finished products - Part 4: Peel test

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12814-4:2018 sisaldab Euroopa standardi EN 12814-4:2018 ja selle paranduse AC:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 12814-4:2018 consists of the English text of the European standard EN 12814-4:2018 and its corrigendum AC:2018.
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.
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English Version

Testing of welded joints of thermoplastics semi-finished products - Part 4: Peel test

Essai des assemblages soudés sur produits semi-finis
en thermoplastiques - Partie 4 : Essai de pelage

Prüfen von Schweißverbindungen aus
thermoplastischen Kunststoffen - Teil 4: Schälversuch

This European Standard was approved by CEN on 10 December 2017.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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This document consolidates EN 12814-4:2018 and the corrigendum EN 12814-4:2018/AC:2018.



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

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European foreword

This document (EN 12814-4:2018) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

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 12814-4:2001.

This document includes the corrigendum EN 12814-4:2018/AC:2018 which corrects the symbol for the peel resistance in 5.5, 2nd paragraph, 1st line.

In comparison with the previous edition, the following technical modifications have been made:

- the procedures in the Clauses “T-peel test”, “Decohesion test”, “Crush test” have been detailed with specifications and consequently with the reference figures.

EN 12814, *Testing of welded joints of thermoplastics semi-finished products*, is composed with the following parts:

- *Part 1: Bend test;*
- *Part 2: Tensile test;*
- *Part 3: Tensile creep test;*
- *Part 4: Peel test;*
- *Part 5: Macroscopic examination;*
- *Part 6: Low temperature tensile test;*
- *Part 7: Tensile test with waisted test specimens;*
- *Part 8: Requirements.*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the dimensions, the method of sampling and the preparation of the test specimens, and also the conditions for performing the peel test perpendicular to the weld in order to determine the peel resistance and the failure behaviour.

A peel test can be used in conjunction with other tests (e.g. tensile creep, macroscopic examination...) to assess the performance of welded assemblies, made from thermoplastics materials.

Peel tests are applicable to overlap welded assemblies made from thermoplastics materials.

The T-peel test as defined in Clause 5 will be used only for assessing welded sheet assemblies. This test is not applicable to welded test pieces containing sheets of different nominal thickness.

The decohesion test as defined in Clause 6 will be used only for assessing electrofusion joints with nominal thickness of pipe/fitting greater than 10 mm.

For socket fusion and for electrofusion socket joints with nominal outside diameter less than or equal to 90 mm, a crush test will be used, as defined in Clause 7.

The crush test can also be used for electrofusion joints with outside diameters greater than 90 mm.

The crush test for electrofusion saddle joints will be performed in accordance with ISO 13955 [1].

NOTE A decohesion test is also defined in ISO 13954 [2].

The tests defined in this standard are not intended to be used for assessment and/or qualification of thermoplastic fittings that already have their own requirements, e.g. polyethylene fittings according to EN 1555-3 [3] and EN 12201-3 [4].

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

3 Terms and definitions

For the purposes of this document, the following term and definition apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

peel resistance

P_1

arithmetic mean of the force values divided by the width of the test specimen (only relevant for T-peel test)

4 Symbols and designations

For the purposes of this document, the symbols and designations given in Table 1 apply.