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Testing of welded joints of thermoplastics
semi-finished products - Part 1: Bend test

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12814-1:2025 sisaldab Euroopa standardi EN 12814-1:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.12.2025.</p> <p>Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12814-1:2025 consists of the English text of the European standard EN 12814-1:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 03.12.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 25.160.40

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EUROPEAN STANDARD

EN 12814-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2025

ICS 25.160.40; 83.080.20

Supersedes EN 12814-1:1999

English Version

Testing of welded joints of thermoplastics semi-finished products - Part 1: Bend test

Essai des assemblages soudés sur produits semi-finis
en thermoplastiques - Partie 1 : Essai de pliage

Prüfen von Schweißverbindungen aus
thermoplastischen Kunststoffen - Teil 1: Biegeversuch

This European Standard was approved by CEN on 26 October 2025.

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CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12814-1:2025) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by SIS.

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 June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

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

This document supersedes EN 12814-1:1999.

EN 12814-1:2025 includes the following significant technical changes with respect to EN 12814-1:1999:

- in Table 4, PA-U has been added;
- in Clause 12 “Test report”, added requirement to define the initial, final, bend or the ram position and the bend angle or ram displacement.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies the dimensions and the method for sampling and preparing test specimens, together with the conditions for carrying out the bend test.

The result of the test is also influenced by the deformation behaviour of the tested material, the kind of welding process and the geometry of the sample.

The test is applicable to plate and tube butt jointed assemblies made from thermoplastic materials filled or unfilled, but not reinforced, irrespective of the welding process used. It is not applicable to assemblies with a wall thickness < 3 mm.

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.

EN ISO 291, *Plastics – Standard atmospheres for conditioning and testing (ISO 291)*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 2818, *Plastics — Preparation of test specimens by machining*

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 terms and definitions apply.

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

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

3.1

face bend

face corresponding to the open side of the groove is subjected to extension

3.2

root bend

face corresponding to the root of the weld is subjected to extension

3.3

side bend

one of the faces of the test specimen corresponding to the cross section of the weld is subjected to extension

3.4

initial angle

α_i

angle between the two sides of the test specimen above the rollers before the test