



**SLOVENSKI STANDARD**  
**SIST EN 12814-8:2021**

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**Preskušanje zvarjenih spojev plastomernih polizdelkov - 8. del: Zahteve**

Testing of welded joints of thermoplastics semi-finished products - Part 8: Requirements

Prüfen von Schweißverbindungen aus thermoplastischen Kunststoffen - Teil 8:  
Anforderungen

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Essais des assemblages soudés sur produits semi-finis en thermoplastiques - Partie 8 :  
Exigences

[SIST EN 12814-8:2021](https://standards.iteh.ai/catalog/standards/sist/5eee8855-26b9-4b7a-80ef-14851189e96e/sist-en-12814-8-2021)

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**Ta slovenski standard je istoveten z: EN 12814-8:2021**

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**ICS:**

25.160.40	Varjeni spoji in vari	Welded joints and welds
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EUROPEAN STANDARD

EN 12814-8

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## Testing of welded joints of thermoplastics semi-finished products - Part 8: Requirements

Essais des assemblages soudés sur produits semi-finis  
en thermoplastiques - Partie 8 : Exigences

Prüfen von Schweißverbindungen aus  
thermoplastischen Kunststoffen - Teil 8:  
Anforderungen

This European Standard was approved by CEN on 20 December 2020.

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

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, Turkey 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**

<b>Contents</b>	<b>Page</b>
European foreword .....	3
<b>1 Scope</b> .....	<b>4</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Terms, definitions, symbols and abbreviations</b> .....	<b>4</b>
<b>3.1 Terms and definitions</b> .....	<b>4</b>
<b>3.2 Symbols and abbreviations</b> .....	<b>4</b>
<b>4 Materials and properties</b> .....	<b>5</b>
<b>5 Destructive test methods</b> .....	<b>5</b>
<b>6 Requirements</b> .....	<b>5</b>
<b>6.1 General</b> .....	<b>5</b>
<b>6.2 Bend test</b> .....	<b>5</b>
<b>6.3 Tensile test</b> .....	<b>15</b>
<b>6.4 Tensile creep test</b> .....	<b>16</b>
<b>6.5 Peel tests</b> .....	<b>16</b>
<b>6.6 Macroscopic examination</b> .....	<b>16</b>
<b>6.7 Low temperature tensile test</b> .....	<b>16</b>
<b>6.8 Tensile test with waisted test specimen</b> .....	<b>17</b>

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## European foreword

This document (EN 12814-8:2021) 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 July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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 12814-8:2001.

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

- PVC-RI has been removed because it is no longer used in the designation;
- bend angle data for PVC-NI has been replaced by PVC-U;
- ram displacement requirements for PP-B and PP-H have been added;
- minimum short-term tensile welding factor for extrusion welding PVC-U has been added.

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, Turkey and the United Kingdom.

**EN 12814-8:2021 (E)****1 Scope**

This document provides the requirements for the tests made on welded thermoplastics semi-finished products.

The selection of the appropriate test method(s) is made in accordance with the particular type and application of welded product.

The test results depend on the conditions of manufacture for the test specimen and on the test conditions. They can therefore only be related to the behaviour of the product or can only be used for designing a structure, if the test conditions can be related to the service conditions.

**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 12814-1, *Testing of welded joints of thermoplastics semi-finished products - Part 1: Bend test*

EN 12814-2, *Testing of welded joints of thermoplastics semi-finished products - Part 2: Tensile test*

EN 12814-3, *Testing of welded joints in thermoplastics semi-finished products - Part 3: Tensile creep test*

EN 12814-4, *Testing of welded joints of thermoplastics semi-finished products - Part 4: Peel test*

EN 12814-5, *Testing of welded joints of thermoplastics semi-finished products - Part 5: Macroscopic examination*

EN 12814-6, *Testing of welded joints of thermoplastics semi-finished products - Part 6: Low temperature tensile test*

EN 12814-7, *Testing of welded joints of thermoplastics semi-finished products - Part 7: Tensile test with waisted test specimens*

**3 Terms, definitions, symbols and abbreviations****3.1 Terms and definitions**

No terms and definitions are listed in this document.

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 <https://www.iso.org/obp>

**3.2 Symbols and abbreviations**

For the purposes of this document, the following symbols and abbreviations apply.

HT Heated tool welding

HG Hot gas welding

EX Extrusion welding (continuous)

## 4 Materials and properties

This document is applicable to the thermoplastic materials listed in Table 1.

**Table 1 — Materials and symbols**

Symbol	Material
PE	Polyethylene
PP-B	Polypropylene block copolymer
PP-H	Polypropylene homopolymer
PP-R	Polypropylene random copolymer
PVC-C	Polyvinyl chloride chlorinated
PVC-U	Polyvinyl chloride unplasticised
PVDF	Polyvinylidene fluoride

## 5 Destructive test methods

The dimensions and the methods for sampling and preparing test specimens, together with the conditions for carrying out destructive tests shall be as given in the standards shown in Table 2.

**Table 2 — Destructive test methods for welded joints**

Test method	Standard reference
Bend test <a href="https://standards.iteh.ai/catalog/standards/sist/5ccc8855-2db9-4b7a-80cf-14851189e96e/sist-en-12814-8-2021">SIST EN 12814-8:2021</a>	EN 12814-1
Tensile test <a href="https://standards.iteh.ai/catalog/standards/sist/5ccc8855-2db9-4b7a-80cf-14851189e96e/sist-en-12814-8-2021">14851189e96e/sist-en-12814-8-2021</a>	EN 12814-2
Tensile creep test	EN 12814-3
Peel test	EN 12814-4
Macroscopic examination	EN 12814-5
Low temperature tensile test	EN 12814-6
Tensile test with waisted test specimen	EN 12814-7

## 6 Requirements

### 6.1 General

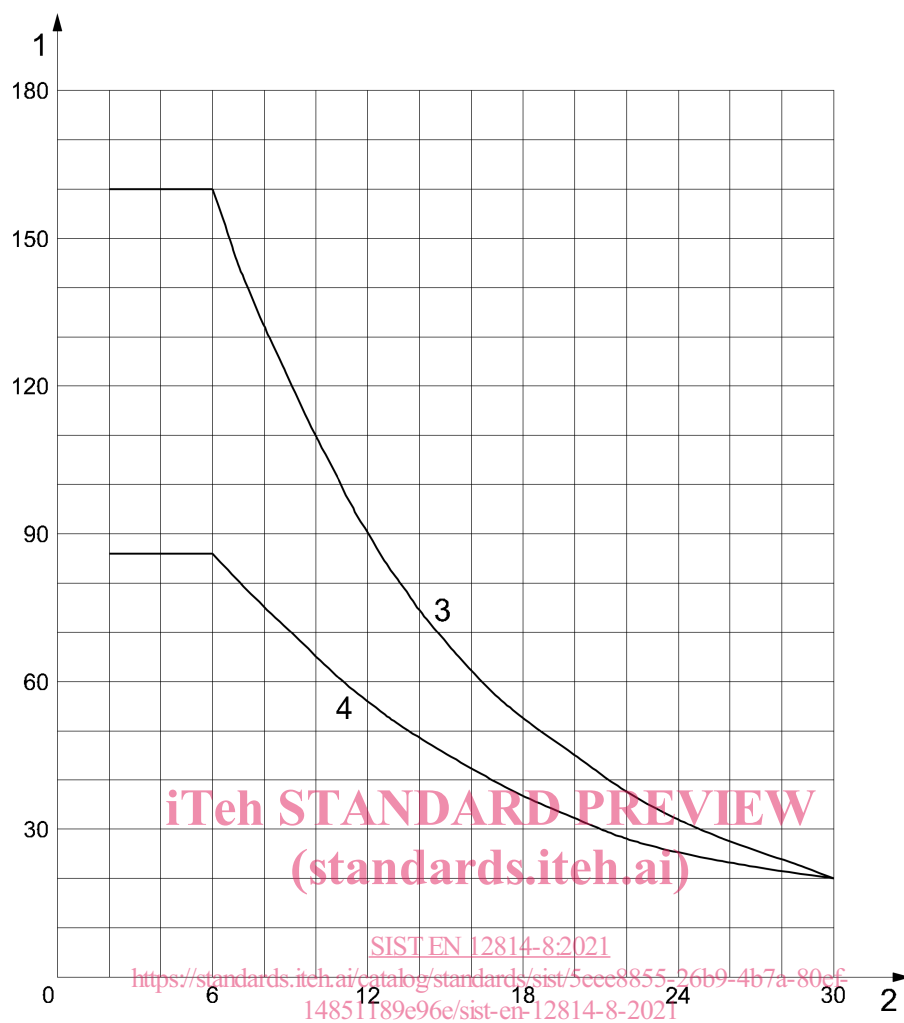
The semi-finished products used for the welded joints shall comply with the relevant standards. The welded joints shall meet the requirements specified hereafter.

### 6.2 Bend test

#### 6.2.1 Bend angle

The individual measured value of the bend angle shall be greater than or equal to the values given in Figures 1 to 5. For PVC-C, the requirements shall be agreed between the contracting parties.

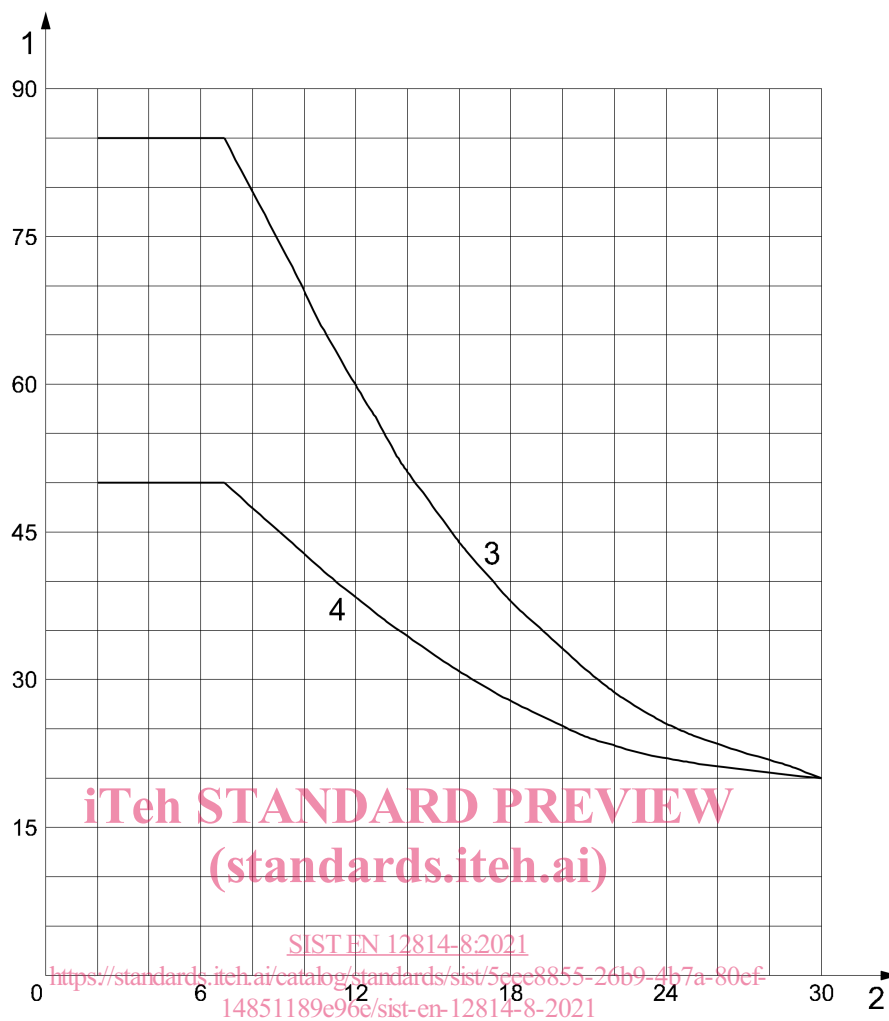
## EN 12814-8:2021 (E)

**Key**

- 1 bend angle in °
- 2 test specimen thickness in mm
- 3 HT
- 4 EX, HG

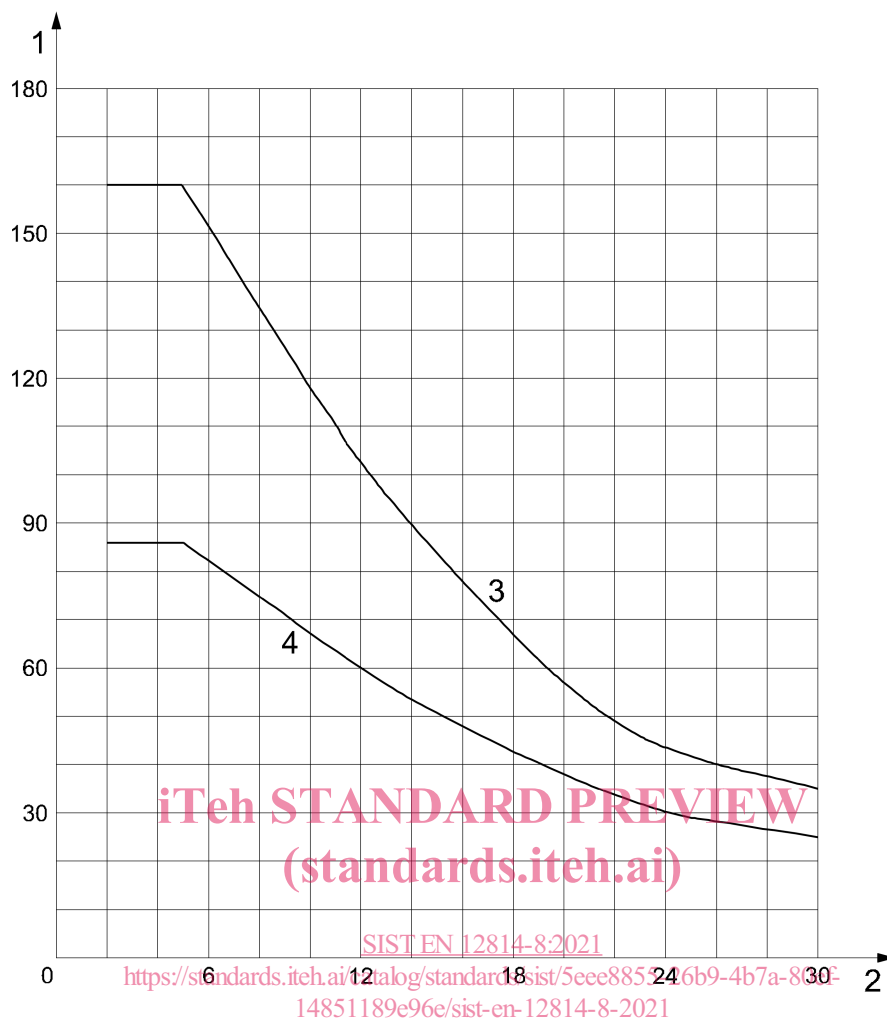
**Figure 1 — Minimum bend angle for PE (density  $\geq 0,94$ )**



**Key**

- 1 bend angle in °
- 2 test specimen thickness in mm
- 3 HT
- 4 EX, HG

**Figure 2 — Minimum bend angle for PP-B and PP-H**

**Key**

- 1 bend angle in °
- 2 test specimen thickness in mm
- 3 HT
- 4 EX, HG

**Figure 3 — Minimum bend angle for PP-R**