

Non destructive testing of welded joints of
thermoplastics semi-finished products - Part 1: Visual
examination

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13100-1:2017 sisaldab Euroopa standardi EN 13100-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 13100-1:2017 consists of the English text of the European standard EN 13100-1:2017.
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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ICS 25.160.40

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English Version

Non destructive testing of welded joints of thermoplastics semi-finished products - Part 1: Visual examination

Contrôle non destructif des assemblages soudés sur
produits semi-finis en thermoplastiques - Partie 1 :
Contrôle visuel

Zerstörungsfreie Prüfung von Schweißverbindungen
an Halbzeugen aus thermoplastischen Kunststoffen -
Teil 1: Sichtprüfung

This European Standard was approved by CEN on 10 March 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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European foreword

This document (EN 13100-1:2017) 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of an identical text or by endorsement, at the latest by November 2017, and conflicting national standards shall be withdrawn at the latest by November 2017.

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 13100-1:1999.

EN 13100, “*Non destructive testing of welded joints of thermoplastics semi-finished products*”, is currently composed with the following parts:

- *Part 1: Visual examination;*
- *Part 2: X-ray radiographic testing;*
- *Part 3: Ultrasonic testing;*
- *Part 4: High voltage testing.*

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 European standard covers the visual examination of welds in thermoplastic materials. It may also be applied to visual testing of the joint prior to and during the welding.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14728, *Imperfections in thermoplastic welds - Classification*

EN 16296, *Imperfections in thermoplastics welded joints - Quality levels*

EN ISO 17637:2016, *Non-destructive testing of welds — Visual testing of fusion-welded joints (ISO 17637:2016)*

EN ISO 17659, *Welding - Multilingual terms for welded joints with illustrations (ISO 17659)*

3 Test conditions and equipment

The illuminance at the surface, shall be a minimum of 350 lx, 500 lx is recommended.

For direct visual examination of welds, access shall be sufficient to allow the eye to be placed within a distance of 600 mm from the weld, around the whole weld and the viewing angle shall not be less than 30°.

Remote visual examination of welds using mirrors, boroscopes, fibre optics or cameras shall be considered as additional requirements and shall be specified by an application standard or by agreement between the contracting parties.

If a good contrast and relief effect between imperfections and background is required, an additional light source can be used.

The equipment (e.g.: gauges, callipers) used for the dimensional check of the weld shall ensure the necessary precision level, in accordance with the applicable acceptance criteria.

Examples of examination equipment are given in EN ISO 17637:2016, Annex A.

4 Personnel

Visual examination of welds and the evaluation of results for final acceptance should be performed by personnel qualified and familiar with the relevant standards, rules, specifications and the welding procedure [1] used.

It is recommended that personnel should be qualified in accordance with EN ISO 9712 or an equivalent standard at an appropriate level in the relevant industry sector.

5 Visual examination

5.1 General

The examination is normally performed on welds in the as-welded condition; however, for example when required by an application standard or by agreement between the contracting parties, the examination may be also carried out at other stages during the welding process, such as for checking