# Non destructive testing of welded joints of thermoplastics semifinished products - Part 2: X-ray radiographic testing

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| Käesolev Eesti standard EVS-EN 13100-2:2005 sisaldab Euroopa standardi EN 13100-2:2004 ingliskeelset teksti.<br><br>Käesolev dokument on jõustatud 25.01.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.<br><br>Standard on kättesaadav Eesti standardiorganisatsioonist. | This Estonian standard EVS-EN 13100-2:2005 consists of the English text of the European standard EN 13100-2:2004.<br><br>This document is endorsed on 25.01.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.<br><br>The standard is available from Estonian standardisation organisation. |

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|---|---|
| **Käsitlusala:**<br>This European Standard specifies fundamental radiographic techniques which enable repeatable results to be obtained economically. This standard applies to the X-ray radiographic examination of heated tool, electrofusion, extrusion and hot gas joints in plastics materials. It applies to joints in single wall pipes and plates with a range of thicknesses from 5 mm to 100 mm. It only applies to pipes containing air or other gases at the time of X-ray testing. This standard does not specify acceptance levels of the indications. | **Scope:**<br>This European Standard specifies fundamental radiographic techniques which enable repeatable results to be obtained economically. This standard applies to the X-ray radiographic examination of heated tool, electrofusion, extrusion and hot gas joints in plastics materials. It applies to joints in single wall pipes and plates with a range of thicknesses from 5 mm to 100 mm. It only applies to pipes containing air or other gases at the time of X-ray testing. This standard does not specify acceptance levels of the indications. |

**ICS** 25.160.40

**Võtmesõnad:** definiti, definitions, materials, non- destructive testing, nondestructive tests, plastics, semi- finished products, testing, testing conditions, testing devices, thermoplastic, thermoplastic polymers, weld seam testing, welded joints, welding, welds, x-ray testing

EUROPEAN STANDARD

NORME EUROPÉENNE

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# EN 13100-2

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English version

# Non-destructive testing of welded joints in thermoplastics semi-finished products - Part 2: X-ray radiographic testing

Essais non destructifs des assemblages soudés sur produits semi-finis en thermoplastiques - Partie 2: Contrôle radiographique par rayons X

Zerstörungsfreie Prüfung von Schweißverbindungen thermoplastischer Kunststoffe - Teil 2: Röntgenprüfung

This European Standard was approved by CEN on 14 October 2004.





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

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## Foreword

This document (EN 13100-2:2004) 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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

# 1 Scope

This document specifies fundamental radiographic techniques which enable repeatable results to be obtained economically.

This document applies to the X-ray radiographic examination of heated tool, electrofusion, extrusion and hot gas joints in plastics materials.

It applies to joints in single wall pipes and plates with a range of thicknesses from 5 mm to 100 mm. It only applies to pipes containing air or other gases at the time of X-ray testing.

This document does not specify acceptance levels of the indications.

# 2 Normative references

The following referenced documents are indispensable for the application 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 462-1, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) - Determination of image quality value*

EN 462-2, *Non-destructive testing — Image quality of radiographs — Part 2: Image quality indicators (step/hole type) - Determination of image quality value*

EN 473, *Non-destructive testing — Qualification and certification of NDT personnel — General principles*

EN 584-1, *Non destructive testing — Industrial radiographic film — Part 1: Classification of film systems for industrial radiography*

EN 584-2, *Non destructive testing — Industrial radiographic film — Part 2: Control of film processing by means of reference values*

EN 25580, *Non destructive testing — Industrial radiographic illuminators — Minimum requirements (ISO 5580:1985)*

# 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**nominal thickness**
nominal thickness of the parent material

NOTE Manufacturing tolerances are not taken into account.

**3.2**
**penetrated thickness**
thickness of material in the direction of the radiation beam including the thickness of the weld beads on butt fusion joints (if appropriate), or the additional thickness of the socket for electrofusion joints, or the combined thickness of the top and bottom half of the joint for multiple wall techniques

**3.3**
**object-to-film distance**
distance between the radiation side of the test object and the film surface, measured along the central axis of the radiation beam