

STN	Zlievarenstvo Rádiografické skúšanie Časť 1: Techniky filmu	STN EN 12681-1 42 9741
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Founding - Radiographic testing - Part 1: Film techniques

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/18

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Founding - Radiographic testing - Part 1: Film techniquesFonderie - Contrôle par radiographie - Partie 1 :
Techniques à l'aide de filmsGießereiwesen - Durchstrahlungsprüfung - Teil 1:
Filmtechniken

This European Standard was approved by CEN on 16 July 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 COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

EN 12681-1:2017 (E)

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EN 12681-1:2017 (E)**European foreword**

This document (EN 12681-1:2017) has been prepared by Technical Committee CEN/TC 190 “Foundry technology”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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 12681:2003.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 10 “Testing for inner discontinuities”:

- to revise EN 12681:2003 into EN 12681-1, *Founding — Radiographic testing — Part 1: Film techniques*;
- and to prepare a further standard EN 12681-2, *Founding — Radiographic testing — Part 2: Techniques with digital detectors*

Annex G covers the significant technical changes between this European Standard and EN 12681:2003.

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.

Introduction

Radiography can be used to detect internal discontinuities in a casting. The discontinuities can be gas holes, non-metallic inclusions, shrinkage, cracks, inserts or chills or inclusions that have lower or higher densities than the parent metal. This European Standard gives acceptance criteria through severity levels.

EN 12681-1:2017 (E)**1 Scope**

This European Standard gives specific procedures for industrial X-ray and gamma radiography for discontinuity detection purposes, using NDT (Non-destructive testing) film techniques. This part of EN 12681 specifies the requirements for film radiographic testing of castings.

Films after exposure and processing become radiographs with different area of optical density. Radiographs are viewed and evaluated using industrial radiographic illuminators.

This part of EN 12681 specifies the recommended procedure for the choice of operating conditions and radiographic practice.

These procedures are applicable to castings produced by any casting process, especially for steel, cast iron, aluminium, cobalt, copper, magnesium, nickel, titanium, zinc and any alloys of them.

NOTE This European Standard considers EN ISO 5579.

This part of this European Standard does not apply to:

- radiographic testing of castings for aerospace applications (see prEN 2002-21);
- radiographic testing of welded joints (see EN ISO 17636-1);
- radiography with digital detectors (see EN 12681-2);
- radiosopic testing (see EN 13068, all parts).

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 12543, *Non-destructive testing — Characteristics of focal spots in industrial X-ray systems for use in non-destructive testing (all parts)*

EN 12679, *Non-destructive testing - Determination of the size of industrial radiographic sources - Radiographic method*

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

EN ISO 5579:2013, *Non-destructive testing - Radiographic testing of metallic materials using film and X-ray or gamma rays - Basic rules (ISO 5579:2013)*

EN ISO 9712, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712)*

EN ISO 11699-1, *Non-destructive testing - Industrial radiographic film - Part 1: Classification of film systems for industrial radiography (ISO 11699-1)*

EN ISO 11699-2, *Non-destructive testing - Industrial radiographic films - Part 2: Control of film processing by means of reference values (ISO 11699-2)*

EN ISO 19232-1, *Non-destructive testing - Image quality of radiographs - Part 1: Determination of the image quality value using wire-type image quality indicators (ISO 19232-1)*

EN ISO 19232-2, *Non-destructive testing - Image quality of radiographs - Part 2: Determination of the image quality value using step/hole-type image quality indicators (ISO 19232-2)*

ISO 5576, *Non-destructive testing — Industrial X-ray and gamma-ray radiology — Vocabulary*

ASTM E 1320:2010, *Reference Radiographs for Titanium Castings*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN