

SVENSK STANDARD

SS-EN 12679:2018

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**Oförstörande provning – Bestämning av storlek på isotoper för
industriell radiografisk provning – Radiografisk metod**

**Non-destructive testing – Radiographic testing – Determination
of the size of industrial radiographic gamma sources**



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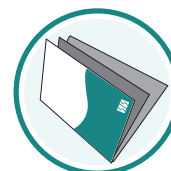
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Europastandarden EN 12679:2018 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 12679:2018.

Denna standard ersätter SS-EN 12679, utgåva 1.

The European Standard EN 12679:2018 has the status of a Swedish Standard. This document contains the official version of EN 12679:2018.

This standard supersedes the SS-EN 12679, edition 1.

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Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Oförstörande provning, SIS/TK 125.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD

EN 12679

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2018

ICS 19.100

Supersedes EN 12679:1999

English Version

Non-destructive testing - Radiographic testing - Determination of the size of industrial radiographic gamma sources

Essais non destructifs - Contrôle radiographique -
Détermination de la dimension des sources de
radiographie industrielle gamma

Zerstörungsfreie Prüfung - Durchstrahlungsprüfung -
Bestimmung der Strahlergrößen von industriell
genutzten Radio-Nukliden

This European Standard was approved by CEN on 18 July 2018.

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, 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 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 12679:2018) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

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 April 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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 12679:1999.

In the framework of its scope, Technical Committee CEN/TC 138 entrusted CEN/TC 138/WG 1 “Radiographic testing” with preparing the following standard:

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

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.

SS-EN 12679:2018 (E)**1 Scope**

This document specifies the determination of the size of gamma radiographic sources of 0,5 mm or greater, made from the radionuclides Iridium 192, Ytterbium 169, Selenium 75 or Cobalt 60, by a method of radiography with X-rays. The source size of a gamma radiography source is an important factor which affects the image quality of gamma ray images.

The source size is determined with an accuracy of $\pm 10\%$ but typically not better than $\pm 0,1$ mm.

The source size is provided by the manufacturer as the mechanical dimension of the source insert. A measurement may be required if the manufacturing process is validated or monitored after implementation of the source into the holder.

This document can be used for other radionuclides after validation.

The standard test method ASTM E1114 provides further information on the measurement of the Ir-192 source size, the characterization of the source shape, and its correct assembly and packaging.

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 19232-5, *Non-destructive testing — Image quality of radiographs — Part 5: Determination of the image unsharpness value using duplex wire-type image quality indicators (ISO 19232-5)*

ISO 16371-1, *Non-destructive testing — Industrial computed radiography with storage phosphor imaging plates — Part 1: Classification of systems*

ASTM E2002 - 15, *Standard Practice for Determining Total Image Unsharpness and Basic Spatial Resolution in Radiography and Radioscopy*

ASTM E2597M - 14, *Standard Practice for Manufacturing Characterization of Digital Detector Arrays*

3 Terms and definitions

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

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

3.1**source size*****d***

maximum dimension of the source of radiation

3.2**signal-to-noise ratio****SNR**

ratio of mean value of the linearized grey values to the standard deviation of the linearized grey values (noise) in a given region of interest in a digital image