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NON-DESTRUCTIVE TESTING - INDUSTRIAL RADIOGRAPHIC FILM - PART 1: CLASSIFICATION OF FILM SYSTEMS FOR INDUSTRIAL RADIOGRAPHY

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English Version

Non-destructive testing - Industrial radiographic film - Part 1: Classification of film systems for industrial radiography

Essais non destructifs - Film pour radiographie industrielle - Partie 1: Classification des systèmes films pour radiographie industrielle

Zerstörungsfreie Prüfung - Industrielle Filme für die Durchstrahlungsprüfung - Teil 1: Klassifizierung von Filmsystemen für die industrielle Durchstrahlungsprüfung

This European Standard was approved by CEN on 9 March 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 584-1:2006) 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of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

This document supersedes EN 584-1:1994.

EN 584 comprises a series of European Standards for industrial radiographic films which is made up of the following:

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

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

The purpose of this standard is to fix the performance of film systems.

This standard is applicable for the classification of film systems in combination with specified lead screens for industrial radiography (non-destructive testing). This standard is intended to assure that the image quality of radiographs – as far as this is influenced by the film system – is in conformity with the requirements of European Standards such as EN 444, EN 1435 and EN 12681. This European Standard does not apply to the classification of films used with fluorescent intensifying screens. The measurement of film systems in this standard is restricted to a selected radiation quality to simplify the procedure. The properties of films will change with radiation energy but not the ranking of film system quality.

Additional methods for evaluating the photographic process are described in EN 584-2 by which the performance of film systems can be controlled under the conditions given in industry.

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

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Terms and Definitions

For the purposes of this standard, the following terms and definitions apply:

3.1
film system
combination of film and film processing which is carried out in accordance with the instructions of the film manufacturer and/or the manufacturer of the processing chemicals.

3.2
film gradient
G
slope of the characteristic curve of a film at a specified optical density D

3.3
granularity
σ_D
stochastic density fluctuations in the radiograph, superimposed on the image of the object

NOTE The limiting values given in this standard are related to fixed radiation energies and specified screens.

3.4
characteristic curve
curve showing the relationship between the common logarithm of exposure $\log K$, and the optical density D