



NSAI
Standards

Irish Standard
I.S. EN ISO 8254-2:2016

Paper and board - Measurement of specular gloss - Part 2: 75 degree gloss with a parallel beam, DIN method (ISO 8254-2:2016)

I.S. EN ISO 8254-2:2016

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National Foreword

I.S. EN ISO 8254-2:2016 is the adopted Irish version of the European Document EN ISO 8254-2:2016, Paper and board - Measurement of specular gloss - Part 2: 75 degree gloss with a parallel beam, DIN method (ISO 8254-2:2016)

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EUROPEAN STANDARD

EN ISO 8254-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2016

ICS 85.060

Supersedes EN ISO 8254-2:2003

English Version

**Paper and board - Measurement of specular gloss - Part 2:
75 degree gloss with a parallel beam, DIN method (ISO
8254-2:2016)**

Papiers et cartons - Mesurage du brillant spéculaire -
Partie 2: Brillant à 75 degrés avec un faisceau parallèle,
méthode DIN (ISO 8254-2:2016)

Papier und Pappe - Bestimmung des Glanzes - Teil 2:
Messung mit einem parallelen Strahl bei 75°, DIN-
Verfahren (ISO 8254-2:2016)

This European Standard was approved by CEN on 19 May 2016.

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EN ISO 8254-2:2016 (E)

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European foreword

This document (EN ISO 8254-2:2016) has been prepared by Technical Committee ISO/TC 6 “Paper, board and pulps” in collaboration with Technical Committee CEN/TC 172 “Pulp, paper and board” 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of an identical text or by endorsement, at the latest by January 2017, and conflicting national standards shall be withdrawn at the latest by January 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 8254-2:2016 has been approved by CEN as EN ISO 8254-2:2016 without any modification.

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**INTERNATIONAL
STANDARD**

**ISO
8254-2**

Second edition
2016-07-01

**Paper and board — Measurement of
specular gloss —**

**Part 2:
75° gloss with a parallel beam, DIN
method**

Papiers et cartons — Mesurage du brillant spéculaire —

Partie 2: Brillant à 75° avec un faisceau parallèle, méthode DIN



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ISO 8254-2:2016(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 6, *Paper, board and pulps*.

This second edition cancels and replaces the first edition (ISO 8254-2:2003), which has been editorially revised (minor revision) to update the bibliographic references.

ISO 8254 consists of the following parts, under the general title *Paper and board — Measurement of specular gloss*:

- *Part 1: 75° gloss with a converging beam, TAPPI method*
- *Part 2: 75° gloss with a parallel beam, DIN method*
- *Part 3: 20° gloss with a converging beam, TAPPI method*

[Annex A](#) forms a normative part of this part of ISO 8254. [Annex B](#) is for information only.

Introduction

Visual gloss is a sensory impression which cannot yet be described completely. Some important physical variables which influence gloss are however known. The sensory perception of gloss under a suitable illumination results from a physical stimulus due to reflection of light from a surface. This reflection is defined by an indicatrix which changes with the angle of incidence. The maximum indicatrix value which is decisive for visual gloss impression is associated with specular reflection, at an angle of reflection which is approximately equal to the angle of incidence. The reflectometer value is determined by averaging the reflection in a defined angular region centred in the specular direction.

NOTE 1 A reflectometer value is a measure of the visual gloss only when the optical conditions of measurement, such as angles and apertures of illumination and observation, are similar to the conditions of viewing.

NOTE 2 Because luminance and structure enter to some extent into the reflectometer value of the test piece, only the comparison of test pieces with nearly the same luminance and structure is meaningful. The influence of luminance on the measurement result decreases rapidly with increasing reflectometer value and increasing angle of reflection.

The proportion of specular reflection in the entire reflection increases with increasing angle of incidence. Very matt surfaces generate a noticeable degree of specular reflection and, therefore, a noticeable gloss effect only above a certain minimum angle of incidence. On the other hand, a large angle of incidence reduces the ability to differentiate between surfaces of high gloss.

NOTE 3 Manufacturers of coated papers usually divide their products into two classes according to their surface gloss: matt coating and gloss coating. However, these classes are only defined approximately. The matt class has reflectometer values, measured according to this part of ISO 8254, from 0 to approximately 20. The glossy class has reflectometer values higher than this value. As there is no precise correlation between reflectometer values measured with different geometries, it is advisable to compare the reflectometer values only within a single class of papers and using the same measuring geometry.

This part of ISO 8254 describes measurement at an angle of incidence of 75° using a parallel beam geometry commonly known as the 75° DIN method. Precision data are not available at the time of publication.

NOTE 4 EN 14086 describes measurement at an angle of 45°.

Paper and board — Measurement of specular gloss —

Part 2:

75° gloss with a parallel beam, DIN method

1 Scope

This part of ISO 8254 specifies a photometric test method for the assessment of visual gloss by means of a reflectometer value measured at an angle of 75°. It is applicable to plane paper and board surfaces of gloss levels below 65, measured according to this part of ISO 8254. It should be the preferred method for paper and board surfaces of gloss levels below 20, measured according to this part of ISO 8254. Materials containing optical brightening agents may be measured.

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.

ISO 186, *Paper and board — Sampling to determine average quality*

ISO 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 10110-5, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 5: Surface form tolerances*

CIE 038-1977, *Radiometric and photometric characteristics of materials and their measurement*

3 Terms and definitions

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

3.1

indicatrix

angular distribution of the reflected light which is measured as illuminance (lm m^{-2}) on the receptor

3.2

reflectometer

instrument for measuring quantities pertaining to reflection

3.3

reflectometer value

measured value which, for a given angle of incidence, is proportional to the integral of the reflection indicatrix within the solid angle defined by the apertures (see [A.2.1](#)) and is equal to 100 times the ratio of the value obtained for the sample to that of a defined specularly reflecting surface ([5.2.2](#))

3.4

specular gloss

reflectometer value as defined in [3.3](#)

Note 1 to entry: The defined specularly reflecting surface thus has an assigned reflectometer value of 100. Reflectometer values are therefore not percentages.

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