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Plastics — Determination of image clarity (degree of sharpness of reflected or transmitted image)

Plastiques — Détermination de la clarté de l'image (degré de netteté de l'image réfléchie ou transmise)

Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **1**
5 Instrument **1**
6 Test specimen **4**
7 Procedure **4**
7.1 Zero adjustment 4
7.2 Sensitivity adjustment 5
7.3 Measurement on the test specimen 5
8 Calculation **5**
9 Test report **6**
Annex A (informative) **Example of determination** **7**
Annex B (informative) **Precision** **10**
Bibliography **12**

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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 61, *Plastics*, Subcommittee SC 5, *Physical chemical properties*.

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Introduction

Visual assessment of the image clarity of plastics is carried out by evaluating the sharpness of an image reflected from a surface, using a specified incident angle, for reflection. For transmission, image sharpness is evaluated by viewing a suitable target through the plastic. The degree of image clarity is influenced by the clearness, surface irregularities and haziness of surfaces. Gloss meters and haze meters do not correctly access this phenomenon. Image clarity is not the same as and should not be confused with gloss or haze. Therefore, standardized methods for determining the optical parameter of image clarity are needed.

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Plastics — Determination of image clarity (degree of sharpness of reflected or transmitted image)

1 Scope

This International Standard specifies an instrumental method for determining the image clarity on plastics specimens by measuring reflection from the specimen surface or transmission through the specimen.

The method can be applied only to a flat surface.

NOTE For same materials, different values of image clarity can be obtained depending on specimen preparation.

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 472, *Plastics — Vocabulary*

ISO 2813, *Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85°*

ISO 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

ISO 11664-2, *Colorimetry — Part 2: CIE standard illuminants*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 and the following apply.

3.1
image clarity
degree of sharpness of an image reflected by a specimen or transmitted through a specimen

Note 1 to entry: Image clarity is expressed in percentage (%).

4 Principle

For the measurement of image clarity, a lamp illuminates the narrow source aperture-slit. The collimating lens projects a parallel beam upon the specimen. The image is either reflected from or transmitted through the specimen, as appropriate. The image is received by the de-collimating lens and focused upon the optical mask. The light passing through the optical mask is received by the light receptor. This resultant signal is processed yielding image clarity values.

5 Instrument

5.1 Light source and spectral response. The light source and the photometer shall be used in conjunction with a filter to provide an output corresponding to the photopic standard luminous efficiency $V(\lambda)$, which is identical to the colour-matching function $y(\lambda)$ specified in ISO 11664-1, under CIE standard illuminant A as specified in ISO 11664-2. The output of the photodetector shall be proportional to the

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