

SINGAPORE STANDARD

**Methods of test for paints, varnishes and
related materials**

– Part E1 : Determination of gloss value at 20°, 60° and
85°

SS 5 : Part E1 : 2020

ISO 2813:2014, MOD
(ICS 87.040)

SINGAPORE STANDARD

Methods of test for paints, varnishes and related materials

– Part E1 : Determination of gloss value at 20°, 60° and 85°

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CSC consists of the following members:

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The Technical Committee sets up the Working Group on Methods of Test for Paints, Varnishes and Related Materials to prepare this standard. The Working Group consists of the following experts who contribute in their *individual capacity*:

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AdMaterials Technologies Pte Ltd

Akzo Nobels Paints (Asia Pacific)

Haruna Paint Pte Ltd

Nippon Paint (Singapore) Co. Pte Ltd

Pidilite Innovation Centre Pte Ltd

Setsco Services Pte Ltd

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National Foreword

This Singapore Standard was prepared by the Working Group on Methods of Test for Paints, Varnishes and Related Materials set up by the Technical Committee on Surface Coatings under the purview of CSC.

It is a revision of SS 5 : Part E1 : 2003 (2013) "Methods of test for paints, varnishes and related materials – Part E1: Measurement of specular gloss of non-metallic paint films at 20°, 60° and 85°".

This standard is a modified adoption of ISO 2813:2014, "Paints and varnishes – Determination of gloss value at 20°, 60° and 85°", published by the International Organization for Standardization. The deviation is as follows:

Subclause	Modification
7.3	Replace "(23 ± 2) °C" and "(50 ± 5) %" with "(27 ± 2) °C" and "(80 ± 5) %" respectively.

Explanation: To reflect the local climatic conditions.

To facilitate identification, the technical deviation is marked by a margin on the left of the standard.

NOTE 1 – Where appropriate, the words "International Standard" are read as "Singapore Standard".

NOTE 2 – Reference to International Standards are replaced by applicable Singapore Standards/Technical References.

NOTE 3 – Where numerical values are expressed as decimals, the comma is read as a full point.

For an overview of other parts to Singapore Standard 5, it is recommended to read the information in SS 5 : Part 0 "General introduction" which is issued separately.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "Mature Standards". Mature Standards will not be subject to further review, unless there are requests to review such standards.
2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.
3. Compliance with a SS or TR does not exempt users from any legal obligations

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This fourth edition cancels and replaces the third edition (ISO 2813:1994), which has been technically revised. It also incorporates the Technical Corrigendum ISO 2813:1994/Cor.1:1997.

The main technical changes are:

- a) the title has been changed;
- b) the scope has been extended to include gloss measurement of metallic coatings;
- c) the term “specular gloss” has been replaced by “gloss”;
- d) the gloss value is indicated in gloss units (GU);
- e) a new annex (Annex A) concerning possible sources of error has been added;
- f) a new annex (Annex B) concerning calibration standards has been added;
- g) a new annex (Annex C) concerning gloss calculation of primary reference standards has been added;

- h) a new annex (Annex D) concerning details on precision has been added;
- i) the precision data are the results of a large interlaboratory test.

Methods of test for paints, varnishes and related materials – Part E1 : Determination of gloss value of 20°, 60° and 85°

1 Scope

This International Standard specifies a method for determining the gloss of coatings using the three geometries of 20°, 60° or 85°. The method is suitable for the gloss measurement of non-textured coatings on plane, opaque substrates.

NOTE On test specimens different from these mentioned above, comparative gloss measurements are possible. However, it is not ensured that the obtained gloss values correspond to the visual gloss perception (see Annex A).

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 1514, *Paints and varnishes — Standard panels for testing*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 4618:2014, *Paints and varnishes — Terms and definitions*