SS 5 : Part F3 : 2019
ISO 7784-2:2016, MOD
(ICS 87.040)

SINGAPORE STANDARD

Methods of test for paints, varnishes and related materials

– Part F3 : Abrasion resistance (Taber abrader)

Singapore Standards Council

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CSC consists of the following members:

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CSC sets up the Technical Committee on Surface Coatings to oversee the preparation of this standard. The Technical Committee 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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		Ms Shirley Lim
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The organisations in which the experts of the Working Group are involved are:

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
TüV SüD PSB Pte Ltd

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Contents

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 F3 : 2013 "Methods of test for paints, varnishes and related materials – Part F3: Abrasion resistance (Taber abrader)".

This standard is a modified adoption of ISO 7784-2:2016, "Paints and varnishes – Determination of resistance to abrasion – Part 2: Method with abrasive rubber wheels and rotating test specimen", published by the International Organization for Standardization. The deviations are as follows:

Clauses	Modifications
6.3	*Replace* "(23 ± 2) °C and a relative humidity of (50 ± 5) %" with "(27 ± 2) °C and a relative humidity of (80 ± 5) %". *Explanation: To reflect the local climatic conditions.*
7.3	*Replace* "(23 ± 2) °C" with "(27 ± 2) °C". *Explanation: To reflect the local climatic conditions.*

To facilitate identification, the affected texts of the International Standard which are to be changed are indicated by a left margin bar adjacent to it.

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.

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

This standard is expected to be used by paint, coatings and inks manufacturers, materials suppliers, test laboratories and related government agencies.

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.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 second edition cancels and replaces the first edition (ISO 7784-2:1997), which has been technically revised with the following changes:

a) the title has been changed;

b) the terms and definitions clause has been amended;

c) the figure explaining the principle of the method was amended;

d) the supplementary test conditions previously in Annex A have been integrated in the test report;

e) the calibration of the apparatus previously in Annex B has been deleted;

f) the test procedure has been re-arranged;

g) the text has been editorially revised and the normative references have been updated.

ISO 7784 consists of the following parts, under the general title *Paints and varnishes — Determination of resistance to abrasion*:

— *Part 1: Method with abrasive-paper covered wheels and rotating test specimen*

— *Part 2: Method with abrasive rubber wheels and rotating test specimen*

— *Part 3: Method with abrasive-paper covered wheel and linearly reciprocating test specimen*

Methods of test for paints, varnishes and related materials – Part F3 : Method with abrasive rubber wheels and rotating test specimen

0 Introduction

This part of ISO 7784 is one of the three parts of ISO 7784 dealing with test methods for the determination of the resistance to abrasion of coatings using abrasive wheels. The characteristics and differences of these methods are summarized in Table 1.

Table 1 — Types of method

Standard	Abrasive wheel		Test specimen movement
	Type	Degree of freedom	
ISO 7784-1	Abrasive paper on rubber wheel	Freely rotatable	Rotation
ISO 7784-2	Abrasive rubber wheel		
ISO 7784-3	Abrasive paper on metal wheel	Rigid – with stroke-dependent rotation[a]	Linear reciprocation
[a] A mechanism rotates the abrasive wheel by a small angle after each double stroke so that a new area of the abrasive paper is effective.			

The methods using abrasive-paper covered wheels (ISO 7784-1 and ISO 7784-3) are preferably to be applied.

1 Scope

This part of ISO 7784 specifies a method for determining the resistance to abrasion of coatings, for which two loaded, freely rotatable but eccentrically arranged abrasive rubber wheels affect the coating of the rotating test specimen.

2 Normative references

The following referenced documents are indispensable for the application of this standard. 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 3270, Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing

ISO 4618, Paints and varnishes — Terms and definitions

ISO 7619-1, Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)