SLOVENSKI STANDARD
oSIST prEN ISO 7784-3:2022

01-februar-2022

Barve in laki - Ugotavljanje odpornosti proti obrabi - 3. del: Metoda s kolesom, prekritim z abrazivnim papirjem, in linearno izmenjajočim se preskusnim vzorcem (ISO/DIS 7784-3:2021)

Paints and varnishes - Determination of resistance to abrasion - Part 3: Method with abrasive-paper covered wheel and linearly reciprocating test specimen (ISO/DIS 7784-3:2021)

Beschichtungsstoffe - Bestimmung des Abriebwiderstandes - Teil 3: Verfahren mit schleifpapierbelegtem Rad und sich hin- und herbewegender Probe (ISO/DIS 7784-3:2021)

Peintures et vernis - Détermination de la résistance à l'abrasion - Partie 3: Méthode utilisant une roue revêtue de papier abrasif et une éprouvette animée d'un mouvement de va-et-vient linéaire (ISO/DIS 7784-3:2021)

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87.040	Barve in laki	Paints and varnishes

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Paints and varnishes — Determination of resistance to abrasion —

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

Peintures et vernis — Détermination de la résistance à l'abrasion —

Partie 3: Méthode utilisant une roue revêtue de papier abrasif et une éprouvette animée d'un mouvement de va-et-vient linéaire

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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).

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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This third edition cancels and replaces the second edition (ISO 7784-3:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

— details of the materials for the precision data have been added in Table 2.

A list of all parts in the ISO 7784 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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 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.

Paints and varnishes — Determination of resistance to abrasion —

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

1 Scope

This part of ISO 7784 specifies a method for determining the resistance to abrasion of coatings, for which a loaded, rigid abrasive-paper covered wheel affects the coating of the linearly reciprocating test specimen.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
test specimen
specimen on which the test is to be carried out

3.2
double stroke
ds
one complete reciprocal movement made by the abrasive wheel

3.3
repeatability conditions
conditions where independent test results are obtained with the same method on identical test items in the same laboratory by the same operator using the same equipment within short intervals of time

[SOURCE: ISO 5725-1:1994, 3.14]

3.4
repeatability limit
r
value less than or equal to which the absolute difference between two test results obtained under *repeatability conditio*ns (3.3) may be expected to be with a probability of 95 %

[SOURCE: ISO 5725-1:1994, 3.16]

3.5
reproducibility conditions
conditions where test results are obtained with the same method on identical test items in different laboratories with different operators using different equipment

[SOURCE: ISO 5725-1:1994, 3.18]

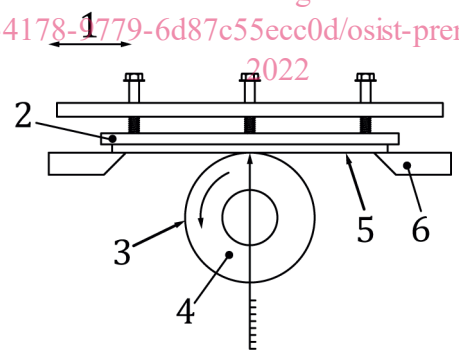
3.6
reproducibility limit
R
value less than or equal to which the absolute difference between two test results obtained under *reproducibility conditions* (3.5) may be expected to be with a probability of 95 %

[SOURCE: ISO 5725-1:1994, 3.20]

4 Principle

A rigid abrasive wheel, covered with abrasive paper, is pressed onto the coating applying the test load. The test specimen is reciprocated with specified stroke length and double-stroke frequency. The abrasive wheel itself is rotated by a small angle after each double stroke, so that a new fresh portion of the abrasive paper is applied. The specimen is set with its testing surface facing downward, and the testing surface is abraded from underneath.

Figure 1 illustrates the test principle.



Key
1 reciprocating motion
2 specimen press
3 abrasive paper
4 abrasive wheel
5 specimen
6 specimen stage

Figure 1 — Principle of the abrasion test with linearly reciprocating test specimen