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Interested committees:

Title: Draft BS EN ISO 11998 Paints and varnishes — Determination of wet-scrub resistance and cleanability of coatings.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT
International
Standard

ISO/DIS 11998

**Paints and varnishes —
Determination of wet-scrub
resistance of coatings**

ICS: 87.040

ISO/TC 35/SC 9

Secretariat: **BSI**

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ISO/CEN PARALLEL PROCESSING

Reference number
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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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This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11998:2006), which has been technically revised.

The main changes are as follows:

- the title has been changed;
- cleanability has been deleted completely;
- the abrasive pad has been changed;
- the statistical data on reproducibility and repeatability have been updated.

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.

Paints and varnishes — Determination of wet-scrub resistance of coatings

1 Scope

This document specifies an accelerated method for the determination of wet-scrub resistance. The determination of cleanability is not covered in the scope of this document.

NOTE The ability of coatings to withstand wear caused by repeated cleaning operations is an important consideration both from a practical point of view and when comparing and rating such coatings. Since wet-scrub resistance depends not only on the quality of a coating but also on the substrate, the method of application, the drying conditions and other factors, the results obtained are not directly transferable to actual practice. In this document the evaluation of the coating is based on a defined substrate, a fixed application method, specified drying conditions and a defined method of wet scrubbing.

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 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 1524, *Paints, varnishes and printing inks — Determination of fineness of grind*

ISO 3270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 4618, *Paints and varnishes — Vocabulary*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

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 terminology 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

scrub cycle

one reciprocal movement of the scrub pad over the scrub length in both directions

3.2

scrub length

stroke length plus the length of the pad

3.3

stroke length

distance traversed by one stroke of the apparatus

3.4

wet-scrub resistance

ability of a dry coating film to sustain less than a specified loss in film thickness, averaged over a defined area, when exposed to a defined number of wet-scrub cycles

4 Principle

The test coating is applied to a test panel using a film applicator at the appropriate gap clearance. After drying and conditioning, the coated panel is weighed and subjected to a defined number of wet-scrub cycles in a scrub testing machine as described in [8.2](#).

NOTE Some classification standards, e. g. EN 13300, require fewer scrub cycles.

It is then washed, dried and weighed again to determine its loss in mass, from which the mean loss in film thickness is calculated.

Through comparison of the mean loss in film thickness with a specified value, as agreed between interested parties, the coating can be rated in wet-scrub resistance classes.

5 Reagents

5.1 Washingliquid. Use a 2,5 g/l solution of sodium *n*-dodecylbenzenesulfonate (CAS-Nr ^{®1)} 25155-30-0) in water conforming to the requirements of grade 3 of ISO 3696. Allow the solution to stand before use until all air-bubbles and foam have dissipated.

6 Apparatus

6.1 Test panel, made of PVC film free of migration-susceptible chemical plasticizers, of sufficient rigidity to ensure a flat surface, impervious to and unaffected by water or aliphatic organic solvents and of nominal thickness 0,25 mm, approximately 430 mm long and not less than 80 mm wide.

Other types of plastics film may be used where the coating contains solvent which might adversely affect the PVC film. If the coating delaminates before or during the test, another, more suitable, substrate shall be used.

6.2 Film applicator, preferably an automatic film applicator, used at an application speed of 10 mm/s to 15 mm/s and fitted with a doctor blade with an appropriate gap clearance and a gap width of at least 60 mm.

6.3 Wet-scrub tester apparatus, consisting of a reciprocating scrub testing machine with a stroke length of (300 ± 10) mm and operating at approximately (37 ± 2) scrub cycles per minute. A counter for recording the number of scrub cycles shall be provided.

6.4 Scrub pad holder, consisting of a metal plate fitted with pins to hold the abrasive pad. A mounting device with elongated holes is loosely fitted on the top of the plate (see [Figure 1](#) and [Figure 2](#)). Alternatively other scrub pad holders, e. g. with hook-and-loop fastener, can be used. The mass of the scrub pad holder which exerts a downward force on the test panel shall be (135 ± 1) g.

1) CAS Registry Number® is a trademark of the American Chemical Society (ACS). This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.