

SS 5 : Part H3 : 2013 (ICS 87.040)

SINGAPORE STANDARD Methods of test for paints, varnishes and related materials

– Part H3 : Designation of degree of rusting



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- Part H3 : Designation of degree of rusting

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This Singapore Standard was approved by the Chemical Standards Committee on behalf of the Singapore Standards Council on 15 April 2013.

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National Foreword

This Singapore Standard was prepared by the Working Group on the Review of Singapore Standard SS 5 Methods of Test for Paints, Varnishes and Related Materials appointed by the Technical Committee on Surface Coatings under the direction of the Chemical Standards Committee.

This is a revision of SS 5 : Part H3 : 1988 (2003) 'Methods of test for paints, varnishes and related materials – Designation of degree of rusting'. It is a modified adoption of the International Standard ISO 4628-3 : 2003 'Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size defects, and of intensity of uniform changes in appearance – Part 3 : Assessment of degree of rusting', published by the International Organization for Standardization.

To facilitate identification, the affected text of the International Standard which is to be changed is indicated by a left marginal bar adjacent to it and the additional text is indicated in a text box.

Clause Modification

1 Scope *Replace with "*This part provides pictorial standards for designating the degree of rusting of paint coatings."

Explanation: ISO 4628-1 was not adopted as a Singapore Standard.

4 Assessment Insert table below after Table 1:

Table 2 – Rating Scheme for designating the size of defect	Table 2 – Rating	scheme for	designating	the size o	f defects
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Rating	Size of defect ^a	
0	not visible under x 10 magnification	
1	only visible under magnification up to x 10	
2	just visible with normal corrected vision	
3	Clearly visible with normal corrected vision (up to 0.5 mm)	
4	0.5 mm to 5 mm	
5	Larger than 5 mm	
^a Unless otherwise specified in subsequent parts of this International Standard.		

Explanation: Table 2 of ISO 4628-1 : 2003 was extracted and placed in this standard for easy reference.

Wherever the words 'International Standard' appear in ISO 4628-3 : 2003, it shall be read as 'Singapore Standard'. The references 'ISO 4628-3 : 2003' shall be read as SS 5 : Part H3.

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.

Acknowledgment is made for the use of information from the above reference.

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.
- 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 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.
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4628-3 was prepared by Technical Committee 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 4628-3:1982), of which it constitutes a mainly editorial revision. The pictorial standards have been replaced by computer-generated pictures and binary images have been added for the calibration of optical imaging systems.

ISO 4628 consists of the following parts, under the general title *Paints and varnishes* — *Evaluation of degradation of coatings* — *Designation of quantity and size of defects, and of intensity of uniform changes in appearance:*

- Part 1: General introduction and designation system
- Part 2: Assessment of degree of blistering
- Part 3: Assessment of degree of rusting

Part 4: Assessment of degree of cracking

- Part 5: Assessment of degree of flaking
- Part 6: Assessment of degree of chalking by tape method
- Part 7: Assessment of degree of chalking by velvet method
- Part 8: Assessment of degree of delamination and corrosion around a scribe
- Part 10: Assessment of degree of filiform corrosion

Methods of test for paints, varnishes and related materials – Part H3 : Designation of degree of rusting

1 Scope

This part of ISO 4628 describes a method for assessing the degree of rusting of coatings by comparison with pictorial standards.

The pictorial standards provided in this part of ISO 4628 show coated steel surfaces which have deteriorated to different degrees by a combination of rust broken through the coating and visible underrust.

NOTE 1 – The pictorial standards have been selected from the "European rust scale" published by the European Confederation of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE), Brussels. The correlation between the ISO scale and the "European rust scale" is given in Annex B, Table B.1.

NOTE 2 – The correlation between the ISO scale and the rating system of ASTM D 610, *Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces*, is given in Annex B, Table B.2.

NOTE 3 The rust formation on uncoated steel surfaces is designated in accordance with ISO 8501-1, *Preparation of steel substrates before application of paints and related products* — *Visual assessment of surface cleanliness* — *Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings* (rust grades A, B, C and D).

ISO 4628-1 defines the system used for designating the quantity and size of defects and the intensity of changes in appearance of coatings and outlines the general principles of the system. This system is intended to be used, in particular, for defects caused by ageing and weathering, and for uniform changes such as colour changes, for example yellowing.

2 Normative references

The following referenced documents are indispensable for the application 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 4628-1, Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 1: General introduction and designation system