
International Standard



4628/3

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect —
Part 3 : Designation of degree of rusting**

Peintures et vernis — Évaluation de la dégradation des surfaces peintes — Désignation de l'intensité, de la quantité et de la dimension des types courants de défauts — Partie 3 : Désignation du degré d'enrouillement

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Descriptors : paints, varnishes, surface defects, rusting, designations.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4628/3 was developed by Technical Committee ISO/TC 35, *Paints and varnishes*.

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This International Standard results from the division into separate parts of International Standard ISO 4628/1-1978, which had been approved by the member bodies of the following countries :

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Australia	India	Romania
Austria	Iran	South Africa, Rep. of
Brazil	Italy	Sweden
Canada	Korea, Rep. of	Switzerland
Chile	Mexico	Turkey
Czechoslovakia	Netherlands	United Kingdom
France	New Zealand	Yugoslavia
Germany, F. R.	Portugal	

No member body had expressed disapproval of the document.

This International Standard cancels and replaces section three of International Standard ISO 4628/1-1978.

Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect —

Part 3 : Designation of degree of rusting

0 Introduction

This International Standard is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products.

The other parts of ISO 4628 already published or in course of preparation are :

Part 1 : General principles and rating schemes.

Part 2 : Designation of degree of blistering.

Part 4 : Designation of degree of cracking.

Part 5 : Designation of degree of flaking.

Part 6 : Designation of degree of chalking.¹⁾

Part 1 of ISO 4628 defines the system for designating the quantity and size of common types of defects of paint coatings and outlines the basic principles of the system in respect of designation of the quantity and size of defects, in particular the defects caused by ageing and weathering.

Parts 2 to 6 provide auxiliary pictorial or other reference scales for rating particular types of defect. As far as possible, these scales are based on existing well-established schemes.

1 Scope and field of application

This part of ISO 4628 provides pictorial standards for designating the degree of rusting of paint coatings.

2 References

ISO 4628/1, *Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect — Part 1 : General principles and rating schemes.*

ASTM D 610-68, *Evaluating degree of rusting of painted steel surfaces.*

3 Rating

Designate the degree of rust formation by reference to the pictorial standards reproduced on pages 3 to 7.

NOTES

1 The pictorial standards are selected from the European rust scale published by the European Committee of Paint, Printing Ink and Artists' Colours Manufacturers' Associations, Brussels.

The correlation between the ISO and European rust scales is as shown in table 2.

2 The approximate correlation between the ISO rust scale and the rating system of ASTM D 610-68 is given in table 3.

These standards show coated steel surfaces deteriorated to different degrees by a combination of rust broken through the coating and apparent underrust.

The approximate amounts of the rust broken through the coating and of the total apparent rust (rust broken through + underrust) shown on these standards are as indicated in table 1.

1) At present at the stage of draft.

Table 1 – Degree of rusting and area

Degree	Area rusted %
Ri 0	0
Ri 1	0,05
Ri 2	0,5
Ri 3	1
Ri 4	8
Ri 5	40/50

Table 2 – Correlation between ISO and European rust scales

ISO rust scale	European rust scale
Ri 0	Re 0
Ri 1	Re 1
Ri 2	Re 2
Ri 3	Re 3
Ri 4	Re 5
Ri 5	Re 7

Table 3 – Approximate correlation between ISO and ASTM rust scales

ISO rust scale	ASTM D. 610
Ri 0	10
Ri 1	9
Ri 2	7
Ri 3	6
Ri 4	4
Ri 5	1 to 2

The standards given are basically intended for rating the degree of rust on coated steel.

They may be used for designating the degree of corrosion on coated non-ferrous metals if the form of breakdown is comparable with that on the standards.

The rating (degree of rusting) in accordance with table 1, which is most representative of the corrosion phenomena on the test piece, especially in respect of the amount of rust that has broken through the coating shall be indicated.

If the average sizes of the rust spots on the test piece differ considerably from those shown on the standards, an indication of their size may be given by reference to the rating scheme given in table 3 of ISO 4628/1.

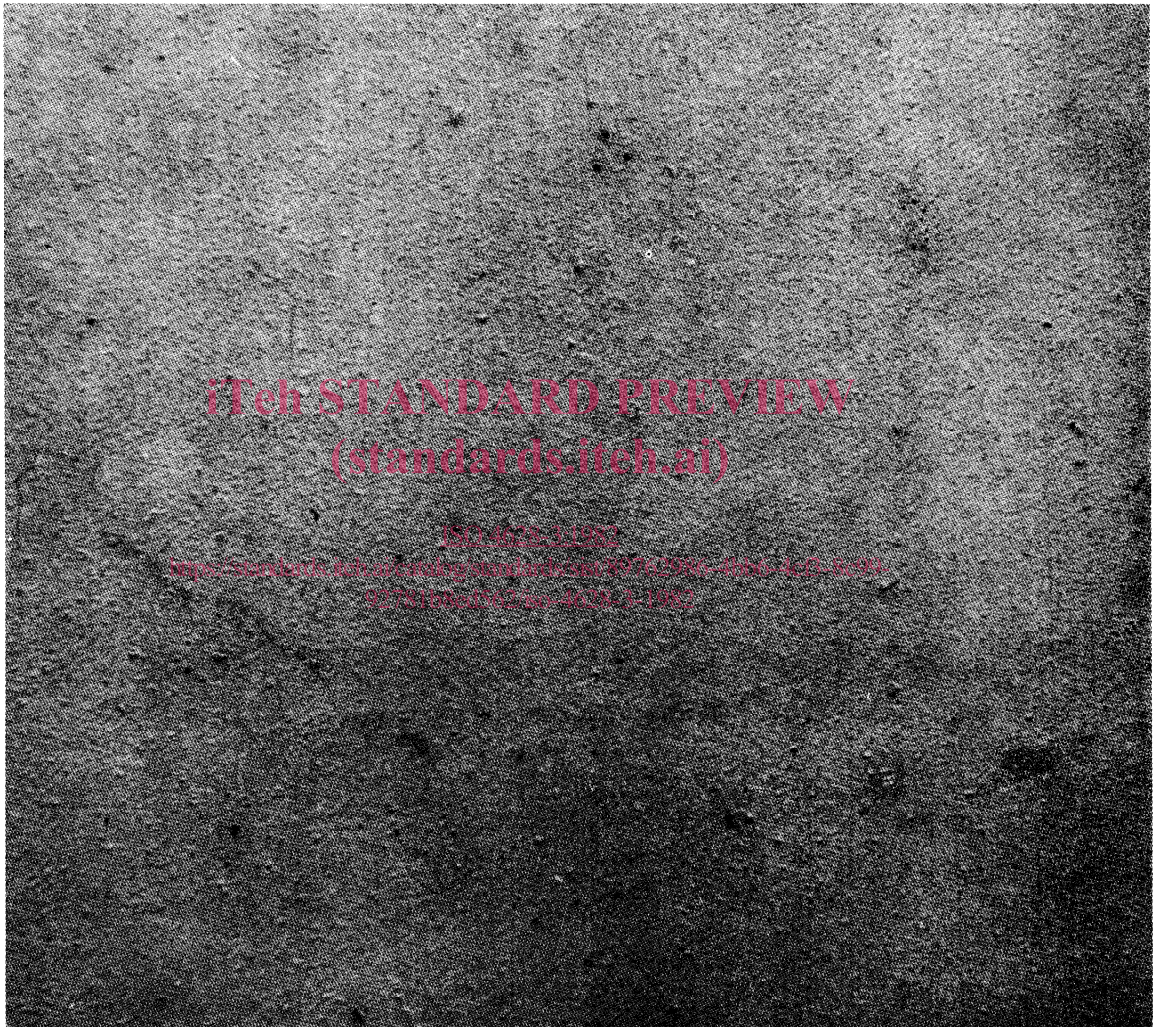
4 Test report

The test report shall contain at least the following information :

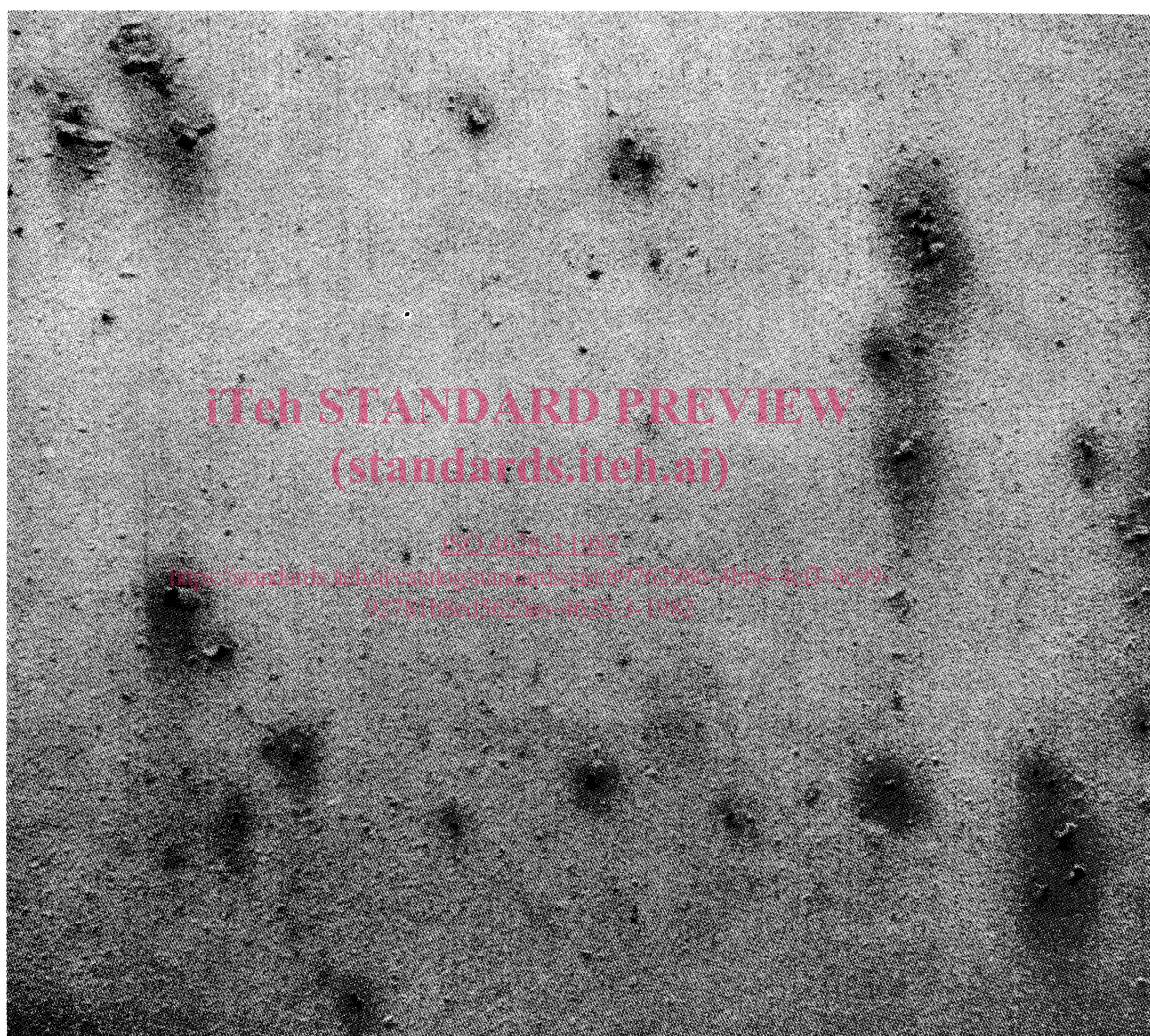
- a) the type and identification of the product tested;
- b) a reference to this International Standard (ISO 4628/3);
- c) the numerical rating of the rusted area;
- d) the numerical rating of the size of the rust spots, if desired, for example :
Rust : Ri 3 (S4) = rusted area, as a percentage of rust approximates standard 3, the sizes of the individual rust spots are of the order of a few millimetres.
- e) the date of the examination.

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Ri 3





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Ri 5