

# INTERNATIONAL STANDARD

**ISO**  
**4628-6**

First edition  
1990-12-15

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

**Part 6:**

Rating of degree of chalking by tape method

*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 6: Cotation du degré de farinage par la méthode du ruban adhésif*



Reference number  
ISO 4628-6:1990(E)

## 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.

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.

International Standard ISO 4628-6 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*.

ISO 4628 consists of the following parts, under the general title *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*
- *Part 2: Designation of degree of blistering*
- *Part 3: Designation of degree of rusting*
- *Part 4: Designation of degree of cracking*
- *Part 5: Designation of degree of flaking*
- *Part 6: Rating of degree of chalking by tape method*

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## Introduction

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

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

Parts 2 to 6 of ISO 4628 provide auxiliary pictorial and other reference scales for rating particular types of defect. As far as possible, these scales are based on existing, well established schemes.

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

## Part 6:

## Rating of degree of chalking by tape method

### 1 Scope

This part of ISO 4628 provides pictorial reference standards for designating the degree of chalking of paint coatings. It also describes a method by which the degree of chalking is rated. In using this method, it is essential that care be taken to distinguish between true degradation products and adhering dirt, particularly when chalking is slight (see 6.4).

### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4628. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4628 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4628-1:1982, *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.*

### 3 Definition

For the purposes of this part of ISO 4628, the following definition applies.

**chalking:** The appearance of a loosely adherent fine powder on the surface of a paint coating, arising from the degradation of one or more of its constituents.

### 4 Principle

By means of an adhesive tape, the chalking is removed from the coating under test. The chalking adhering to the tape is examined against a contrasting background (either black or white whichever gives the greater contrast) and the degree of chalking is assessed with reference to a rating scale.

### 5 Materials

**5.1 Self-adhesive, transparent tape,** of width 25 mm  $\pm$  10 mm.

Commercially available flexible tapes, of low gloss, transparent and without perceptible colour, have been found to be satisfactory. The type of tape shall be agreed on between the interested parties and shall be stated in the test report.

**5.2 Substrate,** black or white, with matt finish, for use as background, e.g. card, or velvet having a short pile without a tendency to be crushed.

### 6 Procedure

**6.1** Carry out the procedure on air-dried surfaces.

Place a piece of the adhesive tape (5.1) on the dry coating by applying firm pressure and rubbing with a finger.

Remove the tape and lay it on a substrate (5.2) of the appropriate colour to give the greater contrast, with the adhesive in contact with the substrate.

Under diffuse light, immediately assess (see 6.5) the degree of chalking by comparing the amount of chalk on the tape with the pictorial reference standards in figure 1.

**6.2** The degree of chalking can also be determined quantitatively using a suitable photoelectric instrument to compare the transmittance of the chalked tape with that of unused tape. In this procedure, the adhesive tape shall not be placed on a substrate (5.2) but on a clean glass slide or open support, which is placed in the optical beam of the instrument.<sup>1)</sup>

This instrumental method shall only be used if the tape is covered homogeneously by the chalking residues.

**6.3** The degree of chalking may vary over a given area. Therefore, an average portion of the coating shall be available. On large surfaces, the determination shall be made at several locations and the mean and range reported.

**6.4** Ratings obtained with coatings exposed to natural weathering shall be treated with caution as dirt deposited on the surface from the atmosphere can give false high values of chalking.

**6.5** After removing the chalking from the coating under test, the assessment of each piece of adhesive tape shall be carried out without delay because the appearance of the chalking on the adhesive tape changes with time, and the transmittance will also change.

## 7 Rating

Rate the degree of chalking by reference to the pictorial standards shown in figure 1. The numerical values given correspond to those in ISO 4628-1.

For textured surfaces, the rating shall be based on the observations of the most intensively chalked parts of the tape.

## 8 Test report

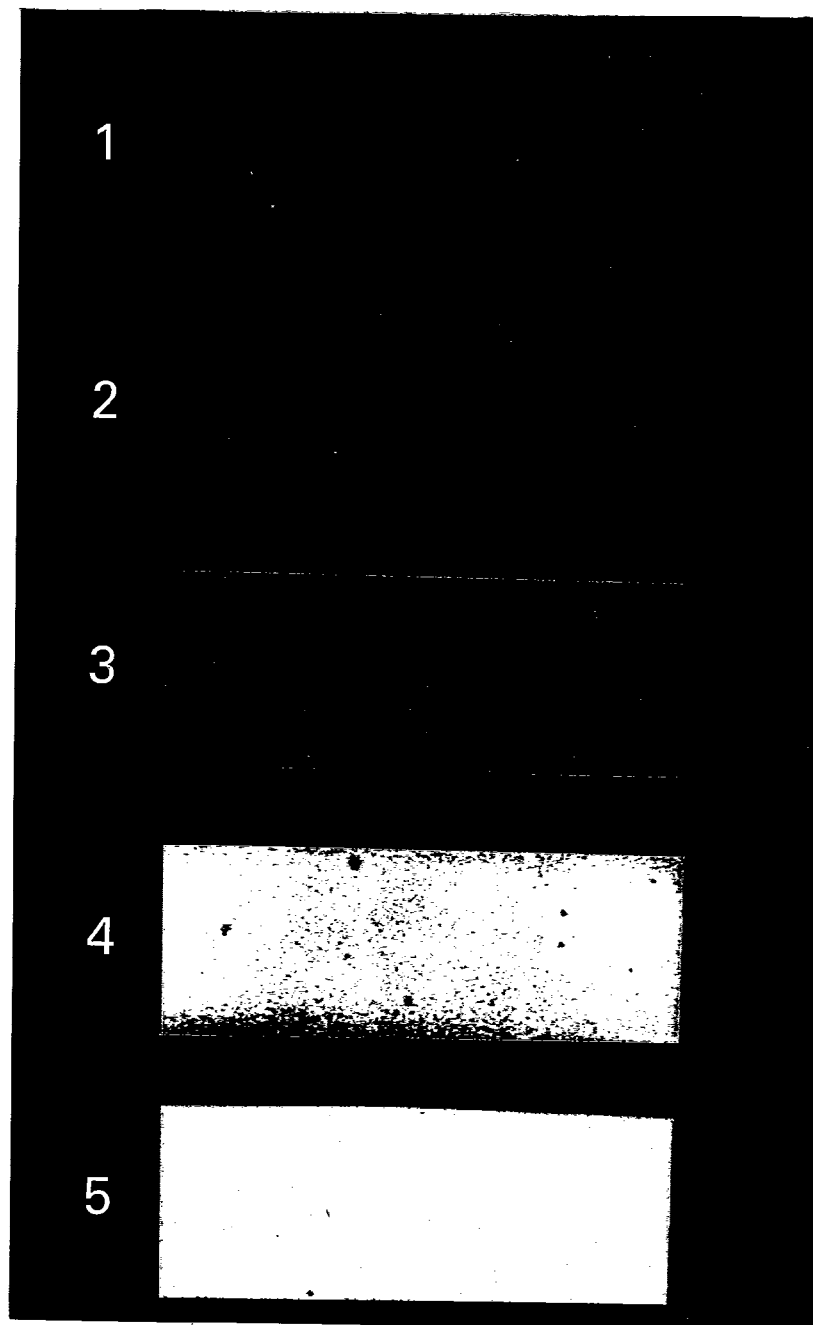
The test report shall contain at least the following information:

- a) all details necessary for the identification of the product tested;
- b) a reference to this International Standard (ISO 4628-6);
- c) the type of weathering (artificial or natural) of the coating;
- d) all details necessary for the identification of the adhesive tape used;
- e) all details necessary for the identification of the substrate used as background for the adhesive tape;
- f) the numerical rating of the degree of chalking;
- g) any deviation from the procedure specified;
- h) the date of the examination.

1) Details of this procedure are given in

[1] HELMEN, T., *Farbe und Lack*, **84** (1978), 5, pp. 315-322.

[2] HELMEN, T., *Farbe und Lack*, **87** (1981), 3, pp. 181-189.



NOTE — The right hand end of each tape corresponds to a chalking rating of 0.

Figure 1 — Pictorial reference standards for numerical chalking ratings of 1 to 5

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