



BSI Standards Publication

**Paints and varnishes —
Evaluation of degradation of
coatings — Designation of
quantity and size of defects,
and of intensity of uniform
changes in appearance**

Part 7: Assessment of degree of chalking by
velvet method

National foreword

This British Standard is the UK implementation of EN ISO 4628-7:2016. It supersedes BS EN ISO 4628-7:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/10, Test methods for paints.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.
Published by BSI Standards Limited 2016

ISBN 978 0 580 86613 5

ICS 87.040

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 February 2016.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD

EN ISO 4628-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 87.040

Supersedes EN ISO 4628-7:2003

English Version

Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 7: Assessment of degree of chalking by velvet method (ISO 4628-7:2016)

Peintures et vernis - Évaluation de la dégradation des revêtements - Désignation de la quantité et de la dimension des défauts, et de l'intensité des changements uniformes d'aspect - Partie 7: Évaluation du degré de farinage selon la méthode du morceau de velours (ISO 4628-7:2016)

Beschichtungsstoffe - Beurteilung von Beschichtungsschäden - Bewertung der Menge und der Größe von Schäden und der Intensität von gleichmäßigen Veränderungen im Aussehen - Teil 7: Bewertung des Kreidungsgrades nach dem Samtverfahren (ISO 4628-7:2016)

This European Standard was approved by CEN on 19 December 2015.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

This document (EN ISO 4628-7:2016) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2016, and conflicting national standards shall be withdrawn at the latest by August 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4628-7:2003.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4628-7:2016 has been approved by CEN as EN ISO 4628-7:2016 without any modification.

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Materials	2
6 Assessment	2
7 Test report	3
Bibliography	5

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test method for paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 4628-7:2003), which has been technically revised with the following changes:

- a) the pictorial reference standard for numerical chalking ratings 1 to 5 have been copied from ISO 4628-6:2011;
- b) a normative reference to ISO 13076 for illumination for the assessment has been added.

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 or other artificial defect*
- *Part 10: Assessment of degree of filiform corrosion*

Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance —

Part 7:

Assessment of degree of chalking by velvet method

1 Scope

This part of ISO 4628 specifies a method suitable, in particular, for rating the degree of chalking on white or coloured exterior coatings and coating systems on rough surfaces (i.e. those having a roughness greater than segment 4 of the reference comparator G as described in ISO 8503-1).

The test method specified can also be used for the assessment of the degree of chalking of coatings and coating systems on smooth surfaces, but the method specified in ISO 4628-6:2011 is preferable for this purpose.

The test method is applicable to coatings and coating systems on mineral substrates, e.g. fibre cement, brick, concrete, and renderings, independent of the structure of the surface. The method can be used quite effectively by experienced operators and is recommended for laboratory use as well as for on-site evaluation.

NOTE 1 When a reference to this test method is included in specifications, the test conditions (i.e. weathering method and substrate) have to be agreed between the interested parties.

NOTE 2 The method described in this part of ISO 4628 is a relative ranking method and is therefore not suitable for use in agreements between parties. See, however, the Note to [Table 1](#).

NOTE 3 Refer to ISO 4628-1 for the designation system for quantity and size of defects and the intensity of changes in appearance of coatings, as well as general principles of the system.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 13076, *Paints and varnishes — Lighting and procedure for visual assessments of coatings*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

chalking

appearance of a loosely adherent fine powder on the surface of a film arising from the degradation of one or more of its constituents

4 Principle

Loosely adherent powder is removed from the coating under test, using a suitable fabric. The degree of chalking is assessed with reference to a rating scale.

5 Materials

5.1 Fabric, as agreed between the interested parties, to rub against the surface being tested. Black wool felt, velvet, and velveteen have proven particularly effective for light coatings and a white fabric for dark coatings.

6 Assessment

Carry out the assessment under good illumination, as specified in ISO 13076.

Carry out the assessment in duplicate, unless otherwise agreed.

Using the index finger, press the fabric against the coating being tested with firm pressure. Rotate the fabric once through an angle of 180°. Remove the fabric and assess the degree of chalking under diffuse light in reference to the rating scheme shown in [Table 1](#).

A mechanical apparatus should be preferred if comparable results are obtained; the coating may also be wiped once with the fabric.

Table 1 — Rating scheme for designating the degree of chalking (derived from ISO 4628-1:2016, Table 3)

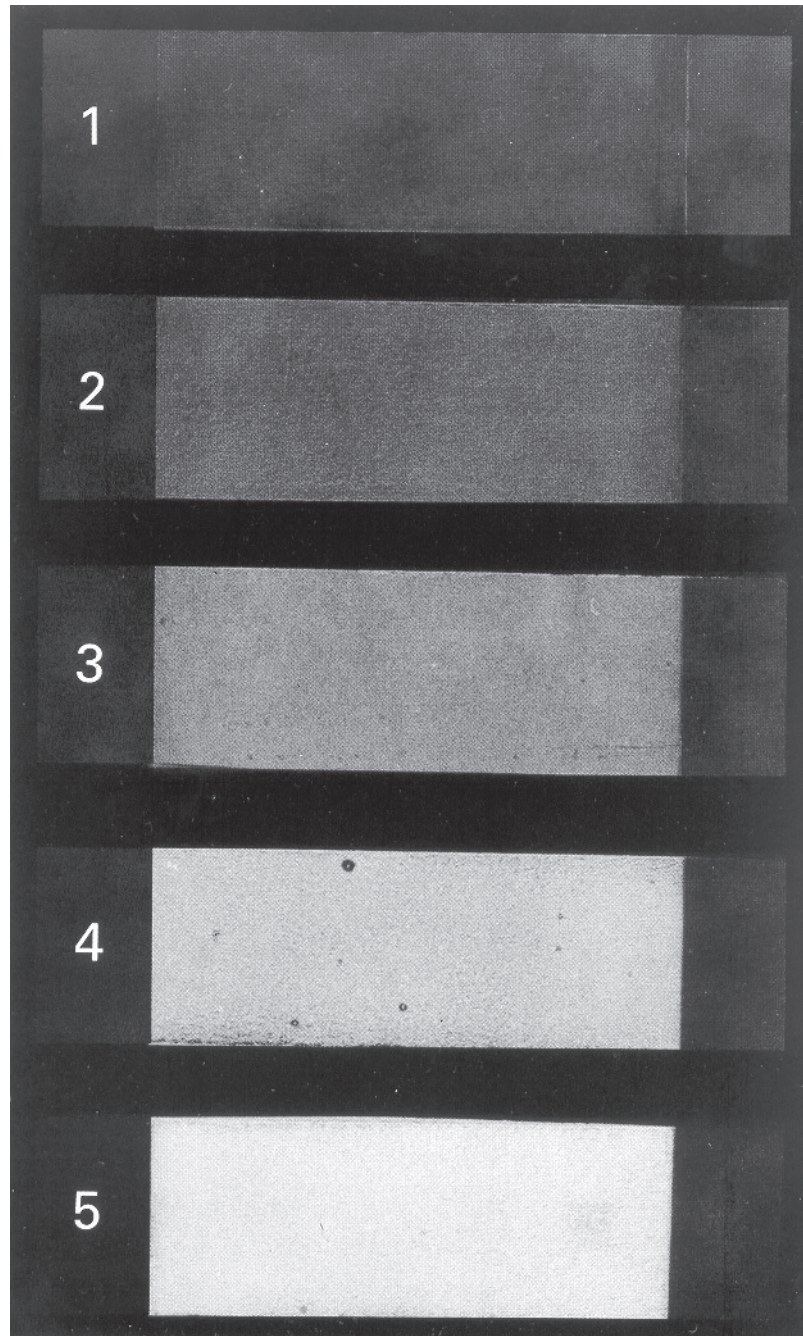
Rating	Degree of chalking
0	unchanged, i.e. no perceptible chalking
1	very slight, i.e. just perceptible chalking
2	slight, i.e. clearly perceptible chalking
3	moderate, i.e. very clearly perceptible chalking
4	considerable, i.e. pronounced chalking
5	severe, i.e. intense chalking

NOTE If specified or agreed, a simpler rating system can be used. However, in such cases, the meanings of the ratings in this table which are used shall not be changed in order to avoid confusion.

Examples of pictorial standards for assessing the degree of chalking are given in [Figure 1](#). The figure is obtained with the tape method specified in ISO 4628-6:2011, but the degrees of chalking 1 to 5 are comparable to those specified in this part of ISO 4628.

The amount of powder may vary over a given area. Therefore, the test shall be carried out at an average location on the coating. On large surfaces, the assessment shall be made at several locations, and the mean and range reported.

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



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

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

7 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the coating tested;
- b) a reference to this part of ISO 4628, i.e. ISO 4628-7;
- c) the type of surface examined, its size and, if appropriate, its location;

- d) the numerical rating of the degree of chalking in accordance with [Clause 6](#) (mean value, range, and number of assessments);
- e) all details necessary to identify the fabric used;
- f) whether the result was obtained using the index finger or a particular apparatus (details to be indicated);
- g) details of any deviation from the procedure specified;
- h) any unusual features (anomalies) observed during the assessment;
- i) the date of the examination.

Bibliography

- [1] 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*
- [2] ISO 4628-6, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 6: Assessment of degree of chalking by tape method*
- [3] ISO 8503-1, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 1: Specifications and definitions for ISO surface profile comparators for the assessment of abrasive blast-cleaned surfaces*

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

Useful Contacts:

Customer Services

Tel: +44 845 086 9001

Email (orders): orders@bsigroup.com

Email (enquiries): cservices@bsigroup.com

Subscriptions

Tel: +44 845 086 9001

Email: subscriptions@bsigroup.com

Knowledge Centre

Tel: +44 20 8996 7004

Email: knowledgecentre@bsigroup.com

Copyright & Licensing

Tel: +44 20 8996 7070

Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK