

BS EN 16492:2014



BSI Standards Publication

Paints and varnishes — Evaluation of the surface disfigurement caused by fungi and algae on coatings

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN 16492:2014.

The UK participation in its preparation was entrusted to Technical Committee STI/28, Paint systems for non-metallic substrates.

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 2014.
Published by BSI Standards Limited 2014

ISBN 978 0 580 80221 8
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 30 June 2014.

Amendments/corrigenda issued since publication

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

EUROPEAN STANDARD

EN 16492

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2014

ICS 87.040

English Version

Paints and varnishes - Evaluation of the surface disfigurement caused by fungi and algae on coatings

Peintures et vernis - Évaluation de l'altération d'aspect de la surface des revêtements provoquée par les champignons et les algues

Beschichtungsstoffe - Bewertung von optischen Oberflächenveränderungen verursacht durch Pilze und Algen auf Beschichtungen

This European Standard was approved by CEN on 30 April 2014.

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

Contents		Page
Foreword.....		3
1	Scope	4
2	Normative references	4
3	Principle	4
4	Apparatus	4
5	Preparation	4
6	Procedure	4
7	Expression of results	5
8	Test report	5
Annex A (normative) Assessment according to EN ISO 4628-1		6
A.1	Designation of intensity of disfigurements according to EN ISO 4628-1:2003, 3.4	6
A.2	Designation of the quantity of disfigurements according to EN ISO 4628-1:2003, 3.2	6
A.3	Designation of the percentage area of disfigurements	6
Bibliography		7

Foreword

This document (EN 16492:2014) has been prepared by 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 December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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.

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.

1 Scope

This European Standard specifies a procedure for the evaluation of the degree of surface disfigurement caused by fungi and algae on coatings.

This European Standard is not applicable for evaluating disfigurements caused by blue stain in service on and in wood surfaces. A scale for the assessment of blue stain of coated and uncoated wood is specified in EN 152:2011, 8.5.2.

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.

EN ISO 4628-1:2003, *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 (ISO 4628-1:2003)*

3 Principle

The degree of fungal or algal growth on coatings is given a numeric rating.

4 Apparatus

4.1 **Microscope** with a typical magnification of up to $\times 100$ (if necessary)

5 Preparation

The test specimen shall be the flat surface of any exposed test panel or cut from a construction panel. In the case of assessment of building facades one or more defined parts of the surface shall be chosen and described in the test report.

The test specimen shall be examined without wiping, washing or removing any loose surface material.

For better discrimination between fungi and algae the test surface shall be examined under wet conditions. Dry surfaces shall be wetted by gently spraying with clean water.

Care shall be taken not to add any contamination to the specimen surface.

6 Procedure

Carry out the assessment visually using normal or corrected vision on a defined test surface. Carry out the assessment under good illumination and from a distance less than 1 m.

If contamination of dirt soil is suspected, this shall be confirmed by the use of a microscope (4.1) and taken into consideration when evaluating the entire surface.

Distinguishing dirt from biological disfigurement might be difficult even with the aid of a microscope. To improve precision, the evaluation should be carried out by an experienced operator.

Any fungal or algal growth observed only on dirt or soil particles that have accumulated on the test specimen shall be reported separately in the test report.

7 Expression of results

The numerical ratings for the intensity (in accordance with Table A.1), the quantity (in accordance with Table A.2) and the percentage area (in accordance with Table A.3) of disfigurements caused by fungal or algal growth shall be expressed as indicated in the following examples:

fungal growth: intensity 1, quantity 3, percentage area 2

algal growth: intensity 2, quantity 1, percentage area 1

8 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the product tested;
- b) reference to this European Standard (EN 16492:2014);
- c) type and origin of the test specimen and its exposure conditions, including whether the inspection is carried out in a laboratory or on-site;
- d) statement whether the growth observed is either fungal or algal;
- e) numerical contamination rating in accordance with Clause 7;
- f) any presence of dirt/soiling;
- g) if any growth is observed on dirt or soil only, including an information whether any magnification to inspect the surface was carried out;
- h) any deviation from the test procedure described;
- i) any unusual features (anomalies) observed during the evaluation;
- j) date(s) of the test.

Annex A (normative)

Assessment according to EN ISO 4628-1

A.1 Designation of intensity of disfigurements according to EN ISO 4628-1:2003, 3.4

The intensity of changes in the appearance of the coating (e.g. colour changes) caused by fungal or algal growth shall be expressed using Table A.1:

Table A.1 — Rating scheme for designating the intensity of visible growth

Rating	Intensity of visible growth
0	unchanged, i.e. no visible growth
1	very slight, i.e. just visible growth
2	slight, i.e. clearly visible growth
3	moderate, i.e. very clearly visible growth
4	considerable, i.e. pronounced visible growth
5	very marked visible growth

A.2 Designation of the quantity of disfigurements according to EN ISO 4628-1:2003, 3.2

The quantity (number) of disfigurements caused by fungal or algal growth shall be expressed using Table A.2:

Table A.2 — Rating scheme for designating the quantity of disfigurements

Rating	Quantity of disfigurements
0	none, i.e. no detectable disfigurements
1	very few, i.e. small, barely significant number of disfigurements
2	few, i.e. small but significant number of disfigurements
3	moderate number of disfigurements
4	considerable number of disfigurements
5	dense pattern of disfigurements / homogeneous disfigurement

A.3 Designation of the percentage area of disfigurements

The percentage area of disfigurements caused by fungal or algal growth shall be expressed using Table A.3:

Table A.3 — Rating scheme for designating the percentage area of disfigurements

Rating	Percentage area of disfigurements
0	no growth on the surface of the specimen
1	up to 10 % growth on the surface of the specimen
2	more than 10 % up to 30 % growth on the surface of the specimen
3	more than 30 % up to 50 % growth on the surface of the specimen
4	more than 50 % up to 100 % growth on the surface of the specimen

Bibliography

EN 152:2011, *Wood preservatives - Determination of the protective effectiveness of a preservative treatment against blue stain in wood in service - Laboratory method*

EN 15457, *Paints and varnishes - Laboratory method for testing the efficacy of film preservatives in a coating against fungi*

EN 15458, *Paints and varnishes - Laboratory method for testing the efficacy of film preservatives in a coating against algae*

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.

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

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



...making excellence a habit.™