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BS EN ISO 8502-3:2017



BSI Standards Publication

Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness

Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method) (ISO 8502-3:2017)

bsi.

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This British Standard is the UK implementation of EN ISO 8502-3:2017. It supersedes BS EN ISO 8502-3:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/21, Paint systems and surface preparation for 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.

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EUROPEAN STANDARD **EN ISO 8502-3**

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English Version

Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness - Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method) (ISO 8502-3:2017)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés - Essais pour apprécier la propreté d'une surface - Partie 3: Évaluation de la poussière sur les surfaces d'acier préparées pour la mise en peinture (méthode du ruban adhésif sensible à la pression) (ISO 8502-3:2017)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen - Prüfungen zum Beurteilen der Oberflächenreinheit - Teil 3: Beurteilung von Staub auf für das Beschichten vorbereiteten Stahloberflächen (Klebeband-Verfahren) (ISO 8502-3:2017)

This European Standard was approved by CEN on 30 September 2016.

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European foreword

This document (EN ISO 8502-3:2017) 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of an identical text or by endorsement, at the latest by August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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 8502-3:1999.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 8502-3:2017 has been approved by CEN as EN ISO 8502-3:2017 without any modification.

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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.

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).

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was developed by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 12, *Preparation of steel substrates before application of paints and related products*.

This second edition cancels and replaces the first edition (ISO 8502-3:1992), which has been technically revised with the following changes:

a) in Clause 2 and 5.1, IEC 454-2 has been substituted with IEC 60454-2;

b) in Table 1, decimal sign has been changed to a decimal comma;

c) Figure A.4 has been added and the former Figure A.4 has been renamed Figure A.5;

d) the document has been editorially revised.

ISO 8502 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness:*

— *Part 2: Laboratory determination of chloride on cleaned surfaces*

— *Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method)*

— *Part 4: Guidance on the estimation of the probability of condensation prior to paint application*

— *Part 5: Measurement of chloride on steel surfaces prepared for painting (ion detection tube method)*

— *Part 6: Extraction of soluble contaminants for analysis — The Bresle method*

— *Part 9: Field method for the conductometric determination of water-soluble salts*

— *Part 11: Field method for the turbidimetric determination of water-soluble sulfate*

— *Part 12: Field method for the titrimetric determination of water-soluble ferrous ions*

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Introduction

The performance of protective coatings of paint and related products applied to steel is significantly affected by the state of the steel surface immediately prior to painting. The principal factors that are known to influence this performance are as follows:

a) presence of rust and mill scale;

b) presence of surface contaminants, including salts, dust, oils and greases;

c) surface profile.

The ISO 8501, ISO 8502 and ISO 8503 series of International Standards have been prepared to provide methods of assessing these factors, while the ISO 8504 series provides guidance on the preparation methods that are available for cleaning steel substrates, indicating the capabilities of each in attaining specified levels of cleanliness.

These series of International Standards do not contain recommendations for the protective coating systems to be applied to the steel surface. Neither do they contain recommendations for the surface quality requirements for specific situations even though surface quality can have a direct influence on the choice of protective coating to be applied and on its performance. Such recommendations are found in other documents such as national standards and codes of practice. It will be necessary for the users of these International Standards to ensure that the qualities specified are

— compatible and appropriate both for the environmental conditions to which the steel will be exposed and for the protective coating system to be used, and

— within the capability of the cleaning procedure specified.

The four series of International Standards referred to above deal with the following aspects of preparation of steel substrates before application of paints and related products:

— ISO 8501 on visual assessment of surface cleanliness;

— ISO 8502 on tests for the assessment of surface cleanliness;

— ISO 8503 on surface roughness characteristics of blast-cleaned steel substrates;

— ISO 8504 on surface preparation methods.

Each of these International Standards is in turn divided into separate parts.

This part of ISO 8502 describes a procedure for the assessment, using a pressure-sensitive tape method, of the quantity and the particle size of dust on steel surfaces prepared for painting.

In the painting schedule requirements of contractual documents giving details of surface preparation by blast-cleaning, it is normally specified that all surfaces shall be free from surface contamination including oil, grease, dirt, dust and water-soluble salts.

Dust on blast-cleaned steel surfaces can reduce the adhesion of subsequently applied organic coatings and, by absorbing moisture, might promote the corrosion of the blast-cleaned steel surfaces. Accumulation of dust more naturally occurs on horizontal surfaces, the interior of pipes, and in structural cavities. Special inspection should be carried out to ensure that such areas are adequately cleaned and adequately free from dust before painting.

Because of subjective factors involved in the test procedure, the test does not allow the precise determination of dust retained on blast cleaned steel surfaces. Nevertheless, when carried out by experienced operators and especially when used to compare the performance of surfaces under test with agreed standard specimens, it gives very useful information.

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There are many possible variables in the conditions at sites where tests might be required to be carried out. Agreements made between interested parties, where appropriate, should include the number or frequency of tests, the test locations, and the dates and times when the tests are to be carried out.

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INTERNATIONAL STANDARD ISO 8502-3:2017(E)

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Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness —

Part 3:
Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method)

1 Scope

This part of ISO 8502 describes a method for the assessment of dust remaining on cleaned steel surfaces prepared for painting. It provides pictorial ratings for the assessment of the average quantity of dust. It also provides descriptive classes for the assessment of the average size of the dust particles.

The method described is a qualitative test useful for a steel surface, before cleaning, corresponding to rust grade A, B or C as defined in ISO 8501-1. It can be used as a "pass/fail" test or to provide a permanent record of the dust present on a surface.

NOTE The quantity ratings and size classes referred to in this part of ISO 8502 are derived from ISO 4628-1.

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 4618, *Paints and varnishes — Terms and definitions*

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*

IEC 60454-2, *Pressure-sensitive adhesive tapes for electrical purposes — Part 2: Methods of test*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 and the following apply.

3.1
dust
loose particulate matters present on a steel surface prepared for painting, arising from blast-cleaning or other surface preparation processes or resulting from the action of the environment

4 Principle

A pressure-sensitive adhesive tape is pressed on to the steel surface prepared for painting. The tape, with the dust adhering to it, is then removed and placed on a display board of a colour which contrasts to that of the dust, and is examined visually. The quantity of dust adhering to the tape and the dust particle size are then estimated.

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