

Teraspindade ettevalmistamine enne värvide ja nendega seotud materjalide pealekandmist. Pritspuhastatud teraspinna kareduse iseloomustus. Osa 2: Abrasiiviga pritspuhastatud pinnaprofiilide liigitamise meetod. Komparaatorimeetod

Preparation of steel substrates before application of paints and related products - Surface roughness characteristics of blast-cleaned steel substrates - Part 2: Method for the grading of surface profile of abrasive blast-cleaned steel - Comparator procedure

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 8503-2:1999 sisaldab Euroopa standardi EN ISO 8503-2:1995 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 12.12.1999 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.05.1995.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 8503-2:1999 consists of the English text of the European standard EN ISO 8503-2:1995.

This standard is ratified with the order of Estonian Centre for Standardisation dated 12.12.1999 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 19.05.1995.

The standard is available from Estonian standardisation organisation.

ICS 25.220.10

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

ICS 25.220.20; 87.020; 91.080.10

Descriptors: Coating, surface roughness parameters, steel, surface profile comparators.

English version

Preparation of steel substrates before application of paints and related products
**Surface roughness characteristics of blast-cleaned
steel substrates**

Part 2: Method for the grading of surface profile of abrasive blast-
cleaned steel; comparator procedure
(ISO 8503-2:1988)

Préparation des subjectiles d'acier avant
appliation de peintures et de produits
assimilés; caractéristiques de rugosité
des subjectiles d'acier décapés. Partie 2:
Méthode pour caractériser un profil de
surface en acier décapé par projection
d'abrasif; utilisation d'échantillons de
comparaison viso-tactile
(ISO 8503-2:1988)

Vorbereitung von Stahloberflächen vor
dem Auftragen von Beschichtungstoffen;
Rauheitskenngrößen von gestrahlten
Stahloberflächen. Teil 2: Verfahren zur
Prüfung der Rauheit von gestrahltem
Stahl; Vergleichsmusterverfahren
(ISO 8503-2:1988)

This European Standard was approved by CEN on 1995-03-14 and is identical to the ISO Standard as referred to.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 8503-2:1988 Preparation of steel substrates before application of paints and related products; surface roughness characteristics of blast-cleaned steel substrates; method for the grading of surface profile of abrasive blast-cleaned steel; comparator procedure,

which was prepared by ISO/TC 35 'Paints and varnishes' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 139 'Paints and varnishes' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by November 1995 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 8503-2:1988 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

This document is a preview generated by EVS

0 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

- a) the presence of rust and mill scale;
- b) the presence of surface contaminants, including salts, dust, oils and greases;
- c) the surface profile.

International Standards ISO 8501, ISO 8502 and ISO 8503 have been prepared to provide methods of assessing these factors, while ISO 8504 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 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;
- within the capability of the cleaning procedure specified.

The four International Standards referred to above deal with the following aspects of preparation of steel substrates :

ISO 8501 — *Visual assessment of surface cleanliness*;

ISO 8502 — *Tests for the assessment of surface cleanliness*;

ISO 8503 — *Surface roughness characteristics of blast-cleaned steel substrates*;

ISO 8504 — *Surface preparation methods*.

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

Irrespective of the procedures and the type of abrasive that are used for the preparation of steel substrates, the surface after blast-cleaning consists of random irregularities with peaks and valleys that are not easily characterized. Consequently, it was concluded that, because of this random nature, no method is capable of giving a precise value for the profile. Thus, it has been recommended that the profile should be identified as either dimpled (where shot abrasives have been used) or angular (where grit abrasives have been used) and that it should be graded as "fine", "medium" or "coarse", each grade being defined by the limits specified in ISO 8503-1. These surface characteristics are considered to give sufficient distinguishing features for most painting requirements.

Particular attention, however, is drawn to the fact that the grades "fine", "medium" and "coarse" represent different ranges in terms of roughness parameters, dependent upon whether these grades are applied to shot abrasive or grit abrasive blast-cleaned surfaces. In consequence, the effect produced on a given coating by a given grade "fine", "medium" or "coarse" is determined not only by the specific surface character but also by the specific roughness value ($\overline{R}_{\text{v}5}$ or \overline{h}_{v}) belonging to that grade. Where surface profile is particularly important, both the grade of the surface profile ("fine", "medium" or "coarse") and the type of abrasive which is to be used should be specified.

This method of test requires the following supplementary information to be completed for any particular application. This information shall be derived from parts of ISO 8501, ISO 8503 and ISO 8504 or similar standards or, where appropriate, shall be the subject of agreement between the interested parties.

a) When and where the assessment of grading is to be carried out (i.e. the frequency of assessments as blast-cleaning proceeds and the nominal distance between individual assessments).

b) Wherever possible, whether shot or grit abrasive (or a mixture of shot and grit abrasives) is to be used for the blast-cleaning procedure(s).

c) The required grading (see the note below) of the blast-cleaned substrates in terms of "fine", "medium" or "coarse" and, where known, the rust grade (see ISO 8501-1) of the substrate prior to blast-cleaning.

d) If required, the type of comparator to be used, i.e. comparator G or comparator S.

NOTE — The rust grade of the steel is indicative of the "primary" profile of the surface and hence this will affect the profile of the cleaned substrate. The "secondary" profile is the profile resulting from the effect of the blast-cleaning process on the primary profile and it is this "secondary" profile which is to be assessed by use of a reference comparator.

Sharp edges due to mechanical or flame cutting, boring, etc., are not considered part of the primary profile and should be removed by grinding prior to abrasive blast-cleaning.

1 Scope and field of application

1.1 This part of ISO 8503 describes a visual and tactile method for assessing the grade of the profile that has been produced by one of the abrasive blast-cleaning procedures described in ISO 8504-2.

The method uses ISO surface profile comparators for assessing, on site, the roughness of surfaces before the application of paint or other protective treatments.

NOTE — Where appropriate, ISO surface profile comparators may be used for assessing the roughness profile of other abrasive blast-cleaned substrates and, in addition, their use is not restricted solely to surfaces that are to be painted.

1.2 The method is applicable to steel surfaces that have been blast-cleaned by use of either shot abrasives or grit abrasives but is only applicable for grades Sa 2 1/2 and Sa 3 of ISO 8501-1 when the entire surface under test shows an overall blast-cleaned appearance.

It is applicable to surfaces that have been cleaned with either metallic or non-metallic abrasives.

2 References

ISO 4618, *Paints and varnishes — Vocabulary*.

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*.

ISO 8503, *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*.

— *Part 3 : Method for the calibration of ISO surface profile comparators and for the determination of surface profile — Focusing microscope procedure*.

— *Part 4 : Method for the calibration of ISO surface profile comparators and for the determination of surface profile — Stylus instrument procedure*.

ISO 8504-2, *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 2 : Abrasive blast-cleaning*.¹⁾

3 Definitions

For the purpose of this part of ISO 8503, the definitions given in ISO 4618 and ISO 8503-1 apply.

4 Principle

Visual and/or tactile comparison of the surface profile of the test surface with the profile of each of the segments of a calibrated ISO surface profile comparator. Identification of the two segments between whose profiles the test surface lies, and conversion to the appropriate grading : "fine", "medium" or "coarse".

5 Apparatus

5.1 **Surface profile comparator**, calibrated, complying with the requirements of ISO 8503-1.

NOTES

1 In ISO 8503-1, two comparators are specified : one with surface profiles corresponding to surfaces that have been blast-cleaned using grit abrasives (reference comparator G) and one with surface profiles corresponding to surfaces that have been blast-cleaned using metallic shot abrasives (reference comparator S). The nominal values for these profiles, which identify the limits of the three grades "fine", "medium" and "coarse", are given in ISO 8503-1.

When a mixture of shot and grit abrasives is used to blast-clean a substrate, the grit-abrasive reference comparator G should be used.

1) At present at the stage of draft.