# Teraspindade ettevalmistamine enne värvide ja nendega seotud materjalide pealekandmist. Pritspuhastatud teraspinna kareduse iseloomustus. Osa 4: ISO pinnaprofiilikomparaatorite kalibreerimise ja pinnaprofiili määramise meetod. Nõelkombitsameetod

Preparation of steel substrates before application of paints and related products - Surface roughness characteristics of blast-cleaned steel substrates - Part 4: Method for the calibration of ISO surface profile comparators and for the determination of surface profile - Stylus instrument procedure

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| Käesolev Eesti standard EVS-EN ISO 8503-4:1999 sisaldab Euroopa standardi EN ISO 8503-4:1995 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 8503-4:1999 consists of the English text of the European standard EN ISO 8503-4:1995. |
| Standard on kinnitatud Eesti Standardikeskuse 12.12.1999 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | 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. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.05.1995. | Date of Availability of the European standard text 19.05.1995. |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. |



**ICS** 25.220.10

# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

EN ISO 8502-4

May 1999

ICS 87.020

**English version**

Preparation of steel substrates before application of paint and related products
## Tests for the assessment of surface cleanliness
Part 4: Guidance on the estimation of the probability of condensation prior to paint application
(ISO 8502-4 : 1993)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés – Essais pour apprécier la propreté d'une surface – Partie 4: Principes directeurs pour l'estimation de la probabilité de condensation avant application de peinture (ISO 8502-4 : 1993)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen – Prüfungen zum Beurteilen der Oberflächenreinheit – Teil 4: Anleitung zum Abschätzen der Wahrscheinlichkeit von Taubildung vor dem Beschichten (ISO 8502-4 : 1993)



This European Standard was approved by CEN on 1999-04-18.

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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.

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CEN

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

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## Foreword

International Standard

ISO 8502-4 : 1993 Preparation of steel substrates before application of paint and related products – Tests for the assessment of surface cleanliness – Part 4: Guidance on the estimation of the probability of condensation prior to paint application,

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 1999 at the latest.

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

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

## Endorsement notice

The text of the International Standard ISO 8502-4 : 1993 was approved by CEN as a European Standard without any modification.

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



## 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.

Some paints (but not all) require dry surfaces when being applied to steel structures. Thin films of condensed water on steel surfaces are mostly invisible. It is therefore important to have a method by which the probability of condensation can be estimated prior to the application of paint.



## 1 Scope

This International Standard gives guidance on the estimation of the probability of condensation on a surface to be painted. It may be used to establish whether conditions at the job site are suitable for painting or not.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8502. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8502 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4677-1:1985, *Atmospheres for conditioning and testing — Determination of relative humidity — Part 1: Aspirated psychrometer method.*

ISO 4677-2:1985, *Atmospheres for conditioning and testing — Determination of relative humidity — Part 2: Whirling psychrometer method.*

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times.*

## 3 Probability of condensation

The relative humidity of the air and the steel surface temperature are the basis for the estimation of the probability of condensation, but there is no simple rule to employ. The situation is complex because there are a multitude of factors which have an influence on the condensation and evaporation of moisture, such as

— heat conductance of the structure;

— solar radiation on the surface;

— flow of ambient air around the structure;

— contamination by hygroscopic substances on the surface.

These factors sometimes provoke wetting or prevent drying locally on the surface, e.g. where the surface temperature remains low or tends to fall due to heat losses or where the air becomes quickly saturated due to reduced ventilation. Naturally, the same factors sometimes have the opposite effect. Therefore any test results should be interpreted with the greatest care.

Unless otherwise agreed, the steel surface temperature generally should be at least 3 °C above the dew-point when paints are used.

NOTE 1 For paints that are tolerant to moisture on the surface, a temperature difference less than 3 °C may be acceptable.