

SLOVENSKI STANDARD

SIST EN ISO 8502-10:2005

01-april-2005

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Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness - Part 10: Field method for the titrimetric determination of water-soluble chloride (ISO 8502-10:1999)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen - Prüfungen zur Bewertung der Oberflächenreinheit - Teil 10: Feldprüfung zur titrimetrischen Bestimmung von wasserlöslichem Chlorid (ISO 8502-10:1999)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés - Essais pour apprécier la propreté d'une surface - Partie 10: Méthode in situ pour la détermination titrimétrique du chlorure hydrosoluble (ISO 8502-10:1999)

Ta slovenski standard je istoveten z: EN ISO 8502-10:2004

ICS:

25.220.10 Priprava površine Surface preparation

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 8502-10

December 2004

ICS 25.220.10

English version

Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness - Part 10: Field method for the titrimetric determination of water-soluble chloride (ISO 8502-10:1999)

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This European Standard was approved by CEN on 21 December 2004.

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.

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

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EN ISO 8502-10:2004 (E)**Foreword**

The text of ISO 8502-10:1999 has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 8502-10:2004 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 June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

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

Endorsement notice

The text of ISO 8502-10:1999 has been approved by CEN as EN ISO 8502-10:2004 without any modifications.

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INTERNATIONAL
STANDARDISO
8502-10First edition
1999-12-01

**Preparation of steel substrates before
application of paints and related products —
Tests for the assessment of surface
cleanliness —****Part 10:****Field method for the titrimetric determination
of water-soluble chloride**

*Préparation des subjectiles d'acier avant application de peintures et de
produits assimilés — Essais pour apprécier la propreté d'une surface —
Partie 10: Méthode in situ pour la détermination titrimétrique du chlorure
hydrosoluble*

Reference number
ISO 8502-10:1999(E)

ISO 8502-10:1999(E)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8502-10 was prepared by Technical Committee ISO/TC35, *Paints and varnishes*, Subcommittee SC 12, *Preparation of steel substrates before the application of paints and related products*.

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

- *Part 1: Field test for soluble iron corrosion products*
[Technical Report]
- *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 7: Field method for the determination of oil and grease*
- *Part 8: Field method for the refractometric determination of moisture*
- *Part 9: Field method for the conductometric determination of water-soluble salts*
- *Part 10: Field method for the titrimetric determination of water-soluble chloride*
- *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*
- *Part 13: Field method for the determination of soluble salts by conductometric measurement*

At the time of publication of this part of ISO 8502, parts 7, 8, 11, 12 and 13 were in course of preparation.

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 system 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.

There are several methods for the analysis of chloride in solution. At least one of them is already an International Standard, ISO 8502-2. However, most of these methods are for laboratory use and very few are suitable for field use, i.e. in conjunction with sampling in workshops, at building sites, on board ships, etc, often under severe environmental conditions.

The proposed field method for chloride and the corresponding methods of analysis that have been developed for other contaminants (such as sulfate, soluble iron corrosion products, and oil and grease) are intended to be used in conjunction with the Bresle method for the extraction of contaminants from a surface, ISO 8502-6. These methods of analysis provide results which, after application of a simple conversion factor, indicate directly the amount of contaminant per unit surface area, usually expressed in mg/m². Of course, the same methods of analysis can also be used in conjunction with other contaminant extraction methods.

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

Part 10:

Field method for the titrimetric determination of water-soluble chloride

CAUTION — The method described in this part of ISO 8502 involves drop titration with mercuric nitrate solution. The small quantity of titrant solution and its low concentration are not likely to make it a hazard (e.g. by ingestion). From a legal point of view, however, the solution might represent an environmental pollution hazard. To avoid this, this part of ISO 8502 specifies requirements for the safe disposal and destruction of the solution (see 7.5).

The method also involves the use of hydrogen fluoride, and particular care should be taken when handling this reagent due to its hazardous nature.

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1 Scope

This part of ISO 8502 specifies a field method for the determination of water-soluble chloride by drop titration.

The method is intended mainly for use in the assessment of contaminants on a surface. It is easy for unskilled personnel to carry out and is sufficiently accurate for most practical purposes.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 8502. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 8502 are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 8502-2:1992, *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.*

ISO 8502-6:1995, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 6: Extraction of soluble contaminants for analysis — The Bresle method.*

3 Principle

The water-soluble contaminants are removed from the test surface by the Bresle method (see ISO 8502-6) or any other convenient method. Water, containing sodium fluoride and hydrogen fluoride, is used as the solvent. The chloride concentration in the solution is determined by drop titration with mercuric nitrate solution, using diphenylcarbazone and bromophenol blue as indicators.