

**SLOVENSKI STANDARD**  
**oSIST prEN ISO 8504-1:2018**  
**01-oktober-2018**

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**Priprava jeklenih podlag pred nanašanjem barv in sorodnih premazov - Postopki priprave površine - 1. del: Splošna načela (ISO/DIS 8504-1:2018)**

Preparation of steel substrates before application of paints and related products - Surface preparation methods - Part 1: General principles (ISO/DIS 8504-1:2018)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen - Verfahren für die Oberflächenvorbereitung - Teil 1: Allgemeine Grundsätze (ISO/DIS 8504-1:2018)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés - Méthodes de préparation des subjectiles - Partie 1: Principes généraux (ISO/DIS 8504-1:2018)

**Ta slovenski standard je istoveten z: prEN ISO 8504-1**

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87.020	Postopki za nanašanje barvnih premazov	Paint coating processes

**oSIST prEN ISO 8504-1:2018**

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## Preparation of steel substrates before application of paints and related products — Surface preparation methods —

### Part 1: General principles

*Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Méthodes de préparation des subjectiles —*

*Partie 1: Principes généraux*

ICS: 25.220.10

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## ISO/DIS 8504-1:2018(E)

## 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation on the voluntary nature of standards, 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](http://www.iso.org/iso/foreword.html).

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

This third edition cancels and replaces the second edition (ISO 8504-1:2000), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Normative references updated;
- Editorially revised.

ISO 8504 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products* — *Surface preparation methods*:

- *Part 1: General principles*
- *Part 2: Abrasive blast-cleaning*
- *Part 3: Hand- and power-tool cleaning*

Further parts are planned.

A list of all parts in the ISO 8504- series can be found on the ISO website.

## 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:

- the presence of rust and mill scale;
- the presence of surface contaminants, including salts, dust, oils and greases;
- 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 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 below 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.

This part of ISO 8504 describes the general principles for the selection of surface preparation methods. It should be read in conjunction with ISO 8504-2, ISO 8504-3 and subsequent parts of ISO 8504 that describe specific surface preparation methods.





# Preparation of steel substrates before application of paints and related products — Surface preparation methods —

## Part 1: General principles

### 1 Scope

This part of ISO 8504 describes the general principles for the selection of methods for the preparation of steel surfaces before application of paints and related products. It also contains information on features that must be taken into account before certain surface preparation methods and preparation grades are selected and specified.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4628-2:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering*

ISO 4628-3:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 3: Assessment of degree of rusting*

ISO 4628-4:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 4: Assessment of degree of cracking*

ISO 4628-5:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 5: Assessment of degree of flaking*

ISO 8501-1:2007, *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 8501-2:1994, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 2: Preparation grades of previously coated steel substrates after localized removal of previous coatings*

ISO 8501-3:2006, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 3: Preparation grades of welds, edges and other areas with surface imperfections*

ISO 8501-4:2006, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 4: Initial surface conditions, preparation grades and flash rust grades in connection with high-pressure water jetting*

ISO 8502-2:2017, *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*

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ISO 8502-3:2017, *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 8502-4:2017, *Preparation of steel substrates before application of paints 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 8502-9:1998, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 9: Field method for the conductometric determination of water-soluble salts*

ISO 8503-1:2012, *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*

ISO 8503-2:2012, *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 8503-3:2012, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 3: Method for the calibration of ISO surface profile comparators and for the determination of surface profile — Focusing microscope procedure*

ISO 8503-4:2012, *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*

ISO 8503-5:2017, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 5: Replica tape method for the determination of the surface profile*

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

ISO 12944-4, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 4: Types of surface and surface preparation*

### **3 Terms and definitions**

No terms and definitions are listed in this document.

### **4 General**

The primary objective of surface preparation is to ensure the removal of deleterious matter and to obtain a surface that permits satisfactory adhesion of the priming paint to the steel. It will also assist in reducing the amounts of contaminants that initiate corrosion.

It is stressed that there is a very wide variation in the condition of steel surfaces requiring cleaning prior to painting. This particularly applies to maintenance of an already coated structure. The age of the structure and its location, the quality of the previous surface, the performance of the existing coating system and the extent of breakdown, the type and severity of previous and future corrosion environments, and the intended new coating system all influence the amount of preparation required.

When selecting a surface preparation method, it is necessary to consider the preparation grade required to give a level of surface cleanliness and, if required, a surface profile (roughness) appropriate to the coating system to be applied to the steel surface. Since the cost of surface preparation is usually in proportion to the level of cleanliness, a preparation grade appropriate to the purpose and type of