
**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*





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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).

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).

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For an explanation of 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 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:

- update of normative references;
- editorial revision.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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, and
- the surface profile.

The ISO 8501 series, the ISO 8502 series and the ISO 8503 series provide methods for 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 of attaining specified levels of cleanliness.

These International Standards do not contain recommendations for the protective coating system to be applied to the steel surface. They do not contain recommendations on surface quality requirements for specific situations even though surface quality can have a direct influence on the choice of protective coating and on its performance. Such recommendations are found in other documents such as national standards and codes of practice. These International Standards are used to ensure that the specified qualities 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.

This document should be read in conjunction with ISO 8504-2, ISO 8504-3 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 document 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 are taken into account when selecting and specifying certain surface preparation methods and preparation grades.

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 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 8501-2, *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 8501-4, *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 (all parts), *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness*

ISO 8503 (all parts), *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

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 also helps in reducing the amounts of contaminants that initiate corrosion.