

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

Part 6: Extraction of water soluble contaminants for analysis (Bresle method)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Essais pour apprécier la propreté d'une surface —

Partie 6: Extraction des contaminants solubles en vue de l'analyse (Méthode de Bresle)



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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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 8502-6:2006), which has been technically revised.

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

- inclusion of the sleeve type extraction cells to be used with water extraction;
- specification that only water is used as a solvent for this method.

A list of all parts in the ISO 8502 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.

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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.

The ISO 8501 series, ISO 8502 series and ISO 8503 series have been prepared to provide methods of assessing these factors, while ISO 8504 series 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 series of 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. Users of these International Standards should 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 series of International Standards referred to above deal with the following aspects of preparation of steel substrates:

- ISO 8501 covers the visual assessment of surface cleanliness;
- ISO 8502 covers the tests for the assessment of surface cleanliness;
- ISO 8503 covers the surface roughness characteristics of blast-cleaned steel substrates;
- ISO 8504 covers the surface preparation methods.

This document is one of many parts of ISO 8502 that specify tests for the assessment of surface cleanliness. In relation to such tests, there are several methods for the extraction, for analysis, of soluble contaminants on surfaces to be painted. One of these methods is based on the swabbing of comparatively large test surfaces. This technique provides average values of the contamination present, but it might conceal localized concentrations of contaminants. Also, swabbing might not ensure sufficient penetration to dissolve all the deep-seated contamination such as ferrous salts.

There are other methods, however, which use small cells for the liquid used to remove and collect the surface contaminants. The cells are attached to test surfaces where soluble contaminants could be expected, e.g. where pitting has occurred and prevent loss of extraction solution from evaporate. This closed cell technique usually provides more accurate, point values of the contamination present.

This document describes a simple, inexpensive field test using flexible cells in the form of adhesive cells designed to be filled with water. The method was originally developed by a Swedish scientist, Dr. A. Bresle, using one of the cell types included in this document.