INTERNATIONAL STANDARD

ISO 12944-7

Second edition
2017-11

Paints and varnishes — Corrosion protection of steel structures by protective paint systems —

Part 7: Execution and supervision of paint work

Peintures et vernis — Anticorrosion des structures en acier par systèmes de peinture —

Partie 7: Exécution et surveillance des travaux de peinture

Reference number
ISO 12944-7:2017(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.

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 14, *Protective paint systems for steel structures*.

This second edition cancels and replaces the first edition (ISO 12944-7:1998), which has been technically revised.

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

— the normative references have been updated;

— the terms and definitions have been updated;

— a bibliography has been added;

— the text has been editorially revised.

A list of all parts in the ISO 12944 series can be found on the ISO website.

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Introduction

Unprotected steel in the atmosphere, in water and in soil is subjected to corrosion that can lead to damage. Therefore, to avoid corrosion damage, steel structures are normally protected to withstand the corrosion stresses to which they will be subjected during the service life required of the structure.

There are different ways of protecting steel structures from corrosion. ISO 12944 (all parts) deals with protection by paint systems and covers, in the various parts, all features that are important in achieving adequate corrosion protection. Additional or other measures are possible but require particular agreement between the interested parties.

In order to ensure effective corrosion protection of steel structures, owners of such structures, planners, consultants, companies carrying out corrosion protection work, inspectors of protective coatings and manufacturers of coating materials need to have at their disposal state-of-the-art information in concise form on corrosion protection by paint systems. It is vital that such information is as complete as possible, unambiguous and easily understandable to avoid difficulties and misunderstandings between the parties concerned with the practical implementation of protection work.

ISO 12944 (all parts) is intended to give this information in the form of a series of instructions. It is written for those who have some technical knowledge. It is also assumed that the user of ISO 12944 (all parts) is familiar with other relevant International Standards, in particular those dealing with surface preparation.

Although ISO 12944 (all parts) does not deal with financial and contractual questions, attention is drawn to the fact that, because of the considerable implications of inadequate corrosion protection, non-compliance with requirements and recommendations given in ISO 12944 (all parts) can result in serious financial consequences.

ISO 12944-1 defines the overall scope of ISO 12944. It gives some basic terms and definitions and a general introduction to the other parts of ISO 12944. Furthermore, it includes a general statement on health, safety and environmental protection, and guidelines for using ISO 12944 (all parts) for a given project.

This document describes how paint work on steel structures is to be executed and supervised after the surface has been prepared in accordance with ISO 12944-4. Examples of protective paint systems suitable for this purpose are given in ISO 12944-5.

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Paints and varnishes — Corrosion protection of steel structures by protective paint systems —

Part 7: Execution and supervision of paint work

1 Scope

This document deals with the execution and supervision of paint work on steel structures in the workshop or on site.

This document does not apply to

— the preparation of surfaces to be painted (see ISO 12944-4) and the supervision of such work,

— the application of metallic coatings, and

— pre-treatment methods, such as phosphating and chromating, and paint application methods, such as dipping, powder coating or coil coating.

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 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 8502-4, *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 12944-1, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 1: General introduction*

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

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 19840, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Measurement of, and acceptance criteria for, the thickness of dry films on rough surfaces*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12944-1 and the following apply.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

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3.1
reference area
defined part of the structure where the coating system has been applied according to the specification and approved by all parties involved

3.2
reference specimen
object, preferably with a geometry that is representative of the structure, where the coating system has been applied according to the specification and approved by all parties involved

3.3
stripe coat
extra coat of paint applied only to edges, welds, fasteners and other irregular areas on steel structures usually before full coating

4 Preconditions for the execution of the paint work

4.1 Qualification

Companies contracted to apply protective paint systems to steel structures, and their personnel, shall be capable of carrying out the work properly and safely. Work requiring particular care with regard to its execution shall only be carried out by personnel having the appropriate qualification.

A method statement shall be provided which shows the ability of the contractor to achieve the specified quality level for each process.

NOTE Processes in the sense of this document are, for example, surface preparation, application of coating materials, drying and quality control.

If requested, the contractor shall provide the client with relevant execution and supervision documentation (templates).

4.2 Condition of the substrate

A protective paint system requires proper surface preparation, which depends on the initial and final condition of the surface. The respective requirements shall be specified in the painting specification and be capable of achievement.

Methods of surface preparation are described in ISO 12944-4. The prepared surfaces shall be assessed with regard to visual cleanliness, surface profile and chemical cleanliness, using the methods given in ISO 12944-4.

The requirements for the supervision of these aspects of the work, the frequency of assessment, and the location of the assessment work shall be agreed between the parties concerned.

If the condition of the surface differs from that described in the specification, the client shall be informed.

The temperature of the surface shall be unequivocally above the dew point of the surrounding air, unless otherwise specified in the paint manufacturer's technical data sheet.

4.3 Health and safety and environmental protection

The applicable requirements concerning health and safety and environmental protection shall be complied with. See ISO 12944-1 and ISO 12944-8.

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