

STN	Náterové látky Protikorózna ochrana oceľových konštrukcií ochrannými náterovými systémami Časť 5: Ochranné náterové systémy (ISO 12944-5: 2018)	STN EN ISO 12944-5 67 3110
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Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 5: Protective paint systems (ISO 12944-5:2018)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/18

Obsahuje: EN ISO 12944-5:2018, ISO 12944-5:2018

Oznámením tejto normy sa ruší
STN EN ISO 12944-5 (67 3110) z marca 2008

127119

EUROPEAN STANDARD

EN ISO 12944-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2018

ICS 87.020

Supersedes EN ISO 12944-5:2007

English Version

Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 5: Protective paint systems (ISO 12944-5:2018)

Peintures et vernis - Anticorrosion des structures en acier par systèmes de peinture - Partie 5: Systèmes de peinture (ISO 12944-5:2018)

Beschichtungsstoffe - Korrosionsschutz von Stahlbauten durch Beschichtungssysteme - Teil 5: Beschichtungssysteme (ISO 12944-5:2018)

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 12944-5:2018 (E)

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European foreword

This document (EN ISO 12944-5:2018) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with 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of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 12944-5:2018 has been approved by CEN as EN ISO 12944-5:2018 without any modification.

**INTERNATIONAL
STANDARD**

**ISO
12944-5**

Third edition
2018-02

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

**Part 5:
Protective paint systems**

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

Partie 5: Systèmes de peinture



Reference number
ISO 12944-5:2018(E)

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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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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).

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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

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

This third edition cancels and replaces the second edition (ISO 12944-5:2007) which has been technically revised.

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

- a) the normative references in [Clause 2](#) have been updated;
- b) the terms and definitions in [Clause 3](#) have been revised;
- c) the document has been restructured and editorially revised;
- d) new types of coatings (polyaspartic, fluoropolymer, fluoroethylene/vinyl ether co-polymer and polysiloxanes coatings) have been added;
- e) descriptions for intermediate coats and topcoats have been added;
- f) the former [Annex A](#) has been divided into the new Annexes C, D and E;
- g) the former [Annex B](#) has been renumbered to become [Annex F](#);
- h) a new normative [Annex A](#) containing abbreviated terms and descriptions has been added;
- i) a new normative [Annex B](#), "Minimum requirements for corrosion protection systems", has been added;
- j) the former [Annex C](#) has been deleted;
- k) the former [Annex D](#) has been deleted;
- l) a Bibliography has been added;

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

ISO 12944-5:2018(E)

Introduction

Unprotected steel in the atmosphere, in water and in soil is subjected to corrosion that may lead to damage. Therefore, to avoid corrosion damage, steel structures are normally protected to withstand the corrosion stresses during the required 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 gives some terms and definitions related to paint systems in combination with guidance for the selection of different types of protective paint system.

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

Part 5: Protective paint systems

1 Scope

This document describes the types of paint and paint system commonly used for corrosion protection of steel structures.

It also gives guidelines for the selection of paint systems available for different environments (see ISO 12944-2) except for corrosivity category CX and category Im4 as defined in ISO 12944-2 and different surface preparation grades (see ISO 12944-4), and the durability grade to be expected (see ISO 12944-1).

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 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

ISO 2063 (all parts), *Thermal spraying — Zinc, aluminium and their alloys*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 3549, *Zinc dust pigments for paints — Specifications and test methods*

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 8503-1, *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 12944-1, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 1: General introduction*

ISO 12944-2, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 2: Classification of environments*

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*

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