



BSI Standards Publication

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

Part 5: Protective paint systems

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National foreword

This British Standard is the UK implementation of EN ISO 12944-5:2019. It is identical to ISO 12944-5:2019. It supersedes BS EN ISO 12944-5:2018, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/21, Paint systems and surface preparation for metallic substrates.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 5: Protective paint systems (ISO 12944-5:2019)

Peintures et vernis - Anticorrosion des structures en acier par systèmes de peinture - Partie 5: Systèmes de peinture (ISO 12944-5:2019)

Beschichtungsstoffe - Korrosionsschutz von Stahlbauten durch Beschichtungssysteme - Teil 5: Beschichtungssysteme (ISO 12944-5:2019)

This European Standard was approved by CEN on 3 September 2019.

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European foreword

This document (EN ISO 12944-5:2019) 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of an identical text or by endorsement, at the latest by April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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.

This document supersedes EN ISO 12944-5:2018.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 12944-5:2019 has been approved by CEN as EN ISO 12944-5:2019 without any modification.

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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 anticorrosion



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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification of environments	3
5 New work and refurbishment	3
5.1 New work and total refurbishment.....	3
5.2 Partial refurbishment.....	4
6 Types of paint	4
6.1 General.....	4
6.2 Examples of generic type of paints.....	4
6.2.1 Alkyd paints (AK).....	4
6.2.2 Acrylic paints (AY).....	4
6.2.3 Ethyl silicate paints (ESI).....	5
6.2.4 Paints for epoxy coatings (EP).....	5
6.2.5 Paints for polyurethane coatings (PUR).....	5
6.2.6 Paints for polyaspartic coatings (PAS).....	6
6.2.7 Paints for polysiloxane coatings (PS).....	6
7 Paint systems	6
7.1 Priming coats and type of primers.....	6
7.1.1 General.....	6
7.1.2 Types of primer.....	6
7.2 Subsequent coats.....	7
7.2.1 General.....	7
7.2.2 Intermediate coats.....	7
7.2.3 Topcoats.....	7
7.3 Dry film thickness.....	7
7.4 Durability.....	7
7.5 Shop and site application.....	8
8 Tables for protective paint systems for C2 to C5, Im1, Im2 and Im3	9
8.1 Reading the tables.....	9
8.2 Parameters influencing durability.....	9
8.3 Designation of the paint systems listed.....	9
8.4 Guidelines for selecting the appropriate paint system.....	9
Annex A (normative) Abbreviated terms and descriptions	10
Annex B (normative) Minimum requirements for corrosion protection systems	11
Annex C (informative) Paint systems for carbon steel	15
Annex D (informative) Paint systems on hot dip galvanized steel	18
Annex E (informative) Paint systems on thermal-sprayed metallic coatings	20
Annex F (informative) Pre-fabrication primers	21
Bibliography	23

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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 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 14, *Protective paint systems for steel structures*.

This fourth edition cancels and replaces the third edition (ISO 12944-5:2018), of which it constitutes a minor revision.

The changes compared to the previous edition are as follows:

- correction of the former doubled category "G5.02" in [Tables D.1](#) to read "G5.02a" and "G5.02b";
- correction of the table headlines of [Tables B.3](#) and [B.4](#);
- some editorial changes.

A list of all parts in the ISO 12944 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

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.

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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*

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:

— ISO Online browsing platform: available at <https://www.iso.org/obp>