

**Värvid ja lakid. Teraskonstruksioonide
korrosioonitõrje
värvkattesüsteemidega. Osa 5:
Kaitsevärvkattesüsteemid**

Paints and varnishes - Corrosion protection of steel
structures by protective paint systems - Part 5:
Protective paint systems

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 12944-5:2007 sisaldab Euroopa standardi EN ISO 12944-5:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 22.11.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 12944-5:2007 consists of the English text of the European standard EN ISO 12944-5:2007.</p> <p>This document is endorsed on 22.11.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>Standardi see osa kirjeldab tavakasutuses olevate värvide ja värvkattesüsteemide tüüpe ja näeb ette juhised sobivate värvkattesüsteemide valimiseks, lähtudes keskkonnast, kus neid soovitakse kasutada.</p>	<p>Scope:</p> <p>This part of ISO 12944 describes the types of paint and paint system commonly used for corrosion protection of steel structures. It also provides guidance for the selection of paint systems available for different environments (see ISO 12944-2) and different surface preparation grades (see ISO 12944-4), and the durability grade to be expected (see ISO 12944-1). The durability of paint systems is classified in terms of low, medium and high.</p>
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Võtmesõnad: kaitsekatted, korrosioon, korrosioonitõrje, lakid, teraskonstruksioon, värvid, värvimine

English Version

**Paints and varnishes - Corrosion protection of steel structures
by protective paint systems - Part 5: Protective paint systems
(ISO 12944-5:2007)**

Peintures et vernis - Anticorrosion des structures en acier
par systèmes de peinture - Partie 5: Systèmes de peinture
(ISO 12944-5:2007)

Beschichtungsstoffe - Korrosionsschutz von Stahlbauten
durch Beschichtungssysteme - Teil 5:
Beschichtungssysteme (ISO 12944-5:2007)

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Foreword

This document (EN ISO 12944-5:2007) 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 March 2008, and conflicting national standards shall be withdrawn at the latest by March 2008.

This document supersedes EN ISO 12944-5:1998.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 12944-5:2007 has been approved by CEN as a EN ISO 12944-5:2007 without any modification.

**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



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 12944-5 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 12944-5:1998), which has been technically revised. The revision includes a reduction in the number of paint systems and in the number of tables. These changes have also brought about some changes in the numbering of the systems in the tables.

ISO 12944 consists of the following parts, under the general title *Paints and varnishes — Corrosion protection of steel structures by protective paint systems*:

- *Part 1: General introduction*
- *Part 2: Classification of environments*
- *Part 3: Design considerations*
- *Part 4: Types of surface and surface preparation*
- *Part 5: Protective paint systems*
- *Part 6: Laboratory performance test methods and associated assessment criteria*
- *Part 7: Execution and supervision of paint work*
- *Part 8: Development of specifications for new work and maintenance*

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 of the structure.

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

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

This International Standard — ISO 12944 — 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 is familiar with other relevant International Standards, in particular those dealing with surface preparation, as well as relevant national regulations.

Although ISO 12944 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 this standard might result in serious financial consequences.

ISO 12944-1 defines the overall scope of all parts 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 for a given project.

ISO 12944-5 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 part of ISO 12944 describes the types of paint and paint system commonly used for corrosion protection of steel structures. It also provides guidance for the selection of paint systems available for different environments (see ISO 12944-2) and different surface preparation grades (see ISO 12944-4), and the durability grade to be expected (see ISO 12944-1). The durability of paint systems is classified in terms of low, medium and high.

2 Normative references

The following referenced documents are indispensable for the application 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 2808, *Paints and varnishes — Determination of film thickness*

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

ISO 4628-1, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 1: General introduction and designation system*

ISO 4628-2, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering*

ISO 4628-3, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 3: Assessment of degree of rusting*

ISO 4628-4, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 4: Assessment of degree of cracking*

ISO 4628-5, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 5: Assessment of degree of flaking*

ISO 4628-6, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 6: Assessment of degree of chalking by tape method*

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 8501-3, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 3: Preparation grades of welds, edges and other areas with surface imperfections*

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 12944-4:1998, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 4: Types of surface and surface preparation*

ISO 12944-6, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 6: Laboratory performance test methods and associated assessment criteria*

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 terms and definitions apply.

3.1
high-build
property of a coating material which permits the application of a coat of greater thickness than usually considered as normal for that type of coating

NOTE For the purposes of this part of ISO 12944, this means $\geq 80 \mu\text{m}$ dry film thickness per coat.

3.2
high-solids
property of a coating material which contains a volume of solids greater than normal for that coating material

3.3
compatibility
(for products within a paint system) ability of two or more products to be used together successfully as a paint system without causing undesirable effects

3.4
compatibility
(between a product and the substrate) ability of a product to be applied to a substrate without causing undesirable effects

3.5
priming coat
first coat of a coating system

NOTE Priming coats provide good adhesion to sufficiently roughened, cleaned metal and/or cleaned old coating, ensuring a sound base for, and offering adhesion to, the subsequent coats. They normally also provide corrosion protection during the overcoating interval and the whole service life of the paint system.

3.6
intermediate coat
any coat between the priming coat and the finishing coat/topcoat

NOTE In the English language, the term “undercoat” is sometimes used synonymously, normally for a coat applied directly before the finishing coat/topcoat.