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

Part 9:

**Protective paint systems and
laboratory performance test methods
for offshore and related structures**

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

*Partie 9: Systèmes de peinture protectrice et méthodes d'essai de
performance en laboratoire pour la protection des structures
offshore et structures associées*

<https://standards.iteh.ai/catalog/standards/iso/c6b94a1a-8dfa-411e-979a-a604bcce7fda/iso-12944-9-2018>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 12944-9:2018](https://standards.iteh.ai/catalog/standards/iso/c6b94a1a-8dfa-411e-979a-a604bcce7fda/iso-12944-9-2018)

<https://standards.iteh.ai/catalog/standards/iso/c6b94a1a-8dfa-411e-979a-a604bcce7fda/iso-12944-9-2018>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Terms and definitions	3
4 Field of application	4
4.1 Type of environment.....	4
4.2 Type of surface and surface preparation.....	5
4.3 Type of paint.....	5
5 Relationship between artificial ageing and natural exposure	5
6 Paints	5
6.1 General.....	5
6.2 Quality assurance.....	6
6.3 Packaging and labelling.....	6
6.4 Required product information.....	6
6.5 Paint identification.....	7
6.5.1 General.....	7
6.5.2 Fingerprint check.....	7
6.5.3 Routine batch check.....	7
6.6 Confidential information.....	8
7 Protective paint systems	8
7.1 Description.....	8
7.2 Minimum requirements for protective paint systems.....	9
8 Application testing of paints	10
9 Performance testing of the paint system	10
9.1 Preparation and conditioning of test panels.....	10
9.1.1 Type and size of panel and number of panels.....	10
9.1.2 Surface preparation.....	11
9.1.3 Application and curing.....	11
9.1.4 Dry film thickness.....	11
9.1.5 Over-coating time.....	11
9.1.6 Conditioning/curing.....	11
9.1.7 Porosity detection.....	12
9.1.8 Scribe line.....	12
9.1.9 Assessment of corrosion.....	12
9.2 Qualification tests.....	12
9.3 Assessment — Methods and requirements.....	12
9.3.1 General.....	12
9.3.2 Assessment.....	13
10 Test report	14
Annex A (normative) Scribe line for cyclic ageing test and sea water immersion	15
Annex B (normative) Cyclic ageing test	17
Annex C (normative) Fingerprint	18
Annex D (informative) Examples of test reports	19
Bibliography	23

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 first edition of ISO 12944-9 cancels and replaces ISO 20340:2009, which has been technically revised.

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

Introduction

Unprotected steel in the atmosphere, in water and in soil is subject 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 this document may 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.

Offshore and related structures require specific attention in order to be able to withstand the severe corrosion stresses to which they are exposed during their service life and to minimize the risk of failures that would impact safety, operating costs or capital cost.

In order to establish sufficient corrosion protection and ensure optimum performance of the coating, it is necessary to specify the requirements for the protective paint system(s) along with the relevant laboratory performance tests to assess its (their) likely durability.

In order to achieve the same performance as indicated by testing, proper surface preparation and application of the paint is essential. Close attention needs to be given to the execution of the work.

This document places emphasis on high-durability paint systems, with the aim of minimizing maintenance and hence reducing safety considerations and environmental impact.