

This is a preview of "ISO 12944-3:2017". [Click here to purchase the full version from the ANSI store.](#)

Second edition
2017-11

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

Part 3: Design considerations

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

Partie 3: Conception et dispositions constructives



Reference number
ISO 12944-3:2017(E)

© ISO 2017

This is a preview of "ISO 12944-3:2017". [Click here to purchase the full version from the ANSI store.](#)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, 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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

This is a preview of "ISO 12944-3:2017". [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 General	2
5 Basic design criteria for corrosion protection purposes	2
5.1 General.....	2
5.2 Accessibility.....	3
5.3 Treatment of gaps.....	3
5.4 Precautions to prevent retention of deposits and water.....	3
5.5 Surface imperfections.....	4
5.6 Bolted connections.....	4
5.6.1 Slip-resistant connections with high-tensile bolts.....	4
5.6.2 Preloaded connections.....	4
5.6.3 Bolts, nuts and washers.....	4
5.7 Box members and hollow components.....	4
5.8 Notches.....	4
5.9 Stiffeners.....	5
5.10 Prevention of galvanic corrosion.....	5
5.11 Handling, transport and erection.....	5
Annex A (informative) Accessibility — Typical distances required for tools in corrosion protection work	6
Annex B (informative) Recommended minimum dimensions of openings for access to confined areas	7
Annex C (informative) Minimum dimensions for narrow spaces between surfaces	8
Annex D (informative) Design features which can be used to avoid deposits accumulating or water being trapped	10
Bibliography	14

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 12944-3:1998), which has been technically revised.

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

- the terms and definitions which were not used in the main part of the standard have been deleted;
- the normative references have been updated;
- [5.1](#) "General" has been added;
- the requirement for gap sealing material has been added in [5.3](#);
- the requirements for surface preparation in case of high and very high durabilities for C4 and higher, as well as Im1 to Im4, have been added;
- the title of [Table A.1](#) has been corrected;
- a key has been added to [Figure B.1](#);
- [Figure D.1](#) c) has been deleted;
- the requirements for the radius in [Figures D.5](#) and [D.7](#) have been added;
- 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.

This is a preview of "ISO 12944-3:2017". [Click here to purchase the full version from the ANSI store.](#)

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 gives guidance on how to minimize the risk of corrosion by appropriate design measures for steel structures to be coated by protective paint systems.