

This is a preview of "ISO 19840:2012". [Click here to purchase the full version from the ANSI store.](#)

Second edition
2012-09-01

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

Peintures et vernis — Anticorrosion des structures en acier par systèmes de peinture — Mesure et critères d'acceptation de l'épaisseur d'un feuil sec sur des surfaces rugueuses



Reference number
ISO 19840:2012(E)

© ISO 2012

This is a preview of "ISO 19840:2012". [Click here to purchase the full version from the ANSI store.](#)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 19840:2012". [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 Principle	3
4.1 General	3
4.2 Principle of the applicable measurement methods	3
5 Apparatus and materials	3
5.1 General	3
5.2 Measurement equipment using a magnetic field	4
5.3 Materials	4
6 Procedure	5
6.1 Sampling plan	5
6.2 Adjustment of the instrument	5
6.3 Measurement	6
7 Correction values	6
8 Expression of results	7
9 Acceptance/rejection criteria	7
10 Test report	8
Annex A (informative) Method based on adjusting the instrument to known thicknesses on a rough surface	9
Annex B (informative) Multiple readings	11
Annex C (informative) Areas requiring special consideration	12
Annex D (normative) Determination of a specific correction value	13
Annex E (informative) Example of a test report form	14
Bibliography	16

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 19840 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 19840:2004), which has been technically and editorially revised as follows:

- a) the descriptions in 4.2 of the principle of the measurement methods have been improved;
- b) a description of eddy current measurement equipment has been introduced (see 5.2.4);
- c) Figure 1 has been made language-independent;
- d) in line A8 in Annex E, the references to lines A7 and A8 have been corrected to A6 and A7;
- e) in line B1 in Annex E, the reference to ISO 8503-1 has been corrected to "the relevant part of ISO 8501";
- f) a Bibliography has been added for the informative references ISO 8501-1 to ISO 8501-4.

This is a preview of "ISO 19840:2012". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This International Standard supplements the ISO 12944 series with regard to the measurement and acceptance criteria for the thickness of a dry film. If specified or agreed, the standard can also be used for other applications.

The objective of this International Standard is to achieve uniformity of practice for measuring the dry-film thickness of a coating on a roughened surface. The chosen methods entail the measurement of dry-film thickness using measurement instruments based on the permanent magnet principle and the inductive magnet principle. Instruments using the eddy current principle can be used but their use is normally on non-ferrous metal surfaces.

If a coating is applied to a roughened steel substrate, the measurement of its dry-film thickness is more complicated than for smooth surfaces. Roughened steel substrates include those prepared by abrasive blast-cleaning or abrading.

The effect of surface roughness on the measurement result increases with profile depth, but the result will also depend on the design of the measurement probe and the thickness of the coating.

Annex A, which is informative, is a method based on adjusting the instrument to known thicknesses on a rough surface. In this method, no correction value is used. In this standard, individual readings are used. Annex B describes a method for multiple readings. The methods in Annexes A and B are intended to be used only if specified or agreed.