

First edition
2011-12-15

Corrected version
2012-01-15

Metallic and other inorganic coatings — Evaluation of properties of dark-stain phenomenon of chromated coiled or sheet products

*Revêtements métalliques et autres revêtements inorganiques —
Évaluation des propriétés du phénomène de tache foncée des produits
chromés enroulés ou en tôle d'acier*



Reference number
ISO/TR 15922:2011(E)

AVA Documents
Document Sharing Hub
© ISO 2011



COPYRIGHT PROTECTED DOCUMENT

© ISO 2011

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

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Information to be supplied by the producer to the user or purchaser	3
4.1 Essential information	3
4.2 Additional information	3
5 Apparatus	3
6 Test methods	4
6.1 General	4
6.2 Procedures	5
6.3 Qualitative test method for determination of the property of dark stain	5
6.4 Quantitative test method for determination of property of dark stain	6
Annex A (normative) Measurement of colour intensities	7
Bibliography	9

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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO should not be held responsible for identifying any or all such patent rights.

ISO/TR 15922 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 8, *Chemical conversion coatings*.

In this corrected version the publication date has been corrected on the cover page.

Introduction

The existence of the dark- or black- stain phenomenon related to chromated hot-dip metallic zinc and electroplated-zinc steel products has been known, but the cause for the occurrence of this phenomenon so far does not appear to have been rationalized. One possible reason for this incidence is due to the packed or stacked storage conditions of coils and sheets in high temperature, pressure and high relative humidity (RH) conditions.

The test method specified in this Technical Report employs exposure of unstacked specimens to accelerated environmental storage conditions. Specimens made from unstacked product representing the unstressed condition typify the outer surface of the coil-packed product whilst similar specimens, when subjected to applied stress, temperature and humidity, represent the inner-surface layers of the packed coil and stacked sheet products and signify the stressed condition of those layers.

The properties are determined qualitatively by test methods to confirm the presence of chromated layers and quantitatively by a colorimetric method. The colorimetric method measures the radiance of the surface and analyses the difference in luminosity or intensity before and after the tests are performed.