International Standard

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Corrosion protection of steel structures by protective paint systems — Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating —

Part 2:
Cross-cut testing and X-cut testing

Protection contre la corrosion des structures en acier par systèmes de peinture — Évaluation et critères d'acceptation de l'adhésion/cohésion (résistance à la rupture) d'un revêtement —

Partie 2: Essai de quadrillage et essai à la croix de Saint André

Reference number
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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.

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 document 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).

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For an explanation of 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 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,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16276-2:2007), which has been technically revised.

The main changes are as follows:

— the content and structure have been updated.

A list of all parts in the ISO 16276 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The main purpose of this document is to supplement the ISO 12944 series with regard to the field assessment of, and acceptance criteria for, the adhesion/cohesion of a coating.

NOTE 1 This document applies to the assessment of cross-cut testing and X-cut testing of paint coatings on steel structures on site. ISO 2409 specifies a cross-cut test.

Fracture strength testing is normally destructive and therefore requires repair work, the extent of which will depend on the specification and the durability required of the protective paint coating.

This document aims to minimize variability and achieve uniformity of practice in the assessment of the fracture strength of a protective paint coating and to establish acceptance/rejection criteria for such coatings. The method specified in this document uses test equipment based on the cross-cut and X-cut principles.

NOTE 2 The characteristics of the coating can make the assessment of the result of a cross-cut or X-cut test difficult.

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Corrosion protection of steel structures by protective paint systems — Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating —

Part 2:
Cross-cut testing and X-cut testing

1 Scope

This document specifies procedures for assessing the resistance of paint systems when a cut in the form of a right-angle lattice pattern (cross-cut) or in the form of an X (X-cut) is made into the paint, penetrating through to the substrate. This document is only applicable if the cross-cut or X-cut test method is specified, together with the rating from the appropriate rating scale.

This document also specifies suitable equipment and defines inspection areas, sampling plans and acceptance/rejection criteria.

It does not specify ratings for particular coating systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2409, *Paints and varnishes — Cross-cut test*

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 following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
fracture strength
force required to exceed the attachment forces:

— between coats or between coat and substrate [*adhesion* (3.2)]; and/or

— within a coat [*cohesion* (3.3)]

Note 1 to entry: This document does not define a method for determining fracture strength (see ISO 16276-1).

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