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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 1: Pull-off testing

Anticorrosion 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 1: Essai de traction

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.

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ISO 16276-1 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes*, in collaboration with Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 14, *Protective paint systems for steel structures*.

ISO 16276 consists of the following parts, under the general title *Corrosion protection of steel structures by protective paint systems — Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating*:

— *Part 1: Pull-off testing*

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

Introduction

The main purpose of this part of ISO 16276 is to supplement the ISO 12944 series with regard to the field assessment of, and acceptance criteria for, the adhesion/cohesion of a coating.

To comply with this part of ISO 16276, laboratory testing of panels might be required.

This part of ISO 16276 introduces the term “fracture strength” which includes both adhesion and cohesion. Adhesion and cohesion are defined in ISO 4618, whereas the ISO 12944 series uses the term “adhesion” only.

NOTE This part of ISO 16276 is intended for the assessment of pull-off testing of paint coatings on steel structures on site. ISO 4624 specifies a pull-off test for laboratory use, without instructions for interpretation of the results and without acceptance or rejection criteria.

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

An objective of this part of ISO 16276 is to provide uniformity in the assessment of the fracture strength of a coating and to establish acceptance/rejection criteria for protective paint coatings. The method uses test equipment based on the pull-off principle.

Protective paint systems which have poor adhesion/cohesion will normally fail at fracture strength values significantly lower than the values quoted in the specification.

For a protective paint system with a particular fracture strength, a range of test values will be obtained from different types of equipment.

Specifying test equipment that gives, for a particular fracture strength, the highest test values does not necessarily indicate a higher durability for that protective paint system. Also, high test values for a particular fracture strength do not necessarily indicate a high durability for that protective paint system.