SLOVENSKI STANDARD
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Prevlečene kovine, ki se navijajo - Preskusne metode - 25. del: Odpornost proti vlagi

Coil coated metals - Test methods - Part 25: Resistance to humidity

Bandbeschichtete Metalle - Prüfverfahren - Teil 25: Beständigkeit gegen Feuchte

Tôles prélaquées - Méthodes d'essai - Partie 25: Résistance à l'humidité

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25.220.60 Organske prevleke Organic coatings

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English Version

Coil coated metals - Test methods - Part 25: Resistance to humidity

Tôles prélaquées - Méthodes d'essai - Partie 25: Résistance à l'humidité

Bandbeschichtete Metalle - Prüfverfahren - Teil 25: Beständigkeit gegen Feuchte

This European Standard was approved by CEN on 7 May 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 13523-25:2014) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13523-25:2006.

The main technical changes are:

a) the description of the test panel was amended;

b) a specification for the water used for the test was added;

c) information concerning humidity in the test cabinet was added to Table 1;

d) the description of the evaluation was amended.

EN 13523, *Coil coated metals — Test methods*, consists of the following parts:

— *Part 0: General introduction*

— *Part 1: Film thickness*

— *Part 2: Gloss*

— *Part 3: Colour difference — Instrumental comparison*

— *Part 4: Pencil hardness*

— *Part 5: Resistance to rapid deformation (impact test)*

— *Part 6: Adhesion after indentation (cupping test)*

— *Part 7: Resistance to cracking on bending (T-bend test)*

— *Part 8: Resistance to salt spray (fog)*

— *Part 9: Resistance to water immersion*

— *Part 10: Resistance to fluorescent UV radiation and water condensation*

— *Part 11: Resistance to solvents (rubbing test)*

— *Part 12: Resistance to scratching*

— *Part 13: Resistance to accelerated ageing by the use of heat*

— *Part 14: Chalking (Helmen method)*

— *Part 15: Metamerism*

— *Part 16: Resistance to abrasion*

— *Part 17: Adhesion of strippable films*

— *Part 18: Resistance to staining*

— *Part 19: Panel design and method of atmospheric exposure testing*

— *Part 20: Foam adhesion*

— *Part 21: Evaluation of outdoor exposed panels*

— *Part 22: Colour difference — Visual comparison*

— *Part 23: Resistance to humid atmospheres containing sulfur dioxide*

— *Part 24: Resistance to blocking and pressure marking*

— *Part 25: Resistance to humidity*

— *Part 26: Resistance to condensation of water*

— *Part 27: Resistance to humid poultice (Cataplasm test)*

— *Part 29: Resistance to environmental soiling (Dirt pick-up and striping)*

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This Part of EN 13523 specifies a procedure for evaluating the resistance to humidity of an organic coating on a metallic substrate, by means of exposure in a humidity cabinet under controlled conditions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13523-0:2014, *Coil coated metals — Test methods — Part 0: General introduction*

EN ISO 4628-2, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering (ISO 4628-2)*

EN ISO 4628-3, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 3: Assessment of degree of rusting (ISO 4628-3)*

EN ISO 4628-4, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 4: Assessment of degree of cracking (ISO 4628-4)*

EN ISO 4628-5, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 5: Assessment of degree of flaking (ISO 4628-5)*

EN ISO 4628-8, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 8: Assessment of degree of delamination and corrosion around a scribe or other artificial defect (ISO 4628-8)*

EN ISO 4628-10, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 10: Assessment of degree of filiform corrosion (ISO 4628-10)*

EN ISO 17872, *Paints and varnishes — Guidelines for the introduction of scribe marks through coatings on metallic panels for corrosion testing (ISO 17872)*

3 Terms and definitions

For the purposes of this document, the definitions given in EN 13523-0:2014 apply.

4 Principle

The method consists of exposing a test panel to humidity, for a pre-determined time, at a specified temperature. The test panel is evaluated for any changes such as blistering or corrosion (e.g. red rust, white rust).

Both continuous and cyclic humidity tests can be carried out.

5 Apparatus

Ordinary laboratory apparatus and glassware, together with the following:

5.1 Humidity cabinet with air temperature control, capable of achieving relative humidity of approx. 100 % with condensation on the test panels. It should also ensure dry periods by adequate purging or allow for the cabinet door to be left open during the dry period.

5.2 Cutting tool, with a hard metal tip having a radius capable of exposing at least 0,2 mm of metal substrate; as specified in EN ISO 17872.

6 Sampling

See EN 13523-0.

7 Test panels

See EN 13523-0.

The panels (usually 150 mm × 100 mm) shall be cut from flat material and free from contamination. The longer side shall be in the rolling direction.

If not otherwise specified, the edges are exposed and the reverse side is protected.

If not otherwise specified, the edges of exposed panels shall be sheared with the burrs away from the test surface.

8 Procedure

8.1 Preparation

Scribing or bending of test panels to evaluate blistering and corrosion phenomena at the scribes or at the bend is optional.

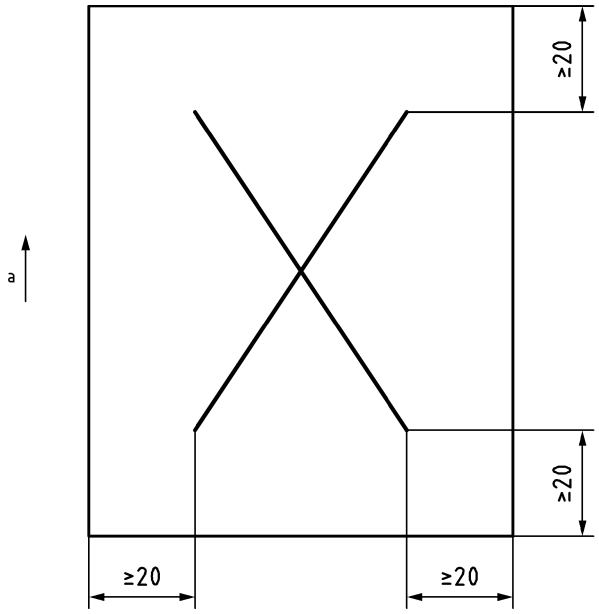
In case of scribing, the scribes shall be prepared by means of the cutting tool (5.2) and extend down just through the organic coating. The scribed indentation shall expose at least 0,2 mm of metal substrate. If the substrate is zinc- or zinc-alloy coated steel, the scratch shall be to the zinc coating, and not down to the steel.

Two configurations are possible:

— either two scribes arranged diagonally, crossing each other in the middle of the specimen and extending to about 20 mm from the edges (see Figure 1); or

— two scribes of equal length arranged at 90° to each other, the scribes being at least 40 mm in length with the vertical scribe central to the horizontal but separated by 20 mm. All scribes shall extend at least 20 mm from the edges (see Figure 2).

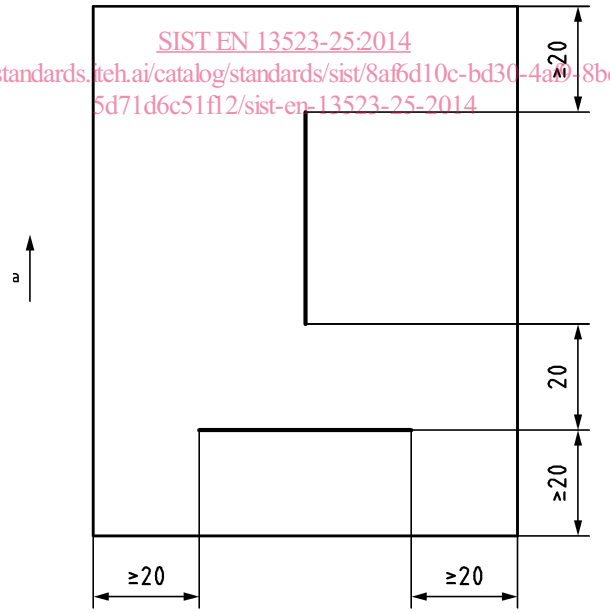
Dimensions in millimetres



Key

a rolling direction

Figure 1 — Diagonal scribe marks on coated panels



Key

a rolling direction

Figure 2 — Perpendicular scribe marks on coated panels