

**Coil coated metals - Test methods - Part 21: Evaluation  
of outdoor exposed panels**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13523-21:2010 sisaldab Euroopa standardi EN 13523-21:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.05.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 24.03.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 13523-21:2010 consists of the English text of the European standard EN 13523-21:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.05.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 24.03.2010.

The standard is available from Estonian standardisation organisation.

ICS 25.220.60

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## English Version

**Coil coated metals - Test methods - Part 21: Evaluation of  
outdoor exposed panels**

Tôles prélaquées - Méthodes d'essai - Partie 21 :  
Évaluation des panneaux exposés en extérieur

Bandbeschichtete Metalle - Prüfverfahren - Teil 21:  
Bewertung von freibewitterten Probenplatten

This European Standard was approved by CEN on 20 February 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This document (EN 13523-21:2010) 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 September 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

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 13523-21:2003.

The main changes are:

- a) the text has been revised editorially and the normative references have been updated.

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

- *Part 0: General introduction and list of test methods*
- *Part 1: Film thickness*
- *Part 2: Specular 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: Colour stability in 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 (Cataplasma 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies the procedure for evaluating the behaviour of an organic coating on a metallic substrate during and after outdoor exposure. Panel design, preparation and the procedure for outdoor exposure are performed in accordance with EN 13523-19.

After washing of the panel some dirt can remain on the panel. This remaining dirt can influence the accuracy and precision of readings of gloss and colour, performed on exposed panels, although carried out in accordance with the standards. Unlike other precise measurements, the objective of this European Standard is to report on trends in the corrosion and/or paint degradation behaviour of coil coated panels.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

EN 13523-0:2001, *Coil coated metals — Test methods — Part 0: General introduction and list of test methods*

EN 13523-2, *Coil coated metals — Test methods — Part 2: Specular gloss*

EN 13523-3, *Coil coated metals — Test methods — Part 3: Colour difference — Instrumental comparison*

EN 13523-14, *Coil coated metals — Test methods — Part 14: Chalking (Helmen method)*

EN 13523-19, *Coil coated metals — Test methods — Part 19: Panel design and method for atmospheric exposure testing*

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 4628-2:2003)*

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 4628-3:2003)*

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 4628-4:2003)*

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 4628-5:2003)*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13523-0:2001 apply.

## 4 Principle

The behaviour of the test panels exposed in accordance with EN 13523-19 is evaluated. Any degradation in the relevant area is reported, using the relevant parts of EN 13523 and appropriate EN ISO Standards.

In cases where the inspection area is limited (e.g. at screws and bends), the evaluation method described in the EN ISO 4628 standard series is replaced by an easier and more suitable measurement of the degradation in millimetres.