

Coil coated metals - Test methods - Part 12: Resistance to scratching

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13523-12:2017 sisaldab Euroopa standardi EN 13523-12:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 13523-12:2017 consists of the English text of the European standard EN 13523-12:2017.
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English Version

Coil coated metals - Test methods - Part 12: Resistance to scratching

Tôles prélaquées - Méthodes d'essai - Partie 12 :
Résistance à la rayure

Bandbeschichtete Metalle - Prüfverfahren - Teil 12:
Widerstand gegen Ritzen

This European Standard was approved by CEN on 30 December 2016.

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European foreword

This document (EN 13523-12:2017) 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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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

This document supersedes EN 13523-12:2004.

The main changes are:

- a) a reference to EN 13523-0 concerning conditioning of the test panels was added;
- b) the text has been editorially revised and the normative references have been updated.

The EN 13523 series, *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 (Cataplasma test)*
- *Part 29: Resistance to environmental soiling (Dirt pick-up and striping)*

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1 Scope

This part of the EN 13523 series describes the procedure for determining the resistance of an organic coating on a metallic substrate to penetration by scratching with a needle.

It is possible that with some aluminium alloys and thin gauge steel substrate below 0,4 mm, that rather than scratching, the needle will deform the substrate. Under these conditions, this test method is not applicable.

Soft coatings such as poly vinyl chloride (PVC) and structured coatings will not give a precise result due to the soft nature of the coating and/or the potential for the needle to snag.

The method is not applicable to conductive coatings.

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 23270, *Paints and varnishes and their raw materials - Temperatures and humidities for conditioning and testing (ISO 3270)*

3 Terms and definitions

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

4 Principle

The organic coating is tested by mechanical means whereby a test panel is dragged beneath a needle upon which a specified load is placed.

5 Apparatus

5.1 Scratch apparatus (see EN ISO 1518-1). The apparatus is shown in Figure 1. It consists of a sliding table, which holds the test panel, with an arm on which the load is placed over a chuck, which holds the needle, a constant speed motor to drive the table and a low voltage electrical meter to detect electrical contact.

Other arrangements which give a similar performance may be used.