Coil coated metals - Test methods - Part 1: Film thickness

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NATIONAL FOREWORD

See Eesti standard EVS-EN 13523-1:2017 sisaldab Euroopa standardi EN 13523-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 13523-1:2017 consists of the English text of the European standard EN 13523-1:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.02.2017.	Date of Availability of the European standard is 22.02.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Coil coated metals - Test methods - Part 1: Film thickness

Tôles prélaquées - Méthodes d'essai - Partie 1 : Épaisseur du revêtement

Bandbeschichtete Metalle - Prüfverfahren - Teil 1: Schichtdicke

This European Standard was approved by CEN on 18 December 2016.

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

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European foreword

This document (EN 13523-1:2017) 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of an identical text or by endorsement, at the latest by August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.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 13523-1:2009.

The main changes are:

a) a reference to EN 13523-0 concerning conditioning of the test panels was added;

b) the principle clause for methods A and B have been stated more precisely;

c) the number of measurements has been added to methods C and D;

d) 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 (Cataplasm 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 specifies the procedures for determining the dry-film thickness of an organic coating on a metallic substrate (coil coating).

Four appropriate methods are given in this European Standard:

a) magnetic induction;

b) eddy current;

c) micrometer;

d) optical.

The methods are applicable only to products with smooth and flat substrates but the coating itself may be textured. In that case, for methods a) and b) the average of a series of readings will represent an average of the thickness of the organic coating, while method c) will give the maximum thickness and method d) can provide the minimum, maximum and average thickness.

Non-destructive continuous-web methods on measurement of dry-film thickness (see EN ISO 2808) are not dealt with.

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)*

EN ISO 3611, *Geometrical product specifications (GPS) - Dimensional measuring equipment: Micrometers for external measurements - Design and metrological characteristics (ISO 3611)*

3 Terms and definitions

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

3.1
film thickness
distance between the surface of the film and the surface of the substrate

[SOURCE: EN ISO 2808:2007, 3.3]

4 Principle

4.1 Method A: Measurement on a magnetic substrate – magnetic induction

The film thickness on a magnetic substrate is determined by means of an electromagnetic probe placed on the coating and developing an electromagnetic field. The variation of this field is a function of the distance between the probe and the substrate. This signal is measured and converted to the film thickness reading.