SLOVENSKI STANDARD
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Prevlečene kovine, ki se navijajo - Preskusne metode - 24. del: Odpornost proti zlepljanju in poškodbam zaradi pritiska

Coil coated metals - Test methods - Part 24: Resistance to blocking and pressure marking

Bandbeschichtete Metalle - Prüfverfahren - Teil 24: Block- und Stapelfestigkeit

Tôles prélaquées - Méthodes d'essai Partie 24 : Résistance à l'adhérence et au marbrage

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25.220.60	Organske prevleke	Organic coatings

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EUROPEAN STANDARD

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English Version

Coil coated metals - Test methods - Part 24: Resistance to blocking and pressure marking

Tôles prélaquées - Méthodes d'essai Partie 24 : Résistance à l'adhérence et au marbrage

Bandbeschichtete Metalle - Prüfverfahren - Teil 24: Block- und Stapelfestigkeit

This European Standard was approved by CEN on 21 May 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 13523-24:2017) 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of an identical text or by endorsement, at the latest by January 2018, and conflicting national standards shall be withdrawn at the latest by January 2018.

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 13523-24:2004.

The main changes compared to the previous edition are:

a) the in-laboratory jargon “eye to the sky” and “eye horizontal” are explained to a more technical term;

b) the terms “light” and “heavy” in 7.2.2 are explained;

c) 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)*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Pressure generated within a coil or a stack of sheets can affect the coating surface and cause marks of gloss transfer, plasticizer migration, etc. and even blocking/sticking.

1 Scope

This part of the EN 13523 series specifies the procedure for determining the resistance to blocking and/or pressure marking of an organic coating on a metallic substrate.

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, *Coil coated metals - Test methods - Part 0: General introduction*

EN 13523-4, *Coil coated metals - Test methods - Part 4: Pencil hardness*

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

3 Principle

Test panels are placed on top of each other in a stack, the two surfaces to be evaluated being in contact. The stack is placed in a press, where a uniform pressure can be applied at an elevated temperature.

4 Apparatus

Ordinary laboratory apparatus and glassware, together with the following:

4.1 Press, designed to ensure a uniform pressure at elevated temperature. Both pressure and temperature shall be adjustable.

5 Sampling

In accordance with EN 13523-0.

6 Test panels

In accordance with EN 13523-0.

Test panels shall be flat and free from contamination.

NOTE A usual size of test panels is 120 mm × 100 mm.

Cut edges shall be flat and any burrs shall be removed.

For each system under evaluation, there shall be at least two test samples plus one reference sample.

7 Procedure

7.1 General

In general, samples can be tested after curing of the coating, as soon as they are cooled down to room temperature.

Place the panels in a stack, the two surfaces to be tested being in contact.

Apply pressure to the samples by the press.

Heat the stack in the press to the specified temperature.

The test shall be allowed to continue for the agreed period of time.

Recommended values are:

— Pressure: 10 MPa.

  Coil is stored with the central core axis held vertically, so called "eye to (the) sky".

  Pressure is caused only by the recoiling tension.

— Pressure: 100 MPa.

  Coil is stored with the central core axis horizontal, so called "eye to (the) side".

  The weight of the coil results into additional pressure.

  This increased pressure is observed at the point of contact with the ground vertically through the coil wall.

— Temperature: 50 °C.

— Duration: 24 h.

For certain products and/or specific line parameters, other values may be used.

Allow the press with the stack to cool down to room temperature for 24 h whilst maintaining the pressure.

Carry out the evaluation at room temperature. In cases of dispute, the evaluation temperature shall be (23 ± 2) °C and the relative humidity shall be (50 ± 5) %, in accordance with EN 23270.

7.2 Evaluation

7.2.1 Blocking/sticking

Separate the panels and rate blocking/sticking, using the scale specified in Table 1.

Table 1 — Rating scheme for blocking/sticking

Rating	Blocking/sticking
0	The panels separate without sticking
1	The panels need to be separated using a light force
2	Separation can only be achieved using substantial force with an instrument, e.g. a knife, but without deforming the panels
3	Separation can only be achieved using an instrument, e.g. a knife, that will be forced between the samples, causing damage, pick off or permanent deformation
4	Separation cannot be achieved