



# SLOVENSKI STANDARD

## SIST EN 13523-24:2005

01-april-2005

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

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

Bandbeschichtete Metalle - Prüfverfahren - Teil 24: Block- und Stapelfestigkeit  
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Tôles prélaquées - Méthodes d'essai - Partie 24 : Résistance a l'adhérence et au marbrage

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**Ta slovenski standard je istoveten z: EN 13523-24:2004**

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**ICS:**

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EUROPEAN STANDARD

**EN 13523-24**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2004

ICS 25.220.60

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

This European Standard was approved by CEN on 23 September 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG**Management Centre: rue de Stassart, 36 B-1050 Brussels**

**EN 13523-24:2004 (E)****Foreword**

This document (EN 13523-24:2004) 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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## 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.

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**EN 13523-24:2004 (E)****1 Scope**

This part of EN 13523 describes 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 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, *Coil coated metals — Test methods — Part 0: General introduction and list of test methods*.

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

EN 13523-22, *Coil coated metals — Test methods — Part 22: Colour difference — Visual comparison*.

EN 23270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing (ISO 3270:1991)*.

**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.

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**4 Apparatus**

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**4.1 General**

Ordinary laboratory apparatus and glassware, together with the following;

**4.2 Press**

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

**5 Sampling**

See EN 13523-0.

**6 Test panels**

See EN 13523-0.

Test panels (usually 100 mm × 120 mm) shall be flat and free from contamination.

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 "eye to the sky".  
Pressure is caused only by the recoiling tension.
- Pressure: 100 MPa  
Coil is stored "eyes horizontal".  
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  $(23 \pm 2)$  °C and the relative humidity shall be  $(50 \pm 5)$  %, in accordance with EN 23270.

### 7.2 Evaluation

#### 7.2.1 Blocking/sticking

Separate the panels and rate blocking/sticking, using a scale between 0 and 4:

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

**EN 13523-24:2004 (E)****7.2.2 Transfer of gloss and pressure marks**

After separating the panels and rating blocking and sticking, rate the pressure marking, using a scale between 0 and 4. Where relevant, the separated test panels shall be kept at room temperature until the 24 h assessment has been completed.

0	No pressure mark immediately after separation
1	No pressure marks remaining 24 h after separation
2	Light pressure marks remaining 24 h after separation
3	Heavy pressure marks remaining 24 h after separation
4	Pressure marks remaining 24 h after separation which cannot be removed after subsequent heating

NOTE The test can also give some indication of plasticizer migration.

The degree of softening of a paint by the plasticizer used in either the top or the backing coat is determined by checking the change in hardness according to EN 13523-4 and comparing to the reference sample.

**8 Expression of results**

Blocking shall be expressed as a rate from 0 to 4 as described in 7.2.1.

Pressure marks shall be expressed as a rate from 0 to 4 as described in 7.2.2.

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**9 Precision**

No precision data are currently available.

**10 Test report**

The test report shall contain at least the following information:

- all details necessary to identify the product tested;
- a reference to this part of EN 13523 (EN 13523-24);
- coating system and coating parameters;
- pressure, temperature and duration of the test;
- result of the test, as indicated in clause 8;
- any deviation from the test method specified (e.g. time between production and testing);
- date of the test.