
Coil coated metals - Test methods - Part 2: Specular gloss

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Bandbeschichtete Metalle - Prüfverfahren - Teil 2: Glanz

Tôles prélaquées - Méthodes d'essai - Partie 2: Brillant spéculaire

Ta slovenski standard je istoveten z: EN 13523-2:2001

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ICS:

| | | |
|-----------|----------------------------|----------------------------------|
| 17.180.20 | Barve in merjenje svetlobe | Colours and measurement of light |
| 25.220.60 | Organske prevleke | Organic coatings |

SIST EN 13523-2:2002

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13523-2

January 2001

ICS 17.180.20; 25.220.60

English version

Coil coated metals - Test methods - Part 2: Specular gloss

Tôles prélaquées - Méthodes d'essai - Partie 2: Brillant
spéculaire

Bandbeschichtete Metalle - Prüfverfahren - Teil 2: Glanz

This European Standard was approved by CEN on 30 December 2000.

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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 Management Centre has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Part of EN 13523 specifies the procedure for determining the specular gloss of an organic coating on a metallic substrate. Gloss is a characteristic of fundamental importance to the appearance of the coil coated product.

The apparatus requires a flat specimen of size greater than the aperture, thus, uneven surfaces cannot be measured.

This method is applicable to all pigmented and unpigmented coatings including metallic/pearlescent coatings. However, for textured coatings it is only indicative.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13523-0:2001

Coil coated metals – Test methods – Part 0: General introduction and list of test methods

EN 23270:1991

Paints and varnishes and their raw materials – Temperatures and humidities for conditioning and testing (ISO 3270:1984)

EN ISO 2813

Paints and varnishes – Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813:1994, including Technical Corrigendum 1:1997)

3 Terms and definitions

For the purposes of EN 13523-2:2001 the terms and definitions given in EN 13523-0:2001 as well as the following terms and definitions apply:

3.1 gloss

optical property of a surface, characterized by its ability to reflect light specularly. [EN 971-1 : 1996]

3.2 specular gloss

ratio of the luminous flux reflected from an object in the specular direction for a specified source and receptor angle to the luminous flux reflected from glass with a refractive index of 1,567 in the specular direction.

NOTE: To define the specular-gloss scale, polished black glass with a refractive index of 1,567 is assigned the value of 100 for geometries 20°, 60° and 85°. [EN ISO 2813]

4 Principle

The gloss of the organic coating is determined by measuring the specular reflectance. The angle of incident light is usually 60°, but angles of 20° or 85° can be used for more accurate measurement of high or low gloss values.

5 Apparatus

Ordinary laboratory apparatus, together with the following:

5.1 60° specular glossmeter or multi-angle glossmeter, in accordance with EN ISO 2813.

5.2 Calibration standards, as recommended by the manufacturer of the glossmeter, in accordance with EN ISO 2813.

6 Sampling

See EN 13523-0:2001.

7 Test panels

See EN 13523-0:2001.

The surfaces to be measured shall be at least as large as the area of the measuring aperture and shall be flat against the measuring aperture.

8 Procedure

8.1 Calibration

Calibrate the apparatus by reading the gloss of two calibration standards. If the reading of the calibration standards is greater than $\pm 1,0$ unit of their reference value, adjustment of the apparatus shall be made.

8.2 Measurement

Measure the specular gloss at ambient temperature. For more accurate measurements, as required for instance in case of dispute, the temperature shall be (23 ± 2) °C and the relative humidity (50 ± 5) %, in accordance with EN 23270 : 1991.

Place the coated specimen over the instrument's aperture and note the gloss reading. Take readings at not less than three different parts of the coated specimen at the specified geometry (60°, 20° or 85°) and report the specular gloss as the average of these readings.

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9 Expression of results

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Express the result of the measurements in units, as the average of the readings taken.

10 Precision

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10.1 Repeatability

With 60° geometry, the repeatability of the result is for coatings of value

| | |
|---------------------|-----------|
| > 70 units | $\pm 2,0$ |
| from 10 to 70 units | $\pm 1,5$ |
| < 10 units | $\pm 1,0$ |

For metallic pigmented organic coatings, the reading may vary depending on the orientation of the test panel and the above values may not necessarily be applicable.

10.2 Reproducibility

With 60° geometry, the values for reproducibility may be expected to give figures which are at least twice the level given for repeatability (see 10.1).

In case of dispute, the calibration of the apparatus shall be verified. If this does not clarify the point, approved and agreed calibration standards shall be used.

11 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 13523-2);
- the results of the test, as indicated in clause 9;
- any deviation from the test method specified;
- the date of the test.

Bibliography

EN 971-1:1996

Paints and varnishes – Terms and definitions for coating materials – Part 1: General terms

EN 1396:1996

Aluminium and aluminium alloys – Coil coated sheet and strip for general applications – Specifications

EN 10169-1:1996

Continuously organic coated (coil coated) steel flat products – Part 1: General information (definitions, materials, tolerances, test methods)

ENV 10169-2:1999

Continuously organic coated (coil coated) steel flat products – Part 2: Products for building exterior applications

In the above standards, tolerances against nominal gloss are given for different gloss ranges of the coil coated product.

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