



SLOVENSKI STANDARD
SIST EN 13523-10:2002

01-september-2002

Coil coated metals - Test methods - Part 10: Resistance to fluorescent UV light and water condensation

Coil coated metals - Test methods - Part 10: Resistance to fluorescent UV light and water condensation

Bandbeschichtete Metalle - Prüfverfahren - Teil 10: Beständigkeit gegen fluoreszierende UV-Strahlung und Kondensation von Wasser

Tôles prélaquées - Méthodes d'essai - Partie 10: Résistance aux UV fluorescentes et à la condensation de l'eau

[SIST EN 13523-10:2002](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

[https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

[ec3abdac006d/sist-en-13523-10-2002](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

Ta slovenski standard je istoveten z: EN 13523-10:2001

ICS:

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

SIST EN 13523-10:2002

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13523-10:2002

<https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13523-10

January 2001

ICS 17.180.20; 25.220.60

English version

Coil coated metals - Test methods - Part 10: Resistance to fluorescent UV light and water condensation

Tôles prélaquées - Méthodes d'essai - Partie 10:
Résistance aux UV fluorescentes et à la condensation de
l'eau

Bandbeschichtete Metalle - Prüfverfahren - Teil 10:
Beständigkeit gegen fluoreszierende UV-Strahlung und
Kondensation von Wasser

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

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13523-10:2002](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

<https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002>



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 describes the basic principles and procedure for determining the resistance of an organic coating on a metallic substrate to a combination of fluorescent UV light and water condensation.

Due to varied conditions which occur during natural weathering and the extreme nature of accelerated testing, correlation between the two cannot be expected.

Not all organic coatings will perform on an equal basis but a degree of correlation between the same generic type may be observed.

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 13523-2:2001

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

EN 13523-3:2001

Coil coated metals – Test methods – Part 3: Colour difference – Instrumental comparison

prEN 13523-14:1999

Coil coated metals – Test methods – Part 14: Chalking (Helmen method)

EN 23270:1991

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

ISO 11507:1997

Paints and varnishes – Exposure of coatings to artificial weathering – Exposure to fluorescent UV and water

3 Terms and definitions

For the purposes of this Part of EN 13523 the terms and definitions given in EN 13523-0:2001 apply.

4 Principle

The coating is exposed in a cyclic manner to UV light, water and temperature under controlled conditions.

One of two types of fluorescent UV lamps, UVA or UVB, are used.

After exposure to UV light under controlled conditions chalking and changes in gloss and colour are assessed.

5 Apparatus

5.1 Test chamber

The test chamber shall be constructed of corrosion resistant materials. Enclosed within the test chamber shall be eight fluorescent lamps (5.2), a heater pan, racks for test specimens, and provisions for indicating and controlling operating times and temperatures.

The lamps shall be in banks of four on either side of the cabinet. Electrical operating conditions for the lamps shall be as given by the manufacturer.

5.2 UV lamps

Either UVA or UVB, as specified in ISO 11507:1997:

- UVA starting at approximately 300 nm with a peak emission of 340 nm;
- UVB starting at approximately 280 nm with a peak emission at 313 nm.

5.3 Water supply

either distilled or deionized water.

6 Sampling

See EN 13523-0:2001.

7 Test panels

See EN 13523-0:2001.

The test specimens shall normally be flat and 150 mm × 75 mm in size.

NOTE: Deviations from the standard methods of panel shape, size, previous working, or conditioning may be agreed between the interested parties.

8 Procedure

8.1 Place the test specimens in racks which are made of inert material. Expose the face of the test specimens parallel to the lamps at a distance of 50 mm from the nearest surface of the lamp.

8.2 If there are empty spaces within the racks fill these with blanks to maintain the conditions within the test chamber.

8.3 Cycle the test specimens through periods of 4 h of dry UV exposure at a black standard temperature of $(60 \pm 3) ^\circ\text{C}$, followed by a period of 4 h of water condensation exposure, without radiation, at a black standard temperature of $(40 \pm 3) ^\circ\text{C}$. (One cycle consists of 8 h exposure.)

8.4 Arrange the test specimens to allow the condensate to freely run off the surface under gravity.

8.5 After every usage period of 400 light hours replace one lamp and rotate the others within the bank with the oldest lamp being taken out of service unless otherwise specified by the equipment manufacturer.

8.6 Conclude the exposure at an agreed time, for example 2000 h for UVA or 1000 h for UVB, or an agreed number of cycles, for example 250 cycles for UVA or 125 cycles for UVB.

8.7 At the conclusion of the exposure evaluate the test specimens for chalking, changes of gloss and colour.

Assess the coating for chalking, change of gloss and change of colour at ambient temperature. For more accurate measurements, as required for instance in case of dispute, the temperature shall be $(23 \pm 2) ^\circ\text{C}$ and the relative humidity $(50 \pm 5) \%$, in accordance with EN 23270 : 1991.

9 Expression of results

The results shall be expressed as comparison between an unexposed test specimen and an exposed test specimen for properties defined in EN 13523-2:2001, EN 13523-3:2001, prEN 13523-14:1999 (see also the document in preparation, WI 00139156, Part 22 of this Standard), if appropriate in terms of, for example, x % gloss retention according to EN 13523-2:2001, ΔE_{ab}^* = y according to EN 13523-3:2001, z chalking according to prEN 13523-14:1999.

10 Precision

No precision data are currently available.

11 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the product tested;
- b) a reference to this part of EN 13523 (EN 13523-10);
- c) the type of UV lamps used;
- d) the duration of exposure in hours;
- e) the results of the test, as indicated in clause 9;
- f) any deviation from the test method specified (panel shape, size, previous working or conditioning and any other changes);
- g) the date of the test.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13523-10:2002](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

<https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002>

Bibliography

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
ISO 4892-3:1994	Plastics – Methods of exposure to laboratory light sources – Part 3: Fluorescent UV lamps
WI 00139156	Coil coated metals – Test methods – Part 22: Colour difference – Visual comparison

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13523-10:2002](https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002)

<https://standards.iteh.ai/catalog/standards/sist/9e7aad44-aac5-432f-a2ba-ec3abdac006d/sist-en-13523-10-2002>