

Coil coated metals - Test methods - Part 13: Resistance to accelerated ageing by the use of heat

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English Version

Coil coated metals - Test methods - Part 13: Resistance to accelerated ageing by the use of heat

Tôles prélaquées - Méthodes d'essai - Partie 13:
Résistance au vieillissement accéléré par la chaleur

Bandbeschichtete Metalle - Prüfverfahren - Teil 13:
Beständigkeit gegen beschleunigte Alterung durch
Wärmeeinwirkung

This European Standard was approved by CEN on 7 May 2014.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 13523-13:2014) 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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13523-13:2001.

The main technical changes are:

- a) in 8.2.1 the preparation of test specimen was made optional for the case that no prepared test specimens are available;
- b) in 8.2.5 and 8.2.6 the measurement of adhesion was made optional;
- c) in 8.3.2 the time for storage after bending was specified;
- d) the supplementary information in the former Annex A were integrated in the test report.

EN 13523, *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 (Cataplasma test)*
- *Part 29: Resistance to environmental soiling (Dirt pick-up and striping)*

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

1 Scope

This Part of EN 13523 specifies the procedure for determining the behaviour of an organic coating on a metallic substrate when submitted to accelerated ageing by heating at a defined temperature for a defined period of time.

It is not possible to test heat resistance in such a way as to control all possible conditions of use. The aim of this test is therefore to furnish the basic test method for the effect of heat.

Special applications might require that properties other than those mentioned in this Part of EN 13523 be checked. The test(s) to be done should then be agreed between the interested parties.

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 13523-2, *Coil coated metals — Test methods — Part 2: Specular gloss*

EN 13523-3, *Coil coated metals — Test methods — Part 3: Colour difference — Instrumental comparison*

EN 13523-7:2014, *Coil coated metals — Test methods — Part 7: Resistance to cracking on bending (T-bend test)*

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

EN 60454-2, *Pressure-sensitive adhesive tapes for electrical purposes — Part 2: Methods of test (IEC 60454-2)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13523-0:2014 apply.

4 Principle

A test specimen is subjected to an elevated temperature during a defined period of time. Certain physical properties of the test specimen are then compared to those of a reference specimen which has been kept during the same period of time in ambient conditions of temperature.

5 Apparatus and materials

5.1 Air circulation oven, capable of being maintained at the chosen test temperature to $\pm 5\%$ (in °C).

5.2 Apparatus as described in EN 13523-2, EN 13523-3 and EN 13523-7.

5.3 Transparent pressure-sensitive adhesive tape, 25 mm wide, with an adhesion strength of (10 ± 1) N per 25 mm width when tested in accordance with EN 60454-2.