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NSAI Standards

Irish Standard
I.S. EN 13523-7:2014

Coil coated metals - Test methods - Part 7: Resistance to cracking on bending (T-bend test)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13523-7

June 2014

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English Version

Coil coated metals - Test methods - Part 7: Resistance to cracking on bending (T-bend test)

Tôles prélaquées - Méthodes d'essai - Partie 7: Résistance à la fissuration par pliage (essai de pliage en T)

Bandbeschichtete Metalle - Prüfverfahren - Teil 7: Widerstandsfähigkeit gegen Rissbildung beim Biegen (T-Biegeprüfung)

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Foreword

This document (EN 13523-7:2014) 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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.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 13523-7:2001.

The main technical changes are:

a) details on the brands of the tape used were added;

b) a remark on conditioning was added;

c) in addition to use a × 10 magnifying glass, the evaluation shall be carried out with normal corrected vision.

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)*

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— *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 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.

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1 Scope

This part of EN 13523 specifies the procedure for determining the resistance to cracking of an organic coating on a metallic substrate when bent through 135° to 180°. The degree of adhesion may also be evaluated.

Both folding and mandrel methods are considered. The folding method is more often used for practical purposes but where more precise determinations are required, the mandrel method is recommended.

The cylindrical bend method may also be used for a pass/fail decision by using an agreed mandrel.

The choice of the appropriate test method is limited by the thickness and/or the hardness of the substrate.

The feasibility of the test depends on the type and thickness of the substrate. During the procedure, the mandrel should not deform.

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 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 and the following apply.

3.1
metal thickness
total thickness of the substrate including any metallic coating and excluding any organic coating

4 Principle

The coated test specimen is bent parallel to the direction of rolling through 135° to 180° over a period of 1 s to 2 s around various radii with the coating on the outside of the bend.

Close contact is maintained between the test specimen and either the wedge or mandrel to ensure a uniform bend.

Any bending device allowing the required smooth and uniform bending may be used.

The minimum bending radius to which the specimen can be bent without cracking of the organic coating determines the resistance to cracking on bending through 135° to 180°.

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