NSAI Standards

Irish Standard
I.S. EN 13523-23:2015

Coil coated metals - Test methods - Part 23: Resistance to humid atmospheres containing sulfur dioxide

I.S. EN 13523-23:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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EUROPEAN STANDARD

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EN 13523-23

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ICS 17.180.20; 25.220.60

Supersedes EN 13523-23:2002

English Version

Coil coated metals - Test methods - Part 23: Resistance to humid atmospheres containing sulfur dioxide

Tôles prélaquées - Méthodes d'essai - Partie 23 : Résistance à des atmosphères humides contenant du dioxyde de soufre

Bandbeschichtete Metalle - Prüfverfahren - Teil 23: Beständigkeit gegen feuchte, Schwefeldioxid enthaltende Atmosphären

This European Standard was approved by CEN on 27 May 2015.

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European foreword

This document (EN 13523-23:2015) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

This document supersedes EN 13523-23:2002.

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of an identical text or by endorsement, at the latest by January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

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.

The main technical changes are:

a) the title and scope was changed from colour stability to resistance;

b) the assessment of changes was added in Clause 8.

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 (Cataplasm test)*

— *Part 29: Resistance to environmental soiling (Dirt pick-up and striping)*

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

Introduction

Previous work by the European Coil Coating Association (ECCA) has established that this test method is not a reliable or reproducible test for assessing the degree of corrosion on coil coated products, but that the test method may be used to evaluate the colour fastness of coil coated products.

The procedure has been aligned with EN ISO 3231, except for the amount of sulfur dioxide.

1 Scope

This part of EN 13523 defines terms of the procedure for determining the resistance of an organic coating on a metallic substrate to humid atmospheres containing sulfur dioxide.

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, *Coil coated metals - Test methods - Part 0: General introduction*

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

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)*

3 Terms and definitions

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

4 Principle

Test specimens are exposed to an atmosphere containing sulfur dioxide. The degree of colour change is measured or visually assessed. The degree of other types of degradation, e.g. spotting, streaking, loss of gloss, of the test specimen may also be assessed.

5 Apparatus

An apparatus consisting of an airtight cabinet of capacity (300 ± 10) l, in the base of which is a water-tight trough fitted with a means of heating the water so that it can raise the air temperature in the cabinet to (40 ± 3) °C in about 1½ h and maintain this temperature for a total period of 8 h from the commencement of the test cycle.

The dimensions and design of the cabinet are not critical provided the stand for supporting the test panels is made of, or coated with an inert material and is of sufficient size to accommodate test specimens with a total surface area of (0,5 ± 0,1) m^2.

The cabinet shall also be constructed of an inert material and have a roof which prevents condensed moisture dripping onto the test specimens.

The cabinet shall be provided with a means of relieving excess pressure and a gas inlet pipe which shall be situated immediately above the water trough.

A gas cylinder or gas generating apparatus fitted with appropriate regulating and measuring apparatus to ensure the supply of the correct volume of sulfur dioxide.

The cabinet shall also be provided with a means of controlling the temperature which shall be measured in the space above the test specimens.

NOTE Some typical designs of apparatus are shown in EN ISO 3231:1997, Figures 1 and 2.