



**BSI Standards Publication**

## **Coil coated metals — Test methods**

---

Part 9: Resistance to water immersion

## National foreword

This British Standard is the UK implementation of EN 13523-9:2022. It supersedes BS EN 13523-9:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/21, Paint systems and surface preparation for metallic substrates.

A list of organizations represented on this committee can be obtained on request to its committee manager.

### Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2022  
Published by BSI Standards Limited 2022

ISBN 978 0 539 15149 7

ICS 25.220.60

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 February 2022.

### Amendments/corrigenda issued since publication

| Date | Text affected |
|------|---------------|
|------|---------------|

English Version

## Coil coated metals - Test methods - Part 9: Resistance to water immersion

Tôles prélaquées - Méthodes d'essai - Partie  
9 : Résistance à l'immersion dans l'eau

Bandbeschichtete Metalle - Prüfverfahren - Teil  
9: Beständigkeit gegen Eintauchen in Wasser

This European Standard was approved by CEN on 19 December 2021.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

# Contents

Page

|                                                     |            |
|-----------------------------------------------------|------------|
| <b>European foreword</b>                            | <b>iii</b> |
| <b>1 Scope</b>                                      | <b>5</b>   |
| <b>2 Normative references</b>                       | <b>5</b>   |
| <b>3 Terms and definitions</b>                      | <b>5</b>   |
| <b>4 Principle</b>                                  | <b>5</b>   |
| <b>5 Apparatus</b>                                  | <b>5</b>   |
| 5.2 System for circulation or stirring of the water | 6          |
| <b>6 Materials</b>                                  | <b>6</b>   |
| <b>7 Sampling</b>                                   | <b>6</b>   |
| <b>8 Test panels</b>                                | <b>6</b>   |
| <b>9 Procedure</b>                                  | <b>6</b>   |
| 9.1 Scribing of test panels and immersion           | 6          |
| 9.2 Assessment                                      | 7          |
| 9.2.1 General                                       | 7          |
| 9.2.2 Blistering                                    | 7          |
| 9.2.3 Corrosion creep                               | 7          |
| <b>10 Expression of results</b>                     | <b>7</b>   |
| <b>11 Precision</b>                                 | <b>8</b>   |
| <b>12 Test report</b>                               | <b>8</b>   |
| <b>Annex A (normative) Scribing of test panels</b>  | <b>9</b>   |
| <b>Bibliography</b>                                 | <b>10</b>  |

## European foreword

This document (EN 13523-9:2022) 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 August 2022, and conflicting national standards shall be withdrawn at the latest by August 2022.

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

This document supersedes EN 13523-9:2014.

The main changes are:

- a) EN ISO 3696 has been added to [6.1](#) as reference for the deionised water;
- b) a remark concerning the assessment of organic coated steel substrates having multiple metallic phases in zinc based coating has been added to [Clause 10](#);
- c) “test specimen” has been harmonized to “test panel” in the entire text;
- d) the list of the existing parts of EN 13523 has been updated;
- e) the text has been editorially revised and the normative references have been updated.

The EN 13523 series, *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 and metamerism — 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 16: Resistance to abrasion*
- *Part 17: Adhesion of strippable films*
- *Part 18: Resistance to staining*