BS EN 10244-2:2023



BSI Standards Publication

Steel wire and wire products — Non-ferrous metallic coatings on steel wire

Part 2: Zinc or zinc alloy coatings

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National foreword

This British Standard is the UK implementation of EN 10244-2:2023. It supersedes BS EN 10244-2:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/106, Wire Rod and Wire.

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

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English Version

Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 2: Zinc or zinc alloy coatings

Fils et produits tréfilés en acier - Revêtements métalliques non ferreux sur fils d'acier - Partie 2 : Revêtement de zinc ou d'alliage de zinc

Stahldraht und Drahterzeugnisse - Überzüge aus Nichteisenmetall auf Stahldraht - Teil 2: Überzüge aus Zink oder Zinklegierungen

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Ref. No. EN 10244-2:2023 E

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Full document details: BS EN 10244-2:2023

Contents

Page

European foreword 3
1 Scope 4
2 Normative references 4
3 Terms and definitions 4
4 Coating requirements 4
4.1 Requirements for the coatings material 4
4.2 Requirements relating to coating on the wire 5
4.2.1 Coating mass 5
4.2.2 Appearance of coating 7
4.2.3 Dipping test 7
4.2.4 Special finishes 7
4.2.5 Adherence of coating 8
5 Test conditions 10
5.1 Selection of samples 10
5.2 Determination of mass of coating 10
5.2.1 General 10
5.2.2 Gravimetric method 10
5.2.3 Gaseous volumetric method 11
5.3 Dipping test 16
5.3.1 Principle 16
5.3.2 Reagents 16
5.3.3 Preparation of test piece 16
5.3.4 Performing of the test 16
5.3.5 Interpretation of results 17
Bibliography 18

Documents
Document Sharing Hub
Full document details: BS EN 10244-2:2023

European foreword

This document (EN 10244-2:2023) has been prepared by Technical Committee CEN/TC 459 “ECISS – European Committee for Iron and Steel Standardization”[1], the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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 10244-2:2009.

In comparison with the previous edition, the following technical modifications have been made:

— the reference towards ASTM B750 for Zn-Alu alloys has been changed to ASTM B997;

— dipping test better specified for Zinc-Alu alloy coatings (see Table 3).

This European Standard series for non-ferrous metallic coating on steel wire is made up of the following parts:

— *Part 1: General principles*

— *Part 2: Zinc or zinc alloy coatings*

— *Part 3: Aluminium coatings*

— *Part 4: Tin coatings*

— *Part 5: Nickel coatings*

— *Part 6: Copper, bronze or brass coatings*

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[1] Through its sub-committee SC 6 “Wire rod and wires” (secretariat: AFNOR).

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1 Scope

This document specifies the requirement for coating mass, other properties and testing of zinc and zinc alloy coatings on steel wire and steel wire products of circular or other section.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1179, *Zinc and zinc alloys — Primary zinc*

EN 10218-1, *Steel wire and wire products — General — Part 1: Test methods*

EN 10244-1, *Steel wire and wire products — Non-ferrous metallic coatings on steel wire — Part 1: General principles*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp/

3.1
wire with zinc or zinc alloy coating
wire to which zinc or zinc alloy coating has first been applied to protect it against corrosion

Note 1 to entry: The coating method may be hot dipping in a bath of molten zinc or by means of an aqueous solution of suitable electrolyte. In the hot dipping process wiping media may be used to modify the mass of coating.

3.2
zinc or zinc alloy coating
zinc to which other elements are deliberately added in order to obtain particular characteristics

Note 1 to entry: In all cases, the quantity of zinc in the alloy shall be minimum 50 %. The most common alloy elements are aluminium, tin and nickel, but other elements may also be considered.

3.3
mass of coating
mass of zinc per unit of surface area expressed in grams per square metre of surface of bare wire

4 Coating requirements

4.1 Requirements for the coatings material

The zinc or zinc alloy used for the coating shall comply with the standard EN 1179. For zinc-alloy grades not mentioned in the EN, the alloy shall be specified at the time of enquiry and order. For Zn-Al alloys, reference is made to ASTM B997.

The ingot of the material used for the zinc coating shall be of minimum 99,95 % purity (according to Z3 of EN 1179) unless otherwise stated in the relevant product standard or other specification in the order. Coatings applied by electrolysis shall contain a minimum of 99 % zinc.

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Full document details: BS EN 10244-2:2023

4.2 Requirements relating to coating on the wire

4.2.1 Coating mass

The minimum mass of zinc per unit of surface area of the wire shall comply with the requirements of Table 1.

Table 1 — Mass requirements for a coating of Zn

Diameter *d* mm	**Classes** [a]					
	A g/m²	AB g/m²	B g/m²	C g/m²	D g/m²	A x 3 [b] g/m²
0,15 ≤ *d* < 0,20	—	—	15	—	10	—
0,20 ≤ *d* < 0,25	30	20	20	20	15	—
0,25 ≤ *d* < 0,32	45	30	30	25	15	—
0,32 ≤ *d* < 0,40	60	30	30	25	15	—
0,40 ≤ *d* < 0,50	85	55	40	30	15	—
0,50 ≤ *d* < 0,60	100	70	50	35	20	—
0,60 ≤ *d* < 0,70	115	80	60	40	20	—
0,70 ≤ *d* < 0,80	130	90	60	45	20	—
0,80 ≤ *d* < 0,90	145	100	70	50	20	—
0,90 ≤ *d* < 1,00	155	110	70	55	25	—
1,00 ≤ *d* < 1,20	165	115	80	60	25	—
1,20 ≤ *d* <1,40	180	125	90	65	25	540
1,40 ≤ *d* < 1,65	195	135	100	70	30	585
1,65 ≤ *d* < 1,85	205	145	100	75	30	615
1,85 ≤ *d* < 2,15	215	155	115	80	40	645
2,15 ≤ *d* < 2,50	230	170	125	85	45	690
2,50 ≤ *d* < 2,80	245	185	125	95	45	735
2,80 ≤ *d* < 3,20	255	195	135	100	50	765
3,20 ≤ *d* < 3,80	265	210	135	105	60	795
3,80 ≤ *d* < 4,40	275	220	135	110	60	825
4,40 ≤ *d* < 5,20	280	220	150	110	70	840
5,20 ≤ *d* < 8,20	290	—	—	110	80	870
8,20 ≤ *d* ≤ 10,00	300	—	—	110	80	900

[a] The coating class with a designation starting with A relates to thick coatings (generally final coating). Designations ending in B relate to classes usually but not always obtained by (zinc coating) and subsequent drawing. Classes C and D are standard classes for low mass coating which are usually produced, but not exclusively produced, by hot zinc dipping and then wiping.

[b] A x 3 relates to very high mass requirement three times higher than class A. Other multiples of Class A are possible and these classes will be identified in the same way, e.g. A x 4.

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