

Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming — Technical delivery conditions

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

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Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming – Technical delivery conditions

Bandes et tôles en aciers doux galvanisées à chaud et en continu pour formage à froid – Conditions techniques de livraison

Kontinuierlich feuerverzinktes Band und Blech aus weichen Stählen zum Kaltumformen – Technische Lieferbedingungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Classification and designation	5
4.1 Classification	5
4.2 Designation	6
5 Information to be supplied by the purchaser	6
5.1 Mandatory information	6
5.2 Options	7
6 Manufacturing process	7
7 Requirements	7
7.1 Mechanical properties	7
7.2 Coatings	8
7.3 Coating finish	9
7.4 Surface quality	9
7.5 Surface treatment (surface protection)	11
7.6 Freedom from coil breaks	12
7.7 Stretcher strains	12
7.8 Coating mass	12
7.9 Adhesion of coating	13
7.10 Surface condition	13
7.11 Tolerances on dimensions and shape	14
7.12 Suitability for further processing	14
8 Testing	14
8.1 General	14
8.2 Test units	14
8.3 Number of tests	14
8.4 Sampling	15
8.5 Test methods	15
8.6 Retests	17
8.7 Inspection documents	17
9 Marking	17
10 Packing	17
11 Storage and transportation	17
12 Disputes	18
Annex A (normative) Reference method for determination of the zinc coating mass	20
Annex B (informative) List of corresponding former designations	20
Bibliography	21

Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 27, Surface coated flat products - Qualities, dimensions, tolerances and specific tests, the secretariat of which is held by DIN.

This European Standard supersedes EN 10142:1990.

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of an identical text or by endorsement, at the latest by October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

1.1 This European Standard specifies requirements for continuously hot-dip zinc coated flat products in thicknesses up to and including 3,0 mm, unless otherwise agreed at the time of ordering, made of the steel given in 4.1 and Table 1. The thickness is the final thickness of the delivered product after zinc coating.

This European Standard applies to strip of all widths and to sheets cut from it (≥ 600 mm width) and cut lengths (< 600 mm width).

The types of coating, coating masses and coating finishes available, and surface qualities are given in Tables 2 to 4 (see also 7.2 to 7.4).

1.2 The products covered by this European Standard are suitable for applications where suitability for forming and resistance to corrosion are of prime importance. Corrosion protection afforded by the coating is directly proportional to the mass of coating (see also 7.2.2).

1.3 This European Standard is not applicable to:

- continuously hot-dip zinc coated structural steel strip and sheet (see EN 10147);
- electrolytically zinc coated cold rolled steel flat products (see EN 10152);
- continuously organic coated (coil coated) steel flat products (see EN 10169-1 and ENV 10169-2);
- continuously hot-dip coated strip and sheet of steels with higher yield strength for cold forming (see EN 10292).

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate points in the text and the publications are listed hereafter. Subsequent amendments to, or revisions of, any of these publications apply to this European Standard only when incorporated in it by amendment or revision. In the case of undated references, the most recent edition of the publications referred to applies (including amendments).

EN 10002-1, *Metallic materials. Tensile testing – Part 1: Method of test (at ambient temperature)*.

EN 10020, *Definition and classification of grades of steel*.

EN 10021, *General technical delivery requirements for steel and steel products*.

EN 10027-1, *Designation systems for steel – Part 1: Steel names, principal symbols*.

EN 10027-2, *Designation systems for steels – Part 2: Numerical system*.

EN 10079, *Definition of steel products*.

EN 10143, *Continuously hot-dip metal coated steel sheet and strip – Tolerances on dimensions and shape.*

EN 10204, *Metallic products – Types of inspection documents.*

CR 10260, *Designation systems for steel – Additional symbols.*

EURONORM 12¹⁾, *Bend test for steel sheet and strip less than 3 mm thick.*

ISO 10113, *Metallic materials – Sheet and strip – Determination of plastic strain ratio.*

ISO 10275, *Metallic materials – Sheet and strip – Determination of tensile strain hardening exponent.*

3 Terms and definitions

For the purposes of this standard the following terms and definitions apply in addition to the terms and definitions in EN 10020, EN 10021, EN 10079 and EN 10204 (see clause 2).

3.1

hot-dip zinc coating

application of zinc coating by immersing the prepared products in a molten bath containing a zinc content of at least 99 %

In this case, the wide strip steel is continuously hot-dip coated.

3.2

coating mass

total mass including both surfaces (expressed in grams per square metre)

4 Classification and designation

4.1 Classification

The steel grades according to this European Standard are classified according to their increasing suitability for cold forming as follows:

DX51D+Z, DX51D+ZF:	bending and profiling quality;
DX52D+Z, DX52D+ZF:	drawing quality;
DX53D+Z, DX53D+ZF:	deep drawing quality;
DX54D+Z, DX54D+ZF:	special deep drawing quality;
DX56D+Z, DX56D+ZF:	extra deep drawing quality.

¹⁾ Until it is transformed into an European Standard, either EURONORM 12 or the corresponding national standard may be applied.

4.2 Designation

4.2.1 Steel names

For the steel grades covered by this European Standard, the steel names as given in Table 1 are allocated in accordance with EN 10027-1 and CR 10260.

4.2.2 Steel numbers

For the steel grades covered by this European Standard, the steel numbers as given in Table 1 are allocated in accordance with EN 10027-2 and CR 10260.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order:

- a) the quantity to be delivered;
- b) the type of product (strip, sheet, cut length);
- c) the number of the dimensional standard (EN 10143);
- d) the nominal dimensions and the tolerances on dimensions and shape and, if applicable, letters denoting relevant special tolerances;
- e) the term “steel”;
- f) number of this standard (EN 10142);
- g) steel name or steel number and symbol for the type of hot-dip coating as given in Table 1;
- h) number designating the nominal mass of coating (e.g. 275 = 275 g/m² including both surfaces; see Tables 2, 3 and 4);
- i) letter denoting the coating finish (N, M or R; see Tables 2 and 3 and 7.3);
- j) letter denoting the surface quality (A, B or C; see 7.4);
- k) letter denoting the surface treatment (C, O, CO, S, P or U; see 7.5).

EXAMPLE 1 sheet, delivered with dimensional tolerances according to EN 10143 with nominal thickness of 0,80 mm, ordered with special thickness tolerances (S), nominal width 1 200 mm, ordered with special width tolerances (S), nominal length 2 500 mm, ordered with special flatness tolerances (FS) made of steel DX53D+ZF (1.0355+ZF) according to EN 10142, coating mass 100 g/m² (100), coating finish regular (R), surface quality B, surface treatment oiled (O):

1 sheet EN 10143-0,80S×1200S×2500FS
steel EN 10142-DX53D+ZF100-R-B-O

or

1 sheet EN 10143-0,80S×1200S×2500FS
steel EN 10142-1.0355+ZF100-R-B-O