

# SVENSK STANDARD

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### **Elektrolytiskt zinkbelagda kallvalsade platta produkter för kallformning – Tekniska leveransbestämmelser**

### **Electrolytically zinc coated cold rolled steel flat products for cold forming – Technical delivery conditions**

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Denna standard ersätter SS-EN 10152:2009, utgåva 3 och SS-EN 10152:2009/AC:2012, utgåva 1.

The European Standard EN 10152:2017 has the status of a Swedish Standard. This document contains the official English version of EN 10152:2017.

This standard supersedes the Swedish Standard SS-EN 10152:2009, edition 3 and SS-EN 10152:2009/AC:2012, edition 1.

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EUROPEAN STANDARD

**EN 10152**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2017

ICS 77.140.50

Supersedes EN 10152:2009

English Version

## Electrolytically zinc coated cold rolled steel flat products for cold forming - Technical delivery conditions

Produits plats en acier, laminés à froid, revêtus de zinc  
par voie électrolytique pour formage à froid -  
Conditions techniques de livraison

Elektrolytisch verzinkte kaltgewalzte Flacherzeugnisse  
aus Stahl zum Kaltumformen - Technische  
Lieferbedingungen

This European Standard was approved by CEN on 21 November 2016.

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.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## **SS-EN 10152:2017 (E)**

### **European foreword**

This document (EN 10152:2017) has been prepared by Technical Committee ECISS/TC 109 “Coated and uncoated flat products to be used for cold forming”, 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 July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

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 10152:2009.

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.



## 1 Scope

This European Standard specifies requirements for continuously electrolytic (or produced with an alternative process on cold rolled finish substrate) zinc coated cold rolled flat products of low carbon steels suitable for cold forming according to Table 1 in rolled widths  $\geq 600$  mm and thicknesses from 0,35 mm up to below and including 3 mm, delivered as strip (in coil form), sheet, slit strip or cut lengths obtained from slit strip or sheet.

NOTE 1 This European Standard can also be applied to continuously electrolytic zinc coated flat products of:

- a) steels according to EN 10139 (cold rolled strip in rolled widths  $< 600$  mm),
- b) steels normally characterized by minimum yield strength or minimum tensile strength values in addition to formability parameters, e.g.
  - 1) steels with high yield strength and improved formability according to EN 10268 (cold rolled flat products),
  - 2) multiphase steels (cold rolled or hot rolled) according to EN 10338,
  - 3) steels for construction according to national or regional standards (see e.g. DIN 1623).

NOTE 2 By agreement at the time of enquiry and order this European Standard can be applied to continuously electrolytic zinc coated hot-rolled steel flat products (e.g. according to EN 10025-1 and -2, EN 10111, EN 10149-1 to EN 10149-3, etc.).

NOTE 3 As the mass of the zinc coating applied is relatively small, the material is not intended to withstand outside exposure without further chemical treatment and painting.

NOTE 4 The products covered by this European Standard can be used as substrates for organic coated flat products specified in EN 10169 for building and general engineering applications.

## 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 10020:2000, *Definition and classification of grades of steel*

EN 10021:2006, *General technical delivery conditions for steel products*

EN 10027-1, *Designation systems for steels - Part 1: Steel names*

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

EN 10051, *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels - Tolerances on dimensions and shape*

EN 10079:2007, *Definition of steel products*

EN 10131, *Cold rolled uncoated and zinc or zinc-nickel electrolytically coated low carbon and high yield strength steel flat products for cold forming - Tolerances on dimensions and shape*

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EN 10204:2004, *Metallic products - Types of inspection documents*

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*

EN ISO 6892-1:2009, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1:2009)*

### 3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 10020:2000, EN 10021:2006, EN 10079:2007, EN 10204:2004 and the following apply.

#### 3.1 electrolytic zinc coating (ZE)

application of a zinc coating by electrolysis on a suitably prepared steel surface from an aqueous zinc salt solution by the use of an electric current

Note 1 to entry Flat products can have a zinc coating on one or both surfaces. If both surfaces are zinc coated, a different coating thickness can be applied on each side (this process being referred to as differential zinc coating).

### 4 Classification and designation

#### 4.1 Classification

The steel grades specified in this European Standard are classified in accordance with EN 10020:2000 as non-alloy quality steels (DC01, DC03, DC04, DC05) and alloy quality steels (DC06, DC07) and by their increasing suitability for cold forming as follows:

- DC01: drawing quality;
- DC03: deep drawing quality;
- DC04, DC05: special deep drawing quality;
- DC06: extra deep drawing quality;
- DC07: super deep drawing quality.

#### 4.2 Designation

**4.2.1** The steel names are allocated in accordance with EN 10027-1. The steel numbers are allocated in accordance with EN 10027-2.

**4.2.2** The products covered by this document shall be designated as follows in the given order:

- 1) Type of product (e.g. strip, sheet, cut length);
- 2) Number of this European Standard (EN 10152);
- 3) Steel name or steel number and symbol for the type of electrolytic coating (see Table 1);

- 4) Numbers denoting the nominal coating thickness on each surface (e.g. 50/50 = nominal coating thickness of 5,0 µm on each side, see Table 2 and 6.9.2);
- 5) Letters A or B indicating the surface quality (see 6.10.2);
- 6) Letters denoting the surface treatment (see 6.11 and Table 3).

EXAMPLE 1 Designation of strip made of steel DC03+ZE (1.0347+ZE), electrolytically zinc coated with a nominal thickness of 5,0 µm on each surface (50/50), surface quality A, surface treatment phosphated (P):

Strip EN 10152 —+ZE50 DC03/50-A-P

or

Strip EN 10152-1.0347+ZE50/50-A-P

EXAMPLE 2 Designation of sheet made of steel DC05+ZE (1.0312+ZE), electrolytically zinc coated with a nominal thickness of 7,5 µm on one surface and of 2,5 µm on the other surface (75/25), surface quality B, surface treatment phosphated and oiled (PO):

Sheet EN 10152 —+ZE75 DC05/25-B-PO

or

Sheet EN 10152-1.0312+ZE75/25-B-PO

**4.2.3** Where appropriate, additional information to the designation as specified in 4.2.2 shall be given to describe clearly the delivery requirements (see Clause 5).

## **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) complete designation (see 4.2.2);
- b) nominal dimensions (thickness, width and, in the case of sheet and cut lengths, length);
- c) quantity;
- d) limiting mass and sizes of the coils and individual bundles of sheets;
- e) surface quality and surface finish (see 6.10);
- f) type of surface treatment (see 6.11 and Table 3).