

This document is a preview generated by EVS

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 10152:2009 sisaldb Euroopa standardi EN 10152:2009 ingliskeelset teksti.	This Estonian standard EVS-EN 10152:2009 consists of the English text of the European standard EN 10152:2009.
Standard on kinnitatud Eesti Standardikeskuse 30.04.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.04.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 11.03.2009.	Date of Availability of the European standard text 11.03.2009.
Standard on kätesaadav Eesti standardiorganisatsionist.	The standard is available from Estonian standardisation organisation.

**ICS 77.140.50**

**Võtmesõnad:** electrochemical coatin, grades : quality, measurement, orders : sales documents, packing, sheets, specifications, surface protection, zinc, zinc coatings, zinc coats, tape, testing, tolerances, tolerances (measurement), weight : mass, weights

**Standardite reproduutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele**

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

**EN 10152**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2009

ICS 77.140.50

Supersedes EN 10152:2003, EN 10336:2007

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 31 January 2009.

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 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 Management Centre has the same status as the official versions.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

	Page
<b>Foreword</b> .....	<b>3</b>
<b>1 Scope</b> .....	<b>4</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 Classification and designation</b> .....	<b>5</b>
<b>4.1 Classification</b> .....	<b>5</b>
<b>4.2 Designation</b> .....	<b>5</b>
<b>5 Information to be supplied by the purchaser</b> .....	<b>6</b>
<b>5.1 Mandatory information</b> .....	<b>6</b>
<b>5.2 Options</b> .....	<b>6</b>
<b>6 Requirements</b> .....	<b>7</b>
<b>6.1 General</b> .....	<b>7</b>
<b>6.2 Steelmaking and manufacturing processes</b> .....	<b>7</b>
<b>6.3 Deoxidation</b> .....	<b>7</b>
<b>6.4 Chemical composition</b> .....	<b>7</b>
<b>6.5 Delivery condition</b> .....	<b>7</b>
<b>6.6 Choice of properties</b> .....	<b>7</b>
<b>6.7 Mechanical properties</b> .....	<b>8</b>
<b>6.8 Stretcher strain marks</b> .....	<b>10</b>
<b>6.9 Coatings</b> .....	<b>10</b>
<b>6.10 Adhesion of coating</b> .....	<b>11</b>
<b>6.11 Surface characteristics</b> .....	<b>11</b>
<b>6.12 Surface treatment (surface protection)</b> .....	<b>11</b>
<b>6.13 Applications</b> .....	<b>12</b>
<b>6.14 Mass, tolerances on dimensions and shape</b> .....	<b>13</b>
<b>7 Inspection</b> .....	<b>13</b>
<b>7.1 Types of inspection and inspection documents</b> .....	<b>13</b>
<b>7.2 Test units</b> .....	<b>13</b>
<b>7.3 Tests to be carried out</b> .....	<b>13</b>
<b>7.4 Sampling</b> .....	<b>13</b>
<b>7.5 Test methods</b> .....	<b>14</b>
<b>7.6 Retests</b> .....	<b>14</b>
<b>8 Marking</b> .....	<b>14</b>
<b>9 Packing</b> .....	<b>15</b>
<b>10 Storage and transportation</b> .....	<b>15</b>
<b>Annex A (normative) Reference method for determination of the zinc coating mass</b> .....	<b>16</b>
<b>A.1 Principle</b> .....	<b>16</b>
<b>A.2 Reagent and preparation of the solution</b> .....	<b>16</b>
<b>A.2.1 Reagent</b> .....	<b>16</b>
<b>A.2.2 Preparation of the solution</b> .....	<b>16</b>
<b>A.3 Apparatus</b> .....	<b>16</b>
<b>A.4 Procedure</b> .....	<b>16</b>
<b>Bibliography</b> .....	<b>18</b>

## Foreword

This document (EN 10152:2009) 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 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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.

This document supersedes EN 10152:2003 and – together with EN 10346:2009 – EN 10336:2007.

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

## 1 Scope

This European Standard specifies requirements for continuously electrolytic 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 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 prEN 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.

## 2 Normative references

The following referenced documents are indispensable for the application 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 10002-1:2001, *Metallic materials – Tensile testing – Part 1: Method of test at ambient temperature*

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 uncoated plate, sheet and 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*

EN 10204:2004, *Metallic materials – Types of inspection documents*

EN ISO 7438, *Metallic materials – Bend test (ISO 7438:2005)*

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