



SLOVENSKI STANDARD

SIST EN 1396:2015

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Nadomešča:
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Aluminij in aluminijeve zlitine - Prevljučena ali premazana pločevina in trakovi za splošno uporabo - Specifikacije

Aluminium and aluminium alloys - Coil coated sheet and strip for general applications - Specifications

Aluminium und Aluminiumlegierungen - Bandbeschichtete Bleche und Bänder für allgemeine Anwendungen - Spezifikationen

Aluminium et alliages d'aluminium - Tôles et bandes revêtues en bobine pour applications générales - Specifications

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Aluminium and aluminium alloys - Coil coated sheet and strip for general applications - Specifications

Aluminium et alliages d'aluminium - Tôles et bandes revêtues en bobine pour applications générales - Spécifications

Aluminium und Aluminiumlegierungen - Bandbeschichtete Bleche und Bänder für allgemeine Anwendungen - Spezifikationen

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EN 1396:2015 (E)**Foreword**

This document (EN 1396:2015) has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", 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of an identical text or by endorsement, at the latest by October 2015 and conflicting national standards shall be withdrawn at the latest by October 2015.

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 1396:2007.

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, 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.

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Introduction

Organic coated aluminium and aluminium alloy strip and sheet products can be used to advantage in cases where corrosion resistance and decorative appearance are of primary importance. They have applications throughout the flat products processing industry e.g. in the building, automotive, caravans, appliances, fabricating and packaging industries.

Organic coated aluminium and aluminium alloy flat products can be delivered in numerous types and grades, depending on the base material used (various grades of aluminium), on the coating material and types of coating and on the requirements for the surface appearance and the formability.

The properties of the products can vary within greater or smaller limits depending on the choice and combination of properties required. It is therefore not practicable to specify in detail minimum requirements for all properties for all types of products.

As a general rule, material specifications shall be agreed between manufacturer and user/purchaser using, when appropriate, the guidelines from Annex C.

Guidelines for proper storage and subsequent processing of organic coated aluminium flat products are given in Annex D.

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EN 1396:2015 (E)**1 Scope**

This European Standard specifies the particular requirements for wrought aluminium and wrought aluminium alloys in the form of coil coated sheet and strip for general applications. This product is generally supplied in thicknesses up to 3,0 mm.

It applies to cold-rolled aluminium and aluminium alloy strip coated by the coil coating process both with liquid as well as with powder paints, either in the final width or slit afterwards, and to sheet obtained from such strip.

It does not apply to coil coated sheet and strip used for special applications such as cans, closures and lids which are dealt with in separate EN 541.

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 485-1, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 1: Technical conditions for inspection and delivery*

EN 485-4, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 4: Tolerances on shape and dimensions for cold-rolled products*

EN 515, *Aluminium and aluminium alloys - Wrought products - Temper designations*

EN 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

EN 12258-1:2012, *Aluminium and aluminium alloys - Terms and definitions - Part 1: General terms*

EN 13523-1, *Coil coated metals - Test methods - Part 1: Film thickness*

EN 13523-2, *Coil coated metals - Test methods - Part 2: Gloss*

EN 13523-3, *Coil coated metals - Test methods - Part 3: Colour difference - Instrumental comparison*

EN 13523-4, *Coil coated metals - Test methods - Part 4: Pencil hardness*

EN 13523-6, *Coil coated metals - Test methods - Part 6: Adhesion after indentation (cupping test)*

EN 13523-7, *Coil coated metals - Test methods - Part 7: Resistance to cracking on bending (T-bend test)*

EN 13523-8, *Coil coated metals - Test methods - Part 8: Resistance to salt spray (fog)*

EN 13523-10, *Coil coated metals - Test methods - Part 10: Resistance to fluorescent UV radiation and water condensation*

EN 13523-19, *Coil coated metals - Test methods - Part 19: Panel design and method of atmospheric exposure testing*

EN 13523-21, *Coil coated metals - Test methods - Part 21: Evaluation of outdoor exposed panels*

EN 13523-22, *Coil coated metals - Test methods - Part 22: Colour difference - Visual comparison*

EN ISO 1520, *Paints and varnishes - Cupping test (ISO 1520)*

EN ISO 4628-2, *Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering (ISO 4628-2)*

EN ISO 6270-1, *Paints and varnishes - Determination of resistance to humidity - Part 1: Continuous condensation (ISO 6270-1)*

EN ISO 6272-1, *Paints and varnishes - Rapid-deformation (impact resistance) tests - Part 1: Falling-weight test, large-area indenter (ISO 6272-1)*

EN ISO 6272-2, *Paints and varnishes - Rapid-deformation (impact resistance) tests - Part 2: Falling-weight test, small-area indenter (ISO 6272-2)*

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 12258-1:2012 and the following apply.

3.1

aluminium

unalloyed aluminium or aluminium alloy

Note 1 to entry: In the USA the term "Aluminum" is used.

[SOURCE: EN 12258-1: 2012]

3.2

aluminium alloy

aluminium which contains alloying elements, where aluminium predominates by mass over each of the other elements and where the aluminium content is not greater than 99,00%

[SOURCE: EN 12258-1:2012]

3.3

metal substrate

base material from cold rolled aluminium or aluminium alloy strip

3.4

coating material

material comprising organic polymers e.g. synthetic resins or plastics, to which pigments, additives and solvents (if required) have generally been added, suitable for coil coating

Note 1 to entry: These can be paints (liquid or powder) or plastic films.

3.5

coil coating

method in which a coating material is applied in a continuous process on a cold rolled metal strip

Note 1 to entry: This process includes cleaning and chemical pre-treatment of the surface and either:

— one-side or two-side, single or multiple application of liquid or powder coating materials which are subsequently cured, or

— laminating with plastic films.

EN 1396:2015 (E)**3.6****organic coating**

paint or lacquer film on a coated product produced from wet paint or from powder coating, or the laminated organic film

[SOURCE: EN 12258-1:2012]

3.7**top side**

side of the strip with the highest decorative demand and which, in normal production, is uppermost

Note 1 to entry: For strip supplied in coil form, the top side is normally the outside of the coil. For sheet supplied in stacks or bundles the top side is normally uppermost.

3.8**reverse side**

underside of the strip, generally coated with a backing coat (see 3.12), but possibly pre-treated only or coated with one of the other systems described in 3.10, 3.11 and 3.13, to fulfil special requirements such as foam or glue adhesion, specially defined friction, etc.

3.9**coating system**

combination of coatings either on the top side or on the reverse side of the metal substrate

Note 1 to entry: The name of the coating system derives from the top coat coating material (see examples in Annex B).

3.10**single layer coating**

single coating either with requirements on appearance, formability, corrosion protection, subsequent painting etc., or as a primer with special properties regarding adhesion and corrosion protection for post-painting applications

3.11**multilayer coating**

system comprising a primer or a base coat, possibly intermediate coat(s), and a top coat with particular requirements on appearance, formability, corrosion protection etc.

3.12**backing coat**

single coating of any type with no particular requirements for appearance, formability, corrosion protection etc., usually on the reverse side of the coated product

3.13**film coating**

organic film applied to a substrate to which an adhesive and, if appropriate, a primer has been applied beforehand

[SOURCE: EN 12258-1:2012]

3.14**master coil / mother coil**

coil-coated in coil from which products (coil or sheet) are obtained

3.15**order document**

document or set of documents agreed between supplier and purchaser at the time of ordering

Note 1 to entry: An order document can be an order of the purchaser confirmed by the supplier or a quotation of the supplier confirmed by the purchaser.

4 Technical conditions for inspection and delivery**4.1 Ordering information**

The order document shall define the product required and shall contain the following information:

- a) the form and type of product:
- the form of the product (organic coated coil, sheet or strip);
 - the designation of the aluminium or aluminium alloy, in accordance with EN 573-3;
- b) the temper of the material for delivery (degree of hardness or heat treatment condition) in accordance with EN 515 and EN ISO 6892-1:2009;
- c) the dimensions and shape of the product:
- thickness (of the metal substrate);
 - width;
 - length of sheet (in the rolling direction);
 - internal and external diameters of the coil;
 - core size and type.

NOTE Unless otherwise agreed, the length is the largest dimension;.

- d) the quantity:
- mass or number of pieces;
- e) the coating system (see examples in Annex B):
- 1) for the top side:
 - colour designation (international and/or company code);
 - nominal gloss value;
 - protective strippable film when required ¹⁾
 - 2) for the reverse side:

1) If the surface is likely to be damaged during transportation, storage, processing or erection, the coil coated material may, on agreement, be supplied with the additional protection of a temporary strippable film. Type, thickness, adhesion properties, formability, tear strength and light fastness are to be taken into consideration when choosing protective films. Only certain protective films can be exposed to outdoor weathering, and these only for a limited period.

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- whether it is a backing coat or not;
 - colour designation (international and/or company code);
 - nominal gloss value;
- f) the type and the design of embossing, when required;
- g) any requirements for inspection documents;
- h) any special requirements for packing:
- mass per coil and per packing unit;
 - number of sheets per stack;
 - position of coil axis (vertical or horizontal);
 - design of pallet;
 - direction of winding;

Optional information to be mentioned in the order:

- i) the form and type of product:
- the purchaser application;
- j) the number of this European Standard, i.e. EN 1396, or a specification number, or, where none exists, the properties agreed between manufacturer and purchaser,
- the quantity
- k) quantity tolerances if required;
- l) the coating system
- 1) for the top side
 - special requirements when required such as coat system (single, multiple); type of organic coating (see Table B.1); coating thickness in micrometers, if different from normal (see Table B.1); stripe code etc.;
 - 2) for the reverse side
 - special requirements when required such as coat system (single, multiple); type of organic coating (see Table B.1); coating thickness in micrometers, if different from normal (see Table B.1); surface finish if not coated (degreased only, pre-treated etc.); printing of markings, foam adhesion, adhesive bonding etc.;
- m) any special requirements agreed between manufacturer and purchaser:
- marking of products;
 - flagging of defects;
 - instruction on the position of the top side if other than the normal one (see 3.7);