



SLOVENSKI STANDARD

SIST EN 1396:1998

01-april-1998

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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 - Spécifications

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Ta slovenski standard je istoveten z: EN 1396:1996

ICS:

77.150.10 Alumijski izdelki Aluminium products

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EUROPEAN STANDARD

EN 1396

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1996

ICS 77.150.10

Descriptors: aluminium, aluminium alloys, metal plates, steel strips, coatings, thickness, specifications, inspection, delivery, characteristics, tests, marking

English version

**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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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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 May 1997, and conflicting national standards shall be withdrawn at the latest by May 1997.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 7 "Sheet, strip and plate" to prepare the following standard :

EN 1396 Aluminium and aluminium alloys - Coil coated sheet and strip for general applications - Specifications.

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

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Introduction

Organic coated aluminium and aluminium alloy flat products may 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 may 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 may 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.

Minimum requirements not specified in this European Standard and deemed necessary for a successful use of the product should be agreed between producer and purchaser at the time of ordering, using, as appropriate, the guidelines given in annex C.

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

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1 Scope

This European Standard specifies the particular requirements for wrought aluminium and aluminium alloys in the form of coil coated sheet and strip for general applications. This product is generally supplied in thicknesses up to 2,0 mm but thicknesses up to 3,0 mm are also available.

It applies to cold-rolled aluminium and aluminium alloy strip coated by the coil coating process, 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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to 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 541	Aluminium and aluminium alloys - Rolled products for cans, closures and lids - Specifications
EN 573-3	Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3 : Chemical composition
EN 10002-1	Metallic materials - Tensile testing - Part 1 : Method of test (at ambient temperature)
ISO 2360	Non-conductive coatings on non-magnetic basis metal - Measurement of coating thickness - Eddy current method
ISO 2409	Paints and varnishes - Cross-cut test
ISO 2813	Paints and varnishes - Measurement of specular gloss of non-metallic paint films at 20 degrees, 60 degrees and 85 degrees
ISO 3668	Paints and varnishes - Visual comparison of the colour of paints

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3 Definitions

Sheet, strip, cold rolled sheet and strip, inspection lot, sample, specimen, test-piece and test are defined EN 485-1.

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For the purposes of this standard the following definitions apply :

3.1 aluminium

Metal with a minimum content of 99,0 % by mass of aluminium, provided that the content by mass of any other element does not exceed the following limits :

- iron + Silicon contents not greater than 1,0 %;
- other element contents not greater than 0,10 % each, with the exception of copper which is permitted to a content of up to 0,20 % provided that neither the chromium nor the manganese content exceeds 0,05 %.

3.2 aluminium alloy

Metallic substance in which aluminium predominates by mass over each of the other elements, provided that the specified limit contents for the other elements are such that the foregoing definition for aluminium does not apply.

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. These may 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. 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.

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3.6 organic coating

Dry paint film of the coated product or the organic film of the organic film/metal laminate.

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3.7 top side

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

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 pretreated only or coated with one of the other systems described in 3.10, 3.11 and 3.13, to fulfil special requirements such as polyurethane foam adhesion.

3.9 coating system

Combination of coatings either on the top side or on the reverse side of the metal substrate.

The name of the coating system derives from the uppermost coating material (see examples in annex B).

3.10 single coat system

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 multiple coat system

Coating 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.

3.13 film coating

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

3.14 master coil

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

4 Technical conditions for inspection and delivery

4.1 Orders and tenders

The order or tender 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 sheet or strip) ;
- the designation of the aluminium or aluminium alloy, in accordance with EN 573-3 ;
- the customer application ;

b) the temper of the material for delivery (degree of hardness or heat treatment condition) in accordance with EN 515 ;

c) the number of this European Standard or a specification number, or, where none exists, the properties agreed between the producer and the purchaser ;

d) 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.

e) the quantity :

- mass or number of pieces ;
- quantity tolerances if required ;

f) the coating system (see examples in annex B) :

1) for the top side :

- colour designation (international and/or company code) ;
- nominal gloss value ; [SIST EN 1396:1998](https://standards.iteh.ai/catalog/standards/sist/1a5addea-5d79-4d98-b5f1-66256751/sist-en-1396-1998)
- protective strippable film when required ¹⁾ ;
- special requirements when required such as :
 - coat system (single, multiple) ;
 - type of organic coating (see table 1) ;
 - coating thickness in micrometers, if different from normal (see table 1) ;
 - stripe code, etc. ;

2) for the reverse side :

- whether it is a backing coat or not ;
- colour designation (international and/or company code) ;
- nominal gloss value ;

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 lighth 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.

- special requirements when required such as :
 - coat system (single, multiple) ;
 - type of organic coating (see table 1) ;
 - coating thickness in micrometers, if different from normal (see table 1) ;
 - surface finish if not coated (degreased only, pretreated, etc.) ;
 - printing of markings, foam adhesion, adhesive bonding, etc. ;
- g) the type and the design of embossing, when required ;
- h) any requirements for inspection documents ;
- i) 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 ;
- j) any special requirements agreed between the producer and the purchaser :
 - marking of products ;
 - flagging of defects ;
 - instruction on the position of the top side if other than the normal one (see 3.7) ;
 - other characteristics of the products (see annex C).

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