



SLOVENSKI STANDARD SIST EN 10205:2017

01-februar-2017

Nadomešča:
SIST EN 10205:1997

Hladno valjani jekleni izdelki za embalažo - Črna pločevina

Cold reduced tinmill products - Blackplate

Kaltgewalzte Verpackungsblecherzeugnisse - Feinstblech

Aciers pour emballage laminés à froid - Fer noir
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Ta slovenski standard je istoveten z: ~~SIST EN 10205:2016~~ **EN 10205:2016**

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ICS:

55.040	Materiali in pripomočki za pakiranje	Packaging materials and accessories
77.140.50	Ploščati jekleni izdelki in polizdelki	Flat steel products and semi-products

SIST EN 10205:2017

en,fr,de

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EUROPEAN STANDARD

EN 10205

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2016

ICS 77.140.50

Supersedes EN 10205:1991

English Version

Cold reduced tinmill products - Blackplate

Aciers pour emballage laminés à froid - Fer noir

Kaltgewalzte Verpackungsblecherzeugnisse -
Feinstblech

This European Standard was approved by CEN on 26 September 2016.

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

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EN 10205:2016 (E)

European foreword

This document (EN 10205:2016) 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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.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 10205:1991.

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.

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1 Scope

This European Standard specifies requirements for blackplate product in the form of coils intended for direct use and mostly for the production of tinsplate, electrolytically chromium / chromium oxide plate (ECCS) and electrolytically zinc coated plate.

Blackplate is specified in nominal thicknesses that are multiples of 0,005 mm from typical 0,10 mm up to 0,60mm.

This European Standard applies to coils in nominal minimum widths of 600 mm.

In addition to this standard the general technical delivery conditions of EN 10021 apply.

NOTE Standard width coils for specific uses, e.g. tab stock, can be slit into narrow strip for supply in coil form.

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, *Definition and classification of grades of steel*

EN 10021, *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 10052, *Vocabulary of heat treatment terms for ferrous products*

EN 10079, *Definition of steel products*

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

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 10079 and EN 10052 and the following apply.

3.1

single reduced blackplate

blackplate which has been reduced to the desired thickness in a cold-reduction mill and subsequently annealed and temper rolled mostly without a water-based lubricant

3.2

double reduced blackplate

blackplate which has been reduced to the desired thickness in a cold-reduction mill and subsequently annealed and temper rolled mostly with the help of a water-based lubricant to achieve a higher gauge reduction

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3.3

temper rolling

secondary rolling process to obtain desired roughness and mechanical properties

3.4

standard grade

material that, having passed line inspection, is suitable under normal conditions of storage, not containing any defect that renders the material unsuitable for its intended use

3.5

batch (box) annealing**BA**

process in which the cold reduced strip is heated in tight coil form, within a controlled atmosphere, for a pre-determined time/temperature cycle

3.6

continuous annealing**CA**

process in which cold reduced coils are unwound and heated in strip form within a controlled atmosphere for a pre-determined time/temperature cycle

3.7

surface appearance

surface appearance of blackplate products determined by the surface characteristics of the steel

3.8

finish

finish of blackplate products determined by roughness average (Ra) and appearance of the surface of the blackplate resulting from controlled preparation of the work rolls used for the final stages of rolling

3.8.1

bright finish

finish resulting from the use of temper mill work rolls that have been ground to a high degree of polish

3.8.2

stone/fine stone finishes

finishes characterized by a directional pattern, resulting from the use of final mill work rolls that have been ground to a lower degree of polish than those used for the bright finish

3.8.3

matt finish

finish resulting from the use of final mill work rolls that have been shot blasted

3.9

coil

rolled flat strip product which is wound into regularly superimposed laps

3.10

longitudinal (line) bow

residual curvature in the strip remaining along the direction of rolling

3.11**transverse (cross) bow**

mode of curvature in the sheet such that the distances between its edges parallel to the rolling direction is less than the sheet width

3.12**centre fullness (full centre, centre buckle)**

intermittent vertical displacement occurring other than at the edge of the sheet or coil when the material is laid on a flat horizontal surface

3.13**edge camber**

deviation of the coil from a straight line forming its chord

3.14**edge wave**

intermittent vertical displacement occurring at the edge of a sheet or a sample from a coil when laid on a flat horizontal surface

3.15**feather edge (transverse thickness profile)**

variation in thickness, characterized by a reduction of thickness close to the edges, at right angles to the rolling direction

3.16**burr**

metal displaced beyond the plane of the surface of the strip by shearing action

Note 1 to entry: Blackplate is usually supplied with cut edges. Blackplate will then have burrs caused by cutting.

3.17**rolling width**

width of the strip perpendicular to the rolling direction

3.18**consignment**

quantity of material of the same specification made available for dispatch at the same time

3.19**pallet**

base platform on which a coil is placed to facilitate ready transportation

3.20**sample unit**

750 m of coil for the purposes of sampling

3.21**line inspection**

final inspection of the finished product performed by instruments and/or by visual examination at normal production line speeds

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EN 10205:2016 (E)**3.22****anvil effect**

effect which a hard anvil can produce on the numerical hardness value obtained when a hardness test is performed on very thin sheet supported on such an anvil

3.23**mill edge**

trimmed before temper rolling therefore leading to higher width tolerances

4 Classification and designation**4.1 Classification**

The classification of the relevant steel grades is according to EN 10020. Steel grades for cold reduced blackplate for the manufacturing of tinplate or ECCS are non alloy quality steels.

4.2 Designation

For the steel grades covered by this document, the steel names as given in the relevant tables are allocated in accordance with EN 10027-1. TS grades are batch annealed grades and TH grades are continuous annealed grades. The steel numbers as given in the relevant tables are allocated in accordance with EN 10027-2.

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5 Information to be supplied by the purchaser**5.1 Mandatory information**

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The following information shall be given by the purchaser on the enquiry and order to assist the manufacturer in supplying the correct material:

- a) quantity expressed in length or mass;
- b) description of the material (blackplate coil);
- c) dimensions (thickness and width);
- d) edge condition, see 6.4 (T for trimmed edges and M for mill edges);
- e) number of this European Standard (EN 10205);
- f) steel name or steel number (see Table 3);
- g) appearance (see 6.5);
- h) finish (see 6.5);
- i) surface condition (oiling), see 6.6;
- j) intended use of the material e.g. stamping, drawing, beading, bending and assembly work such as joint forming, soldering and welding, surface coating (metallic and organic coating);
- k) dispatch and packaging conditions (see Clause 14), e.g. inner diameter of coils, coil winding direction, maximum and minimum mass and/or outside diameter of coils;

- l) if required, standard designation for a test report 2.2 or an inspection certificate 3.1 or 3.2 in accordance with EN 10204:2004 (see 10.1).

5.2 Options

In addition to the information in 5.1 the purchaser shall provide further information to the supplier to ensure that the order requirements are consistent with the end use of the product.

The purchaser is responsible of the choice of grade, the supplier not always being aware to assess of the relevance of the purchaser's choice.

5.3 Ordering example

- a) **Example 1:** 5 t blackplate coil, thickness 0,22 mm, rolling width 800 mm with trimmed edges in accordance with this European Standard of steel grade TS275, appearance A, stone finish with test report 2.2 according to EN 10204:2004 shall be designated:

- 1) 5 t blackplate coil 0,22 × 800 EN 10205-TS275-A-ST, EN 10204:2004 – 2.2;
- 2) 5 t blackplate coil 0,22 × 800 EN 10205-1.0375-A-ST, EN 10204:2004 – 2.2.

- b) **Example 2:** 5 t blackplate coil, thickness 0,18 mm, rolling width 750 mm with trimmed edges in accordance with this European Standard of steel grade TH620, appearance B, stone finish, with inspection certificate 3.1 according to EN 10204:2004 shall be designated:

- 1) 5 t blackplate coil 0,18 × 750 EN 10205-TH620-B-ST, EN 10204:2004 – 3.1;
- 2) 5 t blackplate coil 0,18 × 750 EN 10205-1.0374-B-ST, EN 10204:2004 – 3.1.

NOTE The designation does not cover variations in all material properties.

6 Steelmaking process

6.1 General

The steelmaking process of blackplate is under the responsibility of the manufacturer with the exception that the steel is continuously cast and that the open hearth (Siemens-Martin) process shall not be employed unless in combination with a secondary steelmaking or ladle refining process. If specified at the time of order the steel making process shall be reported to the purchaser.

6.2 Chemical composition and deoxidation

If blackplate is used for food contact, the steel type shall be manufactured in accordance with food safety regulations. The purchaser should be aware of existing national regulations which may impose limitations on some elements.

NOTE Information on the types and chemical composition of steels for blackplate is provided in Annex A.

All steels shall be fully killed.

6.3 Product traceability

Each product shall be traceable to the cast.