

**Steel for packaging —
Flat steel products
intended for use in
contact with foodstuffs,
products and beverages
for human and animal
consumption —
Non-coated steel
(blackplate)**

The European Standard EN 10334:2005 has the status of a
British Standard

ICS 67.250

National foreword

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The UK participation in its preparation was entrusted to Technical Committee ISE/29, Tinplate and blackplate, which has the responsibility to:

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 8, an inside back cover and a back cover.

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English version

Steel for packaging - Flat steel products intended for use in contact with foodstuffs, products and beverages for human and animal consumption - Non-coated steel (blackplate)

Acier pour emballage - Produits plats en acier destiné à entrer au contact des denrées, produits et boissons pour l'alimentation de l'homme et des animaux - Acier non revêtu (fer noir)

Verpackungsblech - Flacherzeugnisse aus Stahl für die Verwendung in Berührung mit Lebensmitteln, Produkten und Getränken für den menschlichen und tierischen Verzehr - Unbeschichteter Stahl (Feinstblech)

This European Standard was approved by CEN on 7 March 2005.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 10334:2005) has been prepared by Technical Committee ECISS/TC 26 “Tinmill products - Qualities, dimensions, tolerances and specific tests”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by October 2005, and conflicting national standards shall be withdrawn at the latest by October 2005.

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1 Scope

This document specifies the maximum content for alloying and residual elements (see Table 1) present in steel (usually called blackplate) used in the manufacture of packaging and packaging components or for coated steel which, as a finished product, are intended for use in direct contact with foodstuffs, products and beverages for human and pet food. For such use blackplate is normally coated but can be used uncoated for some fatty or dry products.

The main examples of use are:

- tinplate and electrolytic chromium/chromium oxide coated steel for the manufacture of food and beverage cans ;
- cans for conditioning foodstuffs (sugar, tea, cake, chocolate, pasta, etc.) ;
- non-mineral oil drums, kegs, barrels.

The choice of material should be appropriate for the conditions of use.

This standard applies to cold-rolled strips in the form a coil or sheets.

This standard does not apply to categories of steel other than steel for packaging intended for use in contact with foodstuffs, products or beverages for human or animal consumption.

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 10204, *Metallic products - Types of inspection documents*

EN 10205:1991, *Cold reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium oxide coated steel*

EN ISO 14284, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

blackplate

low-carbon mild steel which has been subjected to cold reduction, is used mainly in the manufacture of tinplate and electrolytic chromium/chromium oxide coated steel and has a minimum iron content greater than 95% by mass

3.2

steel intended for use in contact with foodstuffs

steel which under its normal or foreseeable conditions of use, does not transfer its constituents to foodstuffs in quantities which could endanger human or animal health or which could bring about an unacceptable change in the foodstuffs or a deterioration in their organoleptic properties

3.3

steel for packaging

non alloyed steel flat product intended for manufacturing cans and other packaging components for drinks or food products. According to the applications considered, this steel can be covered with a metal coating or with an additional organic coating

3.4

steel for other applications than packaging

non alloyed steel flat product or stainless steel that is not intended for the manufacture of cans and other packaging components for drinks or food products. However, it can be used for the manufacture of articles intended to come into contact with foodstuffs

4 Information to be provided by the purchaser

The information to be provided by the purchaser at the time of enquiry and order shall satisfy the requirements of Clause 5 of EN 10205:1991.

NOTE Furthermore, the purchaser can specify the type of oil suitable for food contact to be used when the product is delivered oiled.

5 Dimensions and dimensional tolerances

The nominal dimensions shall be agreed at the time of enquiry and order.

Dimensional tolerances shall meet the requirements of Clause 9 of EN 10205:1991.

6 Requirements

6.1 Steel-making process

The steel-making process which meets the requirements of this standard shall be left to the choice of the manufacturer.

NOTE The continuous cast process is recommended.

6.2 Chemical composition

The chemical composition of steel shall comply with the Table 1.

Table 1 — Chemical composition ^{a, b}

Specified elements	Max. Content in % (of mass)
Al Aluminium	1,0
As Arsenic	0,030
B Boron	0,05
C Carbon	0,30
Cd + Pb + Hg ^b	0,0100
Cd Cadmium ^b	0,0100
Pb Lead ^b	0,0100
Hg Mercury ^b	0,005
Cr Chromium	0,50
Cu Copper	0,40
Mn Manganese	2,50
Mo Molybdenum	0,10
N Nitrogen	0,10
Nb Niobium	0,10
Ni Nickel	0,30
P Phosphorus	0,10
S Sulphur	0,050
Si Silicon	1,0
Sn Tin	0,10
Ti Titanium	0,30
V Vanadium	0,10
W Tungsten	0,10
Zr Zirconium	0,050
Other elements measured individually ^a	0,050
^a The chemical elements contained within the section "other elements measured individually" are those that can appear in a very small quantity but are not added deliberately during the steel making process	
^b The elements Cd, Pb and Hg are not added deliberately during the steel making process. The specification relating to the amount of these 3 elements makes reference to Directive 94/62/EC – see point 3	

6.3 Oiling

Unless otherwise specified at the time of enquiry and order, the products shall be delivered covered with oil suitable for use in contact with foodstuffs.

NOTE Where blackplate is used in a process (e.g. conversion to tinplate or electrolytic chromium/chromium oxide coated steel) which involves rigorous pre-cleaning of the blackplate surface this requirement may not be necessary.

7 Checks

At the request of the purchaser, conformity to the order requirements shall be proven, in accordance with this standard. Unless otherwise specified, the inspection document 2.1 is applicable, in accordance with EN 10204.

8 Sampling

The sampling process and the preparation of the sample shall be in accordance with the requirements of EN ISO 14284.

9 Test method

Unless otherwise agreed at the time of enquiry and the order, the choice of physical or chemical analytical method shall be at the discretion of the manufacturer. In cases of dispute, the analysis shall be conducted by a laboratory which has been approved by both parties. In such cases, an agreement shall be drawn up relating to the analytical method to be used and, if possible, reference shall be made to the relevant European standards or appropriate EURONORMS.

10 Designation

The designation shall be in accordance with Clause 5 of EN 10205:1991.

11 Marking, labelling and packaging

Each coil or bundle shall have a label indicating the reference to this standard, the name and trademark of the manufacturer and the batch identification.

The packaging specifications shall be agreed at the time of enquiry and order.

Bibliography

- [1] Council Directive 89/109/EEC of 21 December 1988 on materials and articles intended to come into contact with foodstuffs
- [2] Directive 94/62/EC of the European Parliament and Council of 20 December 1994 on packaging and packaging waste.
- [3] Council of Europe: Guidelines on metals and alloys intended to come into contact with foodstuffs.
- [4] EN 10079, *Definition of steel products*

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