

**Takprodukter – Självbärande plåt för tak-  
täckning och väggbeklädnad – Krav och  
provningmetoder**

**Self-supporting metal sheet for roofing,  
external cladding and internal lining –  
Product specification and requirements**

ICS 77.140.50; 77.150.01; 91.060.10; 91.060.20

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**EN 14782**

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English Version

## Self-supporting metal sheet for roofing, external cladding and internal lining - Product specification and requirements

Plaques métalliques autoportantes pour couverture, bardages extérieur et intérieur et cloisons - Spécification de produit et exigences

Selbsttragende Dachdeckungs- und Wandbekleidungs-elemente für die Innen- und Außenanwendung aus Metallblech - Produktspezifikation und Anforderungen

This European Standard was approved by CEN on 28 November 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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.



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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Contents

Page

Foreword .....	4
1 Scope .....	5
2 Normative references .....	6
3 Terms and definitions .....	7
4 Requirements .....	7
4.1 Materials .....	7
4.2 Nominal thickness .....	7
4.3 Mechanical resistance .....	7
4.3.1 General .....	7
4.3.2 Resistance of roofing products to concentrated forces .....	8
4.4 Water permeability .....	8
4.5 Vapour and air permeability .....	8
4.6 Dimensional change .....	8
4.7 Dimensional tolerances .....	9
4.8 Durability .....	9
4.9 External fire performance .....	9
4.10 Reaction to fire .....	9
4.11 Release of regulated dangerous substances .....	9
5 Testing, assessment and sampling methods .....	9
5.1 External fire performance for roof covering products .....	9
5.1.1 Products deemed to satisfy the requirements for external fire performance .....	9
5.1.2 Products classified without the need for further testing (CWFT option) .....	10
5.1.3 Other products .....	10
5.2 Reaction to fire .....	10
5.2.1 Products satisfying the requirements for reaction to fire Class A1 without the need for testing .....	10
5.2.2 Products classified without the need for further testing (CWFT option) .....	10
5.2.3 Other products .....	10
5.3 Release of regulated dangerous substances .....	10
6 Evaluation of conformity .....	10
6.1 General .....	10
6.2 Initial type testing (ITT) .....	11
6.2.1 General .....	11
6.2.2 Sampling for ITT .....	13
6.3 Factory production control (FPC) .....	13
6.3.1 General .....	13
6.3.2 General requirements .....	15
7 Designation .....	17
8 Product marking .....	17
Annex A (normative) Multilayer coated steel sheet .....	18
A.1 General .....	18
A.2 Substrate material .....	18
A.3 Specific requirements .....	18
A.3.1 Minimum nominal values of thickness .....	18
A.3.2 Bituminous coating specification .....	18
A.3.3 Durability .....	19
A.4 Freedom from defects .....	19
Annex B (normative) Determination of resistance to concentrated forces .....	20

B.1	Principle.....	20
B.2	Test spans .....	20
B.3	Test sheets .....	21
B.4	Test procedure .....	21
B.5	Number of tests and analysis of results .....	22
B.6	Acceptance criteria .....	23
B.7	Test report .....	24
<b>Annex C (normative) Mounting and fixing conditions of the test specimen for reaction to fire</b>		
	testing .....	25
C.1	General .....	25
C.2	Mounting and fixing conditions .....	25
C.2.1	General .....	25
C.2.2	General configuration.....	25
C.2.3	Securing the overlap vertical joint.....	27
C.2.4	Standard assembly – Steel corner flashings .....	27
C.2.5	Alternative assembly – Corner flashings and seals .....	27
C.2.6	Test arrangement for reaction to fire test according to EN ISO 11925-2 (Ignitability test).....	27
C.3	Direct and extended application of the fire test results according to EN 13823 .....	28
C.3.1	General .....	28
C.3.2	Direct application: Systems with only one metal sheet (single skin system without insulation).....	28
C.3.3	Direct application: Systems with two (profiled or flat) coated metal sheets (or one cassette plus one sheet) with an insulation between the two sheets (double skin system) .....	30
C.3.4	Extended application: Other insulated systems – General methodology .....	33
<b>Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive .....</b>		
		35
ZA.1	Scope and relevant characteristics .....	35
ZA.2	Procedures for the attestation of conformity of products .....	36
ZA.3	CE marking and labelling .....	38
	<b>Bibliography.....</b>	<b>41</b>

## EN 14782:2005 (E)

### Foreword

This European Standard (EN 14782:2005) has been prepared by Technical Committee CEN/TC 128 “Roof covering products for discontinuous laying and products for wall cladding”, the secretariat of which is held by IBN.

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 July 2006, and conflicting national standards shall be withdrawn at the latest by July 2006.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

## 1 Scope

This European Standard specifies the terminology, requirements and test methods for factory made self-supporting metal sheets and tiles (for non-structural applications) delivered in the form of manufactured pieces for roofing and wall cladding and lining.

This standard also covers ceiling (including internal metal sheet) and soffit applications and cassettes (see Figure 1).

This standard covers self-supporting copper, zinc, steel, aluminium and stainless steel sheet with or without coatings, e.g. metallic, organic, inorganic or multi-layer (see Annex A). A moisture retaining layer intended to reduce the fall of droplets coming from condensation may be present on the reverse side of the product.

This standard also includes rules for marking, labelling and evaluation of conformity.

This standard does not cover products for structural purposes, i.e. it does not cover products intended to contribute to the global or partial stability of the building structure by providing racking resistance or resistance to permanent static loads (excluding self-weight of the metal sheet).

Requirements concerning acoustical and thermal insulation properties are not considered in this standard.

This standard does not include calculation or design requirements with regards to the works, installation techniques or the performance of the installed products.

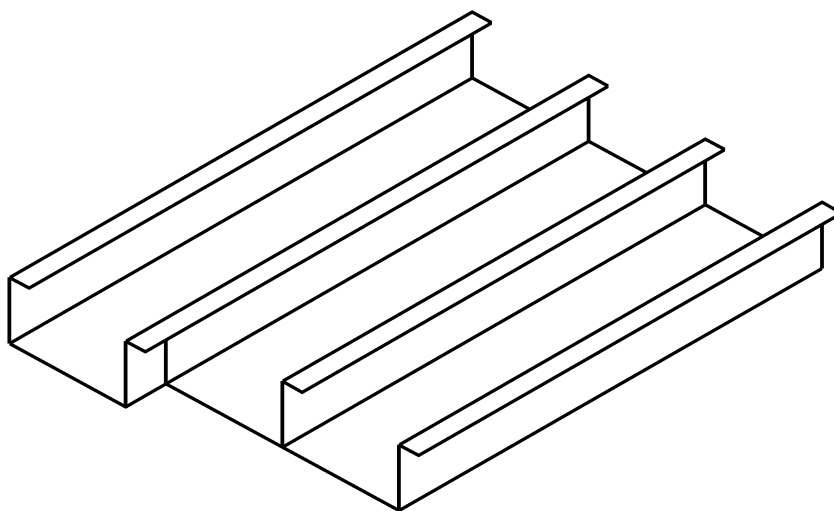


Figure 1 – Illustration of a cassette

## EN 14782:2005 (E)

### 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 506:2000, *Roofing products from metal sheet - Specification for self-supporting products of copper or zinc sheet*

EN 508-1:2000, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 1: Steel*

EN 508-2:2000, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 2: Aluminium*

EN 508-3:2000, *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 3: Stainless steel*

ENV 1187, *Test methods for external fire exposure to roofs*

EN 1427, *Bitumen and bituminous binders - Determination of softening point - Ring and Ball method*

EN 10002-1, *Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature*

EN 10088-1, *Stainless steels - Part 1: List of stainless steels*

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

EN 10326, *Continuously hot-dip coated strip and sheet of structural steels - Technical delivery conditions*

EN 13162, *Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification*

EN 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests*

EN 13501-5, *Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roof tests*

EN 13823, *Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 6270-1, *Paints and varnishes - Determination of resistance to humidity - Part 1: Continuous condensation (ISO 6270-1:1998)*

EN ISO 6988, *Metallic and other non-organic coatings - Sulfur dioxide test with general condensation of moisture (ISO 6988:1985)*

EN ISO 9001:2000, *Quality management systems - Requirements (ISO 9001:2000)*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2002)*

ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests*



### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 506:2000, EN 508-1:2000, EN 508-2:2000 and EN 508-3:2000 and the following apply.

#### 3.1

##### **base material**

coated or non-coated flat sheet or strip (coil) of metal used for the production of a finished product according to this standard

### 4 Requirements

#### 4.1 Materials

The materials for the self-supporting metal sheets specified in this European Standard shall be in accordance with the relevant material standards listed in EN 506, EN 508-1, EN 508-2 and EN 508-3.

#### 4.2 Nominal thickness

The nominal thickness of the self-supporting metal sheet (excluding any organic, inorganic or multi-layer coating), as defined in the relevant material standards listed in EN 506, EN 508-1, EN 508-2 and EN 508-3, shall be equal to or greater than the values given in Table 1.

**Table 1 — Minimum nominal values of thickness of self-supporting metal sheet excluding any organic, inorganic or multi-layer coating**

Type of metal	Specified minimum nominal thickness <sup>a</sup> in mm
Aluminium	0,6 for roofing applications 0,4 for other applications
Copper	0,5
Stainless steel	0,4
Steel	0,4
Zinc	0,6
<sup>a</sup> Member States of use may require greater thickness than the value shown.	

#### 4.3 Mechanical resistance

NOTE The suitability of a sheet for a given application should be determined by calculation or testing according to the specification applicable in the country of use, including the standards implementing the relevant European Standards.

##### 4.3.1 General

The mechanical resistance shall be defined from the following aspects:

- a) intended use, i.e. roof, wall, soffit, ceiling;
- b) type of metal, i.e. aluminium, copper, stainless steel, steel, zinc;
- c) nominal thickness of the metal sheet considering where applicable the class of tolerances as defined in EN 506, EN 508-1, EN 508-2 or EN 508-3;

## EN 14782:2005 (E)

- d) grade of metal in relation to its mechanical properties;
- e) geometry of the product cross-section;
- f) dimensional tolerances (see 4.7);
- g) resistance of the roofing products to concentrated forces (see 4.3.2).

### 4.3.2 Resistance of roofing products to concentrated forces

The resistance of roofing products to concentrated forces shall be evaluated according to Annex B when subject to regulatory requirements and may be evaluated when not subjected to such requirements.

This requirement does not apply for ceiling and soffit products, internal lining and external cladding and cassettes.

Products intended for use at a span less than or equal to 400 mm, e.g. some tile profiles, are deemed to satisfy this requirement without the need for testing.

NOTE In this case, the support structure will determine the resistance to imposed forces.

### 4.4 Water permeability

As long as these products have no holes (as defects), they are water impermeable.

Where required, the absence of holes shall be checked by visual inspection of the finished product.

### 4.5 Vapour and air permeability

As long as these products have no holes (as defects), they are air and vapour impermeable.

Where required, the absence of holes shall be checked by visual inspection of the finished product.

### 4.6 Dimensional change

The thermal expansion shall be taken into account in the change of dimensions of the product, where this change may have an effect on the performance of the product, by stating the appropriate thermal expansion coefficient.

The following thermal expansion coefficient shall be used:

- Aluminium:  $24 \times 10^{-6} \text{ K}^{-1}$ ;
- Copper:  $16,8 \times 10^{-6} \text{ K}^{-1}$ ;
- Stainless steel:  $10,0 \times 10^{-6} \text{ K}^{-1} - 17,0 \times 10^{-6} \text{ K}^{-1}$ , depending on the grade, see EN 10088-1;
- Steel:  $12 \times 10^{-6} \text{ K}^{-1}$ ;
- Zinc:  $22 \times 10^{-6} \text{ K}^{-1}$ ;

unless the manufacturer demonstrates by appropriate means that more accurate values are applicable.

#### 4.7 Dimensional tolerances

The dimensional tolerances specified for roof covering products in the applicable standard from the following: EN 506, EN 508-1, EN 508-2 and EN 508-3, shall not be exceeded.

For other products, the tolerances declared shall be appropriate, due account being taken of any national provisions in the country of use.

#### 4.8 Durability

The manufacturer shall state the type, thickness and grade of metal and, if appropriate, type and thickness (or mass) and/or category of any coating(s) to enable users to select products which may be expected to provide the required durability of the product having regard to the expected environment and/or exposure conditions and feasibility of maintenance.

Where this is not appropriate, the durability of the product shall be determined in accordance with the technical specifications valid in the country of use.

#### 4.9 External fire performance

Where the manufacturer wishes to make a declaration (e.g. when subject to regulatory requirements), the external fire performance of the products specified in this European Standard shall either be declared according to the provisions of 5.1 or be declared as Class F<sub>ROOF</sub>.

#### 4.10 Reaction to fire

Where the manufacturer wishes to make a declaration (e.g. when subject to regulatory requirements), the reaction to fire performance of the products specified in this European Standard shall either be declared according to the provisions of 5.2 or be declared as Class F.

#### 4.11 Release of regulated dangerous substances

Where the manufacturer wishes to make a declaration (e.g. when subject to regulatory requirements), the release of regulated dangerous substances of the products specified in this European Standard shall be declared according to the provisions of 5.3.

### 5 Testing, assessment and sampling methods

#### 5.1 External fire performance for roof covering products

##### 5.1.1 Products deemed to satisfy the requirements for external fire performance

Products covered by this European Standard are considered "deemed to satisfy without the need for testing" in relation to the requirements for external fire performance provided that they meet the definitions given in Commission Decision 2000/553/EC [1], i.e. flat or profiled<sup>1)</sup> metal sheets of nominal thickness  $\geq 0,4$  mm with any external coating which is inorganic or has a gross calorific value,  $PCS \leq 4,0$  MJ/m<sup>2</sup> or a mass  $\leq 200$  g/m<sup>2</sup>.

NOTE Individual Member States may have "deemed to satisfy" lists which go beyond the list given in the Commission Decision 2000/553/EC.

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1) In this standard, the word "profiled" refers to the shape of the product and not the way it is manufactured.