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SIST EN 1462:2004

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Nosilci žlebov - Zahteve in preskušanje

Brackets for eaves gutters - Requirements and testing

Rinnenhalter für Hängedachrinnen - Anforderungen und Prüfung

Crochets de gouttieres pendantes - Exigences et méthodes d'essai

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91.060.20 Strehe Roofs

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Brackets for eaves gutters - Requirements and testing

Crochets de gouttières pendantes - Exigences et méthodes d'essai

Rinnenhalter für Hängedachrinnen - Anforderungen und Prüfung

This European Standard was approved by CEN on 15 July 2004.

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Foreword

This document (EN 1462:2004) 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of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

This document supersedes EN 1462:1997.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies the requirements for rafter and fascia board brackets intended to support eaves gutters conforming to EN 607 or EN 612.

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

EN 485-2, *Aluminium and aluminium alloys — Sheet, strip and plate — Part 2: Mechanical properties*

EN 485-3, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 3: Tolerances on dimensions and form for hot-rolled products*

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

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

EN 607, *Eaves gutters and fittings made of PVC- U — Definitions, requirements and testing*

EN 612, *Eaves, gutters and rainwater down-pipes of metal sheet — Definitions, classifications and requirements*

EN 754-1, *Aluminium and aluminium alloys — Cold drawn rod/bar and tube — Part 1: Technical conditions for inspection and delivery*

EN 755-1, *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Part 1: Technical conditions for inspection and delivery*

EN 1652, *Copper and copper alloys — Plate, sheet, strip and circles for general purposes*

EN 1676, *Aluminium and aluminium alloys — Alloyed ingots for remelting — Specifications*

EN 1706, *Aluminium and aluminium alloys — Castings — Chemical composition and mechanical properties*

EN 10025, *Hot rolled products of non-alloy structural steels — Technical delivery conditions*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip for general purposes*

EN 10088-3, *Stainless steels — Part 3: Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes*

EN 10111, *Continuously hot-rolled low carbon steel sheet and strip for cold forming — Technical delivery conditions*

EN 10142, *Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming — Technical delivery conditions*

EN 10215, *Continuously hot-dip aluminium-zinc (AZ) coated steel strip and sheet — Technical delivery conditions*

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

EN 10327, Continuously hot-dip coated strip and sheet of low carbon steels for cold forming – Technical delivery conditions

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods (ISO 1461:1999)*

3 Terms and definitions

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

3.1
rafter bracket
type of gutter bracket used for fixing a gutter to a rafter

3.2
fascia bracket
type of gutter bracket used for fixing a gutter to a fascia

4 Materials

Gutter brackets shall be manufactured from one of the following materials:

— mild steel conforming to EN 10025 or EN 10111;

— hot-dip zinc coated steel sheet with a minimum grade of DX 51 D and a minimum coating mass of 275 g/m^2, conforming to EN 10142;

— zinc-aluminium coated steel sheet with a minimum grade of DX 51 D+ZA and a minimum coating mass of 225 g/m^2, conforming to EN 10326 or EN 10327;

— aluminium-zinc coated steel sheet with a minimum grade of DX 51 D+AZ and a minimum coating mass of 150 g/m^2, conforming to EN 10215;

— stainless steel conforming to EN 10088-2 or EN 10088-3;

— copper conforming to EN 1652;

— aluminium or aluminium alloy for sheet rolled products conforming to EN 485-1, EN 485-2, EN 485-3 or EN 485-4 in any grade of the 1000, 3000, 5000 and 6000 series;

— aluminium or aluminium alloy for wrought products conforming to EN 754-1 or EN 755-1, and in composition conforming to EN 573-3 (with the exception of those alloys having a mass content of more than 0,3 % of copper or more than 3 % of magnesium);

— aluminium or aluminium alloy for castings conforming to EN 1706 and EN 1676;

— unplasticized polyvinyl chloride (PVC-U) conforming to the requirements given in EN 607 for injection moulded fittings.

5 Resistance to corrosion

5.1 Gutter brackets of mild steel conforming to EN 10025 or EN 10111 shall be protected from corrosion by one of the following means:

a) Hot-dip galvanising conforming to EN ISO 1461. Zinc coatings shall conform to the minimum values given in Table 1.

b) Flexible plastic coating, ≥ 60 μm thick, over a zinc coating with an average thickness of ≥ 20 μm.

c) Flexible plastic coating, ≥ 60 μm thick, with a suitable substrate. When tested in accordance with Annex A, the plastic-coated bracket shall not exhibit any signs of rust or loosening of the coating from the steel.

Table 1 — Minimum zinc coating for mild steel brackets hot-dip galvanized after manufacture

Steel thickness of bracket α (mm)	**Thickness of coating**	
	Minimum single value (μm)	Average value (μm)
$\alpha > 6$	70	85
$6 \geq \alpha > 3$	55	70
$3 \geq \alpha > 1,5$	45	55

5.2 Gutter brackets of PVC-U shall meet the artificial ageing and colour-fastness requirements detailed in EN 607.

5.3 Gutter brackets shall be manufactured from corrosion-resistant materials according to whether they are intended for use in aggressive atmospheres (Class A – industrial pollution or maritime) or more benign conditions (Class B), as given in Table 2.

Table 2 — Classes of resistance to corrosion

Material of manufacture	Class of resistance to corrosion
Stainless steel, copper, rolled or wrought aluminium or mild steel coated in accordance with 5.1 a) or b)	A
Cast aluminium conforming to EN 1706, with a corrosion resistance grading of A to C inclusive	A
Cast aluminium conforming to EN 1706, corrosion resistance coated in accordance with 5.1c)	A
PVC-U, conforming to EN 607	A
Uncoated cast aluminium conforming to EN 1706, with a corrosion resistance of grade D	B
Mild steel conforming to EN 10025 or EN 10111, coated in accordance with 5.1c), or hot-dip coated mild steel conforming to EN 10142, EN 10326, EN 10327 or EN 10215	B

6 Design

6.1 General

Gutter brackets shall be of such dimensions that the gutters of the shape and size for which they are designed can slide freely through them.

It shall not be possible for gutters to be lifted out of a bracket by strong wind. This shall be achieved either through the design of integral lugs or nibs on the bracket itself or by providing separate clips or springs to attach the gutter to the bracket. Clips and springs are not required to be of the same material as the bracket to which they are attached, but shall have a corrosion resistance of Class A, as given in Table 2, if attached to a gutter bracket of corrosion resistance Class A.

Clips and springs shall be manufactured from one of the following materials:

— any of the materials specified in Clause 4;

— polyamide plastic;

— galvanized and prepainted steel sheet having an average coating mass of not less than 275 g/m^2.

Where both the clip or spring and the gutter bracket are manufactured from metal, care shall be taken to avoid contact between incompatible metals, thereby reducing the risk of electrolytic corrosion.

6.2 Load bearing capacity

Gutter brackets shall be divided into three classes according to their load bearing capacity. When tested in accordance with Annex B, brackets of 80 mm or greater top opening width (i.e. brackets of Classes H and L) shall support the loads given in Table 3 without collapse and without causing permanent deflection exceeding 5 mm at the outer end of the bracket.