



SLOVENSKI STANDARD
SIST EN 612:1998

01-april-1998

D`c Yj]bUgh`y`YVcj]`]b`cXlc bY`Wj]`!`8 YZ]b]WY`Z`_`Ug]Z`_UWY`Y]b`nU hYj Y

Eaves, gutters and rainwater down-pipes of metal sheet - De finitions, classifications and requirements

Hängedachrinnen und Regenfallrohre aus Metallblech - Begriffe, Einteilung und Anforderungen

Gouttieres pendantes et descentes d'eaux pluviales en métal laminé - Définitions, classification et spécifications

iTeh STANDARD PREVIEW
(standards.itteh.ai)

SIST EN 612:1998

Ta slovenski standard je istoveten z: **EN 612:1996**

<https://standards.itteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998>

ICS:

91.060.20 Strehe Roofs

SIST EN 612:1998 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 612:1998

<https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998>

EUROPEAN STANDARD

EN 612

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1996

ICS 91.140.80

Descriptors: water removal, rain water, rainwater pipes, eaves gutters, metal products, rolled products, definitions, classifications, shape, dimensions, dimensional tolerances, designation, marking, labelling

English version

Eaves gutters and rainwater down-pipes of metal sheet - Definitions, classifications and requirements

Gouttières pendantes et descentes d'eaux pluviales en métal laminé - Définitions, classification et spécifications

Hängedachrinnen und Regenfallrohre aus Metallblech - Begriffe, Einteilung und Anforderungen

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 612:1998

<https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998>

This European Standard was approved by CEN on 1995-12-01. 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.

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

Contents

	Page
Foreword	2
Introduction	2
1 Scope	2
2 Normative references	3
3 Definitions	3
4 Shapes	4
5 Classification	6
6 Material requirements	7
7 Dimensional requirements	8
8 Designation	11
9 Marking	11
10 Labelling	11

Foreword

This European Standard has been prepared by CEN/TC 128 "Roof covering products for discontinuous laying", 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 September 1996, and conflicting national standards shall be withdrawn at the latest by September 1996.

Accordancing 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 United Kingdom.

Introduction

This European Standard specifies product requirements, derived from performance requirements established for various applications and is supported by separate standards for specific and common test methods in the framework of respective material standards. The performance of a gutter and drainage system made with these products depends not only on the properties of the products as they are defined by this standard. The design, construction and behaviour of the relevant parts of the building also have an effect on the performance of the system.

1 Scope

This European Standard specifies requirements for factory made eaves gutters and rainwater down-pipes made from metal sheet. It establishes the general characteristics, designation system, classification, marking and quality requirements for the products.

The standard applies to eaves gutters and external rainwater down-pipes that are supported by metal brackets and used to drain away rainwater. The shape and dimensions



of a gutter are defined by the quantity of water to be drained away from the roof to the down-pipes and by architectural design requirements. The ability of the system to handle the water depends upon the design of the roof and the dimensions of the gutter and the down-pipes.

The standard specifies the requirements for gutters and rainwater down-pipes which enable these products to meet all usual service conditions such as catching and draining away rainwater, melted snow or ice water from a building to a drainage system or a sewer outside the building.

Requirements for fixings, supporting construction, flashings or the method of making joints between the different components are not included in this standard.

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 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 573-3 | Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition |
| prEN 988 | Zinc and zinc alloys - Technical delivery conditions for cold rolled flat products for building purposes |
| prEN 1172 | Copper and copper alloys - Sheet and strip for building purposes |
| prEN 10088-1 | Stainless steel - Part 1: Catalogue of stainless steels |
| EN 10142:1989 | Continuously hot-dip zinc coated mild steel sheet and strip for cold forming - Technical delivery conditions |
| prEN 10169-1 | Continuously organic coated flat products from steel - Part 1: Generalities (definitions, materials, tolerances, testing) |
| prEN 10214 | Continuously hot-dip zinc-aluminium (ZA) coated steel sheet and strip - Technical delivery conditions |
| prEN 10215 | Continuously hot-dip aluminium-zinc (AZ) coated steel sheet and strip - Technical delivery conditions |

3 Definitions

For the purpose of this standard the following definitions apply.

- 3.1 eaves gutter: A gutter situated outside the building and supported by brackets.
- 3.2 down-pipe: A pipe fitted to a gutter to lead rainwater from the gutter to the drainage system or sewer.
- 3.3 bead: A profile of partly circular or rectangular shape at the top of the front of a gutter.
- 3.4 front: The part of the gutter fitted away from the building (see figure 1).
- 3.5 bottom (sole): The lower part of the gutter profile (see figure 1).
- 3.6 back: The part of the gutter fitted adjacent to the building (see figure 1).
- 3.7 water check: A small inward bend at the top edge of the back of a gutter.
- 3.8 developed width: The original width of the piece of metal sheet from which the gutter or down-pipe is produced.
- 3.9 commercial length: The length of a gutter or a down-pipe which was produced in a factory.
- 3.10 accessories: All parts besides the gutter and the down-pipe which are necessary for the construction of a rainwater drainage.
- 3.11 seam overlap: The overlap of material when a rainwater down-pipe is formed from a flat metal sheet (see figure 3).

4 Shapes

4.1 Gutters

4.1.1 Components

A gutter, formed from one piece of metal sheet, shall consist of the following four main parts:

- the bead;
- the front;
- the bottom and
- the back.

Together, these parts form a trough-shape with an opening at the top to admit rainwater. The most commonly used shapes are shown in figure 1.

The shape of the gutter is characterised by

- the bead dimensions;
- the height of the front;
- the outside width of the bottom;
- the height of the back;
- the upper opening width and
- the developed width.

4.1.2 General requirements on the main parts

4.1.2.1 Bead

The bead has to fulfill two functions,

- a) to give stiffness to the gutter in both the horizontal and the vertical direction,
- b) to form a fixing point for the gutter brackets.

The shape of the bead shall meet an agreed drawing within the tolerances given in 7.1.2.

Three of the most widely used shapes of bead are shown in figure 2. The diameter of the bead, dimension d in figure 2, shall be not smaller than the corresponding value in table 1. The load bearing capacity and stiffness of other beads shall be not less than that of a bead of a circular type, figure 2, shape 1, of the same material in both the horizontal and the vertical direction. This shall be proved by calculation of the modulus of section.

SIST EN 612:1998

4.1.2.2 Front

<https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998>

The shape and dimensions of the front shall meet an agreed drawing within the tolerances given in 7.1.2.

The vertical height of the front, dimension a in figure 1, or the sum of bead diameter plus vertical height of the front, dimensions $a + d$ in figure 1 or figure 2b, shall be not less than the corresponding value given in table 1.

4.1.2.3 Bottom

The shape and dimensions of the bottom are dependent upon the type of gutter. The shape and dimensions of the bottom, together with those of the front and the back, control the upper opening width, dimension e of figure 1. If the outside width of the bottom, dimension b of figure 1, is defined, the tolerances given in 7.1.2 apply.

4.1.2.4 Back

The shape and dimensions of the back shall meet an agreed drawing within the tolerances given in 7.1.2.

The vertical height of the back, dimension c of figure 1, shall be greater than the vertical height of the front by not less than 6 mm when a water check is formed on the back, or 15 mm when there is no water check.

4.2 Down-pipes

The shape and dimensions of down-pipes are defined by the quantity of rainwater to be drained away and by architectural design requirements. Preferred shapes are circular and square. Other shapes shall be in accordance with an agreed drawing supplied by the purchaser.

5 Classification

5.1 Gutters

Gutters are classified as class X or class Y according to their bead diameter or equivalent modulus (see table 1). If a product is identified as class X it will also comply with the requirements of class Y.

Table 1. Gutters, bead diameter and front height

Dimensions in millimetres

developed width w	bead diameter d		front height	sum of bead diameter and front height
	class X min.	class Y min.	dimension a according to figure 1 min.	dimensions $a + d$ according to figures 1 and 2 min.
$w \leq 200$	16	14	40	70
$200 < w \leq 250$	16	14	50	75
$250 < w \leq 333$	18	14	55	75
$333 < w \leq 400$	20	18	65	90
$400 < w$	20	20	75	100

5.2 Down-pipes

Down-pipes are classified as class X or class Y according to the overlap of their seams (see table 2). If a product is identified as class X it also complies with the requirements of class Y.

Table 2. Down-pipes, seams

Dimensions in millimetres

execution of seam	material					overlap of seam	
	Al ¹⁾	Cu ²⁾	St ³⁾	S.S. ⁴⁾	Zn ⁵⁾	class X min.	class Y min.
soldered		X			X	5 ⁶⁾	1 ⁶⁾
brazed		X				3 ⁶⁾	3 ⁶⁾
locked	X	X	X	X	X	6 ⁷⁾	6 ⁷⁾
welded	X	X	X	X	X	dependent on welding process	

1) Aluminium sheet according to 6.1.
2) Copper sheet according to 6.2.
3) Metal coated steel sheet according to 6.3 and metal plus organic coated steel sheet according to 6.4 .
4) Stainless steel sheet according to 6.5.
5) Zinc sheet according to 6.6.
6) Overlap thoroughly bound, measurement L in figure 3a.
7) Overall length, measurement F in figure 3b.

ITeH STANDARD PREVIEW
(standards.iteh.ai)

6 Material requirements

6.1 Aluminium

SIST EN 612:1998

[https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-](https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998)

[272f699aa103/sist-en-612-1998](https://standards.iteh.ai/catalog/standards/sist/5c7bb3d3-848c-465a-ac11-272f699aa103/sist-en-612-1998)

Aluminium or aluminium alloys of series 1000, 3000, 5000 or 6000 according to EN 573-3 in sheets conforming to EN 485-1, with the exception of alloys with magnesium contents of more than 3 % or copper contents of more than 0,3 %.

6.2 Copper sheet

Cu-DHP, material number CWO24A,
CuZn 0,5, material number CW119C,

conforming to prEN 1172.

6.3 Hot-dip metal coated steel sheet

- Zinc coated steel sheet (Z):

D X 51 D + Z or higher grade, with a minimum coating mass of 275 g/m², total both sides (thickness of each side: 20 μm), conforming to EN 10142.

- Zinc-aluminium coated steel sheet (ZA):

DX 51 D + ZA or higher grade, with a minimum coating mass of 225 g/m², total both sides (thickness of each side: 20 μm), conforming to EN 10214.