



SLOVENSKI STANDARD SIST EN 508-1:2002

01-november-2002

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

Dachdeckungsprodukte aus Metallblech - Festlegungen für selbsttragende Bedachungselemente aus Stahlblech, Aluminiumblech oder nichtrostendem Stahlblech - Teil 1: Stahl

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Produits de couverture en tôle métallique - Spécification pour les plaques de couverture en tôle d'acier, d'aluminium ou d'acier inoxydable - Partie 1: Acier

Ta slovenski standard je istoveten z: EN 508-1:2000

ICS:

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91.060.20	Strehe	Roofs

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EUROPEAN STANDARD

EN 508-1

NORME EUROPÉENNE

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September 2000

ICS 91.060.20

English version

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

Produits de couverture en tôle métallique - Spécification pour les plaques de couverture en tôle d'acier, d'aluminium ou d'acier inoxydable - Partie 1: Acier

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This European Standard was approved by CEN on 3 December 1999.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The annexes A, B, C, E, F, and G of this European standard are informative, annex D is normative.

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Introduction

Figure 1 indicates the position of this standard in the CEN framework of standards concerning roofing product of metal.

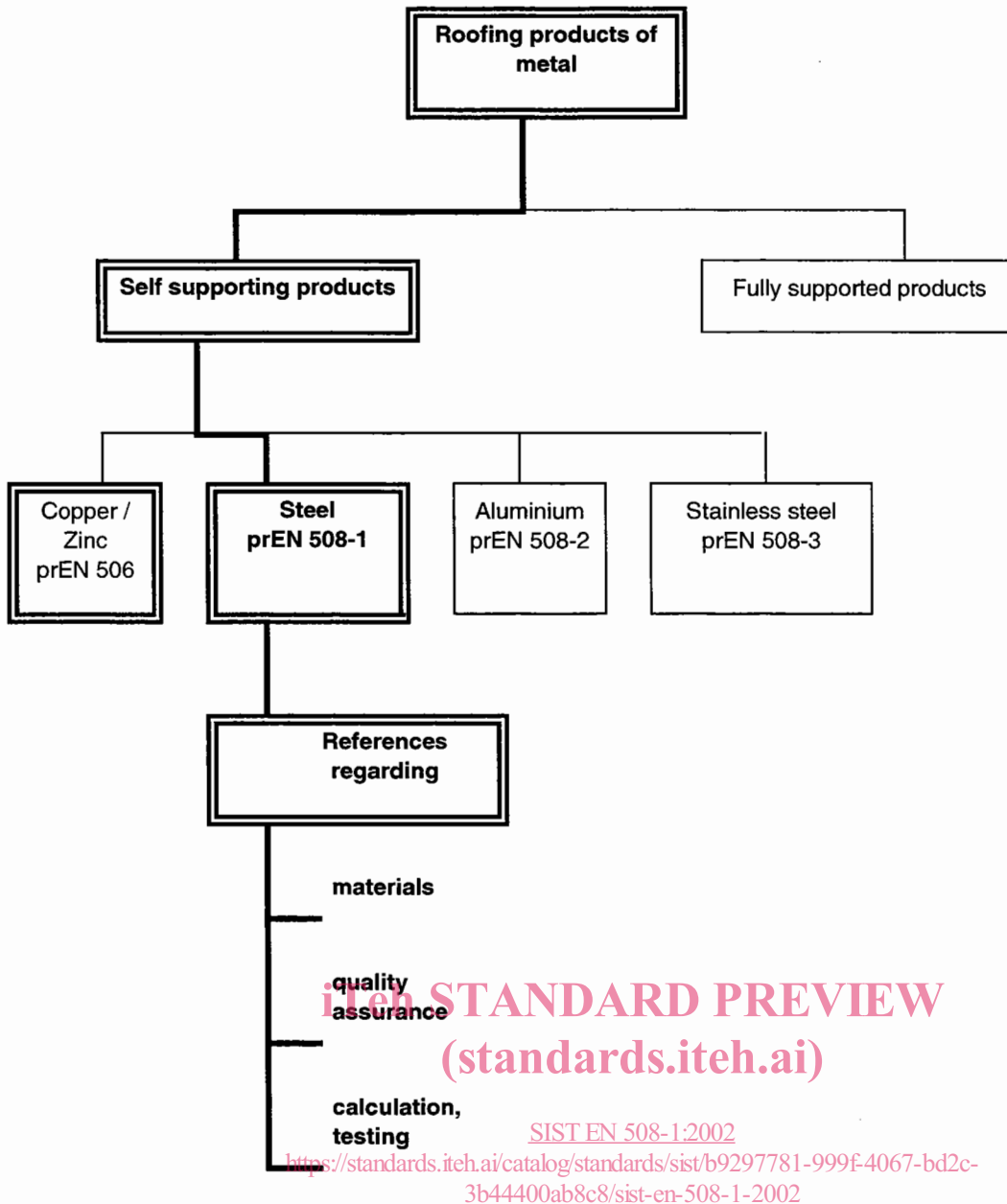


Figure 1 - Framework of standards

In this standard the performance of the product has been defined in terms of calculation and a number of type tests.

The performance of a roof constructed with these products depends not only on the properties of the product as required by this standard, but also on the design, construction and performance of the roof as a whole in relation to the environment and conditions of use.

1 Scope

This part of EN 508 specifies requirements for self supporting roofing products for discontinuous laying made from metallic coated steel sheet with or without additional organic coatings.

The standard establishes general characteristics, definitions, classifications and labelling for the products, together with requirements for the materials from which the products can be manufactured. It is intended to be used either by manufacturers to ensure that their products comply with the requirements or by purchasers to verify that the products comply when purchased before they are despatched from the factory. It specifies the requirements for products which enable them to meet all normal service conditions.

The standard applies to all discontinuously laid self supporting external profiled sheets for roofing. These profiled roof sheets are designed to keep wind, rain and snow out of the building and to transfer any resultant loads and infrequent maintenance loads to the structure.

No requirements for supporting construction, design of roof system and execution of connections and flashings are included.

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 to 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 10142, *Continuously hot-dip zinc coated low carbon steel strip and sheet for cold forming : Technical delivery conditions.*

EN 10143, *Continuously hot-dip metal coated steel sheet and strip - Tolerances on dimensions and shape.*

EN 10147, *Continuously hot-dip zinc coated structural steel strip and sheet - Technical delivery conditions.*

EN 10169-1, *Continuously organic coated (coil coated) steel flat products - Part 1 : General information (definitions, materials, tolerances, test methods).*

ENV 10169-2, *Continuously organic coated (coil coated) steel flat products - Part 2 : Products for building exterior applications.*

EN 10214, *Continuously hot-dip zinc-aluminium (ZA) coated steel strip and sheet - Technical delivery conditions.*

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

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3 Definitions and terminology

For the purposes of this standard, the following definitions and terminology apply in addition to the definitions given in EN 10169-1.

3.1 Self-supporting product

Product which will, by virtue of its material and shape, support all applied loadings (e.g. snow, wind, foot traffic), and transmit these loadings to spaced structural supports.

3.2 Materials

3.2.1

hot-dip zinc coated steel sheet (type Z)

product obtained by continuously hot-dip zinc coating cold reduced strips of either low carbon steel for cold forming to EN 10142 or steel of structural quality to EN 10147

3.2.2

hot-dip 5 % Al-Zn coated steel sheet (type ZA)

product obtained by continuously hot-dip coating cold reduced strips of low carbon steel for cold forming or steel of structural quality on a production line using an alloy consisting of :

- 5 % aluminium (nominal percentage by mass)
- 95 % zinc (nominal percentage by mass)
- small amounts of mischmetal.

NOTE EN 10214 refers to this type of steel.

3.2.3

hot-dip 55 % Al-Zn coated steel sheet (type AZ)

product obtained by continuously hot-dip coating cold reduced strips of low carbon steel for cold forming or steel of structural quality on a production line using an alloy consisting of :

- 55 % aluminium (nominal percentage by mass)
- 1,5 % silicon (nominal percentage by mass)
- balance zinc

NOTE EN 10215 refers to this type of steel.

3.2.4

hot-dip aluminium coated steel sheet (type A)

product obtained by continuously hot-dip aluminium coating cold reduced strips of low carbon steel for cold forming steel or steel of structural quality on a production line (see annex A)

3.2.5

organic coated steel sheet

product obtained by factory application of paint by roller or spray processes, or factory application of laminated organic film, on substrates of type Z, type ZA, type AZ or type A coated steel sheet

NOTE EN 10169-1 refers to this type of coated steel.

3.2.6

multilayer coated steel sheet

product obtained by continuously coating on both sides hot-dip zinc coated cold reduced strips of low carbon steel for cold forming or steel of structural quality with one or multiple applications of thermoplastic asphalt compounds (minimum thickness 1,5 mm) and subsequent lamination of a metal foil with or without decorative painting

NOTE There are no requirements for these products in this part of EN 508 but information on them is given in annex B.

3.3 Profile definitions

3.3.1

trapezoidal profiled sheet

self supporting sheet which is designed to allow it to be side and end lapped, the crowns of which may be rounded and, in addition, the crowns, webs and valleys may be stiffened (see figures 2 to 5)



Figure 2 – Part of typical trapezoidal profile



Figure 3 – Part of typical trapezoidal profile with rounded crowns

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Figure 4 – Part of typical trapezoidal profile with stiffened crown and web



Figure 5 – Part of typical trapezoidal profile with stiffened valley

3.3.2

sinusoidal profiled sheet

self supporting sheet which is designed to allow it to be side and end lapped, comprising a series of arc shaped crowns and valleys interconnected with tangential webs (see figure 6)



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Figure 6 – Part of typical sinusoidal profiled sheet
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3.3.3

standing seam and concealed fix sheet

self supporting sheet profiled in such a way that the fixings are hidden within the construction and are not exposed to the weather, as illustrated in figures 7 and 8

The profile shape is designed to allow the formation of side laps on site.

NOTE As these types of roof covering products are used in proprietary roofing systems, no structural requirements are given within this part of EN 508.

These products are normally designed by testing.



Figure 7 – Typical standing seam profile

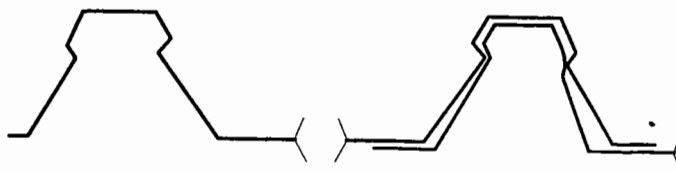


Figure 8 – Typical concealed fix profile

3.3.4

tile profiles

parts of typical tile profiled sheets are illustrated in figure 9. The tile profile may include transverse steps.

The tiles illustrated in figures 9a, 9b, 9c shall allow the sheet to be side and end lapped.

NOTE As these types of roof covering products are used in proprietary systems no structural requirements are given within this part of EN 508.

These products are normally designed by testing.

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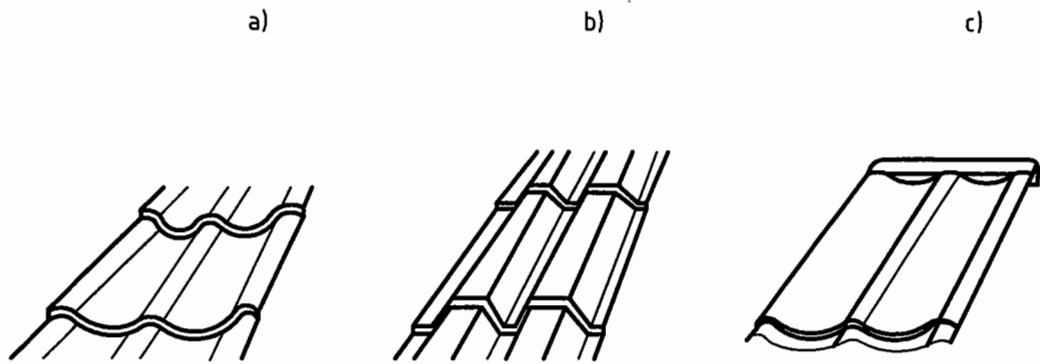


Figure 9 – Typical tile profiles

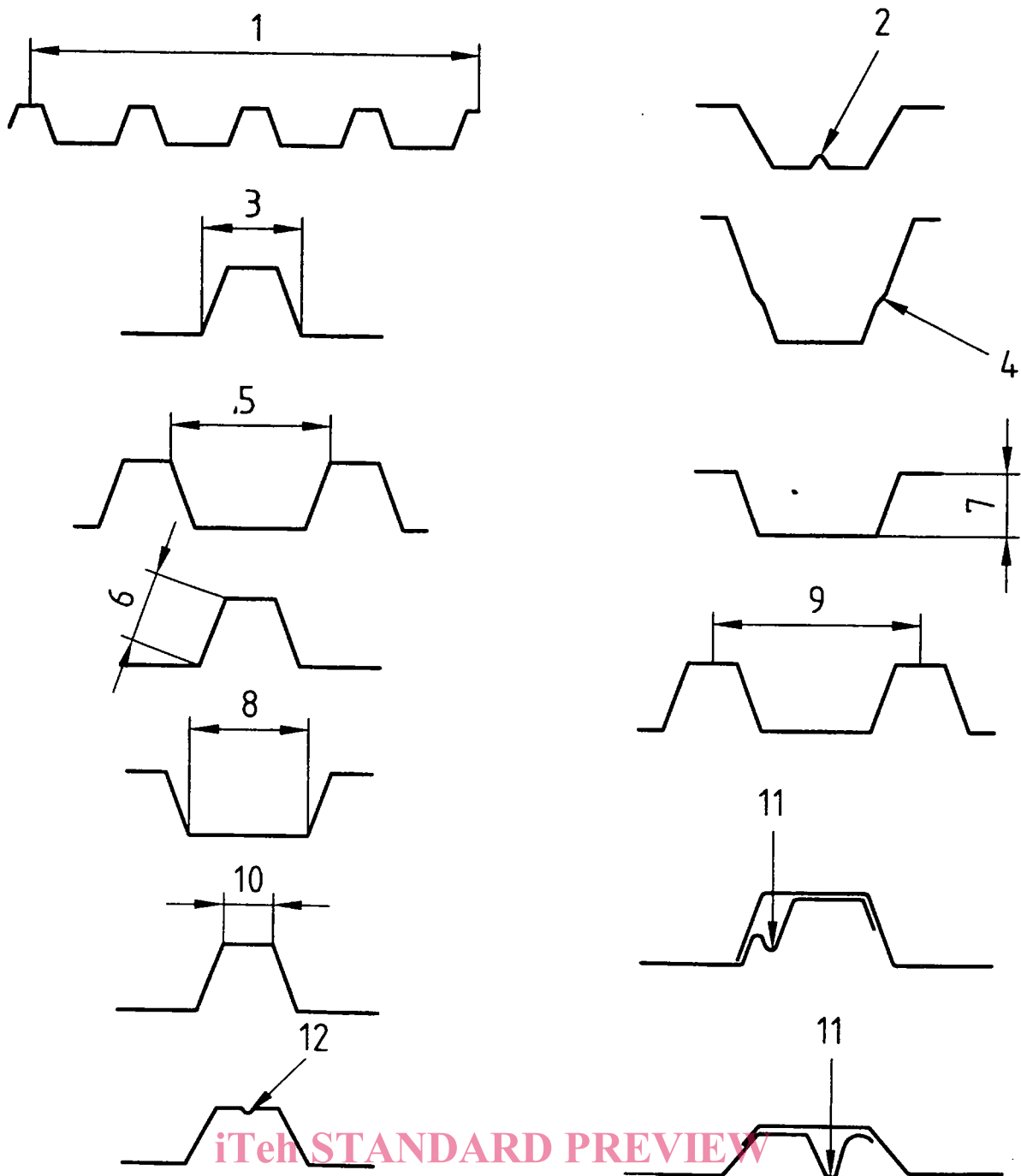
3.4 Product geometry

The names for various parts of typical trapezoidal profiled sheets are defined in figures 10a and 10b, with additional definitions for sinusoidal profiles in figure 11 and tile profiles in figure 12.

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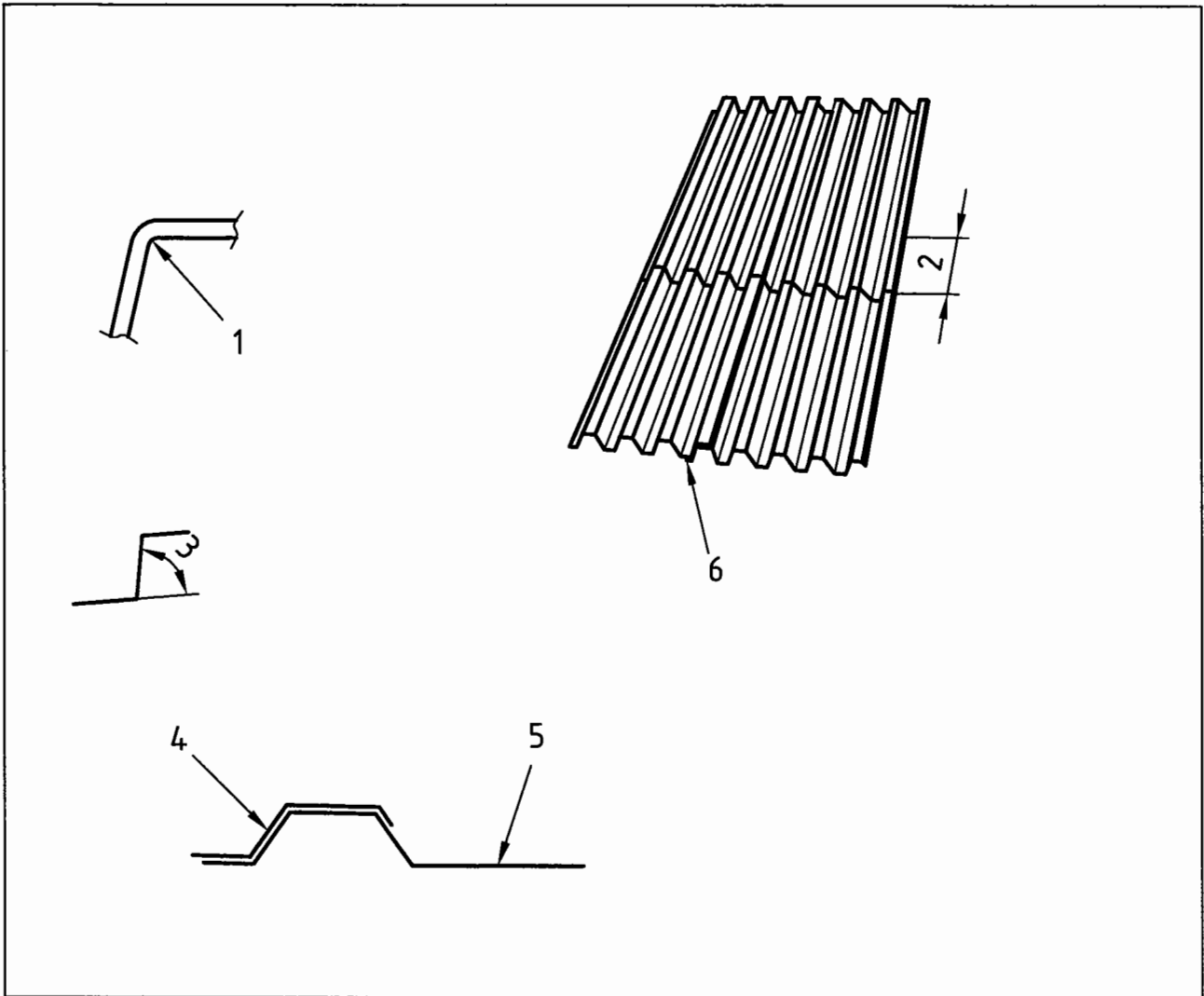
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Key

1. Cover width
2. Valley stiffener
3. Rib
4. Web stiffener
5. Trough
6. Web
7. Depth
8. Valley
9. Pitch
10. Crown
11. Drainage groove
12. Crown stiffener

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Figure 10 a) – Definitions of the parts of typical trapezoidal profiled sheets



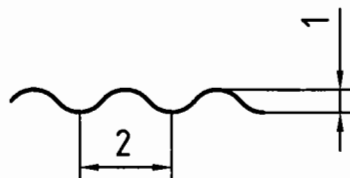
Key

1. Bend radius
2. End lap
3. Web angle
4. Overlap
5. Underlap
6. Side lap in principle the same on tiles

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Figure 10 b) – Definitions of the parts of typical trapezoidal profiled sheets

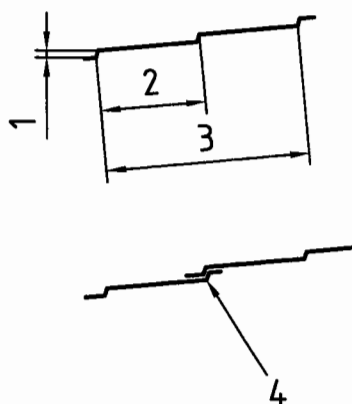
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Key

1. Depth
2. Pitch

Figure 11 – Definitions of the parts of typical sinusoidal profiled sheets



Key

1. Height of the step
2. Length of the step
3. Number of steps
4. End lap

Figure 12 – Definitions of the parts of typical tile

3.5 Symbols and abbreviations

Z	Hot-dip zinc coated steel
ZA	Hot-dip zinc/aluminium coated steel
AZ	Hot-dip aluminium/zinc coated steel
A	Hot-dip aluminium coated steel
ML	Multilayer coated steel
AY	Acrylic paint coating
HDP	High durable polyester
SP	Polyester paint coating
SP-SI	Silicone-modified polyester paint coating

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