SLOVENSKI STANDARD
SIST EN 1304:2014

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Opečni strešniki in fazonski kosi - Definicije in specifikacije izdelkov

Clay roofing tiles and fittings - Product definitions and specifications

Dach- und Formziegel - Begriffe und Produktspezifikationen

Tuiles et accessoires en terre cuite - Définitions et spécifications des produits

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ICS:

01.040.91	Gradbeni materiali in gradnja (Slovarji)	Construction materials and building (Vocabularies)
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Clay roofing tiles and fittings - Product definitions and specifications

Tuiles et accessoires en terre cuite - Définitions et spécifications des produits

Dach- und Formziegel - Begriffe und Produktspezifikationen

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

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Foreword

This document (EN 1304:2013) 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1304:2005.

In comparison to the previous edition, the following clauses are changed: 4.4.3, 4.6, Annex C and Annex ZA.

This document 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 document.

This document is part of a package of standards on clay roofing tiles and fittings.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies requirements for clay roofing tiles and fittings for pitched roof coverings and wall cladding and lining.

It applies to all tiles and fittings as defined in Clause 3.

Clay roofing tiles and clay fittings which conform to this European Standard are suitable for use as roof coverings, vertical wall cladding and lining.

This European Standard defines the minimum requirements for a product which if satisfactory at the time of delivery will ensure that the product is able to perform its function in relation to the performance levels declared for it, whilst subjected to the changes that occur in such materials during normal conditions of use.

The results obtained according to the European Standard apply to products at the time they are offered for sale.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 538, *Clay roofing tiles for discontinuous laying — Flexural strength test*

EN 539-1:2005, *Clay roofing tiles for discontinuous laying — Determination of physical characteristics — Part 1: Impermeability test*

EN 539-2:2013, *Clay roofing tiles for discontinuous laying — Determination of physical characteristics — Part 2: Test for frost resistance*

EN 1024, *Clay roofing tiles for discontinuous laying — Determination of geometric characteristics*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using 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*

3 Terms and definitions

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

3.1 General

3.1.1
clay roofing tiles
products for discontinuous laying on pitched roofs, and for wall cladding, which are manufactured by shaping (extrusion and/or pressing), drying and firing of the prepared clay, with or without additives

Note 1 to entry: All or part of their surface can be covered with an engobe or glaze.

The principal types of tile are:

3.1.1.1
special tiles
tiles made to shapes that vary from tile to tile for aesthetic reasons, for example hand-made tiles

3.1.1.2
tiles with sidelock and headlock
tiles with one or more longitudinal and transverse interlocking device(s)

3.1.1.3
tiles with sidelock only
tiles with a longitudinal interlocking device but no transverse one

Note 1 to entry: They can be used to obtain variable headlaps.

3.1.1.4
tiles with headlock only
tiles with a transverse interlocking device but no longitudinal one

3.1.1.5
tiles with variable headlap
tiles with sidelock and headlock where the design of the tiles allows them to be fixed at varying headlaps

3.1.1.6
tiles with variable sidelap
tiles with sidelock and headlock where the design allows variation in the amount of sidelap

3.1.1.7
plain tiles
tiles usually with a flat surface that can be slightly cross cambered and/or longitudinally cambered and which have no interlocking system

Note 1 to entry: These tiles are generally rectangular, but can have a specially shaped tail (e.g. fish-scale tiles with a rounded or sharp front edge).

3.1.1.8
overlapping tiles
tiles which have no side or headlock and are profiled in an "S" shape

3.1.1.9
over and under tiles
tiles with the shape of a gutter whose design makes it possible either to fix them with variable headlaps or where their headlap is fixed due to the presence of lugs on the tiles

Note 1 to entry: They are made with their edges either parallel or forming a cone.

3.2 General

3.2.1
clay roofing fittings
products that are complementary to the tiles and have a technical function

There are two types of fittings:

3.2.2.1
coordinated fittings
fittings that are intended to align or dimensionally interlock with the tiles with which they are to be laid

EXAMPLE interlocking verge tile, interlocking ventilation tile, tile-and-a-half, interlocking ridge tiles, interlocking or aligning hip tile, aligning valley tile, interlocking or aligning angle tiles

3.2.2.2
uncoordinated fittings
fittings that are not required to align or interlock with the tile with which they are to be laid

EXAMPLE ridge tiles, hip tile, valley tile, verge tile, angle tiles

3.3 Definitions specific to tiles and fittings with sidelock and headlock and tiles with sidelock only

3.3.1 General

3.3.1.1
interlock
system designed for the assembly of two adjoining tiles or fittings and usually including one or more raised parts called "ribs" and one or more concave parts called "grooves"

3.3.1.2
longitudinal interlock
system allowing two tiles or fittings in the same horizontal course to be fitted together

3.3.1.3
transverse interlock
system allowing two tiles or fittings from successive horizontal courses to be fitted together

Note 1 to entry: Three examples of interlock are shown in Figure 1. The arrangement of ribs and grooves limits the extent of movement between the tiles and improves the resistance to the ingress of water.

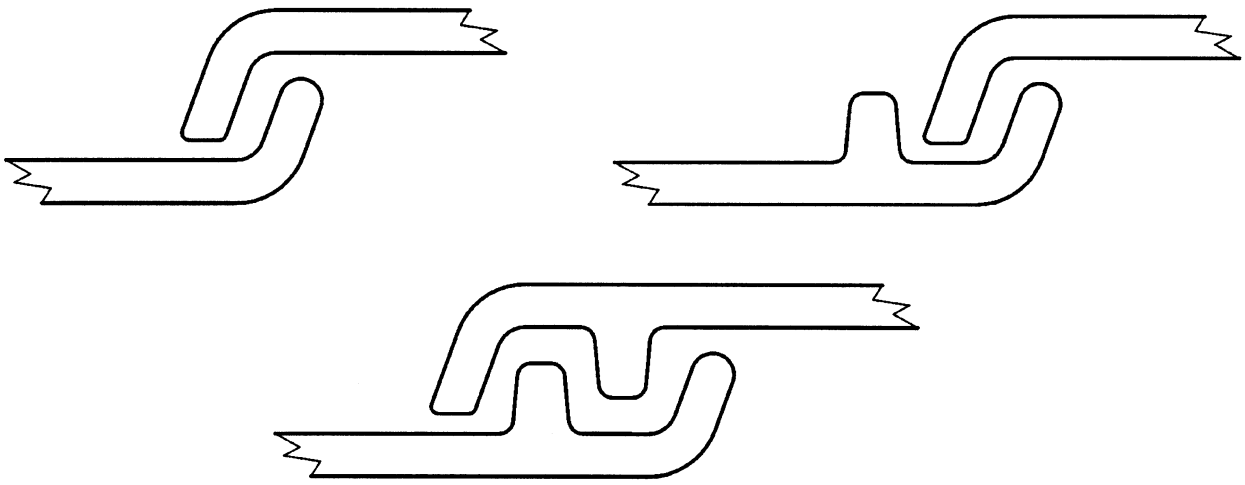


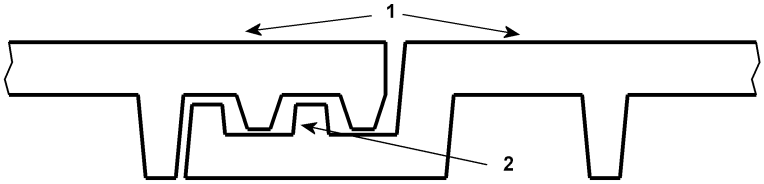
Figure 1 — Examples of interlock

3.3.2
straight bond tiles and fittings
tiles or coordinated fittings designed to be laid so that the longitudinal joints of successive courses are aligned

3.3.3
broken bond tiles and fittings
tiles or coordinated fittings designed to be laid so that the longitudinal joints are shifted half a tile between successive courses

Note 1 to entry: Certain types of tiles or coordinated fittings are designed to be laid either straight bonded or broken bonded.

3.3.4
flat interlocking tiles and fittings
interlocking tiles or coordinating fittings whose visible surface has no rib separating the areas of water flow from the longitudinal interlocks and where the longitudinal interlocks lie below the areas of water flow (see Figure 2)



Key

1 areas of water flow
2 interlock

Figure 2 — Cross section and diagram of principle

3.4 Definitions specific to over and under tiles

3.4.1
under tiles
tiles designed to be laid with their concave side facing upward and resting on the roofing support

Note 1 to entry: Under tiles may have no nib, or one or more nibs for laying on battens.

3.4.2
over tiles
tiles designed to be laid with their concave side facing downward and straddling two under tiles

Note 1 to entry: In general, the same units are used as under tiles when laid with their concave side facing upward and over tiles when they are laid with their concave side facing downward. However, the profile of under tiles can differ from that of over tiles; they can have, for example, a flat base or a shape allowing for the seating of the product on its support. In the latter case, under tiles are equipped with two lateral upright sides.

3.4.3
over and under tiles with lugs to fix the headlap
over and under tiles with lugs to fix the longitudinal overlap

3.5 Further definitions

3.5.1
additive
material added in small quantities to the clay mix so as to facilitate the manufacture of the tile or fitting or to improve its characteristics

3.5.2
efflorescense
crystalline deposit of soluble salts found on the surface of tiles or fittings due to water migrating from within the tiles or fittings and evaporating on the surface

3.5.3 Ceramic coating

3.5.3.1
glaze
glass-based fired coating, or the material used to obtain this effect

3.5.3.2
engobe
permeable or impermeable clay-based fired coating or the material used to obtain this effect

3.5.4
treatments
factory-applied hydrophilic or hydrophobic agents, which change the behaviour of the surface of the clay roofing tiles or fittings when it is wetted by water

3.5.5
crack
more or less regular crack not running throughout the entire thickness of the product

3.5.6
colour variation
variation in tone within one colour or within different colours in one production batch

Note 1 to entry: See also Annex B.

3.5.7
surface features
hollows, raised areas, spots or colours, etc. characterising an entire batch and produced specifically for aesthetic purposes (to imitate the appearance of old tiles, for example)

Note 1 to entry: See also Annex B.

3.5.8
clay fold
interruption of continuity affecting only the surface of the product, caused by the formation of a fold during pressing

Note 1 to entry: See also Annex B.

3.5.9 Overlap dimensions

3.5.9.1 General

3.5.9.1.1
gauge
length of the exposed part of the fixed tile or coordinated fitting, measured longitudinally

Note 1 to entry: This is the same as the batten gauge.

3.5.9.1.2
gauge declared by the manufacturer
mean value or two extreme values of the gauge as defined above, see 3.5.9.1.1

3.5.9.2 General

3.5.9.2.1
cover width
width of the exposed part of the tile or coordinated fitting as laid

3.5.9.2.2
cover width declared by the manufacturer
mean value or two extreme values of the cover width as defined above, see 3.5.9.2.1

3.5.10
camber
deviation from a straight line

Note 1 to entry: For plain tiles and interlocking tiles, camber is expressed as the deviation from a straight line, either longitudinally or transversally measured at the tile edge.

Note 2 to entry: For over and under tiles, camber is expressed as the deviation from a straight line measured, along the generatrix located in the bottom of the tile's concavity.

3.5.11
stratification
presence in the body of strata, possibly of different colours which may go through the thickness of the body

Note 1 to entry: See also Annex B.

3.5.12
nib
raised part at the back of the tile or fitting, used to hook it on the underlying supporting structure, generally battens

3.5.13
body of the tile or fitting
ceramic material making up the fired product

3.5.14
crazing (glaze or engobe)
cracking affecting only the thickness of the glaze or engobe or the vitrified surface of a product obtained by intense reduction, and not endangering the adhesion of the glaze or engobe to the body of the product

Note 1 to entry: See also Annex B.

3.5.15
fixing hole
hole, which is open or easily opened without damaging the product, designed for fixing the product to the underlying supporting structure

3.5.16
underside fixing hole
open hole, made in a raised area on the underside of the tile and designed to fix the tile to the support with an appropriate device

3.5.17 Structural faults

3.5.17.1
break
structural fault consisting of a separation of the product into two or more fragments

3.5.17.2
structural crack
structural fault consisting of a more or less regular crack running throughout the entire thickness of the product and visible to the naked eye

3.5.17.3
loss of nib
structural fault corresponding to the complete loss of the nib in a product designed with one nib only

3.5.18 Surface faults

3.5.18.1
blistering
superficial fault occurring during manufacture, consisting of superficial localised raising of material with a mean dimension of the surface area of over 10 mm

3.5.18.2
pit
superficial fault consisting of a fraction of material detached from the body of the product on the visible surface of the product with a mean dimension of over 7 mm

Note 1 to entry: This is often due to the expansion of a particle of, for example, chalk or pyrites.

3.5.18.3
chip
superficial fault consisting of a fraction of material detached from the body of the product with a mean dimension of over 7 mm, on the visible surface of the product

3.5.19
family
group of products for which the test results for one or more characteristics from any one product within the family are valid for all other products within the family

4 Requirements

4.1 Structural characteristics

There shall be no manufacturing faults which prevent the proper fitting together of the products, nor any structural faults as defined in 3.5.17.

For evaluation of structural characteristics, the products shall be examined with the naked eye at a distance of 30 cm to 40 cm, under normal lighting.

The products tested shall comply with the acceptance criteria given in Table A.1 and Table A.3.

NOTE Comments on appearance characteristics are given in Annex B.