



SLOVENSKI STANDARD

SIST EN 490:1998

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Betonski strešniki in fazonski kosi - Specifikacije

Concrete roofing tiles and fittings - Product specifications

Dach- und Formsteine aus Beton - Produkthanforderungen

Tuiles et accessoires en béton - Spécifications des produits

Ta slovenski standard je istoveten z: **EN 490:1994**

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Concrete roofing tiles and fittings - Product specifications

Tuiles et accessoires en béton - Spécifications des produits

Dach- und Formsteine aus Beton -
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CENEuropean Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 128 "Roof covering products for discontinuous laying", the secretariat of which is held by ON.

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of an identical text or by endorsement, at the latest by September 1994, and conflicting national standards shall be withdrawn at the latest by September 1994.

According to the CEN/CENELEC Internal Regulations, 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, United Kingdom.

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Introduction

This standard specifies requirements for concrete tiles and fittings for pitched roofs. Due to the time constraints under which the standard has been drafted, the specification with respect to fittings is limited to materials and the impermeability of valley tiles.

The specification of any surface coating is not included in this standard and informative advice on surface characteristics is given in annex C.

The performance of the products has been defined, as far as possible, in terms of a number of type tests. A distinction has been made between type tests and routine quality control tests.

A distinction has been made between the sampling requirements for the certification of a consignment of finished products, quality disputes and third party control. The sampling plans do not apply to quality control.

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

A brief statement on combustibility is given in annex D.

1 Scope

This European Standard specifies requirements for concrete roofing tiles, and fittings limited to those described in the text, for assembly into pitched roof coverings.

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 494:1994 Concrete roofing tiles and fittings - Test methods

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this standard the following definitions apply.

3.1.1 aggregate

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Concrete component consisting of uncrushed and/or crushed natural and/or artificial mineral substances with particle sizes and shapes suitable for the production of concrete.

3.1.2 addition

Finely divided material that may be added to concrete in order to improve certain properties or to achieve special properties.

3.1.3 pigment

Addition inert to the ingredients of concrete and intended to provide colour to the concrete.

3.1.4 admixture

Product which is added in small quantities by mass of the cement before or during mixing or during an additional mixing operation, causing required modifications to the properties.

3.1.5 cement

Hydraulic binder, i.e. finely ground inorganic material, which, when mixed with water, forms a paste which sets, by means of hydration reactions and processes and which, after hardening, retains its strength and stability.

3.1.6 fitting

Component, mainly of concrete, that is complementary to the tiles and has a special function.

NOTE: Examples include ridge tile, hip tile, valley tile, verge tile, angle tile.

3.1.7 valley tile

Fitting for use at a meeting of two roof pitches forming a re-entrant angle.

3.1.8 interlocking tile

Profiled or flat tile which has a side lock with or without a head lock feature.

3.1.9 non-interlocking tile

Generally flat, cross cambered and/or longitudinally cambered tile, which is generally rectangular in shape, with or without a featured front edge.

3.1.10 tile with a regular front edge

Tile (interlocking and non-interlocking) which, by design, has a constant or regularly varying hanging length across the width.

3.1.11 tile with an irregular front edge

Tile (interlocking and non-interlocking) which, by design, has an irregularly varying hanging length across the width.

3.1.12 type test

Test concerned with one or more of the following, the effect of which cannot be anticipated on the basis of previous test results:

- a) The introduction of a new product;
- b) A fundamental change in formulation;
- c) A fundamental change in method of manufacture;
- d) A change in product design.

3.1.13 quality control test

Test performed on samples drawn either from continuous production or from a consignment of finished products, to establish whether a batch of products conforms to this standard.

3.1.14 characteristic transverse strength

The value of transverse strength for which 95% of the individual transverse strength results are or are calculated to be greater than or equal to this value (A Q L 5 %).

3.2 Symbols and abbreviations

l_1	:	hanging length of a tile
l_2, l_3	:	hanging edge length, as defined in 4.1 of EN491:1994, of a tile
C_w	:	nominal cover width of one tile
C_{wc}	:	cover width closed up value of ten tiles
C_{wd}	:	cover width drawn out value of ten tiles
d	:	profile depth of a tile
F_c	:	characteristic transverse strength of tiles
F_i	:	transverse strength of an individual tile
AQL	:	acceptable quality level
IL	:	interlocking
NL	:	non-interlocking
RF	:	regular front edge
IF	:	irregular front edge

4 Requirements**4.1 Materials**

The concrete used in the manufacture of tiles and fittings shall be formed by mixing cement, aggregate and water and produced by the hardening of the cement paste (cement and water). Besides the basic components the concrete may also contain pigments, admixtures and/or additives.

4.2 Hanging length and perpendicularity

The tile hanging length shall be declared in the manufacturer's technical specification. For tiles with a regular front edge, the values of l_1 shall be within ± 4 mm of the manufacturer's declared value when tested according to 4.1.1 and 4.1.2 of EN 491:1994.

The squareness for tiles with nominally constant hanging length, when tested according to 4.1.1 of EN491:1994, shall be calculated as the difference between values l_2 and l_3 and shall be not greater than 4mm.

NOTE: Some tiles are designed, for example for aesthetic reasons, with an irregular front edge. In these cases, the test method and requirements do not apply.

4.3 Cover width

4.3.1 General

The tile cover width c_w and optionally the cover width shunts shall be declared in the manufacturer's technical specification.

NOTE: Some tiles are designed, for example for aesthetic reasons, with a random cover width. In these cases, the requirements according to 4.3 do not apply.

4.3.2 Interlocking tiles

When tiles, with cover width shunts declared by the manufacturer, are tested according to 4.2.1 of EN491:1994 the cover width shall comply with the following:

$c_{wd}/10 \geq c_w +$ declared "plus cover width shunt"

$c_{wc}/10 \leq c_w -$ declared "minus cover width shunt".

When tiles without cover width shunts and tiles with cover width shunt but not declared by the manufacturer are tested according to 4.2.1 of EN 491:1994 the average cover width shall be within ± 5 mm of the manufacturer's declared cover width.

4.3.3 Non-interlocking tiles

When tiles are tested according to 4.2.2 of EN 491:1994 the average cover width shall be within ± 3 mm of the manufacturer's declared value.

4.4 Flatness

When tiles are tested according to 4.3 of EN491:1994, the gap between any desired contact point and the flat surface shall not exceed 3 mm or $c_w/100$ mm to the nearest millimetre, whichever is the greater.

NOTE: For some tile patterns the test method and Clause 4.4 are not suitable and do not apply, for example

- 1) the tiles are designed to have less than four desired contact points to a flat surface and/or
- 2) the tiles are designed to be irregular, for example, for aesthetic reasons.