



SLOVENSKI STANDARD
SIST EN 13693:2004/kprA1:2009

Montažni betonski izdelki - Specialni strešni elementi

Precast concrete products - Special roof elements

Betonfertigeteile - Besondere Fertigeteile für Dächer

Produits préfabriqués en béton - Éléments spéciaux de toiture

Ta slovenski standard je istoveten z: EN 13693:2004/prA1

ICS:

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Precast concrete products - Special roof elements

Produits préfabriqués en béton - Éléments spéciaux de
toiture

Betonfertigteile - Besondere Fertigteile für Dächer

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 229.

This draft amendment A1, if approved, will modify the European Standard EN 13693:2004. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Foreword

This document (EN 13693:2005/prA1:2008) has been prepared by Technical Committee CEN/TC 229 "Precast concrete products", the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

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 EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

1 Modification to the Scope

Replace the 2nd paragraph after the NOTE with the following:

"This document identifies also the requirements, the basic performance criteria and the evaluation of conformity of complementary elements made of reinforced or prestressed normal weight concrete, possibly used in combination with the main roof elements, such as load bearing shuttering plates and shells, for which reference shall be made to Annex F."

2 Addition of Annex F Complementary elements

Add the following new Annex F:

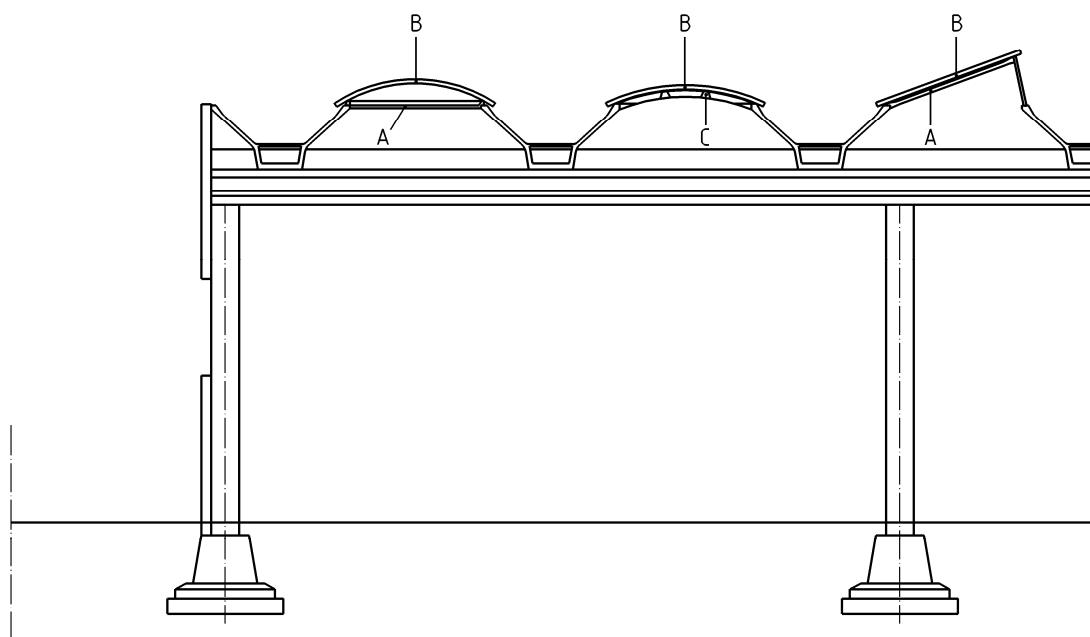
"

Annex F (normative)

Complementary elements

F.1 General

The present Annex deals with small elements, with maximum dimensions of 3 m × 6 m, which are employed as complementary elements in roof systems in conjunction with special roof elements (see Figure F.1).



Key

- A) ribbed slab with plane shape
- B) waterproof fibrocement slab
- C) ribbed slab with curved shape

Figure F.1 — Example of use of complementary elements

These elements are in reinforced or prestressed concrete with plane or curved shape (see Figures 2 and 3). They may have skylight openings.

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Placed in inclined arrangement they are also used for roofings with sub vertical windows.

These elements can be made of a solid or ribbed slabs (see Figures 2, 3 and 4).



Figure F.2 — Example of ribbed slab with plane shape



Figure F.3 — Example of ribbed slab with curved shape

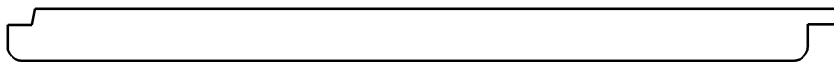


Figure F.4 — Example of solid slabs

F.2 Production requirements

The production of complementary ribbed elements shall comply with the requirements of EN 13369: 2004, clause 4.2.

In particular the strength class shall not be less than C30/37 for reinforced elements and C40/50 for prestressed elements.

F.3 Finished product requirements

F.3.1 Geometrical properties

F.3.1.1 Geometrical tolerances

Clause 4.3.1.1 of EN 13369:2004 shall apply. For ribbed elements complementary to Clause 4.3.1.1 of EN 13369:2004 clause 4.3.1.1 of EN13224:2004 shall apply.

F.3.1.2 Minimum dimensions

Clause 4.3.1.2 of EN 13369:2004 shall apply. For ribbed slabs, the thickness of the plate can be reduced adding a reinforcement mesh of galvanized or stainless steel proportioned only for working loads. The minimum thickness of the plate shall be 25 mm.

F.3.2 Surface characteristics

For surface characteristics, 4.3.2 of EN 13369:2004 shall apply.

F.3.3 Mechanical resistance

For requirements on mechanical strength clause 4.3.3 of EN 13369:2004 (referring to EN 1990: 2002, EN 1992-1-1:2004 and EN 1992-1-2:2004) shall apply, except 4.3.3.4 dealing with verification by testing.

For ribbed slabs the ultimate limit states and serviceability limit states verification refer to the ribs, while shuttering plate has only a function of closure.

For the plate of the ribbed slab, with dimensions greater than 200 x 200 mm, load tests up to failure on at least two full scale specimens for any type of product shall be performed before starting production in order to verify the reliability of the design model assumed for calculation.

The plate of the ribbed slab shall withstand the minimum crushing load F_v when tested in accordance with F.4.

In addition, a reinforced concrete plate, shall withstand a vertical test load F_p . The surface width of any residual crack after removal of the load shall not exceed 0,15 mm.

F.3.3.1 Loading requirement

The minimum vertical crushing load F_v , for the plate of ribbed slab shall be 2,5 kN.

The vertical test load F_p shall be 1,5 kN.

F.3.3.2 Punching test for the plate of ribbed slabs

The test shall be made after a sufficient age when the material properties have reached the necessary level.

The apparatus shall consist of a steel or cast iron square plate of 200 mm × 200 mm side, through which the specified load is applied to the centre of the plate of the ribbed slab placed in its supports.

Steel or cast iron loading plates shall be faced on their underside with elastomeric material; alternatively at the manufacture's discretion they shall be bedded on a layer of cement mortar or gypsum.

A first cycle up to the vertical proof load F_p ; increments are to be sufficiently small; at least 3 steps are needed. After load F_p stabilization the element is unloaded to survey, by visual inspection, if possible cracks do not exceed 0,15 mm width. A final cycle up to failure condition of the plate of the ribbed slab shall be performed.

The ultimate load capacity F_{test} shall be $\geq F_v$.

The test shall be used to verify the reliability of the design model assumed in calculation.

F.3.4 Resistance and reaction to fire

Clause 4.3.4 shall apply.

F.4 Test methods

Clause 5 of EN 13224:2004 shall apply.

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F.5 Evaluation of conformity

Clause 6 of EN 13224:2004 shall apply.

F.6 Marking and labelling

Clause 7 shall apply.

F.7 Technical documentation

Clause 8 shall apply."