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Fabrikstillverkade element av autoklaverad lättbetong eller lättklinkerbetong - Bestämning av skjuvhållfasthet hos svetspunkter i armeringsmattor eller armeringskorgar

Determination of shear strength of welded joints of reinforced mats or cages for prefabricated components made of autoclaved aerated concrete or lightweight aggregate concrete with open structure

Europastandarden EN 1737:1998 gäller som svensk standard. Detta dokument innehåller den officiella engelska språkversionen av EN 1737:1998.

Det finns för närvarande inga planer på att publicera standarden på svenska.

Standarden utgör en av flera provningsmetoder för autoklaverad lättbetong och/eller lättklinkerbetong, vilka åberopas i europastandarderna för armerade element av autoklaverad lättbetong respektive för lättklinkerbetong. De befintliga svenska standarderna för provningsmetoder kommer att upphävas först då nämnda produktstandarder fastställs som svensk standard och ersatt befintliga svenska produktstandarder.

ICS 91.080.00; 91.080.40; 91.100.30

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Descriptors: concrete, cellular concrete, aggregates, reinforcing materials, prefabricated elements, welded wire lattice, mechanical tests, shear tests, determination, shear strength, test specimen

English version

Determination of shear strength of welded joints of
reinforcement mats or cages for prefabricated components
made of autoclaved aerated concrete or lightweight aggregate
concrete with open structure

Détermination de la résistance au cisaillement des
jonctions soudées des treillis ou corbeilles d'armatures
pour les éléments préfabriqués réalisés en béton cellulaire
autoclavé ou en béton de granulats légers à structure
ouverte

Bestimmung der Bruchscherkraft von Schweißknoten von
Betonstahlmatten oder Bewehrungskörben für vorgefertigte
Bauteile aus dampfgehärtetem Porenbeton oder
haufwerksporigem Leichtbeton

This European Standard was approved by CEN on 25 March 1998.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 177 " Prefabricated reinforced components of autoclaved aerated concrete or light-weight aggregate concrete with open structure", the secretariat of which is held by DIN.

In order to meet the performance requirements as laid down in the product standards for prefabricated components of autoclaved aerated concrete and of lightweight aggregate concrete with open structure, a number of standardized test methods are necessary.

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 October 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

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.

1 Scope

This European Standard specifies a method of determining the shear strength of welded joints in reinforcements intended for use in prefabricated components made of autoclaved aerated concrete (AAC) according to prEN 12602 or lightweight aggregate concrete with open structure (LAC) according to prEN 1520.

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.

prEN 1520 Prefabricated components of lightweight aggregate concrete with open structure.

prEN 12602 Prefabricated reinforced components of autoclaved aerated concrete

3 Principle

The shear strength of welded joints is determined on test specimens consisting of a longitudinal bar and a welded transverse bar or diagonal bar.

In the case of welded joints, where the transverse bar forms an angle of 90° with the longitudinal bar, the test load is applied as a tensile force on the free end of the longitudinal bar, while the welded transverse bar is supported by a device designed to minimize influence from bending and twisting forces (see NOTE 1).

When joints with a diagonal bar are tested, the test load is applied to the free end of the diagonal bar while the longitudinal bar is supported (see NOTE 2).

The test load is increased at a uniform rate until failure of the weld, and the ultimate force is recorded.

NOTE 1: In AAC- and LAC-components transverse bars are predominantly used for anchorage of longitudinal bars, therefore the tensile force which can be transmitted from the longitudinal bar to the transverse bar, is of main interest.

NOTE 2: Diagonal bars are mainly used as shear reinforcement. In this case, the welded joint should be able to transmit the tensile force of the diagonal bar to the longitudinal bar.

4 Apparatus

- a) a device for cutting reinforcement without influence on the welded joints;
- b) calipers, capable of measuring the diameter of the reinforcing bars and the dimension of the welded joint to an accuracy of 0,1 mm;
- c) a tensile testing machine having a load capacity of at least 20 kN, capable of measuring the load to an accuracy of 1 %; for routine control purposes machines with lower accuracy may be used, provided the actual accuracy is taken into consideration when evaluating the test results.
- d) a device capable of holding the test specimen in such a way that the non-tensioned bar is firmly supported and prevented from bending and twisting as far as possible. The free end of the tensioned bar shall be supported against bending in such a way, that the measured force is not increased by friction (see NOTE).

NOTE: A typical device is shown in figure 1. An auxiliary for testing welded joints with angles other than 90° between the bars is shown in figure 2.