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Metode preskušanja zidovine - 3. del: Določevanje začetne strižne trdnosti

Methods of test for masonry - Part 3: Determination of initial shear strength

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Methods of test for masonry - Part 3: Determination of initial shear strength

Méthodes d'essai de la maçonnerie - Partie 3: Détermination de la résistance initiale au cisaillement

Prüfverfahren für Mauerwerk - Teil 3: Bestimmung der Anfangsscherfestigkeit (Haftscherfestigkeit)

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 125.

This draft amendment A1, if approved, will modify the European Standard EN 1052-3:2002. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 1052-3:2002/prA1:2004) has been prepared by Technical Committee CEN/TC 125 "*Masonry*", the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

1 Modification in 3 Principle

In the first paragraph delete "with precompression perpendicular to the bed joints".

In the second paragraph delete "The initial shear strength is defined by the linear regression curve to zero normal stress."

Add a new final paragraph as follows:

"Two procedures, A and B are included. Procedure A involves testing specimens at different precompressions and the initial shear strength is defined by a linear regression curve to zero prestress. Procedure B involves testing specimens at zero precompression and determining a characteristic initial shear strength from a simple or a statistical consideration of the results."

2 Modification in 7.1 Preparation of masonry specimens

Delete the first sentence "Prepare at least . . . . > 200 mm." and substitute the following:

"Prepare type A specimens according to Table 2 and Figure 1. If h_u >200mm, type B specimens may be used. Where for practical purposes it is necessary to cut units, ensure that the faces of the unit to be mortared are representative of the unit as a whole."

3 Modification in Table 2 Dimensions and type of shear test specimens

Delete existing Table 2 and substitute new Table 2 as shown below:

Table 2 — Dimensions and type of shear test specimens

Unit length	**Specimen type and dimensions**	
l_u mm	Type according to Figure 1	Dimensions mm
≤ 300	A	$l_s = l_u$
> 300	A	l_s = 300
≤ 300	B	h_1 = 200 $l_s = l_u$
> 300	B	h_1 = 200 $l_s = l_u$

4 Modification in Figure 2 Loading of shear test specimen

Delete $e = \frac{l_u}{15}$ and substitute $e = \frac{l_s}{15}$

5 Modification in 8.2 Loading

Add a new subclause heading "**8.2.1 Procedure A**" above the first two paragraphs.

Add a new subclause after the first two paragraphs as follows:

"**8.2.2 Procedure B**

Test at least six specimens at zero precompression."

Add a new subclause heading "**8.2.3 Loading rate**" above the final paragraph ("Increase the shear . . .).

6 Modification in 8.3 Measurements and observations

After "- the precompression load F_{pi}" add "(where relevant)"

7 Modification in 8.4 Replications

Delete lines 5, 6 & 7 and substitute the following:

"- further specimens may be tested until three shear failures of the types shown in Figure A.1 or Figure A.2 have been achieved for each precompression level (Procedure A) or six times (Procedure B) or alternatively;"

In the final line, add "for Procedure A" after "may be needed".

Delete the final paragraph "Lower bound results . . . . failures are achieved" and substitute the following:

"Lower bound results should not be used in the evaluation of results in clause 10. If necessary, an alternative precompression may be needed for Procedure A so that sufficient failures are achieved. In the case of Procedure B it may be unavoidable in which case the report should indicate that the result is a lower bound".

8 Modification in 9 Calculations

In line 1 add "where relevant" after "shear strength and"

At the end of the clause add:

Where f_{voi} is the shear strength of an individual sample (N/mm^2)

f_{pi} is the precompressive stress of an individual sample (N/mm^2)

F_i is the maximum shear force (N)

F_{pi} is the precompressive force (N)

A_l is the cross sectional area of a specimen parallel to the bed joints (N/mm^2)

9 Modification in 10 Evaluation of results

Add a new subclause heading "**10.1 Procedure A**" above the existing text.

At the end of clause 10 add a new subclause as follows:

"**10.2 Procedure B**

Calculate the mean initial shear strength f_{vo} to the nearest 0,01 N/mm^2

The characteristic initial shear strength may be calculated using 10.2.1 or 10.2.2.

10.2.1 Simple method

The characteristic initial shear strength, f_{vok}, shall be calculated as:

$$f_{vok} = 0.8 \times f_{vo}$$

or f_{vok} shall be taken as the lowest individual result whichever is the lower, and shall be given to the nearest 0.01 N/mm^2.

10.2.2 Statistical method

Calculate for each individual bond strength f_{vo1} f_{vo2} ……. f_{von} the values of Y_1, Y_2 ……Y_n

Where $Y_I = \log_{10} f_{voi}$ and calculate $Y_{mean} = \frac{\Sigma Y_{1-n}}{n}$

Calculate $Y_c = Y_{mean} - K_s$

Where s is the standard deviation of the n log values

K is a function of n given in Table 3

N is the number of individual values (normally 6)

Y is $\log_{10}$ of the initial shear strength, f_{vo}

Calculate the characteristic bond strength to the nearest 0.01 N/mm^2

Table 3 – Relationship between n and k

N	K
6	2.18
7	2.08
8	2.01
9	1.96
10	1.92
11	1.89
12	1.89
20	1.77

Take the characteristic bond strength to be f_{vk} = anti $\log_{10}$ (Y_c) N/mm^2 to the nearest 0.01 N/mm^2

NOTE The characteristic value derived is based upon a 95% confidence level