BRITISH STANDARD

BS EN
772-6:2001

Methods of test for masonry units —

Part 6: Determination of bending tensile strength of aggregate concrete masonry units

The European Standard EN 772-6:2001 has the status of a British Standard

ICS 91.100.30

National foreword

This British Standard is the official English language version of EN 772-6:2001.

EN 772-6 is a supporting standard to the forthcoming harmonized European product standard specification on aggregate concrete masonry units EN 771-3. These standards are the subject of transitional arrangements agreed under the Commission mandate. The Member States have agreed a nominal transition period for the co-existence of these standards and their corresponding national standard(s). It is intended that this period will comprise a nominal nine month period during which any required changes to national regulations are to be made, followed by a further nominal twelve month period for the implementation of CE marking. At the end of this co-existence period, the national standard(s) will be withdrawn. In the UK, the corresponding national standard to EN 772-6 and EN 771-3 is:

— BS 6073:1981, *Precast concrete masonry units — Specification for precast concrete masonry units.*

As EN 772-6 is a supporting standard to the forthcoming 'harmonized' EN 771-3, the nominal transition period of twenty-one months for EN 772-6 will commence upon the date of availability of this forthcoming 'harmonized' EN 771-3. At the end of this period BS 6073:1981 will be withdrawn.

NOTE Users of BS 6073:1981 should contact BSI Customer Services for confirmation of withdrawal.

The UK participation in its preparation was entrusted by Technical Committee B/519, Masonry and associated tests, to Subcommittee B/519/1, Masonry units, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Sector Policy and Strategy Committee for Building and Civil Engineering, was published under the authority of the Standards Policy and Strategy Committee on 04 December 2001

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 6, an inside back cover and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

ISBN 0 580 38770 4

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 772-6

September 2001

ICS 91.100.30

English version

Methods of test for masonry units — Part 6: Determination of bending tensile strength of aggregate concrete masonry units

Méthodes d'essai des éléments de maçonnerie — Partie 6: Détermination de la résistance à la traction par flexion des éléments de maçonnerie en béton de granulats

Prüfverfahren für Mauersteine — Teil 6: Bestimmung der Biegezugfestigkeit von Mauersteinen aus Beton

This European Standard was approved by CEN on 18 August 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 772-6:2001 E

Content

Page

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 125, Masonry, the Secretariat of which is held by BSI.

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 March 2002, and conflicting national standards shall be withdrawn at the latest by June 2003.

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 bending tensile strength of aggregate concrete masonry units having a width less than 100 mm and a ratio of length to width greater than 10, in accordance with prEN 771-3.

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 (including amendments).

prEN 771-3, *Specification for masonry units — Part 3: Aggregate concrete masonry units (dense and lightweight aggregates)*.

EN 772-16, *Methods of test for masonry units — Part 16: Determination of dimensions*.

EN 1015-11, *Methods of test for mortar for masonry — Part 11: Determination of flexural and compressive strength of hardened mortar*.

3 Principle

The principle of this test is to measure the bending tensile strength of concrete units by a flexural test.

4 Symbols

R_{tf}	is the bending tensile strength of the specimen, in Newton per square millimetres (N/mm^2)
F	is the failure load, in Newton (N)
l	is the distance between supports, in millimetres (mm)
b	is the specimen width in millimetres (mm)
h	is the specimen height, in millimetres (mm)

5 Apparatus

5.1 Test machine of appropriate capacity, in accordance with EN 1015-11.

The bending device shall consist of two roller supports having the same diameter between 15 and 40 mm, on which the specimen rests, and two upper rollers of the same diameter, through which the load is applied. The distance between the two support rollers should be at least 4 times the height of the specimen. The two upper rollers should be positioned at the third points of the span.

To allow a uniform distribution of the forces on the specimen, all rollers except one shall be able to oscillate slightly about their centre, in a vertical plane perpendicular to the major axis of the specimen.

5.2 Weighing instrument capable of weighing specimens to an accuracy of at least 0,1 % of their mass.

6 Preparation of specimens

The minimum number of specimens shall be three, but a larger minimum number may be specified in the product specification, in which case that larger number shall be used.

Whole unit test specimens shall be conditioned by air drying in an environment under the following conditions:

Relative humidity	≤ 65 %
Temperature	≥ 15 °C
Duration	14 days

If during the conditioning process the loss in mass in consecutive weighings at not less than 24 h intervals, is less than 1 % of the mass of the unit, the unit may be regarded as air dry.

The method of sampling shall be stated in the test report.

Measure the dimensions of the specimens in accordance with EN 772-16.

7 Test procedure

Apply the load gradually and without shock at any convenient rate such that failure occurs within 30 s to 90 s. Record the maximum load (P), and position of failure.

Measure height h and width b of the cross section at the location of fracture to the nearest 0,1 mm.

8 Calculation of results

Calculate the tensile bending strength of each specimen to the nearest 0,1 N/mm^2 using the formula:

$$R_{\mathrm{tf}} = \frac{Fl}{bh^2}$$

The position of the failure shall be noted in the report. If the fracture occurs in the tension surface outside of the middle third of the span length, the test result should be discarded. Three, or the larger number of specimens referred to in clause 6, results shall be determined. Calculate the tensile bending strength as the mean of the individual results to the nearest 0,1 N/mm^2.

9 Test report

The test report shall contain the following information:

a) the number, title and date of issue of this European Standard;

b) the name of the organization that carried out the sampling and the method used;

c) the date of testing;

d) the type, origin and designation of the masonry unit by reference to prEN 771-3;

e) the number of specimens in the sample;

f) the date of receipt of the specimens in the testing laboratory

g) the age of the specimens (if known);

h) a sketch of the specimen showing the orientation of loading and the position of rollers;

i) the failure load in N, position of failure, strength in N/mm^2 to the nearest 0,1 N/mm^2 and dimensions in mm of each specimen. Note any discarded results;

j) the mean bending tensile strength in N/mm^2 to the nearest 0,1 N/mm^2;

k) remarks, if any.

blank

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001. Standards are also available from the BSI website at http://www.bsi-global.com.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001. Further information about BSI is available on the BSI website at http://www.bsi-global.com.

Copyright

BSI
389 Chiswick High Road
London
W4 4AL