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BSI Group
389 Chiswick High Road
London, W4 4AL
United Kingdom

T: +44 20 845 086 9001
F: +44 20 8996 7400
cservices@bsigroup.com
bsigroup.com

British Standards Limited
Registered in England no: 07864997
Registered address: 389 Chiswick High Road
London, W4 4AL, United Kingdom

BRITISH STANDARD CODE OF PRACTICE

CP 111 : 1970

STRUCTURAL RECOMMENDATIONS FOR LOADBEARING WALLS

THE COUNCIL FOR CODES OF PRACTICE
BRITISH STANDARDS INSTITUTION

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STRUCTURAL RECOMMENDATIONS FOR LOADBEARING WALLS

Incorporating amendments issued June 1971 (AMD 744)
and June 1976 (AMD 2031)

THE COUNCIL FOR CODES OF PRACTICE
BRITISH STANDARDS INSTITUTION
2 PARK STREET, LONDON W1A 2BS
Telex: 266933 Telephone: 01-629 9000

UDC 69.022

STRUCTURAL RECOMMENDATIONS FOR LOADBEARING WALLS

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This part of this Code of Practice makes reference to the following British Standards and British Standard Codes of Practice:

BS 476. Fire tests on building materials and structures. Part 8. Tests methods and criteria for the fire resistance of elements of building construction.'

BS 877. Foamed or expanded blastfurnace slag lightweight aggregate for concrete.

BS 882, 1201 Aggregates from natural sources for concrete (including granolithic)

BS 1047. Air-cooled blast furnace slag coarse aggregate for concrete.

BS 1165. Clinker aggregate for concrete.

BS 2028. 1364 Precast concrete blocks.

BS 3921. Clay bricks and blocks.

BS 4449. Hot-rolled steel bars for the reinforcement of concrete

CP 3. Code of basic data for the design of buildings. Chapter V. Loading. Part 1, Dead and imposed loads.

CP 101. Foundations and substructures for non-industrial buildings of not more than four storeys.

CP 114. Structural use of reinforced concrete in buildings.

CP 115. The structural use of prestressed concrete in buildings.

CP 121 Walling. Part 1. Brick and block masonry.

CP 121.201. Masonry walls ashlared with natural stone or with cast stone.

CP 121.202. Masonry. Rubble walls.

British Standard Codes of Practice are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on this Code of Practice:
Committee reference BLCP/29

CODE DRAFTING COMMITTEE BLCP/29: LOADBEARING WALLS

Mr. E. O. Measor, O.B.E. (*Chairman*)

Mr. Peter Dunican	*Association of Consulting Engineers*
Mr. J. D. Peacock	*Federation of Concrete Specialists*
Mr. L. G. Simms (retired 1967–68)	*Building Research Station (originally DSIR, now MPBW)*
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Mr. A. W. Hill	*Cement and Concrete Association*
Mr. M. A. Pyle (now represented by Mr. K. H. Milbank)	*Chalk, Lime and Allied Industries Research Association (later Welwyn Hall Research Association)*
Mr. E. P. Featherstone	*District Surveyors' Association*
Mr. J. F. Purvis (succeeded Mr. Rees, Secy. of the Federation, Feb. '67)	*Federation of Building Block Manufacturers*
Mr. E. Bell (Mr. J. W. Bielous from Aug. '69)	*Federation of Civil Engineering Contractors*
Mr. K. Thomas	*Brick Development Association*
Mr. F. D. Entwistle	*Incorporated Association of Architects and Surveyors*
Mr. W. L. Nott (resigned July, 1966)	*Institute of Building*
Mr. B. D. Thomas	
Mr. E. O. Measor, O.B.E.	*Institution of Civil Engineers*
Mr. R. H. Ogden (Mr. J. Marsden-Gill from 1966)	*Institution of Municipal Engineers*
Mr. E. O. Measor, O.B.E.	*Institution of Structural Engineers*
Mr. M. C. G. Ayre	*Greater London Council*
Mr. H. E. Mills	*Ministry of Public Building and Works*
Mr. D. K. Doran	*National Federation of Building Trade Employers*
Mr. G. Laurence	*National Federation of Clay Industries*
Mr. T. G. W. Doxall (resigned 1966)	*Pressed Brick Makers' Association*
Mr. R. Richards	
Mr. A. W. Hill	*Prestressed Concrete Development Group*
Mr. A. W. Hill	*The Concrete Society*
Mr. H. J. Clark	*Royal Institute of British Architects*
Mr. K. S. Burns (Mr. B. L. Dent from 1965)	*Royal Institution of Chartered Surveyors*

Mr. D. Dennington
Professor A. W. Hendry
Mr. R. J. M. Sutherland
} *Individual capacity*

Secretariat: *Institution of Structural Engineers*

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This Code of Practice represents a standard of good practice and takes the form of recommendations. Compliance with it does not confer immunity from relevant legal requirements including byelaws.

Attention is, however, drawn to the fact that in certain byelaws, notably those building byelaws based upon one of the models issued by the Ministry of Housing and Local Government and the Scottish Development Department, compliance with the provisions of certain British Standards or British Standard Codes of Practice, or of specific clauses therein, is 'deemed to satisfy' the requirements of certain of the byelaws in the fields covered by the British Standards and Codes of Practice, or by the specific clauses referred to.

BRITISH STANDARD CODE OF PRACTICE CP 111

STRUCTURAL RECOMMENDATIONS FOR LOADBEARING WALLS

FOREWORD

This Code of Practice was first issued in 1948 and was revised in 1964. In that revision the permissible stresses in loadbearing brickwork and blockwork walls were, in general, substantially raised. The basic stresses were only slighly altered, but the changes in reduction factors for slenderness had the effect of increasing permissible stresses, the extent of the increase depending on the type of wall and load it is carrying.

The recommendations for loadbearing concrete walls were not confined to in-situ concrete as previously, and permissible stresses for plain concrete walls were related to cube-strength requirements of both nominal-mix concrete and special-mix concrete.

In July 1970 it was decided to delay the publication of the revision to the Code to enable this to be redrafted as a limit state document. Amendment No. 1 was therefore published to introduce certain changes which had been circulated in the draft for comment of the revised code. The changes included the amendment from nominal thickness to actual thickness; the reduction in thickness from 100 mm to 90 mm in certain instances; changes in the maximum slenderness ratio and to the reduction factor for slenderness; a change in the permissible shear stress; the inclusion of hollow concrete blocks with in-situ filling. *As added June 1971*

At the same time that Amendment No. 1 was published, CP 111 was published as Part 1 'Imperial units' and Part 2 'Metric units'. Part 1 was withdrawn in 1976 and Part 2 was renumbered CP 111. *As amended June, 1976*

SECTION 1. GENERAL

101. Scope. This Code gives structural recommendations relating to loadbearing walls of brickwork, blockwork (which for the purposes of this Code includes masonry) and concrete, in regard to the materials to be used, the maximum permissible stresses and the methods of design and construction.

Two methods of determining the necessary thickness of walls have been used:

a. the thickness is related to the height and length of the wall; or

b. the thickness is determined in relation to the load to be carried by the wall, in conjunction with certain specified permissible stresses.

This Code deals only with the design of walls based on method *b**.

NOTE. Recommendations other than structural may be found by reference to the following Codes:

As amended June, 1976

CP 121, Walling. Part 1, Brick and block masonry.
CP 121.201, Masonry. Walls ashlared with natural stone or cast stone.
CP 121.202, Masonry. Rubble walls.

102. Definitions. For the purposes of this Code the following definitions apply:

Loadbearing wall. A wall designed to carry an imposed load other than that due to its own weight. A wall subjected to its own weight and wind only is excluded. It may be constructed of any of the following materials:

Brickwork. An assemblage of bricks bonded and solidly put together with mortar.

Blockwork. An assemblage of blocks of clay, concrete or other suitable material bonded and solidly put together with mortar.

Masonry. An assemblage of blocks of natural or cast stone bonded and solidly put together with mortar.

Reinforced brickwork, blockwork or masonry. Brickwork, blockwork or masonry in which reinforcement is so embedded in the mortar that all the materials act together in resisting forces.

Concrete. Concrete without reinforcement or concrete having reinforcement which is not designed to carry load.

Structural units. These may be either:

Brick or loadbearing blocks complying with Clause 201; or
Blocks of natural stone complying with Clause 201.

Types of wall.

Cavity wall. A wall comprising two leaves tied together with metal or

* Method *a* is dealt with in the relevant clauses of Ministry of Housing and Local Government, Series IV, 'Buildings', or those issued by the Scottish Development Department or sometimes in the appropriate byelaws.