

Specification for

Calcium silicate (sandlime and flintlime) bricks

UDC 691.316:666.965.2

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Brick Development Association	Royal Institute of Chemistry
British Ceramic Research Association	The Modular Society Ltd.
Calcium Silicate Brick Association Ltd.	Welwyn Hall Research Association
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This British Standard, having been prepared under the direction of the Cement, Gypsum, Aggregates and Quarry Products Standards Committee, was published under the authority of the Executive Board on 31 October 1978

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First published March 1923
First revision March 1934
Second revision June 1942
Third revision September 1955
Fourth revision June 1967
Metric edition published as Part 2 July 1970
Fifth revision as BS 187 October 1978

The following BSI references relate to the work on this standard:
Committee reference CAB/10
Draft for comment 76/10116DC

ISBN 0 580 10303 X

Amendments issued since publication

Amd. No.	Date of issue	Comments
5427	August 1987	Indicated by a sideline in the margin

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Foreword

This revision of BS 187-2 has been prepared under the direction of the Cement, Gypsum, Aggregates and Quarry Products Standards Committee.

NOTE Part 1 of this standard, imperial units, is now withdrawn.

In this revision, attention has been paid to the need to coordinate methods of classification requirements and test procedures, wherever practicable, with those for other types of bricks, given in BS 3921 and BS 6073-1. Advantage has been taken, in making these changes, of investigations and experience gained by a number of testing laboratories as well as by manufacturers and users.

Certification. Attention is drawn to the certification facilities described on the inside back cover of this standard.

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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

Since some of the manufacturing processes now offer greater flexibility of form of bricks, provisions have been made in this standard to cover solid bricks, as well as traditional bricks with frogs.

The lowest strength category, class 2, has been removed from this standard as bricks of strength below the requirements for class 3 are not now produced in significant quantities.

The introduction of a requirement for “predicted lower limit of crushing strength”, instead of the “coefficient of variation” limit in the previous standard, is intended to give a more equitable basis of acceptance; it was possible on the previous basis to have a consignment rejected even though the bricks were of adequate strength because of the form of distribution of strengths. The calculation involves no more work than that of the coefficient of variation. The minimum requirements in this respect are in effect of similar stringency to those of the previous standard, with consignments of normal strength distribution. The theoretical basis for this requirement is indicated briefly in Appendix C.

The drying shrinkage test has been deleted because the test method formerly given in the standard was not reproducible and was in any case difficult and costly to carry out. Research is in progress to develop a test method which will relate the movement characteristics of the bricks more closely to the behaviour of calcium silicate masonry in service. If the new method proves to be satisfactory it will be incorporated in the standard.

The procedure for determining compressive strength has been revised to accord more closely with procedures in other brick standards and to take account of more recent studies on this subject.

Most materials have different strengths when tested wet from those when tested dry; the wet strength is normally the lower. In practice, bricks are rarely completely dry and their strengths may vary from values closely approaching the wet strengths towards those of the dry strengths. The strength upon which calculations are based would, therefore, usually be the wet strength and for this reason the wet strength is used in this standard.

No requirement regarding water absorption is included in this standard since the water absorption of calcium silicate bricks does not provide a satisfactory measure of durability. Furthermore, with regard to rain penetration, the relationship between absorption and permeability (the rate of flow of water through the brick) is not a simple one and the penetration of water through the brickwork is usually through mortar joints or mortar/brick interfaces.

1 Scope

This British Standard specifies requirements for calcium silicate bricks for use in walling. It does not cover lime based bricks made with calcined shale, slag or other materials made by a similar process or the colour and texture of bricks, which should be the subject of special agreement between the manufacturer and the purchaser.

The bricks are intended to be laid on a bed mortar, following the recommendations in BS 5628-3. Sizes and tolerances given in this standard apply only to the 225 mm × 112.5 mm × 75 mm format.

Requirements for a 200 mm × 100 mm × 75 mm format are given in BS 6649 and requirements for special bricks are given in BS 4729.

NOTE Some types of bricks may also be suitable for use in paving (see BS 6677-1).

2 References

The titles of the standards publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1 brick

a walling unit which does not exceed 337.5 mm in length, 225 mm in width and 112.5 mm in height

3.2 frogs

depressions in the bed faces of a brick

3.3 solid brick

a brick which has no holes, cavities or depressions

3.4 cavities

holes which are closed at one end

3.5 frogged brick

a brick having depressions in one or more bed faces, the volume of which does not exceed 20 % of the gross volume of the brick

3.6 loadbearing brick

a brick which is suitable for brickwork bearing significant loads and conforming to defined limits for strength