

Specification for

Water repellents for masonry surfaces

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Elements and Components (of Diverse Materials) for Buildings Standards Policy Committee (ECB/-) to Technical Committee ECB/37, upon which the following bodies were represented:

- Autoclaved Aerated Concrete Products Association
- Brick Development Association
- British Adhesives and Sealants Association
- British Board of Agrément
- British Ceramic Research Ltd.
- British Wood Preserving and Damp-proofing Association
- Consumer Policy Committee of BSI
- Department of the Environment (Building Research Establishment)
- Institution of Environmental Health Officers
- Society of Chemical Industry
- Society of Chief Architects of Local Authorities

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Foreword

This British Standard has been prepared under the direction of the Elements and Components (of Diverse Materials) for Building Standards Policy Committee. For 3 years before its withdrawal BS 3826:1969 ran concurrently with BS 6477:1984 which this standard now supersedes.

This standard provides a performance specification covering all types of water repellent for masonry surfaces. The tests given in BS 3826 and BS 6477:1984 have been revised for the following reasons:

- a) to classify water repellents into four groups according to performance on different substrates (see clause 3);
- b) to relate the prescribed laboratory treatment method more closely to potential site application conditions and temperature;
- c) to extend the duration of the durability test.

While masonry provides adequate protection from the weather when properly designed and constructed, colourless water repellent treatments based on solutions of waxes and/or metallic soaps have long been used in building primarily for remedial purposes. More durable treatments based on silicone resins and polyoxo aluminium stearate have largely replaced these materials. Water repellents will not cure rain penetration in all circumstances; they may sometimes be ineffective or, rarely, be detrimental. Reference should be made to BS 6270 and, whenever possible, expert advice should be sought.

This standard gives performance criteria only and it is not possible to give effective concentrations for the different repellents available. However, accumulated evidence to date, based on solvent based polymeric silicones, aqueous solutions of alkali metal alkyl siliconates and solvent based polyoxo aluminium stearates and silanes and their derivatives indicates that an active repellent solution of not less than 4.5 % (*m/m*) will be necessary to pass the 1 year durability test as specified in BS 3826. An active water repellent content greater than 5 % (*m/m*) will be necessary to pass the durability test as described in this standard.

For monomeric alkyl alkoxy silanes a solids content of 40 % minimum will normally be necessary to comply with the test requirements described in this standard.

This British Standard calls for the use of substances that may be injurious to health if adequate precautions are not taken. It refers only to the technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

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.

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.

1 Scope

This British Standard specifies performance requirements, including requirements for durability, for water repellents intended for use on masonry above ground level and free from cracks with a surface width exceeding 0.15 mm.

Water repellents are classified into four groups according to suitability for use on particular types of substrate. The various clauses in the specification containing performance requirements refer to Appendix A to Appendix H inclusive. These appendices contain test procedures, which are also requirements of the standard.

Appendix J gives recommendations for use, covering general considerations, the preparation of surfaces to be treated, the application of the repellent and the protection of workers.

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

2 Definitions

For the purposes of this British Standard the definitions given in BS 6100 apply, together with the following.

2.1

water repellent

a substance that will prevent the wetting of masonry by liquid water but will allow vapour transmission

2.2

active water repellent

a fully cured water repellent deposited on the substrate

NOTE The fully cured water repellent should not be confused with the initial non-volatile content of the water repellent solution.

3 Classification

Water repellents for masonry shall be classified according to suitability for use on particular types of substrate, as given in Table 1.

Table 1 — Classification of water repellents

Group	General description of substrate	Examples
1	Predominantly siliceous	All fired-clay surfaces. Sandstones, e.g. Darley Dale, Wealden, St. Bees, Blaxter and Hollington stone. Mature and other hydraulic cement-based materials, e.g. cement and cement-lime renderings. Fibre reinforced cement
2	Predominantly calcareous	Natural limestone, e.g. Portland, Bath, Hopton Wood, Clipsham, Weldon, Doultong, Caen. Cast stone made using hammer compacted factory processes
3	Freshly made cementitious materials and other materials of similar alkaline nature	New or repaired surfaces where brickwork or stonework has been bonded, painted or rendered with cement based materials (see note 3)
4	Calcium silicate ^a brickwork	
NOTE 1 If in doubt, the type of surface to be treated should be reported to the manufacturer so that the most appropriate group may be recommended on the basis of experience or laboratory tests. NOTE 2 Some repellents are suitable for use on more than one substrate. NOTE 3 When considering new work or repairs, a group 3 water repellent should be used unless the mortar is allowed to cure or mature for at least 1 month before the application of the repellent to the structure. ^a Commonly known as sandlime or flintlime.		

4 Application properties

The viscosity of the water repellent solution shall be such that it can be applied to a masonry surface in sufficient quantity in a single generous or flood coat, the manufacturer's application recommendations also having been followed (see also **J.3**).