

Technical references for mortar and associated topics



Mortar Industry Association (MIA) Publications

Reference/Publication Date	Subject
Data Sheet No. 1: January 2005	Factory produced lime:sand mortar for masonry
Data Sheet No. 2: January 2005	Factory produced ready-to-use mortar for masonry
Data Sheet No. 3: January 2005	Factory produced silo mortar for masonry
Data Sheet No. 4: January 2005	Factory produced mortar for external rendering
Data Sheet No. 5: January 2005	Factory produced mortar for internal plastering
Data Sheet No. 6: January 2005	Factory produced lime:sand mortar for paving
Data Sheet No. 7: January 2005	Factory produced mortar for use at low/freezing temperatures
Data Sheet No. 8: January 2005	Efflorescence and bloom on masonry
Data Sheet No. 9: January 2008	Technical references for mortar and associated topics
Data Sheet No. 10: January 2005	Guide to remedial measures associated with internal plastering
Data Sheet No. 11: January 2005	The benefits of factory produced lime:sand mortar for masonry
Data Sheet No. 12: January 2005	Guide to minimising rain penetration through masonry walls
Data Sheet No. 13: January 2005	Terms, descriptions and definitions
Data Sheet No. 14: January 2005	Guide to best practice for external rendering
Data Sheet No. 15: May 2003	Admixtures for mortar
Data Sheet No. 16: May 2008	The use of ground granulated blastfurnace slag and pulverised fuel ash in mortar
Data Sheet No. 17: May 2004	Pigments for mortar
Data Sheet No. 18: May 2004	The use of lime in mortar
Data Sheet No. 19: January 2005	New mortar standards
Data Sheet No. 20: January 2007	Health & Safety Product Data Sheet - Factory Produced Mortar
Data Sheet No 21: May 2008	The specification of an appropriate mortar

Concrete Society Publications

Reference/Publication Date	Subject
CS 116:2000	Rendering - a practical handbook by W L Monks.
CS 159:2005	Mortars for masonry: Guidance on specification, types, production and use.
CAS24	Rendering - Defects and Remedial Measures.

British Cement Association (BCA) Publications

Reference/Publication Date	Subject
48.063	BCA guide to materials for masonry mortar.

British Standards Institution (BSI) publications

BS No./Publication Date	Subject
BS 476:Part 4:1970 (1984)	Fire tests on building materials and structures. Non-combustibility test for materials.
BS 476:Part 10:1983 (1989)	Fire testing on building materials and structures. Guide to the principles and application of fire testing.
BS 476:Part 20:1987	Fire tests on building materials and structures. Method for determination of the fire resistance of elements of construction (general principles).
BS 476:Part 21:1987	Fire testing on building materials and structures. Methods for the determination of fire resistance of loadbearing elements.
BS 743:1970	Specification for materials for damp-proof courses.
BS 3921:1985 (1995)	Specification for clay bricks.
BS 4027:1996	Specification for sulfate-resisting Portland cement.
BS 4551:2005	Mortar. Methods of test for mortar. Chemical analysis and physical testing.
BS 4729: 2005	Clay and calcium silicate bricks of special shapes and sizes. Recommendations.
BS 5502:Part 21:1990 (1995)	Buildings and structures for agriculture. Code of practice for selection and use of construction materials.
BS 5628:Part 1:2005	Code of practice for use of masonry. Structural use of unreinforced masonry.
BS 5628:Part 2:2005	Code of practice for use of masonry. Structural use of reinforced and prestressed masonry.
BS 5628:Part 3:2005	Code of practice for use of masonry. Materials and components, design and workmanship.
BS 5642:Part 1:1978	Sills and copings. Specification for window sills of precast concrete, cast stone, clayware, slate and natural stone.
BS 5642:Part 2:1983	Sills and copings. Specification for copings of precast concrete, cast stone, clayware, slate and natural stone.
BS 6100:Part 5:Sec 5.1:1992 (1998)	Glossary of building and civil engineering terms. Masonry. Terms common to masonry.
BS 6100:Part 5:Sec 5.2:1992 (1998)	Glossary of building and civil engineering terms. Masonry. Stone.
BS 6100:Part 6:Sec 6.1:1984 (1997)	Concrete and plaster. Binders.
BS 6100-6.6.1 Sec 6.6: 1992	Glossary of building and civil engineering terms. Concrete and plaster. Products, applications and operations. Concrete and mortar.
BS 6100-6.6.2:1990	Glossary of building and civil engineering terms. Concrete and plaster. Products, applications and operations. Plaster.
BS 6398: 1983	Specification for bitumen damp-proof courses for masonry.
BS 6457:1984	Specification for reconstructed stone masonry units.
BS 7979: 2001	Specification for limestone fines for use with Portland cement.
BS 8000:Part 3:2001	Workmanship on building sites. Code of practice for masonry.
BS 8000:Part 10:1995	Workmanship on building sites. Code of practice for plastering and rendering.
BS 8103-2:2005	Structural design of low-rise buildings. Code of practice for masonry walls for housing.
BS 8215: 1991	Code of practice for design and installation of damp-proof courses in masonry construction.
BS 8221-1:2000	Code of practice for cleaning and surface repair of buildings. Cleaning of natural stones, brick and terracotta and concrete.

British Standards Institution (BSI) publications (cont)

BS No./Publication Date	Subject
BS 8221-2:2000	Code of practice for cleaning and surface repair of buildings. Surface repair of natural stones, brick and terracotta.
BS 8481: 2006	Design, preparation and application of internal gypsum, cement, cement and lime plastering systems. Specification.
DD 86:Part 3:1990	Damp-proof courses. Guide to characteristic strengths of damp-proof course material used in masonry.
BS EN 197-1:2000	Cement. Composition, specification and conformity criteria for common cements.
BS EN 197-4:2004	Cement. Composition, specification and conformity criteria for low early strength blastfurnace cements.
BS EN 413-1:2004	Masonry cement. Composition, specifications and conformity criteria.
BS EN 413-2:2005	Masonry cement: Test methods.
BS EN 450-1: 2005	Fly ash for concrete. Definition, specifications and conformity criteria.
BS EN 459-1:2001	Building lime. Definitions, specifications and conformity criteria.
BS EN 480-1:2006	Admixtures for concrete, mortar and grout. Test methods. Reference concrete and reference mortar for testing.
BS EN 480-2:2006	Admixtures for concrete, mortar and grout. Test methods. Determination of setting time.
BS EN 480-5:2005	Admixtures for concrete, mortar and grout. Test methods. Determination of capillary absorption.
BS EN 480-6:2005	Admixtures for concrete, mortar and grout. Test methods. Infrared analysis.
BS EN 480-8:1997	Admixtures for concrete, mortar and grout. Test methods. Determination of the conventional dry material content.
BS EN 480-10:1997	Admixtures for concrete, mortar and grout. Test methods. Determination of water soluble chloride content.
BS EN 480-12:2005	Admixtures for concrete, mortar and grout. Test methods. Determination of the alkali content of admixtures.
BS EN 480-13:2002	Admixtures for concrete, mortar and grout. Test methods. Reference masonry mortar for testing mortar admixtures.
BS EN 771-1:2003	Specification for masonry units. Clay masonry units.
BS EN 771-2:2003	Specification for masonry units. Calcium silicate masonry units.
BS EN 771-3:2003	Specification for masonry units. Aggregate concrete masonry units (dense and light-weight aggregates).
BS EN 771-4:2003	Specification for masonry units. Autoclaved aerated concrete masonry units.
BS EN 771-5:2003	Specification for masonry units. Manufactured stone masonry units.
BS EN 771-6:2005	Specification for masonry units. Natural stone masonry units.
BS EN 772-1:2000	Methods of test for masonry units. Determination of compressive strength.
BS EN 772-2:1998	Methods of test for masonry units. Determination of percentage voids in masonry units (by paper indentation).
BS EN 772-3:1998	Methods of test for masonry units. Determination of net volume and percentage of voids of clay masonry units by hydrostatic weighing.
BS EN 772-4:1998	Methods of test for masonry units. Determination of real and bulk density and of total and open porosity for natural stone masonry units.

British Standards Institution (BSI) publications (cont)

BS No./Publication Date	Subject
BS EN 772-5:2001	Methods of test for masonry units. Determination of the active salts content of clay masonry units.
BS EN 772-6:2001	Methods of test for masonry units. Determination of bending tensile strength of aggregate concrete masonry units.
BS EN 772-7:1998	Methods of test for masonry units. Determination of water absorption of clay masonry damp-proof course units by boiling in water.
BS EN 772-9:1998	Methods of test for masonry units. Determination of volume and percentage of voids and net volume of calcium silicate masonry units by sand filling.
BS EN 772-10:1999	Methods of test for masonry units. Determination of moisture content of calcium silicate and autoclaved aerated concrete units.
BS EN 772-11:2000	Methods of test for masonry units. Determination of water absorption of aggregate concrete, manufactured stone and natural stone masonry units due to capillary action and the initial rate of water absorption of clay masonry units.
BS EN 772-13:2000	Methods of test for masonry units. Determination of net and gross dry density of masonry units (except for natural stone).
BS EN 772-14:2002	Methods of test for masonry units. Determination of moisture movement of aggregate concrete and manufactured stone masonry units.
BS EN 772-15:2000	Methods of test for masonry units. Determination of water vapour permeability of autoclaved aerated concrete masonry units.
BS EN 772-16:2000	Methods of test for masonry units. Determination of dimensions.
BS EN 772-18:2000	Methods of test for masonry units. Determination of freeze - thaw resistance of calcium silicate masonry units.
BS EN 772-20:2001	Methods of test for masonry units. Determination of flatness of faces of masonry units.
BS EN 934-3:2003	Admixtures for concrete, mortar and grout. Admixtures for masonry mortar. Definitions, requirements, conformity, marking and labelling.
BS EN 934-6:2001	Admixtures for concrete mortar and grout - Sampling, conformity control and evaluation of conformity.
BS EN 998-1:2003	Specification for mortar for masonry - Part 1: Rendering and plastering mortar.
BS EN 998-2:2003	Specification for mortar for masonry - Part 2: Masonry mortar.
BS EN 1015-1:1999	Methods of test for mortar for masonry. Determination of particle size distribution (by sieve analysis).
BS EN 1015-2:1999	Methods of test for mortar for masonry. Bulk sampling of mortars and preparation of test mortars.
BS EN 1015-3:1999	Methods of test for mortar for masonry. Determination of consistence of fresh mortar (by flow table).
BS EN 1015-4:1999	Methods of test for mortar for masonry. Determination of consistence of fresh mortar (by plunger penetration).
BS EN 1015-6:1999	Methods of test for mortar for masonry. Determination of bulk density of fresh mortar.
BS EN 1015-7:1999	Methods of test for mortar for masonry. Determination of air content of fresh mortar.
BS EN 1015-9:1999	Methods of test for mortar for masonry. Determination of workable life and correction time of fresh mortar.
BS EN 1015-10:1999	Methods of test for mortar for masonry. Determination of dry bulk density of hardened mortar.

British Standards Institution (BSI) publications (cont)

BS No./Publication Date	Subject
BS EN 1015-11:1999	Methods of test for mortar for masonry. Determination of flexural and compressive strength of hardened mortar.
BS EN 1015-12:2000	Methods of test for mortar for masonry. Determination of adhesive strength of hardened rendering and plastering mortars on substrates.
BS EN 1015-17:2000	Methods of test for mortar for masonry. Determination of water-soluble chloride content of fresh mortars.
BS EN 1015-18:2002	Methods of test for mortar for masonry. Determination of water absorption coefficient due to capillary action of hardened mortar.
BS EN 1015-19:1999	Methods of test for mortar for masonry. Determination of water vapour permeability of hardened rendering and plastering mortars.
BS EN 1015-21:2002	Methods of test for mortar for masonry. Determination of the compatibility of one coat-rendering mortars with substrates.
BS EN 1052-1:1999	Methods of test for masonry. Determination of compressive strength.
BS EN 1052-2:1999	Methods of test for masonry. Determination of flexural strength.
BS EN 1052-3:2002	Methods of test for masonry. Determination of initial shear strength.
BS EN 1052-4:2000	Methods of test for masonry. Determination of shear strength including damp proof course.
BS EN 1052-5:2005	Methods of test for masonry. Determination of bond strength by the bond wrench method.
BS EN 1934:1998	Thermal performance of buildings. Determination of thermal resistance by hot box method using heat flow meter. Masonry.
BS EN 1996-1-1:2005	Eurocode 6: Design of masonry structures. General rules for reinforced and unreinforced masonry structures.
BS EN 1996-1-2:2005	Eurocode 6: Design of masonry structures. General rules. Structural fire design.
BS EN 1996-2:2006	Eurocode 6: Design of masonry structures. Design considerations, selection of materials and execution of masonry.
BS EN 1996-3:2006	Eurocode 6: Design of masonry structures. Simplified calculation methods for unreinforced masonry structures.
BS EN 12878:2005	Pigments for the colouring of building materials based on cement and/or lime. Specifications and methods of test.
BS EN 13139:2002	Aggregates for mortar.
BS EN 13658-1: 2005	Metal lath and beads, Definitions, requirements and test methods. Internal plastering.
BS EN 13658-2: 2005	Metal lath and beads, Definitions, requirements and test methods. External rendering.
BS EN 13914-1: 2005	Design, preparation and application of external rendering and internal plastering. External rendering.
BS EN 13914-2: 2005	Design, preparation and application of external rendering and internal plastering. Design considerations and essential principles for internal plastering.
BS EN 15167-2: 2006	Ground granulated blastfurnace slag for use in concrete, mortar and grout. Conformity evaluation.
PD CEN/TR 15123: 2005	Design, preparation and application of internal polymer plastering systems.
PD 6678:2005	Guide to the specification of masonry mortar.
PD 6682 Aggregates - Part 3:2003	Aggregates for mortar - Guidance on the use of BS EN 13139.

Building Research Establishment (BRE) Publications

Reference/Publication Date	Subject
AP 251	Bricks, mortar, render, plaster and stone pack.
Digest 163	Drying our buildings
Digest 329	Installing wall ties in existing construction
Digest 359	Repairing brick and block masonry
Digest 360	Testing bond strength of masonry
Digest 362	Building mortar
Digest 421	Measuring the compressive strength of masonry materials: the screw pull-out test
Digest 432	Aircrete: thin joint mortar systems
Digest 443	Conventions for U value calculations
GBG 7	Replacing failed plaster.
GBG 18	Choosing external rendering.
GBG 24	Repairing external rendering.
GBG 33	Building damp-free cavity walls.
GBG 34	Building in winter.
GBG 65/1	Plastering and internal rendering. Part 1: Design and specification.
GBG 65/2	Plastering and internal rendering. Part 2: Workmanship.
GBG 66	Building masonry with lime-based bedding mortars.
GG 23	Assessing external rendering for replacement or repair.
GG 27	Building brickwork or blockwork retaining walls.
GG 44	Insulating masonry cavity walls: Part 1 Techniques and materials.
GG 44	Insulating masonry cavity walls: Part 2 Principal risks and guidance.
GG 50	Insulating solid masonry walls.
GG 54	Construction site communication: Part 1 General.
GG 54	Construction site communication: Part 2 Masonry.
GG 58	Thin layer mortar masonry.
GR 18 1998	Replacing plasterwork.
GR 28	Repairing brick and block freestanding walls.
GR 8	Treating rain penetration in houses.
GRG 20/2	Repairing frost damage to walls.
GR 24	Repointing external brickwork walls.
IP2/98	Mortars for blockwork: Improved thermal performance.
IP8/89	BREMORETEST: a rapid method of testing fresh mortars for cement content.
IP16/03	Proprietary renders.

Brick Development Association (BDA) Publications

Reference/Publication Date	Subject
Site Practice BN1	Brickwork - Good Site Practice
Maintenance and Repair T1P1	The Repair and Maintenance of Brickwork
Maintenance and Repair M & R 4.1	Cleaning of Clay Brickwork
Maintenance and Repair M & R 4.3	Cleaning of Calcium Silicate Brickwork
Brick Information Sheets BIS 6.3	Colour Consistency/Causes of Inconsistency
Brick Information Sheets BIS 6.4	Repointing of Brickwork
Brick Information Sheets BIS 6.5	Bricklaying in Winter Conditions
Brick Information Sheets BIS 6.6	Tinting Brickwork Colour Variation Information
Brickwork Design & Detailing DN 7	Brickwork Durability
Brickwork Design & Detailing DN 8	Rigid Paving with Clay Pavers
Brickwork Design & Detailing DN 9	Flexible Paving with Clay Pavers
Brickwork Design & Detailing DN 16	Resisting Rain Penetration with Facing Brickwork
Properties of Bricks & Mortars T1P8	A Basic Guide to Brickwork Mortars
Properties of Bricks & Mortars PBM 1.3	Use of Traditional Lime Mortars in Modern Brickwork
Textbook (3rd Edition) BDA1	The BDA Guide to Successful Brickwork
Textbook BDA2	Creative Brickwork



There is a real danger of contact dermatitis or serious burns if skin comes into contact with wet mortar. Wear suitable protective clothing and eye protection. Where skin contact occurs either directly or through saturated clothing wash immediately with soap and water. For eye contact immediately wash out eyes thoroughly with clean water. If swallowed wash out mouth and drink plenty of water.

The relevant codes of practice, standards and statutory regulations must always be observed.

The information in this data sheet may be freely copied with acknowledgement to the Mortar Industry Association. Current issue numbers of all MIA publications are available from the MIA website.



Mortar Industry Association

Gillingham House 38 - 44 Gillingham Street London SW1V 1HU Tel +44 (0)20 7963 8000 Fax +44 (0)20 7963 8001

Promoting quality factory produced mortar

www.mortar.org.uk