

Concrete and its constituent materials

Second edition December 2003

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INTRODUCTION

This publication gives the European equivalents of British Standards. Once a European Standard (EN) has received a positive vote, BSI will publish it within six months of the date of availability. The date of availability is when CEN/MC* distributes to the national standards bodies the definitive 'ratified' text of an approved EN in the official languages of CEN. These European Standards will replace any conflicting British Standards, which will be withdrawn. This withdrawal of British Standards may be six months or more after the date of publication of the European Standard or when a package of related standards is completed. For example, the European Standard for concrete, BS EN 206-1 (published in February 2001), the related concrete test methods and a number of standards for constituent materials are being treated as a package and the date of withdrawal of BS 5328 and most parts of BS 1881 was 1 December 2003. However some of the British Standards for constituent materials, e.g. BS 12 and BS 5075, were withdrawn prior to this date.

In theory, all remaining British Standards that cite the withdrawn standard should be amended. Many of these British Standards, however, will themselves

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Association of Concrete Industrial Flooring Contractors
Association of Lightweight Aggregate Manufacturers
British Cement Association
British Standards Institution
Building Research Establishment
Cement Admixtures Association
Cementitious Slag Makers Association
Concrete Industry Alliance
Concrete Society
Glanville Consultants
Institute of Concrete Technology
Ove Arup & Partners
Quarry Products Association
Ready-mixed Concrete Bureau
RMC Readymix Ltd
L M Scofield Ltd
United Kingdom Quality Ash Association

A full list of the publications in this series is given page 2.

* CEN/MC is the Management Centre of the European Committee for Standardization

be replaced by European Standards within a few years and therefore BSI is taking a pragmatic approach to amendments. Where such a British Standard will be replaced by a European Standard within a few years, this publication may be used during the transition period as the basis for supplying a product or material conforming to an equivalent European Standard. For example, if the specification requires a PC 42.5 cement to BS 12, a CEM I 42.5 cement to BS EN 197-1 may be used, i.e. the identical cement with a different name. Where there is a possibility for confusion, a British Standard will be amended as a priority. In all other cases, each British Standard will be amended at its five yearly review.

In some cases, a British Standard that apparently conflicts with a European Standard will not be withdrawn and this will be because part of its content is outside the scope of the European Standard. In this case the British Standard should be amended or revised to remove subject matter covered by the European Standard. In a number of cases, however, the remaining subject matter will be covered by yet another European Standard that is under preparation and in these situations BSI will take a case-by-case approach and may choose not to amend or revise the British Standard.

Some European Standards (EN) are called harmonised European Standards (hEN). This means that they contain an annex ZA that includes the regulatory requirements for CE marking and attestation of conformity. At present BSI has no plans to distinguish in the standard coding that a standard (BS EN) has the status of a hEN.

As well as the European equivalents of British Standards, this publication lists those British Standards that will continue into the foreseeable future.

This publication is limited to:

- concrete design codes;
- product standards for concrete, mortar and grout;
- test methods for concrete, mortar and grout;
- product standards for constituent materials for concrete, mortar and grout;
- product standards for reinforcement and prestressing steel;
- formwork and falsework standards.

This publication does not contain:

- test methods for constituent materials;

- standards for precast concrete products.

Not all the European Standards listed in this publication have been published. All those that are published, or are about to be published (as at the date shown on page 1), are shown in bold and the standard bears the date of publication.

FURTHER READING

The other publications from this series will be helpful.

Standards for fresh concrete – a composite of BS EN 206-1 and BS 8500

Specifying concrete to BS EN 206-1/BS 8500:

Concrete for normal uses

Concrete resistant to chemical attack

Guide to the selection of concrete quality and cover to reinforcement for normal concrete structures

Examples of the specification of designated concrete

Examples of the specification of designed concrete

Guidance on the additional requirements for designed concrete

Lightweight concrete

Visual concrete

Coloured concrete

Concrete for industrial floors

Specifying constituent materials for concrete to BS EN 206-1/BS 8500:

Cements

Additions

Admixtures

European replacements for British Standards:

Concrete and its constituent materials

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DESIGN CODES RELATING TO CONCRETE

BS title	BS EN title	Comments
BS 4485-4 Water cooling towers - Part 4: Code of practice for structural design and construction		No European equivalent
	BS EN 1990: 2002 Basis of structural design	Replaces parts of various design codes
BS 5400-2 Steel, concrete and composite bridges - Part 2: Specification for loads	BS EN 1991 Actions on structures	Contains loadings for all types of structures in various parts. Some parts are published
BS 5400-4 Steel, concrete and composite bridges - Part 4: Code of practice for design of concrete bridges	BS EN 1992-2 Design of concrete structures - Part 2: Reinforced and prestressed concrete bridges	
BS 5502 Buildings and structures for agriculture	BS EN 1991 Actions on structures BS EN 1992-1-1 Design of concrete structures - Part 1: General rules and rules for buildings	
BS 6399 Loading for buildings	BS EN 1991 Actions on structures	Some parts are published
PD 6529 Report on a new approach for design loads for buildings	BS EN 1991 Actions on structures	Some parts are published
BS 8002 Code of practice for earth retaining structures	BS EN 1992-3 Design of concrete structures - Part 3: Liquid retaining and containment structures	
BS 8004 Code of practice for foundations	BS EN 1992-1-1 Design of concrete structures - Part 1: General rules and rules for buildings BS EN 1997-1 Geotechnical design - Part 1: General rules	BS 8004 incorporated into BS EN 1992-1-1 and BS EN 1997-1
BS 8007 Code of practice for design of concrete structures for retaining aqueous liquids	BS EN 1992-3 Design of concrete structures - Part 3: Liquid retaining and containment structures	

European replacements for British Standards

BS 8103 Structural design of low-rise buildings		No European equivalent
BS 8110 Structural use of concrete	BS EN 1992-1-1 Design of concrete structures - Part 1: General rules and rules for buildings BS EN 1992-1-2 Design of concrete structures - Part 2: Structural fire design DD ENV 13670-1: 2000 Execution of concrete structures	Part also in BS EN 1990
BS 8204-1 In-situ floorings - Part 1: Code of practice for concrete bases to receive in-situ floorings	BS EN 13318: 2000 Screed materials and floor screeds - Definitions	Part covered by BS EN 13318
BS 8204-2 In-situ floorings - Part 2: Code of practice for concrete wearing surfaces	BS EN 13318: 2000 Screed materials and floor screeds - Definitions	Part covered by BS EN 13318
	prEN 13577 Water aggressive to concrete Determination of aggressive carbon dioxide content	
BS EN 6089 Guide to assessment of concrete strength in existing structures	prEN 13791 Assessment of concrete compressive strength in structures or in precast concrete products	Completed second CEN enquiry

EXECUTION

BS Title	BS EN title	Comments
BS 5400-7 Steel, concrete and composite bridges - Part 7: Specification for materials and workmanship, concrete, reinforcement and prestressing tendons	DD ENV 13670-1: 2000 Execution of concrete structures	The future of BS 5400-7 is undecided
BS 8000-2 Workmanship on building sites - Part 2: Code of practice for concrete work		Small or simple concrete works are not within the scope of DD ENV 13670

BS 8000-9 Workmanship on building sites - Part 9: Code of practice for cement/sand floor screeds and concrete floor toppings		No European equivalent
	BS EN 446: 1997 Grout for prestressing tendons – Grouting procedures	See Concrete Society Technical Report 47, <i>Durable bonded post- tensioned concrete ridges</i> , for a UK viewpoint
	prEN 14487-2 Sprayed concrete - Part 2: Repair and upgrading	Drafting in progress

CONCRETE, SCREEDS, MORTAR AND GROUT

BS title	BS EN title	Comments
BS 5328 Concrete	BS EN 206–1:2000 Concrete - Part 1: Specification, performance, production and conformity	BS EN 206–1 requires complementary BS 8500
BS 8500: 2002 Complementary British Standard to BS EN 206–1 Part 1: Method of specifying and guidance for the specifier Part 2: Specification for constituent materials and concrete		Contains national provisions where required or permitted and provisions outside the scope of BS EN 206–1
	prEN 14487-1 Sprayed concrete - Part 1: Definitions, specifications and conformity	No BS equivalent
BS 4721 Specification for ready-mixed building mortars	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 998-3 Specification for mortar for masonry - Part 3: Thin coated plasters	Drafting in progress
BS 5838 Specification for dry packaged cementitious mixes		This may be covered by a future part of BS EN 206

BS EN 13369: 2001 Common rules for precast concrete products	Contains the provisions for concrete and the link to BS EN 206-1
BS EN 13318: 2000 Screed material and floor screeds Definitions	Replaces part of BS 8204-2
BS EN 13813: 2002 Screed material and floor screeds. Screed material. Properties and requirements	
BS EN 447: 1997 Grout for prestressing tendons. Specification for common grout	See Concrete Society Technical Report 47, <i>Durable bonded post-tensioned concrete bridges</i> , for a UK viewpoint

MATERIALS FOR CONCRETE, SCREEDS, MORTAR AND GROUT

Cement and lime

BS title	BS EN title	Comments
BS 12 Specification for Portland cement Part of former BS 146: 1996 Specification for Portland blastfurnace cement BS 4246 Specification for high slag blastfurnace cement BS 6588 Specification for Portland pulverised-fuel ash cements BS 7583 Specification for Portland limestone cement	BS EN 197-1: 2000 Cement - Part 1: Composition, specifications and conformity criteria. Common cements	This standard covers a range of cements
	BS EN 197-2: 2000 Cement - Part 2: Conformity evaluation	No BS equivalent
	BS EN 13877-1 Concrete pavements - Part 1: Materials	Contains additional requirements for concrete pavements, lean concrete and sub-bases. No equivalent BS, but likely to replace part of the Highways Agency specification

	BS EN 13877-2 Concrete pavements - Part 2: Functional requirements for concrete pavements	No equivalent BS. Likely to replace part of the Highway Agency specifications
BS 146: 2002 Specification for blastfurnace cements outside the scope of BS EN 197-1	BS EN 197-4 Cement - Part 4: Composition, specifications and conformity criteria for low early strength blast furnace cements	In 2004 BS 146 will be superseded by BS EN 197- 4
BS 890 Specification for building limes	BS EN 459-1: 2001 Building lime - Part 1: Definitions, specifications and conformity criteria	BS EN 459-1 contains a wider range of materials, e.g. hydraulic lime
BS 915 Specification for high alumina cement	BS EN 14647 Calcium aluminate cement – Composition, specifications and conformity criteria for calcium aluminate cement	In the future BS 915 will be superseded by BS EN 14647
BS 1370 Specification for low heat Portland cement	BS EN 197-1: 2000/prA1: 2003 Cement - Part 1: Composition, specifications and conformity criteria for common cements	In 2004 amendment A1 to BS EN 197-1 will cover low heat common cements
BS 4027 Specification for sulphate- resisting Portland cement		SRPC will be one of the cements described in a future CEN CR (Report)
BS 5224 Specification for masonry cement	BS EN 413-1 Masonry cement - Part 1: Composition, specifications and conformity criteria	
BS 6610 Specification for Pozzolanic pulverized-fuel ash cements	BS EN 14216 Very low heat special cements – Composition, specifications and conformity criteria	In 2004 BS EN 14216 will supersede BS 6610

Additions

BS title	BS EN title	Comments
	BS EN 450: 1995 Fly ash for concrete. Definitions, requirements and quality control	Under revision as a harmonised standard and may include co-combustion fly ashes
BS 3892 -1 Pulverized-fuel ash - Part 1: Specification for pulverized-fuel ash for use with Portland cement		When BS EN 450 is revised, this will be withdrawn

European replacements for British Standards

BS 3892-2 Pulverized-fuel ash - Part 2: Specification for pulverized-fuel ash to be used as a Type I addition		Agreed not to be in conflict with BS EN 450 but whether it conflicts with BS EN 12620 is not resolved
BS 3892-3 Pulverized-fuel ash - Part 3: Specification for pulverized-fuel ash for use in cementitious grouts		Contains a fluidity test
BS 7979: 2001 Specification for limestone fines for use with Portland cement		No equivalent EN
	BS EN 13263-1 Silica fume for concrete - Part 1: Definitions, requirements and conformity control	No equivalent BS. European standard has been for public comment
	BS EN 13263-2 Silica fume for concrete - Part 2: Evaluation of conformity	No equivalent BS. European standard has been for public comment
BS 6699 Specification for ground granulated blastfurnace slag for use with Portland cement	prEN xxx: Ground granulated blastfurnace slag for use in concrete, mortar and grout	Work has recently started on a harmonised European standard
Admixtures		
BS title	BS EN title	Comments
BS 5075 Concrete admixtures	BS EN 934-2: 2001 Admixtures for concrete, mortar and grout - Part 2: Concrete admixtures. Definitions, requirements, conformity, marking and labelling	This is a harmonised standard and replaces all 3 parts of BS 5075. A new BS will be produced for concrete admixtures not covered by EN 934-2
BS 4887 Mortar admixtures	BS EN 934-3 Admixtures for concrete, mortar and grout - Part 3: Admixtures for masonry mortar. Definitions, requirements and conformity	At formal vote as a harmonised standard
	BS EN 934-4: 2001 Admixtures for concrete, mortar and grout - Part 4: Admixtures for grout. Definitions, requirements and conformity	No equivalent BS

	BS EN 934-5 Admixtures for concrete, mortar and grout - Part 5: Admixtures for sprayed concrete. Definitions, requirements and conformity criteria	Unlikely to be published till the end of 2004, or even 2005
	BS EN 934-6: 2001 Admixtures for concrete, mortar and grout - Part 6: Sampling, conformity control, evaluation of conformity, marking and labelling	Covers requirements that are common to all other parts of BS EN 934

Aggregates

BS title	BS EN title	Comments
BS 882 Specification for aggregates from natural sources for concrete	BS EN 12620: 2002 Aggregates for concrete	BS 882 to be withdrawn June 2004; see also PD 6682-1
BS 1047 Specification for air-cooled blast furnace slag aggregate for use in construction	BS EN 12620: 2002 Aggregates for concrete	BS 1047 to be withdrawn June 2004; see also PD6682-1
PD 6682-1: 2003 Aggregates - Part 1: Aggregates for concrete. Guidance on the use of BS EN 12620		National guidance on the use of BS EN 12620
BS 3797 Specification for lightweight aggregates for masonry units and structural concrete	BS EN 13055-1: 2002 Lightweight aggregates - Part 1: Lightweight aggregates for concrete, mortar and grout	BS 1047 to be withdrawn June 2004; see also PD6682-4
PD 6682-4: 2003 Aggregates - Part 4: Lightweight aggregates for concrete, mortar and grout. Guidance on the use of BS EN 13055-1		National guidance on the use of BS EN 113055-1
BS 1199 Specification for building sands from natural sources	BS EN 13139: 2002 Aggregates for mortar	BS 1199 to be withdrawn June 2004; see also PD6682-3
PD 6682-3: 2003 Aggregates - Part 3: Aggregates for mortar. Guidance on the use of BS EN 13139		National guidance on the use of BS EN 13139

Other constituents

BS title	BS EN title	Comments
BS 1014 Specification for pigments for Portland cement and Portland cement products	BS EN 12878: 1999 Pigments for the colouring of building materials based on cement and/or lime. Specifications and methods of test	
BS 3148 Methods of test for water for making concrete (including notes on the suitability of the water)	BS EN 1008: 2002 Mixing water for concrete. Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete	
	prEN AAAA-1 Steel fibres - Part 1: Definition, specification and conformity	Being drafted
	prEN AAAA-2 Polymer fibres - Part 2: Definition, specification and conformity	Being drafted

REINFORCING AND PRESTRESSING STEEL

BS title	BS EN title	Comments
BS 4449 Specification for carbon steel bars for the reinforcement of concrete	BS EN 10080 Steel for the reinforcement of concrete. Weldable reinforcing steel - general	In various parts; the future of BS 4449, BS 4482 and BS 4483 is undecided (10/2003)
	BS EN 10081 Steel for the re-inforcement of concrete Technical delivery conditions	
BS 4482 Specification for cold reduced steel wire for the reinforcement of concrete	BS EN 10080 Steel for the reinforcement of concrete Weldable reinforcing steel – general	
	BS EN 10081 Steel for the re-inforcement of concrete Technical delivery conditions	
BS 4483 Steel fabric for the reinforcement of concrete	BS EN 10080 Steel for the reinforcement of concrete Weldable reinforcing steel – general	
	BS EN 10081 Steel for the re-inforcement of concrete Technical delivery conditions	

BS 6744 Specification for austenitic stainless steel bars for the reinforcement of concrete	BS EN 10088 Stainless steels	BS EN 10088 is in 3 parts
BS 4486 Specification for hot rolled and hot rolled and processed high tensile alloy steel bars for the prestressing of concrete	BS EN 10138 Prestressing steels	BS EN 10138 is in 5 parts
BS 5896 Specification for high tensile steel wire and strand for the prestressing of concrete	BS EN 10138 Prestressing steels	BS EN 10138 is in 5 parts
	BS EN xxxx Hot dip galvanized smooth wires and strands for prestressing	
BS 7295 Fusion bonded epoxy coated carbon steel bars for the reinforcement of concrete		No European equivalent
BS 8666 Specification for scheduling, dimensioning, bending and cutting of steel reinforcement for concrete	BS EN ISO 3766 Construction drawings Simplified representation of concrete re-inforcement	Was BS EN ISO 4066 BS 8666 will be revised in due course
	BS EN 523: 2003 Steel strip sheaths for pre-stressing tendons – Terminology, requirements, quality control	No equivalent BS. Replaces non-harmonised version published in 1997
BS 7973-1: 2001 Spacers and chairs for steel reinforcement and their specification – Part 1: Product performance requirements		No equivalent EN
BS 7973-2: 2001 Spacers and chairs for steel reinforcement and their specification - Part 2: Fixing and application of spacers and chairs and tying of reinforcement		No equivalent EN

CONCRETE TEST METHODS

BS title	BS EN title	Comments
BS 1881-5 Testing concrete - Part 5: Methods of testing hardened concrete for properties other than strength (dynamic modulus, length change on wetting and drying, initial surface absorption)		The future of this BS is under review
BS 1881-101 Testing concrete - Part 101: Method of sampling fresh concrete on site	BS EN 12350-1: 2000 Testing fresh concrete - Part 1: Sampling	
BS 1881-102 Testing concrete - Part 102: Method for determination of slump	BS EN 12350-2: 2000 Testing fresh concrete - Part 2: Slump test	Result now reported to the nearest 10mm
BS 1881-103 Testing concrete - Part 103: Method for determination of compacting factor	BS EN 12350-4: 2000 Testing fresh concrete - Part 4: Degree of compactability	Not the same test, but used on the same types of concrete
BS 1881-104 Testing concrete - Part 104: Method for determination of Vebe time	BS EN 12350-3: 2000 Testing fresh concrete - Part 3: Vebe test	
BS 1881-105 Testing concrete - Part 105: Method for determination of flow	BS EN 12350-5: 2000 Testing fresh concrete - Part 5: Flow table test	Result now reported to the nearest 10mm
BS 1881-106 Testing concrete - Part 106: Method for determination of air content of fresh concrete	BS EN 12350-7: 2000 Testing fresh concrete - Part 7: Air content – Pressure methods	
BS 1881-107 Testing concrete - Part 107: Method for determination of density of compacted fresh concrete	BS EN 12350-6: 2000 Testing fresh concrete - Part 6: Density	A minimum container size of 5 litres is specified
BS 1881-108 Testing concrete - Part 108: Method for making test cubes from fresh concrete	BS EN 12390-1: 2000 Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds BS EN 12390-2: 2000 Testing hardened concrete - Part 2: Making and curing specimens	

for strength tests

BS 1881-109
Testing concrete -
Part 109: Method for making test
beams from fresh concrete

Current Standard

BS 1881-110
Testing concrete -
Part 110: Method for making test
cylinders from fresh concrete

BS EN 12390-1: 2000
Testing hardened concrete -
Part 1: Shape, dimensions and other
requirements for specimens and
moulds

BS EN 12390-2: 2000
Testing hardened concrete -
Part 2: Making and curing specimens
for strength tests

BS 1881-111
Testing concrete -
Part 111: Methods of normal curing
of test specimens (20°C method)

BS EN 12390-2: 2000
Testing hardened concrete -
Part 2: Making and curing specimens
for strength tests

BS 1881-112
Testing concrete -
Part 112: Methods of accelerated
curing of test cubes

No European equivalent

BS 1881-113
Testing concrete -
Part 113: Methods for making
and curing no-fines-test cubes

No European equivalent

BS 1881-114
Testing concrete -
Part 114: Method for
determination of density of
hardened concrete

BS EN 12390-7: 2000
Testing hardened concrete -
Part 7: Density of hardened concrete

BS 1881-115
Testing concrete -
Part 115: Specification for
compression testing machines for
concrete

BS EN 12390-4: 2000
Testing hardened concrete -
Part 4: Compressive strength –
Specification for testing machines

BS 1881-116

BS EN 12390-3: 2002

Instead of a fixed loading

European replacements for British Standards

Testing concrete - Part 116: Method for determination of compressive strength of concrete cubes	Testing hardened concrete - Part 3: Compressive strength of test specimens	rate, a range of permissible loading rates is given
BS 1881-117 Testing concrete - Part 117: Method for determination of tensile splitting strength	BS EN 12390-6: 2000 Testing hardened concrete - Part 6: Tensile splitting strength of test specimens	
BS 1881-118 Testing concrete - Part 118: Method for determination of flexural strength	BS EN 12390-5: 2000 Testing hardened concrete - Part 5: Flexural strength of test specimens	
BS 1881-119 Testing concrete - Part 119: Method for determination of compressive strength using portions of beams broken in flexure (equivalent cube method)		No European equivalent
BS 1881-120 Testing concrete - Part 120: Method for determination of compressive strength of concrete cores	BS EN 12504-1: 2000 Testing concrete in structures - Part 1: Cored specimens – Taking, examining and testing in compression	No guidance on interpretation of the results is given. Follow guidance given in superseded BS until a national annex to BS EN 12504-1 is provided
BS 1881-121 Testing concrete - Part 121: Method for determination of static modulus of elasticity in compression	BS EN 12390-x Testing hardened concrete - Part x: Static modulus of elasticity	European equivalent under development
BS 1881-122 Testing concrete - Part 122: Method for determination of water absorption		No European equivalent
BS 1881-124 Testing concrete - Part 124: Method for analysis of hardened concrete		No European equivalent
BS 1881-125 Testing concrete - Part 125: Method for mixing and sampling fresh concrete in the laboratory		No European equivalent
BS 1881-127 Testing concrete -		No European equivalent

Part 127: Method for verifying the performance of a concrete cube compression machine using the comparative cube test		
BS 1881-128 Testing concrete - Part 128: Method for analysis of fresh concrete		See also CEN Report 13902: 2000: <i>Test methods for determining water/cement ratio of fresh concrete</i>
BS 1881-129 Testing concrete - Part 129: Method for determination of density of partially compacted semi-dry fresh concrete		No European equivalent
BS 1881-130 Testing concrete - Part 130: Method for temperature-matched curing of concrete specimens		No European equivalent
BS 1881-131 Testing concrete - Part 131: Methods for testing cement in a reference concrete		No European equivalent
BS 1881-201 Testing concrete - Part 201: Guide to the use of non-destructive methods of test for hardened concrete	BS EN 13791 Assessment of concrete compressive strength in structures or in precast concrete products	
BS 1881-202 Testing concrete - Part 202: Recommendations for surface hardness test by rebound hammer	BS EN 12504-2: 2002 Testing concrete in structures - Part 2: Non-destructive testing – Determination of rebound number	National annex is being prepared
BS 1881-203 Testing concrete - Part 203: Recommendations for measurement of velocity of ultra-sonic pulses in concrete	BS EN 12504-4 Testing concrete in structures - Part 4: Determination of ultra-sonic pulse velocity	Sent for formal vote
BS 1881-204 Testing concrete - Part 204: Recommendations on the use of electromagnetic covermeters.		No European equivalent
BS 1881-205 Testing concrete - Part 205: Recommendations for radiography of concrete		No European equivalent
BS 1881-206 Testing concrete - Part 206: Recommendations for		No European equivalent

European replacements for British Standards

determination of strain in concrete		
BS 1881–207 Testing concrete - Part 207: Recommendations for the assessment of concrete strength by near-to-surface tests	BS EN 12504–3 Testing concrete in structures - Part 3: Determination of pull-out force	BS EN 12504–3 covers only part of BS 1881–207. EN has a positive formal vote; awaiting publication
BS 1881–208 Testing concrete - Part 208: Recommendations for the determination of the initial surface absorption of concrete		No European equivalent
BS 1881–209 Testing concrete - Part 209: Recommendations for measurement of dynamic modulus of elasticity		No European equivalent
	BS EN 12390–8: 2000 Testing hardened concrete - Part 8: Depth of penetration of water under pressure	This is not a measure of permeability, but more an assessment of whether the concrete has a closed structure
	(prEN 12390-9) Testing hardened concrete - Part 9: Freeze-thaw resistance - Scaling	Recommendation that this is published as a European Technical Specification and not as an EN
	(prEN 12390) Testing hardened concrete - Part ? : Freeze-thaw – internal structural damage	Recommendation that this is published as a CEN Technical Report
	(prEN 12390) Testing hardened concrete - Determination of the relative carbonation resistance of concrete	May get published as a European Technical Specification
SPRAYED CONCRETE TEST METHODS		
	prEN 14488-1 Testing sprayed concrete - Part 1: Sampling fresh and hardened concrete	There is no BS equivalent
	prEN 14488-2 Testing sprayed concrete - Part 2: Compressive strength of young sprayed concrete	There is no BS equivalent
	prEN 14488-3 Testing sprayed concrete - Part 3: Flexural strengths (first peak, ultimate and residual) of fibre	There is no BS equivalent

reinforced beam specimens		
prEN 14488-4 Testing sprayed concrete - Part 4: Bond strength of cores by direct tension		There is no BS equivalent
prEN 14488-5 Testing sprayed concrete - Part 5: Determination of energy absorption capacity of fibre reinforced slab specimens		There is no BS equivalent
prEN 14488-6 Testing sprayed concrete - Part 6: Fibre content of fibre reinforced concrete		There is no BS equivalent

SCREED TEST METHODS

BS title	BS EN title	Comments
BS 4551 Methods of testing mortars, screeds and plasters	BS EN 13892 Methods for test for screed materials - Part 1: Sampling, making and curing specimens for test	Positive formal vote; awaiting publication
	Part 2: Determination of flexural and compressive strength	Positive formal vote; awaiting publication
	Part 3: Determination of wear resistance – Böhme	Positive formal vote; awaiting publication
	Part 4: Determination of wear resistance (BCA)	Positive formal vote; awaiting publication
	Part 5: Determination of resistance to rolling wheel - methods for screed material for wearing layer	Undergoing formal vote
	Part 6: Determination of surface hardness	Positive formal vote; awaiting publication
	Part 7: Determination of resistance to rolling wheel; method for screed material with floor coverings	Undergoing formal vote
	Part 8: Determination of bond strength and surface tensile strength	Positive formal vote; awaiting publication

MORTAR TEST METHODS

BS title	BS EN title	Comments
BS 4551	BS EN 1015	

Methods of testing mortars, screeds and plasters

Methods of test for mortar for masonry

Part 1: 1999: Determination of particle size distribution (by sieve analysis)

Part 2: 1999: Bulk sampling of mortars and preparation of test mortars

Part 3: 1999: Determination of consistence of fresh mortar (by flow table)

Part 4: 1999: Determination of consistence of fresh mortar (by plunger penetration)

Part 6: 1999: Determination of bulk density of fresh mortar

Part 7: 1999: Determination of air content of fresh mortar

Part 9: 1999: Determination of workable life and correction time of fresh mortar

Part 10: 1999: Determination of dry bulk density of hardened mortar

Part 11: 1999: Determination of flexural and compressive strength of hardened mortar

Part 12: 2000: Determination of adhesion of hardened rendering and plastering mortar on substrates

Part 13: Determination of dimensional stability of hardened mortar

It is proposed to delete this from work programme

Part 14: Determination of durability of hardened mortar (with cement comprising greater than 50% of the binder)

Not yet sent for formal vote

Part 17: 2000: Determination of water soluble chloride content of fresh mortars

Part 18: 2002: Determination of water absorption coefficient due to capillary action of hardened rendering mortar

Part 19: 1999: Determination of water vapour permeability of hardened rendering and plastering mortars

Part 20: Determination of durability of hardened masonry mortar (with cement comprising less than, or equal to, 50% of the total binder mass)

Drafting in progress

Part 21: 2002: Determination of the

compatibility of one coat rendering mortars with backgrounds through the assessment of adhesive strength

GROUT TEST METHODS

BS title	BS EN title	Comments
	BS EN 445: 1997 Grout for prestressing tendons – Test methods	See Concrete Society Technical Report 47, <i>Durable bonded post-tensioned concrete bridges</i> , for a UK viewpoint

FORMWORK, FALSEWORK AND ACCESS

BS title	BS EN title	Comments
BS 1139-1-1 Metal scaffolding - Part 1: Tubes Section 1.1: Specification for steel tube	BS EN 39: 2001 Loose steel tubes for tube and coupler scaffolds – technical delivery conditions	BS EN 39 is slightly different and it includes a second thinner tube
BS 1139-1-2: 1990 Metal scaffolding - Part 1: Tubes Section 1.2: Specification for aluminium tube		
BS 1139-2-1: 1991 Metal scaffolding - Part 2: Couplers Section 2.2 Specification for steel couplers, loose spigots and base-plates for use in working scaffolds and falsework made of steel tube ³	BS EN 74: 1991 Couplers, loose spigots and base-plates for use in working scaffolds and falsework made of steel tubes; requirements and test procedures	Dual numbered EN 74 is under revision
BS 1139-2-2: 1991 Metal scaffolding - Part 2: Couplers Section 2.2: Specification for steel and aluminium couplers, fittings and accessories for use in tubular scaffolding		No equivalent yet
BS 1139-3: 1994 Metal scaffolding - Part 3: Specification for prefabricated mobile access and working towers	HD 1004 Mobile access and working towers made of prefabricated elements – materials, dimensions, design loads and safety requirements	Dual numbered revision in progress
BS 1139-4: 1982 Metal scaffolding - Part 4: Specification for prefabricated steel splitheads and trestles		No equivalent
BS 1139-5: 1990 Metal scaffolding - Specification for materials, dimensions, design loads and safety requirements for service and working scaffolds made of prefabricated elements	HD 1000 Service and working scaffolds made of prefabricated elements. Materials, dimensions, design loads and safety requirements	Dual numbered. Expected to be superseded by BS EN 128 10 shortly
BS 1139-6 Guide for prefabricated towers		In process of publication
BS 2482: 1981		No equivalent

Specification for timber scaffold boards		
BS 2830: 1994 Specification for suspended access equipment (suspended chairs, traditional steeplejack's seats, work cages, cradles and platforms) for use in the building, engineering construction, steeplejack and cleaning industries		No equivalent
BS 3913: 1973 Specification for industrial safety nets		Superseded by BS 7955
BS 4074: 2000 Specification for steel trench struts		Previously also included telescopic props, see BS EN 1065
BS 4074: 1982 Specification for metal props and struts	BS EN 1065: 1999 Adjustable telescopic props – Product specifications, design and assessment by calculation and tests	The EN contains four other types of prop. The remaining BS 4074 deals only with trench struts
BS 5507-1:1977 Methods of test for falsework - equipment Part 1: Floor centres		No equivalent
BS 5507-3: 1982 Methods of test for falsework - equipment Part 3: Props		BS EN 1065 includes a testing approach for the particular types specified in it.
BS 5973: 1993 Code of practice for access and working scaffolds and special structures in steel		EN 12811 is expected to partially supersede BS 5973 shortly
DD 72 Design requirements for access and working scaffolds		Will be finally obsolete when BS EN 128-1 is published
BS 5974:1990 Code of practice for temporarily installed suspended scaffolds and access equipment	BS EN 1808: 1999 Safety requirements on suspended access equipment – design calculations, stability criteria, construction - tests	CEN document also covers permanent equipment, but is of narrower scope
BS 5975: 1996 Code of practice for falsework		BS EN 1281 is expected to partially supersede BS 5975

		BS EN 12813, load bearing towers made of prefabricated elements: particular design and assessment (by calculation) is expected to be published. There is no previous BS
BS 6037 Code of practice for permanently installed suspended access equipment	BS EN 1808: 1999 Safety requirements on suspended access equipment – design calculations, stability criteria, construction - tests	BS EN supersedes safety aspects in the earlier version of the BS. It also covers temporarily installed equipment, but is of narrower scope
BS 6037-1: 2003 Code of practice for the planning, installation and use of permanently installed access equipment - Part 1: Suspended access equipment		Just been published. Retains material not superseded by BS EN 1808
BS 7955: 1999 Containment nets and sheets on construction works – specification for performance and test methods		Supersedes BS 3913 and part of BS 8093
DD 7995 Specification for temporary access platforms – performance and design requirements, and test methods		In publication
BS 8093: 1991 Code of practice for the use of safety nets, containment nets and sheets on constructional works	BS EN 1263-1: 2002 Safety nets - Part 1: Safety requirements, test methods	The BS EN partly supersedes BS 8093
	BS EN 1263-2: 2002 Safety nets - Part 2: Safety requirements for the erection of safety nets	Partly supersedes BS 8093
BS 8410 Code of practice for containment nets, sheets and glass-reinforced plastics profiled sheets on construction works		This will be published soon. It partially supersedes BS 8093. Code of practice for the use of safety nets, containment nets and sheets on constructional works. It is complementary to BS EN 1263-1. It will supersede BS 3913
BS 8411 Code of practice for safety nets on construction sites and other works		This will be published soon. It partially supersedes BS 8093. Code of Practice for the use of safety nets, containment nets and sheets on constructional

	works. It is complementary to BS EN 1263-1
BS EN 12811-3: 2002 Temporary works equipment - Part 3: Load testing	No previous standard
DD 89: 1983 Method of testing and assessing the performance of prefabricated heavy duty support towers	Is likely to be substantially superseded soon by BS EN 12813. Temporary works equipment - Load bearing towers of prefabricated elements - Particular methods of structural design
BS EN 1298: 1996 Mobile access and working towers - Rules and guidelines for the preparation of an instruction manual	No previous standard
BS EN 13331-1: 2002 Trench lining systems - Part 1: Product specifications	No previous standard
BS EN 13331-2: 2002 Trench lining systems - Part 2: Assessment by calculation or test	No previous standard
BS EN 13377: 2002 Prefabricated timber formwork beams - requirements, classification and assessment	No previous standard
BS EN 12811-2 Temporary works equipment – Scaffolds Part 2: Information on materials	Guidance document in progress
BS EN 13374 Temporary edge protection systems - Product specification, test methods	No previous standard Nearing formal vote
BS EN ?????? Vertical formwork - Performance requirements and general design	In preparation. There is no equivalent BS
BS EN ????-1 Manually operated hydraulic shoring systems for groundwork support - Part 1: Product specification	In preparation. There is no equivalent BS

BS EN ????-2
Manually operated hydraulic shoring
systems for groundwork support -
Part 2: Assessment by calculation or test

In preparation. There is no
equivalent BS
