

New European Standards - replacements for British Standards

BSI withdrew BS 5328, BS 3148 and many parts of BS 1881 on 1 December 2003. This information sheet is a summary of the changes with respect to concrete, constituent materials for concrete and concrete test methods. A more comprehensive set of equivalents is given in **European replacements for British standards - Concrete and its constituent materials, second edition** (available for free downloading from <http://www.bca.org.uk/activities/matstand>).

European standards have, in general, introduced new ways of describing products

and properties and therefore it is essential that the new standards are read carefully and products and properties defined in the correct terms. National guidance documents often provide guidance on equivalents, e.g. PD 6682-1 **Aggregates - Part 1: Aggregates for concrete - guidance on the use of BS EN 12620**.

Example 1

The phrase 'OPC complying with BS 12: 1989' became 'PC 42.5 conforming to BS 12: 1996' and is now 'CEM I 42.5 conforming to BS EN 197-1'.

Example 2

The phrase 'a workability of 50mm slump in accordance with BS 5328' is now 'consistence class S2 conforming to BS 8500-2'.

Example 3

The phrase 'a target air content of 5.5% in accordance with BS 5328' is now 'a minimum air content of 3.5% in accordance with BS 8500-2'.

Example 4

The phrase 'a maximum chloride ion content of 0.40% by mass of cement' is now 'chloride class C10,40'.

Concrete Standards

Former British Standard	New European Standard	Comments
BS 5328-1: Concrete - Part 1: Guide to specifying concrete	BS 8500-1: Concrete - Complementary British Standard to BS EN 206-1: Part 1: Method of specifying and guidance for the specifier	Annex A
BS 5328-2: Concrete - Part 2: Methods for specifying concrete mixes	BS 8500-1: Concrete - Complementary British Standard to BS EN 206-1: Part 1: Method of specifying and guidance for the specifier	Do not use BS EN 206-1: 2000, clause 6
BS 5328-3: Concrete - Part 3: Specification for the procedures to be used in producing and transporting concrete	BS EN 206-1: Concrete - Part 1: Specification, performance, production and conformity	
	BS 8500-2: Concrete - Complementary British Standard to BS EN 206-1: Part 2: Specification for constituent materials and concrete	
BS 5328-4: Concrete - Part 4: Specification for the procedures to be used in sampling, testing and assessing compliance of concrete	BS EN 206-1: Concrete - Part 1: Specification, performance, production and conformity	
	BS 8500-2: Concrete - Complementary British Standard to BS EN 206-1: Part 2: Specification for constituent materials and concrete	



Constituent Material Standards

Former British Standard	New European Standard	Comments
Cements		
BS 12: Specification for Portland cement	BS EN 197-1: Cement - Part 1 Composition, specifications and conformity criteria for common cements	
BS 6588: Specification for Portland pulverised-fuel ash cements		
BS 4246: Specification for high slag blastfurnace cement		
BS 7583: Specification for Portland limestone cement Part of the former BS 146: 1996: Specification for Portland blastfurnace cement		
BS 146: 2002: Specification for blastfurnace cements with strength properties outside the scope of BS EN 197-1	prEN 197-4: Cement: Part 4: Composition, specifications and conformity criteria for low early strength blastfurnace cements	In 2004 the BS will be superseded by BS EN 197-4
BS 915: Specification for high alumina cement (Metric units)	prEN 14647: Calcium aluminate cement - Composition, specifications and conformity criteria for calcium aluminate cement	In the future the BS will be superseded by BS EN 14647
BS 1370: Specification for low heat Portland cement	prEN 197-1: Amendment A1	In 2004 Amendment A1 to BS EN 197-1 will cover low heat Portland cements
BS 4027: Specification for sulfate-resisting Portland cement	No European equivalent	Current Standard
BS 6610: Specification for Pozzolanic pulverised-fuel ash cement	prEN 14216: Very low heat special cements - Composition, specifications and conformity criteria	In 2004 BS EN 14216 will supersede this BS
Additions		
BS 3892-1: Specification for pulverised-fuel ash for use with Portland cement		When BS EN 450 is revised, the BS will be withdrawn
	BS EN 450: Fly ash for concrete - Definitions, requirements and quality control	Under revision as a harmonised standard and it may include co-combustion fly ashes
BS 6699: Specification for ground granulated blastfurnace slag for use with Portland cement		Work has recently started on a European standard
BS 7979: Specification for limestone fines for use with Portland cement		Current standard
	BS EN 13263-1: Silica fume for concrete Part 1: Definitions, requirements and conformity criteria Part 2: Conformity evaluation	European standard has been for public comment

Constituent Material Standards (cont)

Former British Standard	New European Standard	Comments
Aggregates		
BS 882: Specification for aggregates from natural sources for concrete	BS EN 12620: Aggregates for concrete	BS 882 to be withdrawn June 2004. See also PD 6682-1: Aggregates - Part 1: Aggregates for concrete - Guidance on the use of BS EN 12620
BS 1047: Specification for air-cooled blastfurnace slag aggregate for use in construction	BS EN 12620: Aggregates for concrete	BS 1047 to be withdrawn June 2004. See also PD 6682-1: Aggregates - Part 1: Aggregates for concrete - Guidance on the use of BS EN 12620
BS 3797: Specification for lightweight aggregates for masonry units and structural concrete	BS EN 13055-1 Lightweight Aggregates - Part 1: Lightweight aggregates for concrete, mortar and grout	BS 1047 to be withdrawn June 2004. See also PD 6682-4: Aggregates - Part 4: Lightweight aggregates for concrete, mortar and grout - Guidance on the use of BS EN 13055-1
Other constituents		
BS 5075: Concrete admixtures	BS EN 934-2 Admixtures for concrete, mortar and grout Part 2: Concrete admixtures - Definitions, requirements, conformity, marking and labelling	A new BS is being developed for admixtures that are outside the scope of BS EN 932-2
BS 1014: Specification for pigments for Portland cement and Portland cement products	BS EN 12878: Pigments for the colouring of building materials based on cement and 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: 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	

Concrete Testing Standards

Former British Standard	New European Standard	Comments
BS 1881: Testing Concrete - Part 5 Methods of testing hardened concrete for other than strength		
BS 1881: Testing Concrete - Part 101: Method of sampling fresh concrete on site	BS EN 12350-1: Testing fresh concrete - Part 1: Sampling	
BS 1881: Testing Concrete - Part 102: Method for determination of slump	BS EN 12350-2: Testing fresh concrete - Part 2: Slump test	Result now reported to the nearest 10mm
BS 1881: Testing Concrete - Part 103: Method for determination of compacting factor	BS EN 12350-4: Testing fresh concrete - Part 4: Degree of compactibility	Not the same test, but used on the same types of concrete

Concrete Testing Standards (cont)

Former British Standard	New European Standard	Comments
BS 1881: Testing Concrete - Part 104: Method for determination of Vebe time	BS EN 12350-3: Testing fresh concrete - Part 3: Vebe test	
BS 1881: Testing Concrete - Part 105: Method for determination of flow	BS EN 12350-5: Testing fresh concrete - Part 5: Flow table test	Result now reported to the nearest 10mm
BS 1881: Testing Concrete - Part 106: Methods for the determination of air content of fresh concrete	BS EN 12350-7: Testing fresh concrete - Part 7: Air content - Pressure methods	
BS 1881: Testing Concrete - Part 107: Method for the determination of density of compacted fresh concrete	BS EN 12350-6: Testing fresh concrete - Part 6: Density	A minimum container size of 5 litres is specified
BS 1881: Testing Concrete - Part 108: Method for making test cubes from fresh concrete	BS EN 12390-1: Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds BS EN 12390-2: Testing hardened concrete - Part 2: Making and curing specimens for strength tests	
BS 1881: Testing Concrete - Part 109: Method for making test beams from fresh concrete	BS EN 12390-1: Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds BS EN 12390-2: Testing hardened concrete - Part 2: Making and curing specimens for strength tests	
BS 1881: Testing Concrete - Part 110: Method for making test cylinders from fresh concrete	BS EN 12390-1: Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds BS EN 12390-2: Testing hardened concrete - Part 2: Making and curing specimens for strength tests	
BS 1881: Testing Concrete Part 111: Method of normal curing of test specimen (20°C method)	BS EN 12390-2: Testing hardened concrete - Part 2: Making and curing specimens for strength tests	
BS 1881: Testing Concrete - Part 112: Methods of accelerated curing of test cubes.	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 113: Method for making and curing no-fines cubes	No European equivalents	Current Standard
BS 1881: Testing Concrete Part 114: Methods for the determination of density of hardened concrete	BS EN 12390-7: Testing hardened concrete - Part 7 - Density of hardened concrete	
BS 1881: Testing Concrete - Part 115: Specification for compression testing machines for concrete	BS EN 12390-4: Testing hardened concrete - Part 4: Compressive strength - Specification for testing machines	

Concrete Testing Standards (cont)

Former British Standard	New European Standard	Comments
BS 1881: Testing Concrete - Part 116: Method for determination of compressive strength of concrete cubes	BS EN 12390-3: Testing hardened concrete - Part 3: Compressive strength of test specimens	Instead of a fixed loading rate, a range of permissible loading rates is given
BS 1881: Testing Concrete - Part 117: Method for determination of tensile splitting strength	BS EN 12390-6: Testing hardened concrete - Part 6 - Tensile splitting strength of test specimens	
BS 1881: Testing Concrete - Part 118: Method for determination of flexural strength	BS EN 12390-5: Testing hardened concrete - Part 5 - Flexural strength of test specimens	
	BS EN 12390-8: 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
BS 1881: Testing Concrete - Part 119: Method for determination of compressive strength using portions of beams broken in flexure (equivalent cube method)	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 120: Method for determination of the compressive strength of concrete cores	BS EN 12504-1: 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: Testing Concrete - Part 121: Method for determination of static modulus of elasticity in compression		Current Standard Work has started on a European standard
BS 1881: Testing Concrete - Part 122: Method for determination of water absorption	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 124: Methods for analysis of hardened concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 125: Method for mixing and sampling fresh concrete in the laboratory	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 127: Method for verifying the performance of a concrete cube compression machine using the comparative cube test	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 128: Method for analysis of fresh concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 129: Method for the determination of density of partially compacted semi-dry fresh concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 130: Method for temperature matched curing of concrete specimens	No European equivalents	Current Standard

Concrete Testing Standards (cont)

Former British Standard	New European Standard	Comments
BS 1881: Testing Concrete - Part 131: Methods for testing cement in a reference concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 201: Guide to the use of non-destructive methods of test for hardened concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 202: Recommendations for surface hardness testing by rebound hammer	BS EN 12504-2: Testing concrete in structures - Part 2: Non-destructive testing - Determination of rebound number	A national annex is being prepared to provide guidance on this test
BS 1881: Testing Concrete - Part 203: Recommendations for measurement of velocity of ultrasonic pulses in concrete	pr EN 12504-4: Testing concrete in structures - Part 4: Determination of ultrasonic pulse velocity	This Part of EN 12504 has been sent for formal vote
BS 1881: Testing Concrete - Part 204: Recommendations on the use of electromagnetic covermeters	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 205: Recommendations for radiography in concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 206: Recommendations for determination of strain in concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 207: Recommendations for the assessment of concrete strength by near-to-surface tests	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 208: Recommendations for the initial surface absorption of concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 209: Recommendations for the measurement of dynamic modulus of elasticity of concrete	No European equivalents	Current Standard
	BS EN 12504-3: Testing concrete in structures - Part 3: Determination of pull-out force	



Providing Essential Materials for Britain

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