



AQuality TestConsult Limited

東恒測試顧問有限公司

ADDRESS : No.11 A&B, Kai Fong Garden, Ping Che Road, Fanling, New Territories,
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香港新界粉嶺坪輦路啟芳園11號A&B

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Scope of Accreditation
Registration No. HOKLAS 237
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Issue Date: 9 March 2022
Ref: HOKLAS237-26

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地址

Laboratory : No.11 A&B, Kai Fong Garden, Ping Che Road, Fanling, New Territories, Hong Kong
香港新界粉嶺坪輦路啟芳園 11 號 A&B

ACCREDITED TEST : Construction Materials

CATEGORY 建築材料

認可測試類別



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Construction Materials 建築材料		
ITEM TESTED OR MEASURED 測試或量度項目	SPECIFIC TEST OR PROPERTY MEASURED 特定測試或量度的特性	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED 規範、標準方法或應用技術
Adhesive	Pull-off test of render	In-house method TIL-P-004 (Saw cutting method or coring method)
	Pull-off test of mortar	Hong Kong Housing Authority Materials Testing Services (2010) Specification Part D Cl. 2.1.15 (Method 1) In-house method TIL-P-005 (Saw cutting method or coring method)
	Pull-off test of tiles	In-house method TIL-P-001 (Saw cutting method or coring method)
	Pull-off test of tile adhesive	In-house method TIL-P-002 (Saw cutting method or coring method)

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Admixture (Chemical analysis)	Ash content	BS 5075: Part 1: 1982 App. D2 + Amd. 4910
	Dry material content	BS 5075: Part 1: 1982 App. D1 + Amd. 4910
	Conventional dry material content	BS EN 480: Part 8 : 1997 BS EN 934: Part 1: 2008 Cl. 4 & BS EN 934: Part 2 : 2009 Cl. 4.1 & BS EN 480: Part 8 : 2012
	pH value of liquid admixtures	In-house method ADX-C-005 BS EN 934: Part 1: 2008 Cl. 4 & BS EN 934: Part 2: 2009 Cl. 4.1 & ISO 4316: 1977
	Relative density of liquid admixtures	BS 5075: Part 1: 1982 App. D3 + Amd. 4910
	Density	ISO 758: 1976
	Chloride ion content	BS 5075: Part 1: 1982 App. E + Amd. 4910
	Water-soluble chloride content	BS EN 480: Part 10: 1997 BS EN 934: Part 1: 2008 Cl. 4 & BS EN 934: Part 2: 2009 Cl. 4.1 & BS EN 480: Part 10: 2009
	Sodium oxide content	BS EN 480: Part 12: 1998 BS EN 480: Part 12: 2005 In-house method ADX-C-006
	Potassium oxide content	BS EN 480: Part 12: 1998 BS EN 480: Part 12: 2005 In-house method ADX-C-006
	Alkali content	In-house method ADX-C-006 BS EN 480: Part 12: 1998 BS EN 934: Part 1: 2008 Cl. 4 & BS EN 934: Part 2: 2009 Cl. 4.1 & BS EN 480: Part 12: 2005

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Aggregate	Aggregate crushing value	BS 812: Part 110: 1990
	Aggregate impact value	BS 812: Part 112: 1990 + Amd. 8772 CS3: 2013 Section 15
	Bulk density, void and bulking	BS 812: Part 2: 1995
	Clay, silt and dust content	BS 812: Part 1: 1975 + Amd. 4875 (Decantation method)
	Compacting fraction value of aggregates for granular bed	Hong Kong Housing Authority Specification Library (2004) Cl. DRA2.T250.4 - DRA2.T290.4 Hong Kong Housing Authority Specification Library (2008) Cl. DRA2.T250.4 - DRA2.T290.4 General Specification for Civil Engineering Works (2006) Vol. 1 App.5.2
	Drying shrinkage	CS3: 2013 Section 20
	Effect of organic substances by mortar method	CS3: 2013 Section 22
	Elongation index	BS 812: Section 105.2: 1990 CS3: 2013 Section 12
	Flakiness index	BS 812: Section 105.1: 1985 BS 812: Section 105.1: 1989 CS3: 2013 Section 11
	Los Angeles value	CS3: 2013 Section 14
	Methylene blue value	CS3: 2013 Section 13
	Moisture content	BS 812: Part 2: 1975 + Amd. 4615 (Oven drying method) BS 812: Part 109 : 1990 (Oven drying method) CS3: 2013 Section 18
	Particle density and water absorption	BS 812: Part 2: 1995 + Amd. 9195 & 10379 CS3: 2013 Section 17

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Aggregate (cont'd)	Particle size distribution	BS 812: Part 1: 1975 + Amd. 2069 (Sieve analysis) BS 812: Section 103.1: 1985 + Amd. 6003 (Sieve analysis) CS3: 2013 Section 10 + Amd. 1
	Sampling	BS 812: Part 102: 1989 CS3: 2013 Section 8
	Shell content	BS 812: Part 106: 1985
	Soundness	BS 812: Part 121: 1989 CS3: 2013 Section 19
	Relative density and water absorption	BS 812: Part 2: 1975 + Amd. 4615
	Ten per cent fines value	BS 812: Part 3: 1975 + Amd. 4845 BS 812: Part 111: 1990 CS3: 2013 Section 16
	Aggregate (Chemical analysis)	Water-soluble chloride salts
Water-soluble sulphate content		BS 812 Part 118: 1988 <Excluding Cl. 4, 5.3, 5.5.2.1>
Total sulphate content		BS 812 Part 118: 1988 <Excluding Cl. 4>
Acid-soluble materials		BS 812 Part 119: 1985 <Excluding Cl. 4>
Water-soluble chloride ion content		CS3: 2013 Section 21.3
Acid-soluble chloride ion content		CS3: 2013 Section 21.4
Acid-soluble sulphate content		CS3: 2013 Section 21.5
Total sulphur content		CS3: 2013 Section 21.6
Presence of humus		CS3: 2013 Section 21.7

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Cement (Chemical analysis)	Loss-on-ignition	BS EN 196-2: 2005 Cl. 7 BS EN 197-1: 2011 Cl. 7.3 & BS EN 196-2: 2013 Cl. 4.4.1
	Sulphate content (as SO ₃)	BS EN 196-2: 2005 Cl. 8 BS EN 197-1: 2011 Cl. 7.3 & BS EN 196-2: 2013 Cl. 4.4.2
	Residue insoluble in hydrochloric acid and sodium carbonate	BS EN 196-2: 2005 Cl. 9 BS EN 197-1: 2011 Cl. 7.3 & BS EN 196-2: 2013 Cl. 4.4.3
	Manganese content (Mn) Manganese oxide content (MnO) Manganese trioxide content (Mn ₂ O ₃)	BS EN 196-2: 2005 Cl. 12 BS EN 196-2: 2013 Cl. 4.4.6
	Impure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.2, 13.3 BS EN 196-2: 2005 Cl. 13.2, 13.4 BS EN 196-2: 2005 Cl. 13.5 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.3 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.4 BS EN 196-2: 2013 Cl. 4.5.5
	Pure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.6 BS EN 196-2: 2013 Cl. 4.5.6
	Soluble silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.8 BS EN 196-2: 2013 Cl. 4.5.8
	Total silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.9 BS EN 196-2: 2013 Cl. 4.5.9
	Iron (III) oxide content	BS EN 196-2: 2005 Cl. 13.10 BS EN 196-2: 2013 Cl. 4.5.10
	Aluminium oxide content	BS EN 196-2: 2005 Cl. 13.11 BS EN 196-2: 2013 Cl. 4.5.11

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Cement (Chemical analysis) (cont'd)	Calcium oxide content	BS EN 196-2: 2005 Cl. 13.12 (Reference method) BS EN 196-2: 2005 Cl. 13.14 (Alternative method) BS EN 196-2: 2013 Cl. 4.5.12 (Reference method) BS EN 196-2: 2013 Cl. 4.5.14 (Alternative method)
	Magnesium oxide content	BS EN 196-2: 2005 Cl. 13.13 (Reference method) BS EN 196-2: 2013 Cl. 4.5.13 (Reference method) BS EN 196-2: 2005 Cl. 13.15 (Alternative method) BS EN 196-2: 2013 Cl. 4.5.15 (Alternative method)
	Sodium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Potassium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Alkali content (sodium oxide equivalent)	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Chloride ion content (Cl ⁻)	BS EN 196-2: 2005 Cl. 14 BS EN 197-1: 2011 Cl. 7.3 & BS EN 196-2: 2013 Cl. 4.5.16
	Heat of hydration	BS 4550: Part 3: Section 3.8: 1978 (with modification)

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Cement & Portland pulverized fuel ash cement (PPFAC)	Compressive strength of broken mortar prism in the force range 1 kN - 250 kN	BS EN 196-1: 1995 BS EN 196-1: 2005 BS EN 196-1: 2016
	Density	BS EN 196-6: 1992 Annex NC BS EN 196-6: 2010 Annex NC
	Fineness	BS EN 196-6: 1992 Cl.4 (by Blaine method) BS EN 196-6: 2010 Cl.4 (by Blaine method)
	Flexural strength of mortar prisms in the force range 1 kN – 15 kN	BS EN 196-1: 1995 BS EN 196-1: 2005 BS EN 196-1: 2016
	Setting times	BS EN 196-3: 1995 Cl. 6 BS EN 196-3: 2005 + A1: 2008 Cl. 6 BS EN 196-3: 2016 Cl. 6
	Soundness	BS EN 196-3: 1995 Cl. 7 BS EN 196-3: 2005 + A1: 2008 Cl. 7 BS EN 196-3: 2016 Cl. 7
	Standard consistence	BS EN 196-3: 1995 Cl. 5 BS EN 196-3: 2005 + A1: 2008 Cl. 5 BS EN 196-3: 2016 Cl. 5
Concrete	Air content	BS 1881: Part 106: 1983 BS EN 12350: Part 7: 2009 CS1: 2010 Section 6
	Alkali silica reaction potential by ultra-accelerated mortar-bar test	RILEM TC 106-2:2000 CS1: 2010 Section 22
	Compaction factor	BS 1881: Part 103: 1983 + Amd. 6089, 6726 CS1: 2010 Section 2 Part II
	Compressive strength of cores in the force range 20 kN - 3000 kN	BS 1881: Part 120: 1983 + Amd. 6109 CS1: 2010 Section 15
	Compressive strength of cubes in the force range 20 kN - 3000 kN	BS 1881: Part 116: 1983 BS EN 12390: Part 3: 2009 CS1: 2010 Section 12

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Concrete (cont'd)	Curing of test specimens (Tropical zone temperature)	BS 1881: Part 111: 1983 BS EN 12390: Part 2: 2000 + Amd. 14343 CS1: 2010 Section 10
	Density of compacted fresh concrete	BS 1881: Part 107: 1983 CS1: 2010 Section 5
	Density of hardened concrete	BS 1881: Part 114: 1983 BS EN 12390: Part 7: 2009 CS1: 2010 Section 16
	Flexural strength of beams in the range 1 kN - 100 kN	BS 1881: Part 118: 1983 CS1: 2010 Section 14
	Flow table test	BS 1881: Part 105: 1984 BS EN 12350: Part 5: 2009 CS1: 2010 Section 2 Part IV
	Making test beams from fresh concrete	BS 1881: Part 109: 1983 CS1: 2010 Section 8
	Making test cube from fresh concrete	BS 1881: Part 108: 1983 BS EN 12390: Part 2: 2000 + Amd. 14343 CS1: 2010 Section 7
	Making test cylinders from fresh concrete	BS 1881: Part 110: 1983 CS1: 2010 Section 9
	Mixing and sampling of fresh concrete	CS1: 2010 Section 11
	Obtaining core samples	CS1: 2010 Section 15
	Removal of concrete cover to expose reinforcement	Hong Kong Housing Authority Materials Testing Services (2008/2010) for Maintenance & Building Materials Specification Part D Cl. 4.2.1 Hong Kong Housing Authority Materials Testing Services (2012/2014) for Maintenance & Building Materials Specification Part D Cl. 4.2.1
	Sampling of fresh concrete	BS 1881: Part 101: 1983 BS EN 12350: Part 1: 2009 CS1: 2010 Section 1

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Concrete (cont'd)	Slump	BS 1881: Part 102: 1983 BS EN 12350: Part 2: 2009 CS1: 2010 Section 2 Part I
	Stiffening time	CS1: 2010 Section 3
	Temperature monitoring	In-house method CON-P-019
	Water absorption	BS 1881: Part 122: 1983 BS 1881: Part 122: 2011 + A1: 2020
Concrete (Chemical analysis)	Chloride content	CS1: 2010 Section 21.10.2
	Calcium oxide content	CS1: 2010 Section 21.6
	Cement content	CS1: 2010 Section 21.6.6
	Aggregate content	CS1: 2010 Section 21.6.7
	Sulphate content	CS1: 2010 Section 21.10.3

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Concrete (Diagnostic)	Carbonation test	Building Research Establishment Information Paper IP 6/81 BS EN 14630: 2006 Hong Kong Housing Authority Materials Testing Services (2012/2014) for Maintenance & Building Materials Specification Part D Cl. 4.3.1 (Method 1 & Method 2)
	Covermeter survey	BS 1881: Part 204: 1988
	Half cell potential measurement	ASTM C876-87
	Surface hardness measurement	BS 1881: Part 202: 1986 BS EN 12504-2: 2001 BS EN 12504-2: 2012
	Ultrasonic pulse velocity measurement	BS 1881: 203: 1986 Cl. 6.2 & 6.3 (direct & semi-direct transmission) BS EN 12504-4: 2004 (direct & semi-direct transmission)
Curtain walls & cladding (spiders)	Proof load test of spiders in the force range 1 kN – 120 kN	Code of Practice for the Structural Use of Steel 2011 Cl. 16.2.1

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Grout	Compressive strength of grout cubes in the force range 20 kN to 3000 kN	BS 1881: Part 116: 1983 BS EN 12390: Part 3: 2009 CS1: 2010 Section 12
	Flow of grout for pre-placed aggregate concrete (flow cone method)	ASTM C939-97 ASTM C939-02 ASTM C939-10
	Expansion and bleeding of freshly mixed grouts for preplaced-aggregates concrete	ASTM C940-87 ASTM C940-98a ASTM C940-10a
	Bleeding and free expansion	General Specification for Civil Engineering Works (1992) Vol. 2 Cl. 17.60 General Specification for Civil Engineering Works (2006) Vol. 2 Cl. 17.60
Ground Granulated Blastfurnace Slag (GGBS)	Activity index	BS EN 15167-1: 2006 Cl. 5.3.2.3 BS EN 196-1: 2005 BS EN 196-1: 2016
	Density	BS EN 15167-1: 2006 Cl. 5.5 BS EN 196-6: 2010 Annex NC
	Fineness	BS EN 15167-1: 2006 Cl. 5.3.1 BS EN 196-6: 2010 Cl. 4 (Blaine method)
	Initial setting time	BS EN 15167-1: 2006 Cl. 5.3.2.2 BS EN 196-3: 2005 + A1: 2008 Cl. 6 BS EN 196-3: 2016 Cl. 6
	Moisture content	BS EN 15167-1: 2006 Annex A

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Ground Granulated Blastfurnace Slag (GGBS) (Chemical analysis)	Loss-on-ignition	BS EN 196-2: 2005 Cl. 7 BS EN 15167-1: 2006 (Amd16763) Cl. 5.2 & BS EN 196-2: 2013 Cl. 4.4.1
	Sulphate content (as SO ₃)	BS EN 196-2: 2005 Cl. 8 BS EN 15167-1:2006 (Amd16763) Cl. 5.2 & BS EN 196-2: 2013 Cl. 4.4.2
	Insoluble residue in hydrochloric acid and sodium carbonate	BS EN 196-2: 2005 Cl. 9 BS EN 196-2: 2013 Cl. 4.4.3
	Manganese content (Mn) Manganese oxide content (MnO) Manganese trioxide content (Mn ₂ O ₃)	BS EN 196-2: 2005 Cl. 12 BS EN 15167-1: 2006 (Amd16763) Cl. 5.5 & BS EN 196-2: 2013 Cl. 4.4.6
	Impure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.2, 13.3 BS EN 196-2: 2005 Cl. 13.2, 13.4 BS EN 196-2: 2005 Cl. 13.5 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.3 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.4 BS EN 196-2: 2013 Cl. 4.5.5
	Pure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.6 BS EN 196-2: 2013 Cl. 4.5.6
	Soluble silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.8 BS EN 196-2: 2013 Cl. 4.5.8
	Total silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.9 BS EN 15167-1: 2006 (Amd16763) Cl. 5.5 & BS EN 196-2: 2013 Cl. 4.5.9
	Iron (III) oxide content	BS EN 196-2: 2005 Cl. 13.10 BS EN 196-2: 2013 Cl. 4.5.10
	Aluminium oxide content	BS EN 196-2: 2005 Cl. 13.11 BS EN 15167-1: 2006 (Amd16763) Cl. 5.5 & BS EN 196-2: 2013 Cl. 4.5.11

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Ground Granulated Blastfurnace Slag (GGBS) (Chemical analysis) (cont'd)	Calcium oxide content	BS EN 196-2: 2005 Cl. 13.12 (Reference method) BS EN 196-2: 2005 Cl. 13.14 (Alternative method) BS EN 15167-1: 2006 (Amd16763) Cl. 5.5 & BS EN 196-2: 2013 Cl. 4.5.12 (Reference method) BS EN 196-2: 2013 Cl. 4.5.14 (Alternative method)
	Magnesium oxide content	BS EN 196-2: 2005 Cl. 13.13 (Reference method) BS EN 196-2: 2005 Cl. 13.15 (Alternative method) BS EN 15167-1: 2006 (Amd16763) Cl. 5.2 & BS EN 196-2: 2013 Cl. 4.5.13 (Reference method) BS EN 196-2: 2013 Cl. 4.5.15 (Alternative method)
	Sodium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Potassium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Alkali content (sodium oxide equivalent)	BS EN 196-2: 2005 Cl. 17 (Reference method) BS EN 15167-1: 2006 (Amd16763) Cl. 5.5 & BS EN 196-2: 2013 Cl. 4.5.19 (Reference method)
	Chloride ion content (Cl ⁻)	BS EN 196-2: 2005 Cl. 14 BS EN 15167-1: 2006 (Amd16763) Cl. 5.2 & BS EN 196-2: 2013 Cl. 4.5.16
	Sulphide content	BS EN 196-2: 2005 Cl. 11 BS EN 15167-1: 2006 (Amd16763) Cl. 5.2 & BS EN 196-2: 2013 Cl. 4.4.5
	Groundwater (Chemical analysis)	Sulphate content (as SO ₃)
pH value		GEOSPEC 3: 2001 Test 9.5 GEOSPEC 3: 2017 Test 9.5

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Manhole cover	Permanent set, mass determination & loading test of manhole covers, gully gratings & kerb overflow weirs	BS EN 124: 1994 Cl. 8 + Amd. 8587 BS EN 124: Part 1: 2015 General Specification for Civil Engineering Works, Vol. 1 (1992) Cl. 5.94 & App. 5.3 General Specification for Civil Engineering Works, Vol. 1 (1992) Cl. 5.95 & App. 5.3 General Specification for Civil Engineering Works, Vol. 1 (2006) Cl. 5.95 & App. 5.3 Hong Kong Housing Authority Building Works Specification Library (2000) Cl. DIS 3.T430.3 to Cl. DIS 3.T480.3 Hong Kong Housing Authority Building Works Specification Library (2008) Cl. DRA2.M650.5 and Cl. DRA2.T430.5 to Cl. DRA2.T490.5
Metallic materials	Bend test of metallic materials	BS EN ISO 7438: 2016 excluding Cl. 4.3 & 4.4 in conjunction with the following specification(s): BS EN 485-1: 2008 Cl 6.4 & BS EN 485-2: 2008 Cl. 4.1
	Bend test of reinforcing bar, wire rods, welded fabric, cold reduced wire for reinforcement of concrete	BS EN ISO 15630-1: 2002 Cl. 6 BS EN ISO 15630-1: 2010 Cl. 6 BS EN ISO 15630-1: 2019 Cl. 6
	Bend test of welded fabric for reinforcement of concrete	BS EN ISO 15630-2: 2010 Cl. 6 BS EN ISO 15630-2: 2019 Cl. 6
	Bond property of steel reinforcing bars by surface geometry measurement	BS EN ISO 15630-1: 2002 Cl. 10, 11.2 & 11.3 BS EN ISO 15630-1: 2010 Cl. 10, 11.2 & 11.3 BS EN ISO 15630-1: 2019 Cl. 10, 11.2 & 11.3 CS2: 2012 + Amd. 1/2018 + Amd. 2/2018 Cl. 6.1 & 6.7 excluding Cl. 6.7.3 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.4 & 9

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Metallic materials (Cont'd)	Charpy V-notch impact test	BS EN 10045-1: 1990 BS EN ISO 148-1: 2016 in conjunction with the following specification(s): BS EN 10021: 2006 Cl. 8.3.4.2 BS EN 10025-1: 2004 Cl.10.2.2 BS EN 10025-2: 2004 Cl.10.2 & Table 9 BS EN 10025-2: 2019 Cl. 10.2.2 & Table 8 BS EN 10025-3: 2004 Cl.10.2, Table 6 & 7 BS EN 10025-3: 2019 Cl. 10.2.2, Table 5 & 6 BS EN 10025-4: 2004 Cl.10.2, Table 6 & 7 BS EN 10025-4: 2019 Cl.10.2.2, Table 5 & 6 BS EN 10025-5: 2004 Cl.10.2 & Table 5 BS EN 10025-5: 2019 Cl. 10.2.2 & Table 5 BS EN 10025-6: 2004 + A1: 2009 Cl. 10.2, Table 6 & 7 BS EN 10025-6: 2019 Cl. 10.2.2 & Table 5 & 6 BS EN 10088-2: 2005 Cl. 7.4.4, Table 8, 10 & 11 BS EN 10088-2: 2014 Cl. 7.4.4, Table 7, 8, 10 BS EN 10088-3: 2005 Cl. 7.4.4, Table 9 to 12 & 14 - 17 BS EN 10088-3: 2014 Cl. 7.4.4, Table 8, 9, 11 to 14, 16 & 17 BS EN 10210-1: 2006 Cl. 6.6.2, 9.2.3, Table A.3 & B.3 BS EN 10219-1: 2006 Cl. 6.7.2, 9.2.3, Table A.3, B.4 & B.5 BS EN 1563: 2018 Cl. 9.2 & Table 2 BS EN ISO 898-1: 2013 Cl. 9.14.5 & Table 3 ISO 898-1: 2009 Cl. 9.14.5 & Table 3
	Mass per metre of cold reduced steel wires	BS 4482: 1985 Cl. 9 & App. A BS 4482: 2005 Cl. 7.3, 9 & BS EN ISO 15630-1: 2002 Cl. 12
	Mass per meter of steel reinforcing bars, wire rods and wire	BS EN ISO 15630-1: 2002 Cl. 12 BS EN ISO 15630-1: 2010 Cl. 12 BS EN ISO 15630-1: 2019 Cl. 12 CS2: 2012 + Amd. 2/2018 Cl. 6.1 & 6.2 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.2, 7.3 & 9
	Mass per metre square, pitch and dimension of steel fabrics for reinforcement of concrete	BS 4483: 1998 Cl. 6 & 10 BS 4483: 2005 Cl. 7.3, 8.1.3.2 with BS 4449: 2005 Cl. 7.3 & BS EN ISO 15630-1: 2002 Cl. 12

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Metallic materials (cont'd)	<p>Proof load test of unmachined (finished) bolts screws and studs in the force range 3 kN – 2000 kN</p> <p>Proof load test of steel nuts in the force range 3 kN – 2000 kN</p> <p>Proof load test of stainless steel nut in the force range 3 kN – 2000 kN</p> <p>Rebend test of reinforcing bars, wire rod, welded fabric, cold reduced wire for reinforcement of concrete</p>	<p>BS EN ISO 898-1: 2009 Cl. 9.6 BS EN ISO 898-1: 2013 Cl. 9.6 in conjunction with the following specification(s): BS 3692: 2001 Cl. 11 & 13 BS 3692: 2014 Cl. 14 & 21 BS 4190: 2001 Cl. 15 & 20 BS 4190: 2014 Cl. 15 & 21</p> <p>BS 3692: 2001 Annex C.1 BS 3692: 2014 Annex C.1 BS 4190: 2001 Annex A.1 BS 4190: 2014 Annex A.1 BS EN ISO 898-2: 2012 Cl. 9.1</p> <p>BS EN ISO 898-2: 2012 Cl. 9.1 in conjunction with the following specification(s): BS EN ISO 3506-2: 2009 Cl. 6 BS EN ISO 3506-2: 2020 Cl. 10.1</p> <p>BS EN ISO 15630-1: 2002 Cl. 7 BS EN ISO 15630-1: 2010 Cl. 7 BS EN ISO 15630-1: 2019 Cl. 7 CS2: 2012 + Amd. 2/2018 Cl. 6.1 & 6.5 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.5 BS 4482: 1985 Cl. 12.2 & App. C.5 BS 4482: 2005 Cl. 7.2.4 & 9 BS 4483: 1998 Cl. 13.1 BS 4483: 2005 Cl. 7.2.5 & 8.1.3.2</p>

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Metallic materials (cont'd)	Tensile test of unmachined (finished) bolts, screws and studs in the force range 3 kN – 2000 kN	BS EN ISO 6892-1: 2009 Cl. 10.4 Method B BS EN ISO 6892-1: 2016 Cl. 10.3.3 Method B BS EN ISO 6892-1: 2019 Cl. 10.3.3 Method B in conjunction with the following specification(s): BS 3692: 2001 Cl. 11 & 13 BS 3692: 2014 Cl. 14 & 21 BS 4190: 2001 Cl. 15 & 20 BS 4190: 2014 Cl. 15 & 21 BS EN ISO 898-1: 2009 Cl. 9.2 BS EN ISO 898-1: 2013 Cl. 9.2
	Tensile test of machined bolts, screws and studs in the force range 3 kN – 2000 kN	BS EN ISO 6892-1: 2009 Cl. 10.4 Method B BS EN ISO 6892-1: 2016 Cl. 10.3.3 Method B BS EN ISO 6892-1: 2019 Cl. 10.3.3 Method B in conjunction with the following specification(s): BS 3692: 2001 Cl. 11 & 13 BS 3692: 2014 Cl. 14 & 21 BS 4190: 2001 Cl. 15 & 20 BS 4190: 2014 Cl. 15 BS EN ISO 898-1: 2009 Cl. 9.7 BS EN ISO 898-1: 2013 Cl. 9.7

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Metallic materials (cont'd)	<p>Tensile test of reinforcing bars, wire rod, welded fabric, cold reduced wire for reinforcement of concrete in the force range 3 kN - 2000 kN</p> <p>Tensile test & slip/permanent elongation test of mechanical coupler for reinforcing bar in the force range 3 kN – 2000 kN</p>	<p>BS EN 10002-1: 2001 BS EN ISO 6892-1: 2009 Cl. 10.4 Method B BS EN ISO 6892-1: 2016 Cl. 10.3.3 Method B BS EN ISO 6892-1: 2019 Cl. 10.3.3 Method B in conjunction with the following specification(s): BS 4482: 1985 Cl. 12.1 & App. C.3 BS 4482: 2005 Cl. 8.1.3.1 & 9 BS 4483: 1998 Cl. 13.1 BS 4483: 2005 Cl. 7.2.2 & 7.2.3, 8.1.3.1 & 9 BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.2, 7.2.3, 8.1.3.1 & 9 BS EN ISO 15630-1: 2002 Cl. 5 BS EN ISO 15630-1: 2010 Cl. 5 BS EN ISO 15630-1: 2019 Cl. 5 BS EN ISO 15630-2: 2010 Cl. 5 BS EN ISO 15630-2: 2019 Cl. 5 CS2: 2012 + Amd. 1/2016 + Amd. 2/2018 Cl. 6.1 & 6.4</p> <p>In-house method STL-P-008 In-house method STL-P-009 in conjunction with the following specification(s): BS 8110-1: 1997 Cl. 3.12.8.16.2 General Specification for Civil Engineering Works (2006) Vol. 2 Cl. 15.35 Buildings Department Code of Practice for Structural Use of Concrete (2013) Cl. 3.2.8.3</p>

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Metallic materials (cont'd)	Tensile test of metallic materials in the force range 3 kN – 2000 kN	BS EN 10002-1: 2001 BS EN ISO 6892-1: 2009 Cl. 10.4 Method B BS EN ISO 6892-1: 2016 Cl. 10.3.3 Method B BS EN ISO 6892-1: 2019 Cl. 10.3.3 Method B in conjunction with the following specification(s): BS EN 485-1: 2008 Cl. 6.3 & BS EN 485-2: 2008 Cl. 4.1 BS EN 1561: 1997 Cl. 9.1 & Table 1 BS EN 1561: 2011 Cl. 9.1 & Table 1 BS EN 1562: 1997 Cl. 9.1, Table 1 & 2 BS EN 1563: 1997 Cl. 9.1, Table 1 & 3 BS EN 1563: 2018 Cl. 9.1, Table 1 & 3 BS EN 10025-1: 2004 Cl. 9.2.3.2 & 10.2.1 BS EN 10025-2: 2004 Cl. 10.2 & Table 7 & 8 BS EN 10025-2: 2019 Cl. 10.2.1 & Table 6 & 7 BS EN 10025-3: 2004 Cl. 10.2 & Table 5 BS EN 10025-3: 2019 Cl. 10.2.1 & Table 4 BS EN 10025-4: 2004 Cl. 10.2 & Table 5 BS EN 10025-4: 2019 Cl. 10.2.1 & Table 4 BS EN 10025-5: 2004 Cl. 10.2 & Table 4 BS EN 10025-5: 2019 Cl. 10.2.1 & Table 4 BS EN 10025-6: 2004 + A1: 2009 Cl. 10.2 & Table 5 BS EN 10088-2: 2005 Cl. 7.4.2, Table 7 - 17 & 19 - 25 BS EN 10088-2: 2014 Cl. 7.4.2, Table 7 - 18 BS EN 10088-3: 2005 Cl. 7.4.2, Table 8 - 17 BS EN 10088-3: 2014 Cl. 7.4.2, Table 8 - 17 & 19 - 25 BS EN 10164: 2004 Cl. 5.1 & 8.1 BS EN 10164: 2018 Cl. 6 & 9.1 BS EN 10210-1: 2006 Cl. 6.6.1, 9.2.1 & 9.2.2 BS EN 10219-1: 2006 Cl. 6.7.1, 9.2.1 & 9.2.2 BS EN 10248-1: 1996 Cl. 8.4.3 & 8.4.4 BS EN 10255: 2004 + A1: 2007 Cl. 9.3 & Table 1



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Metallic materials (cont'd)	<p>Vickers hardness test of metal in scale range of HV5, HV10 and HV30</p> <p>Weld shear force test of welded fabrics for reinforcement of concrete in the force range 3 kN – 2000 kN</p>	<p>BS 427: 1990 Section 2 BS EN 23878: 1993 BS EN ISO 6507-1: 1998 BS EN ISO 6507-1: 2005 BS EN ISO 6507-1: 2018 in conjunction with the following specification(s): BS 3692: 2001 Cl C.4.3 & Table 9 BS 3692: 2014 Cl C.4.4 & Table 10 BS 4190: 2001 Cl A.2.4 & Table 14 BS 4190: 2014 Cl A.4.4 & Table 14 BS EN 10088-2: 2005 Cl 7.4.5 & Table 8 BS EN 10088-2: 2014 Cl 7.4.5 & Table 10 BS EN ISO 898-1: 1999 Cl 8.4.1 & Table 3 BS EN ISO 898-1: 2009 Cl 9.9.3(a) & Table 3 BS EN ISO 898-1: 2013 Cl 9.9.3(a) & Table 3 BS EN ISO 898-2: 2012 Cl 9.2.2 & Table 6 BS EN ISO 3506-1: 2009 Cl 7.2.7 & Table 3</p> <p>BS EN ISO 15630-2: 2010 Cl. 7 BS EN ISO 15630-2: 2019 Cl. 7.1 in conjunction with the following specification(s): BS 4483: 1998 Cl. 13.2 BS 4483: 2005 Cl. 7.2.2 & 7.2.4</p>

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Metallic materials (chemical analysis) - Carbon steel 250, 500 B, 500C	Elemental Composition :- - Carbon - Chromium - Copper - Molybdenum - Manganese - Nitrogen - Nickel - Sulphur - Phosphorus - Vanadium Carbon equivalent value	In-house method STL-C-001 (Spark OES)
- Stainless steel 316, 316L, 316H	- Carbon - Chromium - Molybdenum - Manganese - Nitrogen - Nickel - Sulphur - Phosphorus - Silicon	CS2:2012 Cl. 1.5.1 In-house method STL-C-001 (Spark OES)

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Mortar	Compressive strength of mortar cubes in the force range 20 kN to 3000 kN	BS 1881: Part 116: 1983 CS1: 2010 Section 12 BS EN 12390: Part 3: 2009
Pulverized fuel ash (PFA)	Activity index	BS EN 450-1: 2005 + A1: 2007 BS EN 450-1: 2012
	Density	BS 3892: Part 1: 1997 Cl.7 BS EN 450-1: 2005 + A1: 2007 BS EN 450-1: 2012
	Fineness	BS 3892: Part 1: 1982 + Amd. 4629 Annex D BS 3892: Part 1: 1997 Annex D BS EN 451-2: 1995 BS EN 451-2: 2017
	Initial setting time	BS 3892: Part 1: 1997 Cl.10 BS EN 450-1: 2005 + A1: 2007 BS EN 450-1: 2012
	Moisture content	BS 3892: Part 1: 1982 + Amd. 4629 App. B BS 3892: Part 1: 1997 Annex C
	Soundness	BS 3892: Part 1: 1997 Cl.11 BS EN 450-1: 2005 + A1: 2007 BS EN 450-1: 2012
	Strength factor	BS 3892: Part 1: 1997 Annex F
	Water requirement	BS 3892: Part 1: 1982 + Amd. 4629 App. E BS 3892: Part 1: 1997 Annex E BS EN 450-1: 2005 + A1: 2007 Annex B BS EN 450-1: 2012 Annex B

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Pulverized fuel ash (Chemical analysis)	Loss-on-ignition	BS EN 196-2: 2013 Cl. 4.4.1 (using an ignition time of 1 hour) BS EN 450-1: 2012 Cl. 5.2.2 & BS EN 196-2: 2005 Cl. 7 (using an ignition time of 1 hour)
	Sulphate content (as SO ₃)	BS EN 196-2: 2013 Cl. 4.4.2 BS EN 450-1: 2012 Cl. 5.2.4 & BS EN 196-2: 2005 Cl. 8
	Manganese content (Mn) Manganese oxide content (MnO) Manganese trioxide content (Mn ₂ O ₃)	BS EN 196-2: 2005 Cl. 12 BS EN 196-2: 2013 Cl. 4.4.6
	Impure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.2, 13.3 BS EN 196-2: 2005 Cl. 13.2, 13.4 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.3 BS EN 196-2: 2013 Cl. 4.5.2, 4.5.4
	Pure silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.6 BS EN 196-2: 2013 Cl. 4.5.6
	Soluble silica content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.8 BS EN 196-2: 2013 Cl. 4.5.8
	Total silica content (SiO ₂)	BS EN 196-2: 2013 Cl. 4.5.9 BS EN 450-1: 2012 Cl. 5.2.8 & BS EN 196-2: 2005 Cl. 13.9
	Iron (III) oxide content	BS EN 196-2: 2013 Cl. 4.5.10 BS EN 450-1: 2012 Cl. 5.2.8 & BS EN 196-2: 2005 Cl. 13.10
	Aluminium oxide content	BS EN 196-2: 2013 Cl. 4.5.11 BS EN 450-1: 2012 Cl. 5.2.8 & BS EN 196-2: 2005 Cl. 13.11

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Pulverized fuel ash (Chemical analysis) (cont'd)	Calcium oxide content	BS EN 196-2: 2005 Cl. 13.12 (Reference method) BS EN 196-2: 2005 Cl. 13.14 (Alternative method) BS EN 196-2: 2013 Cl. 4.5.12 (Reference method) BS EN 196-2: 2013 Cl. 4.5.14 (Alternative method)
	Magnesium oxide content	BS EN 196-2: 2013 Cl. 4.5.13 (Reference method) BS EN 196-2: 2013 Cl. 4.5.15 (Alternative method) BS EN 450-1: 2012 Cl. 5.2.10 & BS EN 196-2: 2005 Cl. 13.13 (Reference method) BS EN 196-2: 2005 Cl. 13.15 (Alternative method)
	Sodium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Potassium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Alkali content (sodium oxide equivalent)	BS EN 196-2: 2013 Cl. 4.5.19 BS EN 450-1: 2012 Cl. 5.2.9 & BS EN 196-2: 2005 Cl. 17
	Chloride ion content (Cl ⁻)	BS EN 196-2: 2013 Cl. 4.5.16 BS EN 450-1: 2012 Cl. 5.2.3 & BS EN 196-2: 2005 Cl. 14
	Free calcium oxide content	BS EN 451-1: 2003 BS EN 451-1: 2017

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Silica fume (chemical analysis)	Loss-on-ignition	BS EN 196-2: 2005 Cl.7 (using an ignition time of 1 hour) BS EN 13263-1: 2005 + A1: 2009 Cl. 5.2.7 & BS EN 196-2: 2013 Cl. 4.4.1 (using an ignition time of 1 hour)
	Sulphate content (as SO ₃)	BS EN 196-2: 2005 Cl. 8 BS EN 13263-1: 2005 + A1: 2009 Cl. 5.2.4 & BS EN 196-2: 2013 Cl. 4.4.2
	Silicon dioxide content (SiO ₂)	BS EN 196-2: 2005 Cl. 13.2, 13.3 & Cl. 13.6 BS EN 13263-1: 2005 + A1: 2009 Cl. 5.2.1 & BS EN 196-2: 2013 Cl. 4.5.2, 4.5.3 & Cl. 4.5.6
	Sodium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Potassium oxide content	BS EN 196-2: 2005 Cl. 17 BS EN 196-2: 2013 Cl. 4.5.19
	Alkali content (sodium oxide equivalent)	BS EN 196-2: 2005 Cl.17 BS EN 13263-1: 2005 + A1: 2009 Cl. 5.2.5 & BS EN 196-2: 2013 Cl. 4.5.19
	Chloride ion content (Cl)	BS EN 196-2: 2005 Cl.14 BS EN 13263-1: 2005 + A1: 2009 Cl. 5.2.6 & BS EN 196-2: 2013 Cl. 4.5.16
	Free calcium oxide content	BS EN 451-1: 2003 BS EN 451-1: 2017

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Road surfaces	Texture depth of carriageways (sand patch method)	General Specification for Civil Engineering Works (2006) Vol. 1 App. 10.1 Hong Kong Housing Authority Specification Library (2008) EXT 2.T910.5 to T1010.5
	Surface regularity of carriageways	General Specification for Civil Engineering Works (2006) Vol. 1 Cl. 9.42 to 9.43, Cl. 10.55 to 10.56 Hong Kong Housing Authority Specification Library (2008) EXT 2.T810.5 to T850.5
Soil (Chemical analysis)	Organic matter content	GEOSPEC 3: 2001 Test 9.1 GEOSPEC 3: 2017 Test 9.1
	Loss-on-ignition	GEOSPEC 3: 2001 Test 9.2 GEOSPEC 3: 2017 Test 9.2
	Total sulphate content (as SO ₃)	GEOSPEC 3: 2001 Test 9.3 GEOSPEC 3: 2017 Test 9.3
	Water-soluble sulphate content (as SO ₃)	GEOSPEC 3: 2001 Test 9.3 GEOSPEC 3: 2017 Test 9.3
	Water-soluble chloride content	GEOSPEC 3: 2001 Test 9.4 GEOSPEC 3: 2017 Test 9.4
	pH value	GEOSPEC 3: 2001 Test 9.5 GEOSPEC 3: 2017 Test 9.5

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Soil (Phase I)	Moisture content by oven-drying at 45°C ± 5°C	GEOSPEC 3: 2001 Test 5.1 GEOSPEC 3: 2017 Test 5.1
	Moisture content by oven-drying at 105°C ± 5°C	GEOSPEC 3: 2001 Test 5.2 GEOSPEC 3: 2017 Test 5.2
	Comparative test for the determination of moisture content by oven drying	GEOSPEC 3: 2001 Test 5.3 GEOSPEC 3: 2017 Test 5.3
	Liquid limit, plastic limit, and plasticity index	GEOSPEC 3: 2001 Test 6.1 GEOSPEC 3: 2017 Test 6.1
	Liquidity index	GEOSPEC 3: 2001 Test 6.2 GEOSPEC 3: 2017 Test 6.2
	Particle size distribution by wet sieving (with dispersant)	GEOSPEC 3: 2001 Test 8.1 GEOSPEC 3: 2017 Test 8.1
	Particle size distribution by wet sieving (without dispersant)	GEOSPEC 3: 2001 Test 8.2 GEOSPEC 3: 2017 Test 8.2
	Particle size distribution by hydrometer (with dispersant)	GEOSPEC 3: 2001 Test 8.5 GEOSPEC 3: 2017 Test 8.5
	Particle size distribution by hydrometer (without dispersant)	GEOSPEC 3: 2001 Test 8.6 GEOSPEC 3: 2017 Test 8.6
	Construction of a continuous particle size distribution curve from the results of wet-sieving and sedimentation tests	GEOSPEC 3: 2001 Test 8.7 GEOSPEC 3: 2017 Test 8.7
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using 1000 cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.1 GEOSPEC 3: 2017 Test 10.1
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using 1000 cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.2 GEOSPEC 3: 2017 Test 10.2

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Construction Materials 建築材料		
ITEM TESTED OR MEASURED 測試或量度項目	SPECIFIC TEST OR PROPERTY MEASURED 特定測試或量度的特性	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED 規範、標準方法或應用技術
Soil (Phase I) (cont'd)	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using CBR mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.3 GEOSPEC 3: 2017 Test 10.3
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using CBR mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.4 GEOSPEC 3: 2017 Test 10.4
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using 1000 cc mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.5 GEOSPEC 3: 2017 Test 10.5
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using 1000 cc mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.6 GEOSPEC 3: 2017 Test 10.6
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using CBR mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.7 GEOSPEC 3: 2017 Test 10.7
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using CBR mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.8 GEOSPEC 3: 2017 Test 10.8
	In-situ bulk density and in-situ dry density of soils by the sand replacement method suitable for fine and medium grained soils (with small pouring cylinder)	GEOSPEC 3: 2001 Test 11.1 GEOSPEC 3: 2017 Test 11.1
	In-situ bulk density and in-situ dry density of soils by the sand replacement method suitable for fine, medium and coarse grained soils (with large pouring cylinder)	GEOSPEC 3: 2001 Test 11.2 GEOSPEC 3: 2017 Test 11.2
	Relative compaction of fill material	GEOSPEC 3: 2001 Test 11.4 GEOSPEC 3: 2017 Test 11.4

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Structural fixings (anchor bolts, dowel bars)	Tensile proof test of anchor bolts or dowel bars in the force range 2 kN - 600 kN	BS 5080: Part 1:1993, Cl. 6, 7.1.1 & 7.1.3 with modification (by incremental loading)
	Tensile proof load test of anchor bolts or dowel bars in the force range 2 kN - 600 kN	In-house method CON-N-007 In-house method CON-N-008
	Shear test of anchor bolts or dowel bars in the force range 1 kN – 200 kN	BS 5080: Part 2: 1986 Cl. 7.1, 7.2.1 & 7.2.3 + Amd. 7602 (by incremental loading) In-house method CON-N-011a
Tapwares and valves	Dimension	BS EN 1286: 1999 Cl. 8
	Leaktightness test	BS EN 1286: 1999 Cl. 9.3 to 9.5
Welds (destructive)	Bend test on welds in metallic materials	BS EN 910: 1996 BS EN ISO 5173: 2010 + A1: 2011
	Bend test on arc stud welding in metallic materials	BS EN ISO 14555: 2017 Cl. 11.3
	Bend test on shear stud connectors	BS 5400-6: 1999 Cl. 5.5.4 Code of Practice for the structural use of steel 2011 Cl. 14.3.7
	Bend test on welding of reinforcing steel	BS EN ISO 17660-1: 2006 Cl. 14.4
	Charpy V-notch impact test on welds in metallic materials	BS EN 875: 1995 BS EN ISO 9016: 2012
	Fracture test on welds in metallic materials	BS EN 1320: 1997 ISO 9017: 2001 BS EN ISO 9017: 2018
	Longitudinal tensile test on weld metal in fusion welded joints in the force range 3 kN – 2000 kN	BS EN 876: 1995 BS EN ISO 5178: 2011 BS EN ISO 5178: 2019
	Macroscopic examination on welds in metallic materials	BS EN 1321: 1997 BS EN ISO 17639: 2013

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Welds (destructive) (cont'd)	Macro examination of arc stud welding in metallic materials	BS EN ISO 14555: 2017 Cl. 11.6
	Shear test on welding of reinforcing steel in the force range 3 kN–2000kN	BS EN ISO 17660-1: 2006 Cl. 14.3
	Tensile test on welds in metallic materials in the force range 3 kN – 2000 kN	BS EN 10002-1: 2001 BS EN ISO 6892-1: 2009 Method B BS EN ISO 6892-1: 2016 Method B BS EN ISO 6892-1: 2019 Method B in conjunction with the following specification(s): BS EN 895: 1995 BS EN ISO 4136: 2012
	Tensile test on arc stud welding in metallic materials in the force range of 3 kN - 2000 kN	BS EN ISO 6892-1: 2009 Method B BS EN ISO 6892-1: 2016 Method B BS EN ISO 6892-1: 2019 Method B in conjunction with the following specification(s): BS EN ISO 14555: 2017 Cl. 11.4
	Tensile test on welding of reinforcing steel in the force range 3 kN – 2000 kN	BS EN ISO 17660-1: 2006 Cl. 14.2
	Vickers hardness test across welded joints in the scale of HV 5 to HV 10	BS EN 1043-1: 1996 BS EN ISO 9015-1: 2011 ISO 9015-1: 2011
Welds (non-destructive)	Magnetic particle test (Magnetic flow method, colour contrast technique using permanent magnets, A.C. yokes)	BS 6072: 1981 BS EN 1290: 1998 BS EN ISO 9934-1: 2016 BS EN ISO 17638: 2009 BS EN ISO 17638: 2016 in conjunction with the following specification(s): BS 5135: 1984 Table 18 & 19 BS EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014 Table 1 BS EN ISO 15614-1: 2017 + A1: 2019 Table 4 Level 1 Code of Practice for Structural Use of Steel (2005) Table 14.3b Code of Practice for Structural Use of Steel (2011) Table 14.3b



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Water (Chemical analysis)	Sulphate content	In-house method WAT-C-001 (Gravimetric)
	Total dissolved solids	APHA 23e 2540C
	Chloride content	APHA 23e 4500-ClB
	Total alkalinity	APHA 23e 2320B
	pH value	In-house method WAT-C-005
	Sodium oxide content (Na ₂ O)	BS EN 196-21: 1992 Cl. 7 (reference method)
	Potassium oxide content (K ₂ O)	BS EN 196-21: 1992 Cl. 7 (reference method)
	Alkali content (equivalent Na ₂ O)	BS EN 1008: 2002 Cl. 6.1.3 & BS EN 196-21: 1992 Cl. 7 (reference method)