



Scope of Accreditation
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Hong Kong Testing Company Limited

香港試驗有限公司

ADDRESS : Room 205, 2/F, Fuk Shing Commercial Building, 28 On Lok Mun Street,
地址 On Lok Tsuen, Fanling, New Territories, Hong Kong
香港新界粉嶺安樂村安樂門街 28 號福成商業大廈二樓 205 室

ACCREDITED TEST : Calibration Services 校正服務
CATEGORY Construction Materials 建築材料
認可測試類別 Environmental Testing 環境測試

Hong Kong Testing Company Limited

香港試驗有限公司

Room 205, 2/F, Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling,

New Territories, Hong Kong

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Calibration Services 校正服務		
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 [@]	CALIBRATION AND MEASUREMENT CAPABILITY (CMC)* 標準和測量能力*
Construction materials testing equipment		
- Compacting bar	Verification in accordance with in-house methods CAL-FSH-0101 and CAL-FSH-0102 for the dimensional and mass requirements as specified in CS1: 1990: Vol. 1 App. A9 (Amd. 1102) CS1: 2010: Vol. 1 App. A10	
	- Length of bar	0.1 mm
	- Mass of bar	1 g
- Concrete test cube mould	Verification in accordance with in-house methods CAL-FSH-0301 and CAL-FSH-0303 for the dimensional requirements as specified in CS1: 1990: Vol. 1 App. A21 CS1: 2010: Vol. 1 App. A25 <Excluding the following> for the above two verifications surface texture measurement	
	- Dimension	0.04 mm
	- Flatness	0.01 mm
	- Perpendicularity	0.05 mm
	- Parallelism	0.05 mm
- Curing tank	On-site verification in accordance with in-house methods CAL-CON-0101 and CAL-CON-0102 for the requirements as specified in CS1: 1990: Vol. 1 App. A24 CS1: 2010: Vol. 1 App. A28	
	- Temperature distribution	0.3 K
	- Efficiency of circulation	1 min

[@] UNLESS OTHERWISE SPECIFIED, ACCREDITED ACTIVITIES ARE CONDUCTED AT THE LABORATORY.

* THE CALIBRATION UNCERTAINTY OF A DEVICE UNDER TEST IS USUALLY REPORTED AT 95% CONFIDENCE LEVEL AND DEPENDS ON BOTH THE CMC OF THE LABORATORY AND THE PERFORMANCE OF THE DEVICE DURING CALIBRATION.

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Construction materials testing equipment (cont'd)		
- Slump cone	Verification in accordance with in-house methods CAL-FSH-0201 and CAL-FSH-0202 for the dimensional requirements as specified in CS1: 1990: Vol. 1 App. A4 (Amd. 1102) CS1: 2010: Vol. 1 App. A5	
	- Top diameter	0.12 mm
	- Base diameter	0.12 mm
	- Wall thickness	0.12 mm
	- Height	0.10 mm
- Tamping rod	Verification in accordance with in-house methods CAL-FSH-0201 and CAL-FSH-0202 for the dimensional requirements as specified in CS1: 1990: Vol. 1 App. A5 (Amd. 1102) CS1: 2010: Vol. 1 App. A6	
	- Diameter	0.1 mm
	- Length	0.1 mm

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Mass and related measurements		
- Force measurements		
- Concrete testing machine	On-site calibration using true force method in accordance with BS 1610: Part 1: 1985 (Amd. 6175) BS 1610: Part 1: 1992 CS1: 1990 App. D over the following range : 5 kN to 3000 kN	0.6 % (Calibration is conducted using Grade 1 load cell)
	On-site calibration using true force method in accordance with BS EN 12390-4: 2000 Annex B and Table 1 CS1: 2010 App. D over the following range : 5 kN to 3000 kN	0.6 % (Calibration is conducted using Class 1 load cell)
	On-site strain gauged column and proving test (stability test) in accordance with BS 1881: Part 115: 1986 (Amd. 6536), BS EN 12390-4: 2000 Annex A and Table 3 CS1: 1990 App. D CS1: 2010 App. D	0.03 strain ratio
- Universal testing machine in compression mode	On-site calibration using true force method in accordance with BS 1610: Part 1: 1985 CS1: 1990 App. D over the following range : 5 kN to 3000 kN	0.6 % (Calibration is conducted using Grade 1 load cell)

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Admixtures (Chemical analysis)	Acid-soluble alkali content (equivalent Na ₂ O)	In-house Method CON-CHM-1201
	Dry material content	BS 5075: Part 1: 1982 (Amd. 4910) App. D.1
	Ash content	BS 5075: Part 1: 1982 (Amd. 4910) App. D.2
	Relative density (of liquid admixture)	BS 5075: Part 1: 1982 (Amd. 4910) App. D.3
	Chloride ion content	BS 5075: Part 1: 1982 (Amd. 4910) App. E
Aggregates	Particle size distribution	BS 812: Part 1: 1975 BS 812: Section 103.1: 1985 (Amd. 6003) CS3: 2013 Section 10 (Sieve analysis)
	Clay, silt and dust content	BS 812: Part 1: 1975 (Amd. 4572) (Decantation method)
	Flakiness index	BS 812: Part 1: 1975 (Amd. 4572) BS 812: Section 105.1: 1985 BS 812: Section 105.1: 1989 CS3: 2013 Section 11
	Elongation index	BS 812: Part 1: 1975 (Amd. 4572) BS 812: Section 105.2: 1990 CS3: 2013 Section 12
	Shell content	BS 812: Part 106: 1985
	Relative density and water absorption	BS 812: Part 2: 1975 (Amd. 4615) (Gas jar method and Pycnometer method) BS 812: Part 2: 1995 (Amd. 1 & 2) (Wire basket method, Gas jar method and Pycnometer method)
	Bulk density	BS 812: Part 2: 1975 (Amd. 4615)
	Moisture content	BS 812: Part 2: 1975 (Amd. 4615) BS 812: Part 109: 1990 CS3: 2013 Section 18.5 (Oven drying method)

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Aggregates (cont'd)	Aggregate crushing value	BS 812: Part 3: 1975 (Amd. 4225) BS 812: Part 110: 1990
	Methylene blue value	CS3: 2013 Section 13
	Los Angeles value	ASTM C131-96 ASTM C535-96 CS3: 2013 Section 14
	Aggregate impact value	BS 812: Part 3: 1975 (Amd. 4225) BS 812: Part 112: 1990 (Amd. 8772) CS3: 2013 Section 15
	Ten per cent fines value	BS 812: Part 3: 1975 (Amd. 4225) BS 812: Part 111: 1990 CS3: 2013 Section 16
	Particle density and water absorption	CS3: 2013 Section 17
	Sampling	BS 812: Part: 102: 1989 CS3: 2013 Section 8
	Soundness	BS 812: Part 121: 1989 CS3: 2013 Section 19
	Drying shrinkage	CS3: 2013 Section 20
	Effect of organic substances by mortar method	CS3: 2013 Section 22
Aggregates (Chemical analysis)	Total sulphate content	BS 812: Part 118: 1988 <i>Excluding</i> Cl. 4
	Total sulphur content	CS3 : 2013 Section 21.6
	Water-soluble sulphate content	BS 812: Part 118: 1988 <i>Excluding</i> Cl. 4
	Acid-soluble sulphate content	CS3 : 2013 Section 21.5
	Water-soluble chloride salts	BS 812: Part 117: 1988 BS 812: Part 4: 1976
	Water-soluble chloride ion content	CS3 : 2013 Section 21.3

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Aggregates (Chemical analysis) (cont'd)	Acid-soluble chloride ion content	CS3 : 2013 Section 21.4
	Presence of humus	CS3 : 2013 Section 21.7
	Acid-soluble material	BS 812: Part 119: 1985 <i>Excluding</i> Cl. 4
	Soluble calcium oxide content	HKHA MTS (97/99) Specification Part D 1.4.9
	Soluble silica content	HKHA MTS (97/99) Specification Part D 1.4.9
Bituminous materials	Asphalt content of hot mix asphalt by ignition method	ASTM D6307-98 Method A ASTM D6307-05 Method A
	Bulk specific gravity and density of compacted bituminous mixtures using automatic vacuum sealing method	ASTM D6752/D6752M-11 ASTM D6752/D6752M-17
	Bulk specific gravity & density of compacted bituminous mixtures using coated specimen	ASTM D1188-96 (Reapproved 2002)
	Bulk specific gravity and density of non-absorptive compacted bituminous mixtures	ASTM D2726-96a ASTM D2726-88
	Mechanical size analysis of extracted aggregate	ASTM D5444-08
	Permeability of friction course material	General specification for Civil Engineering Works (1992) Vol. 2 App. 9.1 General specification for Civil Engineering Works (2006) Vol. 1 App. 9.1
	Percent air voids in compacted mixtures	ASTM D3203-94 ASTM D3203-88 ASTM D3203/D3203M-11
	Polymer modified binder content and particle size distribution of polymer modified friction course and cushion course materials by centrifuge method and ignition method.	Particular Specification for Highways Department App. 9.2 (RD/GN/032 June 2007 App. B), ASTM C117-95 and ASTM C136-96a with modification

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Bituminous materials (cont'd)	Quantitative extraction of bitumen from bituminous paving mixtures	ASTM D2172-95 (Method A using ashing method) ASTM D2172-88 (Method A using ashing method)
	Sieve analysis of fine and coarse aggregates and materials finer than 75 micron sieve in mineral aggregates by washing	ASTM C117-95 and ASTM C136-95a with modifications ASTM C117-95 and ASTM C136-96a with modifications ASTM C117-95 and ASTM C136-84a with modifications ASTM C117-87 and ASTM C136-84a with modifications
	Theoretical maximum specific gravity and density of bituminous paving mixtures	ASTM D2041-78 (Weighing in water method using type A container) with modifications ASTM D2041-95 (Weighing in water method using type A container) with modifications
	Thickness or height of compacted bituminous paving mixture specimens	ASTM D3549-93a (excluding Cl. 6.2 & 6.3)
Blocks and bricks	Compressive strength of interlocking blocks in the force range 50 kN - 3000 kN	General Specification for Civil Engineering Works (1992) App. 11.1 General Specification for Civil Engineering Works (2006) App. 11.1 HKHA Specification (2000) RAP 3.T010.3 to 3.T060.3
	Dimension check of clay and calcium silicate pavers	BS 6677: Part 1: 1986 App. A & C
	Dimension deviation of clay pavers	BS EN 1344: 2002 Annex B Highway Department Specification for Clay Pavers and Clay Paving Setts (2008)
	Dimensions of natural granite pavers	BS EN 1341: 2001 Annex A BS EN 1342: 2001 Annex A Highways Department Specification for Natural Granite Pavers and Miscellaneous Items (2008)

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Blocks and bricks (cont'd)	Dimensions of paving blocks	BS 6717: 2001 Annex B General Specification for Civil Engineering Works (2006) Cl. 11.86 (3)
	Dimensions of paving flags	BS 7263-1: 2001 Annex B General Specification for Civil Engineering Works (2006) Cl. 11.86 (2)
	Flexural strength & breaking load of natural granite pavers in the force range 0.2 kN - 300 kN	BS EN 1341: 2001 Annex B & BS EN 12372: 2006 Highways Department Specification for Natural Granite Pavers and Miscellaneous Items (2008)
	Slip/skid resistance of clay pavers	BS EN 1344: 2002 Annex F General Specification for Civil Engineering Works (2006) Cl. 11.87 Highway Department Specification for Clay Pavers and Clay Paving Setts (2008)
	Slip/skid resistance of natural granite pavers	BS EN 1341: 2001 Annex D BS EN 1342: 2001 Annex C Highways Department Specification for Natural Granite Pavers and Miscellaneous Items (2008)
	Transverse breaking load of clay and calcium silicate pavers in the force range 0.2 kN - 300 kN	BS 6677: Part 1: 1986 App. D
	Transverse breaking load of clay pavers in the force range 0.2 kN - 300 kN	BS EN 1344: 2002 Annex D Highway Department Specification for Clay Pavers and Clay Paving Setts (2008)
	Transverse breaking load of natural granite pavers in the force range 0.2 kN - 300 kN	Highways Department Specification for Natural Granite Pavers and Miscellaneous Items (2008)
Water absorption of masonry units and segmental pavers (Cold Water)	AS/NZS 4456.14: 2003 General Specification for Civil Engineering Works (2006) Cl. 11.88 Highway Department Specification for Clay Pavers and Clay Paving Setts (2008) Highways Department Specification for Natural Granite Pavers and Miscellaneous Items (2008)	

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Building Stones	Absorption and bulk specific gravity	ASTM C97-02 ASTM C97/C97M-15
	Compressive strength of building stones in the force range 0.2 kN - 300 kN	ASTM C170-90 (Reapproved 1999) ASTM C170/C170M-15a
	Flexural strength of building stones in the force range 0.2 kN - 300 kN	ASTM C880-98 ASTM C880/C880M-15
	Strength of individual stone anchorage	ASTM C1354-96 (Reapproved 2004) ASTM C1354/C1354M-15
Cement	Compressive strength of broken mortar prisms in the force range 2 kN - 300 kN	BS EN 196-1: 1995
	Compressive strength of concrete cubes in the force range 50 kN - 2000 kN	BS 4550: Part 3: Section 3.4: 1978 + Amd. 4247, 4498 & 5704
	Compressive strength of mortar cubes in the force range 50 kN - 2000 kN	BS 4550: Part 3: Section 3.4: 1978 (Amd. 4247, 4498 & 5704)
	Density	BS 4550: Part 3: Section 3.2: 1978 BS EN 196-6: 1992: Annex NC
	Fineness	BS 4550: Part 3: Section 3.3: 1978 + Amd. 5703 (Using the method stated in App. D of BS 4359: Part 2: 1982) BS EN 196-6: 1992: Cl. 4 (by Blaine Method)
	Flexural strength of mortar prisms in the force range 1 kN - 30 kN	BS EN 196-1: 1995
	Setting times	BS 4550: Part 3: Section 3.6: 1978 + Amd. 5706 BS EN 196-3: 1995 Cl. 6
	Soundness	BS 4550: Part 3: Section 3.7: 1978 + Amd. 5707 BS EN 196-3: 1995 Cl. 7
	Standard consistence	BS 4550: Part 3: Section 3.5: 1978 + Amd. 5705 BS EN 196-3: 1995 Cl. 5
	Sampling	BS 4550: Part 1: 1978 Cl. 5.1 excluding 5.1.1

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Cement (Chemical analysis)	Alumina content (Al_2O_3)	BS 4550: Part 2: 1970 Cl. 7.2
	Insoluble residue content	BS 4550: Part 2: 1970 Cl. 3.1
	Residue insoluble in hydrochloric acid and sodium carbonate	BSEN196-2: 1995 Cl. 9
	Iron oxide content (Fe_2O_3)	BS 4550: Part 2: 1970 Cl. 8
	Lime saturation factor	BS 12: 1978 Cl. 6.1
	Loss-on-ignition (L.O.I.)	BS 4550: Part 2: 1970 Cl. 13.2 BS EN 196-2: 1995 Cl. 7
	Magnesia content (MgO)	In-house Method CEM-CHM-0301
	Sulphuric anhydride (SO_3)	BS 4550: Part 2: 1970 Cl. 10
	Sulphate content (as SO_3)	BS EN 196-2: 1995 Cl. 8
	Total calcium oxide content (CaO)	In-house Method CEM-CHM-0201
	Total silica content (SiO_2)	BS 4550: Part 2: 1970 Cl. 4.2
	Total sulphur content (SO_3)	BS 4550: Part 2: 1970 Cl. 12
	Chloride content	BS 4550: Part 2: 1970 (Amd. 5713) BS EN 196-21: 1992 Cl. 4
	Tricalcium aluminate content (C_3A)	BS 12: 1989 Cl. 8.4
	Heat of hydration	BS 4550: Part 3: Section 3.8: 1978 with modification
	Acid-soluble alkali content (equivalent Na_2O)	In-house method CON-CHM-1101
Alkali content (equivalent Na_2O)	In-house method CON-CHM-1105	
Coating	Bond strength of coating in the force range 1 kN - 50 kN	In-house method MIS-PHY-0201 (by cutting method) In-house method MIS-PHY-0202 (by coring method)

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Concrete	Alkali silica reaction potential by ultra-accelerated mortar bar test	CS1: 2010 Section 22
	Assessment of the cement, aggregate and water content of fresh concrete	In-house method FSH-PHY-1001 DD 83: 1983 Section 3 Cl. 5
	Bleeding test	ASTM C232-99 Method A ASTM C232 / C232M-09 Method A
	Compaction factor	BS 1881: Part 103: 1983 (Amd. 6089,6724) CS1: 1990 Section 3 (Amd. 1101 & 1102) CS1: 2010 Section 2 Part II
	Compressive strength of concrete cores in the force range 50 kN - 3000 kN	BS 1881: Part 120: 1983 CS1: 1990 Section 15 (Amd. 1201 & 1205) CS1: 2010 Section 15
	Compressive strength of concrete cubes in the force range 50 kN - 3000 kN	BS 1881: Part 116: 1983 CS1: 1990 Section 12 (Amd. 1201) CS1: 1990 Section 12 (Amd. 1202) CS1: 2010 Section 12
	Curing of test specimens (Tropical zone temperature)	BS 1881: Part 111: 1983 CS1: 1990 Section 10 (Amd. 1101) CS1: 2010 Section 10
	Cutting of stitch cores	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 6.3
	Density of compacted fresh concrete	BS 1881: Part 107: 1983 CS1: 1990 Section 5 (Amd. 1101) CS1: 2010 Section 5
	Density of hardened concrete	BS 1881: Part 114: 1983 Section 6 (Amd. 6098) CS1: 1990 Section 16 (Amd. 1201 & 1203) CS1: 2010 Section 16
	Dry cutting mini-cores	HKHA MTS (2002/2004) for Maintenance & Building Materials Specification Part D Cl. 4.4
	Flexural strength of beams in the force range 5 kN –100 kN	CS1: 1990 Section 14 (Amd. 1201) CS1: 2010 Section 14

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Concrete (cont'd)	Flow table test	BS 1881:Part 105: 1984 CS1: 1990 Section 22 (Amd. 1206) CS1: 2010 Section 2 Part IV
	Making test beams from fresh concrete	CS1: 1990 Section 8 (Amd. 1101) CS1: 2010 Section 8
	Making test cubes from fresh concrete	BS 1881: Part 108: 1983 CS1: 1990 Section 7 (Amd. 1101 & 1102) CS1: 2010 Section 7
	Making test cylinders from fresh concrete	CS1: 1990 Section 9 (Amd. 1101 & 1102) CS1: 2010 Section 9
	Obtaining core samples	HKHA MTS (2002/2004) for Maintenance & Building Materials Specification Part D Cl. 4.1
	Sampling of fresh concrete	BS 1881: Part 101: 1983 CS1: 1990 Section 1 (Amd. 1101) CS1: 2010 Section 1
	Setting time monitoring	HKHA MTS (2002/2004) for Maintenance & Building Materials Specification Part D Cl. 1.3.9
	Slump	BS 1881: Part 102: 1983 CS1: 1990 Section 2 (Amd. 1101 & 1102) CS1: 2010 Section 2 Part I
	Slump flow test	CS1: 2010 Section 2 Part V
	Stiffening time	CS1: 2010 Section 3
	Tensile splitting strength of cylinders in the force range 50 kN – 3000 kN	CS1: 1990 Section 13 (Amd. 1203 & 1204) CS1: 2010 Section 13
	Water absorption	BS 1881: Part 122: 1983

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Concrete (diagnostic)	Carbonation test	BS EN 14630: 2006 BRE IP6/81
	Covermeter survey	BS 1881: Part 204: 1988
	Half-cell potential measurement	ASTM C876-91
	Surface hardness measurement	BS 1881: Part 202: 1986 Cl. 6 BS EN 12504: Part 2: 2012
	Removal of concrete cover to expose reinforcement	HKHA MTS (2006/2008) for Maintenance & Building Materials Specification Part D Cl. 4.2.1
Concrete (Chemical analysis)	Cement and aggregate content (by CaO determination)	BS 1881: Part 124: 1988 Cl. 5.4 & 5.9 CS 1: 1990: Section 21.6 CS 1: 2010: Section 21.6
	Aggregate / cement ratio	BS 1881: Part 124: 1988 Cl. 5.9
	Original water content (as original total water/cement ratio)	BS 1881: Part 124: 1988 Cl. 7 CS1: 1990 Section 21.7 CS1: 2010 Section 21.7
	Oven-dried bulk density	BS 1881: Part 114: 1983 Cl. 10 CS1: 1990 Section 16 (Amd. 1201)
	Chloride ion content	BS 1881: Part 124: 1988 Cl. 10.2 CS 1: 1990 Section 21.10.2 (Amd. 1201) CS 1: 2010 Section 21.10.2
	Sulphate content	BS 1881: Part 124: 1988 Cl. 10.3 CS 1: 1990 Section 21.10.3 CS 1: 2010 Section 21.10.3
	pH value	In-house method CON-CHM-0801
	Acid-soluble alkali content (equivalent Na ₂ O)	In-house method CON-CHM-1001
	Detection of PFA	In-house method CON-CHM-1501

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New Territories, Hong Kong

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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
Foundation	Plate load test (PLT)	BS 1377: Part 9: 1990 (Amd. 8264) Cl. 4.1 (incremental loading)
Ground granulated blastfurnace slag (GGBS)	Activity index	BS EN 196-1: 2005 Cl. 9.2 in conjunction with the following specification: BS EN 15167: Part 1: 2006 Cl. 5.3.2.3
	Compressive strength of broken mortar prism in the force range 20 kN – 250 kN	BS EN 196: Part 1: 1995 Cl. 9.3
	Density	BS EN 196: Part 6: 1992 Annex NC in conjunction with the following specification: BS EN 15167: Part 1: 2006 Cl. 5.5g
	Flexural strength of mortar prism in the force range 1 kN – 25 kN	BS EN 196: Part 1: 1995 Cl. 9.2
	Fineness	BS EN196: Part 6: 1992 Cl. 4 (by Blaine Method) in conjunction with the following specification: BS EN 15167: Part 1: 2006 Cl. 5.3.1
	Initial setting time	BS EN 196: Part 3: 1995 Cl. 6 in conjunction with the following specification: BS EN 15167: Part 1: 2006 Cl. 5.3.2.2
	Moisture content	BS EN 15167: Part 1: 2006 Annex A (Oven drying method)
	Standard consistence	BS EN 196: Part 3: 1995 Cl. 5
Grout	Bleeding and free expansion	ASTM C940-89 ASTM C940-98a General Specification for Civil Engineering Works (1992) Vol.2 Cl. 17.60 General Specification for Civil Engineering Works (2006) Vol.1 Cl. 7.160 & Vol.2 Cl. 17.60
	Flow of grout for pre-placed aggregate concrete (flow cone method)	ASTM 939-94a
Ground water (Chemical analysis)	Sulphate content	GEOSPEC 3:2001 Test 9.3
	pH value	GEOSPEC 3: 2001 Test 9.5

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Metallic materials	Bend test of carbon steel bars	CS2: 1995 Cl. 6.1 & 6.3
	Rebend test of carbon steel bars	CS2: 1995 Cl. 6.1 & 6.4
	Tensile test of carbon steel bars in the force range 12 kN – 2000 kN	CS2: 1995 Cl. 6.1 & 6.2
	Bond property of steel reinforcing bars by surface geometry measurement	BS EN ISO 15630-1: 2002 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 Cl.7.4.2 BS 4482: 2005 + A1: 2007 Cl.7.4.2 CS2: 2012 + Amd. 1/2018 + Amd. 2/2018 Cl. 6.1 & 6.7
	Mass per metre of steel reinforcing bars	BS 4449: 2005 + A2: 2009 Cl. 7.3 CS2: 2012 + Amd. 1/2016 + Amd. 2/2018 Cl. 6.1 & 6.2
	Rebend test of steel reinforcing bars	BS EN ISO 15630-1: 2002 Cl. 7 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 Cl. 7.2.5 CS2: 2012 + Amd. 2/2018 Cl. 6.1 & 6.5
	Tensile test of steel reinforcing bars in the force range 12 kN – 2000 kN	BS EN 10002-1: 2001 or BS EN ISO 6892 -1: 2009 in conjunction with the following specification(s): BS 4449: 2005 + A2: 2009 Cl. 7.2.2, 7.2.3 & 8.1.3.1 CS2: 2012 + Amd. 1/2016 + Amd. 2/2018 Cl. 6.1 & 6.4

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Metallic materials	Bend test of hot rolled bars	BS 4449: 1988 Building Ordinance Office PNAP 122 (Jul 1994)
	Rebend test of hot rolled bars	BS 4449: 1988 Building Ordinance Office PNAP 122 (Jul 1994)
	Tensile test of hot rolled bars in the force range 12 kN – 2000 kN	BS 4449: 1988 Building Ordinance Office PNAP 122 (Jul 1994)
	Rebend test of cold reduced wires	BS 4482: 1985 with modification
	Tensile test of cold reduced wires in the force range 12 kN – 2000 kN	BS 4482: 1985 with modification
	Bend test of steel fabrics	BS 4483: 1985 BS 4483: 1998 BS 4483: 2005
	Dimension, mass and tolerance of steel fabric	BS 4483: 2005
	Tensile test of steel fabrics in the force range 12 kN – 2000 kN	BS 4483: 1985 BS 4483: 1998 BS 4483: 2005
	Weld test of steel fabric	BS 4483: 1985 BS 4483: 1998 BS 4483: 2005

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Metallic materials (cont'd)	<p>Tensile test & slip/permanent elongation test of reinforcing bar with mechanical coupler in the force range 12 kN – 2000 kN</p> <p>Tensile test of metallic materials in the Force range 12 kN – 2000 kN</p> <p>Static tension test, static compression test, cyclic tension & compression tests for mechanical connector systems (Type 2 Splice) for steel reinforcing bars in the force range 12 kN - 2000 kN</p> <p>Charpy V-notch impact test of metallic materials</p>	<p>BS 8110: Part 1: 1985 Cl.3.12.8.16.2 BS 8110: Part 1: 1997 Cl.3.12.8.16.2 Buildings Department Code of Practice for Structural Use of Concrete (2004) Cl. 3.2.8.2 Buildings Department Code of Practice for Structural Use of Concrete (2013) Cl. 3.2.8.3 General Specification for Civil Engineering Works (1992) Vol. 2 Cl. 15.33 General Specification for Civil Engineering Works (2006) Vol. 2 Cl. 15.35</p> <p>BS 18: 1987 in conjunction with the following specification(s): BS 4360: 1986 Cl. 23</p> <p>BS EN 10002-1: 2001 or BS EN ISO 6892 -1: 2009 in conjunction with the following specification(s): BS 4360: 1990 Cl. 23 BS EN 10025-1: 2004 Cl. 10.2.1 BS EN 10025-2: 2004 Cl. 10.2 & Table 7 BS EN 10025-4: 2004 Cl. 10.2 & Table 5 BS EN 10210-1: 1994 Cl. 9.2.1 BS EN 10219-1: 2006 Cl. 9.2.2</p> <p>ICC Evaluation Service, Inc. AC133 (Approved May 2008, Effective 1 Jun 2008) Cl. 4.1.2 ICC Evaluation Service, Inc. AC133 (Approved Jan 2010, Effective 1 Jul 2010) Cl. 4.1.2 Buildings Department Code of Practice for Structural Use of Concrete (2013) Cl. 3.2.8.4(b), (c) & (d)</p> <p>BS EN 10045-1: 1990 in conjunction with the following specification(s): BS EN 10025-1: 2004 Cl. 10.2.2 BS EN 10025-2: 2004 Cl. 10.2 & Table 9 BS EN 10025-4: 2004 Cl. 10.2, Table 6 & 7 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</p>

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Polymer latex (Chemical analysis)	Polymer solids content	HKHA Standard 002: 1990 (modified) Cl. 2
Polymer modified mortar and prebagged materials (Chemical analysis)	Sample treatment	HKHA Standard 002: 1990 (modified) Cl. 6
	Cement content and sand/cement ratio (by CaO determination)	HKHA Standard 002: 1990 (modified) Cl. 7
	Polymer solids	HKHA Standard 002: 1990 (modified) Cl. 8
	CO ₂ content (gasometric)	HKHA Standard 002: 1990 (modified) Cl. 7
Pulverized fuel ash (PFA)	Moisture content	BS 3892: Part 1: 1982 App. B (Amd. 4629) BS 3892: Part 1: 1997 Annex C
	Fineness	BS 3892: Part 1: 1982 App. D (Amd. 4629) BS 3892: Part 1: 1997 Annex D
	Water requirement	BS 3892: Part 1: 1982 App. E (Amd. 4629) BS 3892: Part 1: 1997 Annex E
	Density	BS 3892: Part 1: 1997 Cl. 7
	Initial setting time	BS 3892: Part 1: 1997 Cl. 10 with modification
	Soundness	BS 3892: Part 1: 1997 Cl. 11 with modification
	Strength factor	BS 3892: Part 1: 1997 Cl. 9 Annex F with modification
	Pulverized fuel ash (Chemical analysis)	Chloride
Loss-on-ignition		BS 4550: Part 2: 1970 Cl. 13.2 BS EN 196-2: 1995 Cl. 7
Magnesium oxide content (MgO)		BS 3892: Part 1: 1982 App. C
Sulphuric anhydride content (SO ₃)		BS 4550: Part 2: 1970 Cl. 10 BS EN 196-2: 1995 Cl. 8
Total alkali content (equivalent Na ₂ O)		In-house method CON-CHM-1102
Alkali content (equivalent Na ₂ O)		In-house method CON-CHM-1106

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Portland pulverized fuel ash cement (PPFAC)	Compressive strength of broken mortar prisms in the force range 2 kN - 300 kN	BS EN196-1: 1995
	Compressive strength of concrete cubes in the force range 50 kN - 2000 kN	BS 4550: Part 3: Section 3.4: 1978 (Amd. 4247, 4498 & 5704)
	Compressive strength of mortar cubes in the force range 50 kN - 2000 kN	BS 4550: Part 3: Section 3.4: 1978 (Amd. 4247, 4498 & 5704)
	Density	BS 4550: Part 3: Section 3.2: 1978 BS EN 196-6: 1992 Annex NC
	Fineness	BS 4550: Part 3: Section 3.3: 1978 (Amd. 5703) (Using the method stated in App. D of BS 4359: Part 2: 1982) BS EN 196-6: 1992: Cl. 4 (By Blaine Method)
	Flexural strength of mortar cubes in the force range 1 kN - 30 kN	BS EN 196-1: 1995
	Setting times	BS 4550: Part 3: Section 3.6: 1978 (Amd. 5706) BS EN 196-3: 1995
	Soundness	BS 4550: Part 3: Section 3.7: 1978(Amd. 5707) BS EN 196-3: 1995 with modifications
	Standard consistence	BS 4550: Part 3: Section 3.5: 1978 (Amd. 5705) BS EN 196-3: 1995
	Sampling	BS 4550: Part 1: 1978 excluding Cl. 5.1.1
Pulverized fuel ash cement (Chemical analysis)	Loss-on-ignition (L.O.I.)	BS 4550: Part 2: 1970 Cl. 13.2
	Proportion of PFA content	BS 6588: 1985 App. A.3
	Magnesium oxide content (MgO)	BS 3892: Part 1: 1982 App. C
	Sulphur trioxide content (SO ₃)	BS 4550: Part 2: 1970 Cl. 12 BS EN 196-2: 1995 Cl. 8
	Chloride	BS EN 196-21: 1992 Cl. 4

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Repair mortar	Compressive strength of repair mortar cubes in the force range 50 kN - 2000 kN	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.1
	Bond strength of repair mortar (Pull-off test) in the force range 1 kN – 50 kN	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.15 Method 1 (by coring method) HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.15 Method 1 with modification (by coring method) – 50 mm diameter In-house method MTS-PHY-0102 (by saw-cutting method)
	Flow	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.18
	Obtaining inspection core samples	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.22
	Trial mixes	HKHA MTS (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 2.1.20
Road surfaces	Texture depth of carriageways (sand patch method)	General Specification for Civil Engineering Works (1992) Vol. 2 App. 10.1 General Specification for Civil Engineering Works (2006) Vol. 1 App. 10.1
	Surface regularity of carriageways	Highways Department (Research and Development Division) Guidance Notes on Road Testing - RD/GN/009 (Sep 1989) with modification General Specification for Civil Engineering Works (1992) Vol. 2 Cl. 9.39, 9.40 & 10.55 to 10.56 General Specification for Civil Engineering Works (2006) Vol. 1 Cl. 9.42, 9.43 & 10.55 to 10.56

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Road surfaces (cont'd)	Surface regularity test	General Specification for Civil Engineering Works (1992) Vol. 2 Cl. 9.39, 9.40 & 10.55 to 10.56 General Specification for Civil Engineering Works (2006) Vol. 1 Cl. 9.42, 9.43 & 10.55 to 10.56
	Skid resistance of road markings using a portable pendulum tester	BS EN 1436: 1998 (Amd. 14288: 2003) Highway Department Terms Contract Particular Specification (2010)
	Skid resistance of road surface using a portable pendulum tester	Highways Department (Research and Development Division) Guidance Notes on Road Testing -RD/GN/009 (Sep 1989)
	Luminance coefficient under defuse illumination (Qd) and retro-reflected luminance (RL) of road markings by portable retroreflectometer (excluding wet surface)	BS EN 1436: 1998 (Amd. 14288: 2003) Highway Department Terms Contract Particular Specification (2010)
	Thickness of road marking by micrometer method	BS 3262: Part 3: 1989 (Amd. 8785 & Amd. 10205) Highway Department Terms Contract Particular Specification (2010)

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Soil (Phase I)	Moisture content by oven-drying at 45°C ± 5°C	GEOSPEC 3: 2001 Test 5.1
	Moisture content by oven-drying at 105°C ± 5°C	GEOSPEC 3: 2001 Test 5.2
	Comparative test for the determination of moisture content by oven-drying	GEOSPEC 3: 2001 Test 5.3
	Liquid limit, plastic limit, and plasticity index	GEOSPEC 3: 2001 Test 6.1
	Liquidity index	GEOSPEC 3: 2001 Test 6.2
	Particle density by gas jar method	GEOSPEC 3: 2001 Test 7.1
	Particle density by small pycnometer method	GEOSPEC 3: 2001 Test 7.2
	Particle size distribution by wet sieving (with dispersant)	GEOSPEC 3: 2001 Test 8.1
	Particle size distribution by wet sieving (without dispersant)	GEOSPEC 3: 2001 Test 8.2
	Particle size distribution by hydrometer (with dispersant)	GEOSPEC 3: 2001 Test 8.5
	Particle size distribution by hydrometer (without dispersant)	GEOSPEC 3: 2001 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
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a 1000cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.1

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Soil (Phase I) (cont'd)	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a 1000cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.2
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a CBR mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.3
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a CBR mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.4
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a 1000cc mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.5
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a 1000cc mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.6
	Dry density/moisture content relationship of soils containing particles which are not susceptible to crushing (using a CBR mould and 4.5 kg rammer)	GEOSPEC 3: 2001 Test 10.7
	Dry density/moisture content relationship of soils containing particles which are susceptible to crushing (using a CBR mould and 4.5 kg rammer)	GEOSPEC 3: 2001 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

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Soil (Phase I) (cont'd)	In-situ bulk density and in-situ dry density of soils by the sand replacement method coarse-grained soils (with large pouring cylinder)	GEOSPEC 3: 2001 Test 11.2
	In-situ bulk density and in situ dry density of soils by nuclear densometer method suitable for fine- and medium-grained soils	GEOSPEC 3: 2001 Test 11.3
	Relative compaction of fill material	GEOSPEC 3: 2001 Test 11.4 Building Department PNAP 55 (1994) Cl. 2 App. A
	California Bearing Ratio (CBR)	GEOSPEC 3: 2001 Test 12.1
Soil (other)	Pull-out test of soil nails	Hong Kong Housing Authority Specification Library (2000) Cl. SLO.T310.3-SLO.T350.3 Hong Kong Housing Authority Specification Library (2004) Cl. SLO. T310.A-SLO. T320.B GEO Particular Specification for soil nail pull out test (Contract No. GE/2003/26) Cl. 7.226 A1 CEDD Particular Specification for soil nail pull out test (Contract No. GE/2005/13) Cl. 7.227 A1
	Lift-off test of ground anchors	Highways Department Specification (2004) Cl. 35.07 GEOSPEC 1 App. A.16
	Time Domain Reflectometry (TDR) test on soil nails	In-house method SOL-PHY-4402
Soil (Chemical analysis)	Total sulphate content (asSO ₃)	GEOSPEC 3: 2001 Test 9.3
	Water-soluble sulphate content (as SO ₃)	GEOSPEC 3: 2001 Test 9.3
	Organic matter content	GEOSPEC 3: 2001 Test 9.1
	Loss-on-ignition	GEOSPEC 3: 2001 Test 9.2
	Water-soluble chloride content	GEOSPEC 3: 2001 Test 9.4
	pH value	GEOSPEC 3: 2001 Test 9.5

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Steel (Chemical analysis) - Carbon and low alloy steel	Carbon, Chromium, Copper, Manganese, Molybdenum, Nickel, Nitrogen, Phosphorus, Sulphur, Vanadium	In-house Method STL-CHM-0101 (Spark-OES)
	Carbon equivalent value (CEV)	In-house Method STL-CHM-0101 (by calculation)
Structural fixings (anchor bolts, dowel bars)	Tensile proof load test of structural fixings in the force range 2 kN – 200 kN in the force range 1 kN – 600 kN	BS 5080: Part1: 1993 Cl. 6, 7.1.1 & 7.1.3 (incremental loading) In-house method MIS-PHY-0301
Tiles	Pull-off test of tiles in the force range 1 kN - 50 kN	In-house method MIS-PHY-0101 (saw-cutting method) In-house method MIS-PHY-0102 (by coring method)
	Static coefficient of friction of ceramic tiles and other like surfaces by horizontal dynamometer pull-meter	ASTM C1028: 1996

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Tile adhesive	Initial tensile adhesion strength for normal setting cementitious adhesive	BS EN 1348: 2007 Cl. 8.2
	Tensile adhesion strength after water immersion for normal and fast setting cementitious adhesives	BS EN 1348: 2007 Cl. 8.3
	Tensile adhesion strength after heat ageing for normal and fast setting cementitious Adhesives	BS EN 1348: 2007 Cl. 8.4
	Tensile adhesion strength after freeze-thaw cycle for normal and fast setting cementitious adhesives	BS EN 1348: 2007 Cl. 8.5
	Early tensile adhesion strength for fast setting adhesive	BS EN 1348: 2007 Cl. 8.2
	Open time of normal and fast setting tile adhesives: Tensile adhesive strength	BS EN 1346: 2007
	Slip resistance of adhesives for tiles	BS EN 1308: 2007
Water (Chemical analysis)	Total alkalinity	APHA 18e 2320B
	Chloride content	APHA 18e 4550 Cl-B
	pH value	In-house method WAT-CHM-0301
	Sulphate content	In-house method WAT-CHM-0401
	Acid-soluble alkali content (equivalent Na ₂ O)	In-house method CON-CHM-1301
	Total dissolved solids content dried at 180°C	In-house method WAT-CHM-0501

Hong Kong Testing Company Limited

香港試驗有限公司

Room 205, 2/F, Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling,

New Territories, Hong Kong

香港新界粉嶺安樂村安樂門街 28 號福成商業大廈二樓 205 室

Environmental Testing 環境測試		
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
Water and wastewater	Physical examination:- - Total suspended solids dried at 103°C - 105°C - Suspended volatile solids ignited at 550°C Organic pollutants:- - Oil & grease - Oxygen-demand (Biochemical) - Oxygen-demand (Chemical)	APHA 17e 2540 D (Gravimetric) APHA 17e 2540 E (Gravimetric) APHA 18e 5520 B Solvent (c & d) mixture (Partition & gravimetric) APHA 18e 5210 B (BOD-5 days) APHA 18e 5220 B (Open reflux)