Qualitech Testing & Consultancy Limited
匯駿檢測及顧問有限公司

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Main Laboratory	:	Flat E & F, 9/F, Block B, Universal Industrial Centre, 19-25 Shan Mei Street, Fo Tan, New Territories, Hong Kong 香港新界火炭山尾街 19-25 號宇宙工業中心 B 座 9 樓 E 及 F 室
Branch Laboratories	:	Flat G, 9/F, Block B, Universal Industrial Centre, 19-25 Shan Mei Street, Fo Tan, New Territories, Hong Kong 香港新界火炭山尾街 19-25 號宇宙工業中心 B 座 9 樓 G 室 Workshop 3, 1/F, Wah Wai Centre, 38-40 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong 香港新界火炭坳背灣街 38-40 號華衛工貿中心 1 樓 3 號鋪 Flat E, 6/F, Block B, Universal Industrial Centre, 19-25 Shan Mei Street, Fo Tan, New Territories, Hong Kong 香港新界火炭山尾街 19-25 號宇宙工業中心 B 座 6 樓 E 室 Flat N, 17/F, Block B, Universal Industrial Centre, 19-25 Shan Mei Street, Fo Tan, New Territories, Hong Kong 香港新界火炭山尾街 19-25 號宇宙工業中心 B 座 17 樓 N 室
ACCREDITED TEST CATEGORY **認可測試類別**	:	Calibration Services 校正服務 Construction Materials 建築材料 Environmental Testing 環境測試 Miscellaneous 雜類

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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)* 校準和測量能力*
Construction materials testing equipment		
- Cement grout flow cone	Verification in accordance with in-house method CAL-CGFLOWCONE for the performance as specified in: ASTM C939-02 Cl. 8; or ASTM C939-16a Cl. 9	
	Time of efflux of water from cone: 8.0s	0.07 s
- Compacting bar	Verification in accordance with in-house method CAL-COMPBAR for the dimensional and mass requirements as specified in CS1: 2010 Vol. 1 App. A10	
	Dimensions of ramming face: 25 mm x 25 mm Length: 380 mm Mass: 1.8 kg	0.1 mm 0.5 mm 4 g
- Covermeter	Calibration for depth of cover in accordance with in-house method CAL-COVERMETER(C) using a device as specified in BS 1881: Part 204: 1988 Cl. 6.4 (Method C) over the following ranges :	
	20 mm to 120 mm	1.5 mm
- Cube mould	Verification in accordance with in-house method CAL-CUBEMOULD for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A25	
	Dimensions: 100 mm or 150 mm Flatness: not more than 0.03 mm or 0.06 mm Perpendicularity: 0.5 mm Parallelism: 1 mm	0.03 mm 0.01 mm 0.05 mm 0.20 mm

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Construction materials testing equipment (cont'd)		
- Cube mould (cont'd)	On-site verification in accordance with in-house method CAL-CUBEMOULD for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A25	
	Dimensions: 100 mm or 150 mm	0.03 mm
	Flatness: not more than 0.03 mm or 0.06 mm	0.01 mm
	Perpendicularity: 0.5 mm	0.05 mm
	Parallelism: 1 mm	0.20 mm
- Curing tank	On-site verification for the following parameters in accordance with in-house method CAL-CURTANK for the requirements as specified in CS1: 2010: Vol. 1 App. A28	
	Temperature distribution at a range of (27 ± 3) ℃	0.4 K
	Efficiency of circulation	0.5 min
- Flow mould for determination of flow of fresh concrete	Verification in accordance with in-house method CAL-FLOWMOULD for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A15.2	
	Internal diameter of top: 130 mm	0.5 mm
	Internal diameter of base: 200 mm	0.5 mm
	Height: 200 mm	0.4 mm
	Thickness of metal: 1.5 mm	0.1 mm

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Construction materials testing equipment (cont'd)		
- Flow table for determination of flow of fresh concrete	Verification in accordance with in-house method CAL-FLOWTABLE for the dimensional and mass requirements as specified in CS1: 2010 Vol. 1 App. A15.1	
	Dimensions of metal plate: 700 mm x 700 mm	0.6 mm
	Thickness of metal plate: minimum 2 mm	0.2 mm
	Diameter of central circle: 210 mm	0.2 mm
	Fall height: 40 mm	0.2 mm
	Mass: 16 kg	0.01 kg
- Flow tamping bar for determination of flow of fresh concrete	Verification in accordance with in-house method CAL-FLOWTAMPBAR for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A15.3	
	Dimensions of square section: 40 mm x 40 mm	0.1 mm
	Length of square section: 200 mm	0.5 mm
	Length of circular handle: 120 mm to 150 mm	0.5 mm
- Mixer	On-site calibration for rotation speed of mixing blade and mixing bowl in accordance with in-house method CAL-MIX-SP over the following ranges :	
	20 rpm to 1000 rpm	1 rpm
	above 1000 rpm to 2000 rpm	2 rpm

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Construction materials testing equipment (cont'd)		
- Rebound hammer	Calibration for rebound value in accordance with in-house method CAL-REBHAM using anvil complying with BS EN 12504-2: 2001 Cl. 4.2; or BS EN 12504-2: 2012 Cl. 4.2; or BS EN 12504-2: 2021 Cl. 5.2	1 rebound count
- Slump cone	Verification in accordance with in-house method CAL-SLUMPCONE for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A5	
	Internal diameter of base: 200 mm	0.5 mm
	Internal diameter of top: 100 mm	0.5 mm
	Wall thickness: minimum 1.5 mm	0.1 mm
	Height: 300 mm	0.4 mm
- Slump flow base plate	Verification in accordance with in-house method CAL-SFBASEPL for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A16	
	Plate thickness: minimum 2 mm	0.1 mm
	Deviation from flatness: less than 3 mm	0.1 mm
	Dimensions of plate: minimum 800 mm x 800 mm	0.6 mm
	Diameters of central circles: 200 mm and 500 mm	0.6 mm

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Construction materials testing equipment (cont'd)		
- Tamping rod	Verification in accordance with in-house method CAL-TAMPROD for the dimensional requirements as specified in CS1: 2010 Vol. 1 App. A6	
	Diameter: 16 mm	0.2 mm
	Length: 600 mm	0.5 mm
- Weld gauge	Calibration in accordance with in-house method CAL-WELDGAUGE for the following parameters :	
	Scale measuring bevel angle: 0° to 90°	1.1°
	Scale measuring fixed bevel angle: 0° to 90°	1.1°
	Ruler: 0.5 mm to 60 mm	0.6 mm
	Scale measuring weld width: 0 mm to 10 mm	0.6 mm
	Scale measuring high low, weld cap and leg length: 0 mm to 50 mm	0.6 mm
	Scale measuring undercut depth: 0 mm to 25 mm	0.6 mm
	Scale measuring weld throat: 0 mm to 20 mm	0.6 mm

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Electrical measurements		
- Time and frequency measuring instruments		
- Digital stop watch / Timer	Calibration for time in accordance with in-house method CAL-TIMER over the following ranges :	
	5 s to 3600 s	60 ms
	1 h to 4 h	60 ms

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Length and related measurements		
- Angle measuring instruments		
- Engineer's square	Calibration for deviation from squareness in accordance with in-house method CAL-SQUARE over the following ranges :	
- Square with inner length of blade from 10 mm to 270 mm	20 μm to 1000 μm	10 μm
- Square with inner length of blade above 270 mm to 350 mm	20 μm to 1000 μm	20 μm
- Spirit level	Calibration of sensitivity in accordance with in-house method CAL-SPLVL-SEN over the following range :	
	0.35 mm/m to 35 mm/m	0.28 mm/m to 7.5 mm/m

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Length and related measurements (cont'd)		
- Form measuring instruments		
- Straight edge 10 mm to 1000 mm length	Calibration for deviation from straightness in accordance with in-house method CAL-STREDGE over the following range :	
	-20 µm to 1000 µm	11 µm

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Length and related measurements (cont'd)		
- Length measuring instruments		
- Calibration foil	Calibration for thickness in accordance with in-house method CAL-CTG+FOIL over the following ranges :	
	12 µm to 12.5 mm	3 µm to 5 µm
- Calliper (Vernier)	Calibration for length in accordance with BS 887: 2008 App. B.1 over the following range :	
	external measurement: 0.5 mm to 305 mm	0.02 mm
	internal measurement: 10 mm to 305 mm	0.03 mm
- Calliper	Calibration for partial surface contact error and shift error in accordance with ISO 13385-1: 2019 (excluding cl. 4, 5.7, 5.8, 6.1, 6.3, 7 and Annex B) over the following ranges :	
	partial surface contact error: 0.5 mm to 305 mm	0.02 mm
	shift error: 0.5 mm to 305 mm	0.02 mm
- Coating thickness gauge	Calibration for thickness using calibration foils in accordance with in-house method CAL-CTG+FOIL over the following ranges :	
	12 µm to 12.5 mm	6 µm to 70 µm

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Length and related measurements (cont'd)		
- Length measuring instruments		
- Dial gauge	Calibration for length in accordance with BS 907: 2008 App. B3 using micrometer calibrator over the following range :	
	0.001 mm to 25 mm	5 µm
	Calibration for length in accordance with BS 907: 2008 App. B3 using gauge blocks over the following ranges :	
	0.1 mm to 50 mm	6 µm
	above 50 mm to 100 mm	7 µm
	Calibration for length in accordance with BS 907: 2008 App. B3 using micrometer calibrator with gauge blocks over the following range :	
	0.001 mm to 100 mm	7 µm

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Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Digimatic indicator	Calibration for length in accordance with in-house method CAL-LVDT using micrometer calibrator over the following range :	
	0.001 mm to 25 mm	2 µm
	Calibration for length in accordance with in-house method CAL-LVDT using gauge blocks over the following ranges :	
	0.1 mm to 50 mm	2 µm
	above 50 mm to 100 mm	3 µm
- Feeler gauge	Calibration for thickness of blade in accordance with in-house method CAL-FEELERG over the following range :	
	0.02 mm to 5 mm	2 µm
- Engineer's steel rule	Calibration for length in accordance with in-house method CAL-STRULE (Method I) over the following range :	
	1 mm to 1 m	0.23 mm
	Calibration for length in accordance with in-house method CAL-STRULE (Method II) over the following range :	
	1 mm to 1 m	0.5 mm

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Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- External micrometer	Calibration for travel length in accordance with BS 870: 2008 App. A.6 and A.7 over the following range :	
	0.5 mm to 25 mm	2 µm
	above 25 mm to 50 mm	3 µm
	Calibration for length measurement error and variation in length measurement error in accordance with ISO 3611: 2023 (excluding cl. 5.7, 5.8 and 6) over the following range :	
	length measurement error: 0.5 mm to 50 mm	2 to 3 µm
	variation in length measurement error: 0.5 to 50 mm	2 to 3 µm
- Extensometer - Grade A with gauge length from 50 mm to 100 mm - Grade B with gauge length from 25 mm to 100 mm - Grade C with gauge length from 12 mm to 100 mm - Grade D with gauge length from 5 mm to 100 mm	On-site calibration for displacement using calibration rig in accordance with BS 3846: 1970 over the following range :	
	0.01 mm to 50 mm	0.6 µm
- Class 0.5, 1 or 2 with gauge length from 5 mm to 100 mm	On-site calibration for displacement using calibration rig in accordance with BS EN ISO 9513: 2002; or BS EN ISO 9513: 2012 over the following range:	
	0.01 mm to 50 mm	0.6 µm

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Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Linear displacement indicator	Calibration for length in accordance with in-house method CAL-LVDT using micrometer calibrator over the following range :	
	0.001 mm to 25 mm	2 µm
	Calibration for length in accordance with in-house method CAL-LVDT using gauge blocks over the following ranges :	
	0.1 mm to 50 mm	2 µm
	above 50 mm to 100 mm	3 µm
- Linear variable displacement transducer (LVDT)	Calibration for length in accordance with in-house method CAL-LVDT using micrometer calibrator over the following range :	
	0.001 mm to 25 mm	2 µm
	Calibration for length in accordance with in-house method CAL-LVDT using gauge block over the following ranges :	
	0.1 mm to 50 mm	2 µm
	above 50 mm to 100 mm	3 µm

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Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Measuring tape	Calibration for length in accordance with in-house method CAL-MTAPE over the following range : 0.1 m to 100 m	0.4 mm to 8.0 mm
- Steel tape	Calibration for length in accordance with in-house method CAL-MTAPE over the following range : 0.1 m to 100 m	0.4 mm to 8.0 mm
- Rotational speed measurements		
- Tachometer	Calibration for rotational speed in accordance with in-house method CAL-TACHOMETER over the following range: 20 rpm to 100 rpm above 100 rpm to 1000 rpm above 1000 rpm to 2000 rpm	 0.03 rpm 0.2 rpm 2 rpm

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Mass and related measurements		
- Force measurements		
- Compression testing machine	On-site calibration for compressive force using Grade 1.0 load cells and verification for grade in accordance with BS 1610: Part 1: 1985 (Amd. 6175) (constant true force method or indicated force method) over the following range :	
	0.2 kN to 0.4 kN	0.6% of reading
	above 0.4 kN to 3000 kN	0.3% of reading
- Concrete testing machine	On-site calibration for compressive force using Class 1.0 load cells and verification for class in accordance with BS EN 12390-4: 2000 Annex B; or CS1: 2010 App. D (constant true force method or indicated force method for above two standards) over the following range :	
	0.2 kN to 0.4 kN	0.6% of reading
	above 0.4 kN to 3000 kN	0.3% of reading
	On-site calibration for strain ratio by performing strain gauged column and proving test (stability test) in accordance with CS1 : 2010 App. D; BS EN 12390-4: 2000 Table 3 and Annex A; or BS EN 12390-4: 2019 Table 1 and Annex A over the following range of compressive force:	
	200 kN to 2000 kN	0.03 strain ratio
- Force measuring device (compression)	Calibration for compressive force in accordance with in-house method CAL-LOADCELL over the following ranges :	
	0.2 kN to 0.4 kN	0.6% of reading
	above 0.4 kN to 2 kN	0.3% of reading
	above 2 kN to 10 kN	0.5% of reading
	above 10 kN to 2000 kN	0.3% of reading

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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)* 校準和測量能力*
Mass and related measurements (cont'd)		
- Force measurements (cont'd)		
- Impact testing machine	On-site indirect calibration for energy absorbed by breaking of Charpy V reference test piece in accordance with BS EN 10045-2: 1993 Cl. 6; or BS EN ISO 148-2: 2016 Cl. 7 over the following ranges :	
	1 J to 40 J	1.7 J at 21.1 J
	above 40 J to 220 J	11 J at 209 J
- Pull-off tester	Calibration for lifting force in accordance with in-house method CAL-POTESTER over the following ranges :	
	0.2 kN to 2 kN	5.6 N
	above 2 kN to 50 kN	10 N to 100 N
- Static uniaxial testing machine (compression mode)	On-site calibration for compressive force using Class 1.0 load cells and verification for class in accordance with BS EN ISO 7500-1: 2018; or BS EN ISO 7500-1: 2004 (Cor.1: 2008) (constant true force method or indicated force method for above two standards) over the following range :	
	0.2 kN to 0.4 kN	0.6% of reading
	above 0.4 kN to 3000 kN	0.3% of reading

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Mass and related measurements (cont'd)		
- Force measurements (cont'd)		
- Static uniaxial testing machine (tension mode)	On-site calibration for tension force using Class 1.0 load cells and verification for class in accordance with BS EN ISO 7500-1: 2018; or BS EN ISO 7500-1: 2004 (Cor.1: 2008) (constant true force method or indicated force method for above two standards) over the following range :	
	0.2 kN to 0.8 kN	0.6% of reading
	above 0.8 kN to 50 kN	0.3% of reading
- Universal testing machine (compression mode)	On-site calibration for compressive force using Class 1.0 load cells and verification for class in accordance with BS 1610: Part 1: 1985 (Amd. 6175); BS EN 12390-4: 2000 Annex B; or CS1: 2010 App. D (constant true force method or indicated force method for above three standards) over the following range :	
	0.2 kN to 0.4 kN	0.6% of reading
	above 0.4 kN to 3000 kN	0.3% of reading

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Mass and related measurements (cont'd)		
- Balance	Calibration for mass using following OIML Class standard weights (1) E2 weights from 1 mg to 1 g (2) E2 weights from 1 g to 200 g (3) F1 weights from 1 g to 60 kg in accordance with in-house method CAL-BALANCE over the following ranges :	
	1 mg to 1 g	0.2 mg
	above 1 g to 1 kg	0.2 mg to 1.7 mg
	above 1 kg to 6 kg	7 mg to 11 mg
	above 6 kg to 60 kg	0.07 g to 0.6 g
	On-site calibration for mass using following OIML Class standard weights (1) E2 weights from 1 mg to 1 g (2) E2 weights from 1 g to 200 g (3) F1 weights from 1 g to 60 kg in accordance with in-house method CAL-BALANCE over the following ranges :	
	1 mg to 1 g	0.2 mg
	above 1 g to 1 kg	0.2 mg to 1.7 mg
	above 1 kg to 6 kg	7 mg to 11 mg
	above 6 kg to 60 kg	0.07 g to 0.6 g

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Mass and related measurements (cont'd)		
- Weight (Standard values)	Calibration for mass by comparison with reference mass in accordance with in-house method CAL-WEIGHT at the following specific nominal values :	
	1 mg	0.2 mg
	2 mg	0.2 mg
	5 mg	0.2 mg
	10 mg	0.2 mg
	20 mg	0.2 mg
	50 mg	0.2 mg
	100 mg	0.2 mg
	200 mg	0.2 mg
	500 mg	0.2 mg
	1 g	0.2 mg
	2 g	0.2 mg
	5 g	0.2 mg
	10 g	0.2 mg
	20 g	0.2 mg
	50 g	0.2 mg
	100 g	0.2 mg
	200 g	0.2 mg
	500 g	2 mg
	1 kg	2 mg
	2 kg	20 mg
	5 kg	20 mg
	10 kg	3 g
	20 kg	3 g
	50 kg	3 g
- Weight (Non-standard values)	Calibration for mass by comparison with reference mass in accordance with in-house method CAL-WEIGHT over the following ranges :	
	1 mg to 200 g	0.2 mg to 0.8 mg
	above 200 g to 1 kg	1.0 mg to 4 mg
	above 1 kg to 6.2 kg	20 mg
	above 6.2 kg to 60 kg	3 g to 4 g

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Mass and related measurements (cont'd)		
- Hardness measurements		
- Hardness testing machine	On-site indirect verification for testing machine for Vickers hardness scales in accordance with BS EN ISO 6507-2: 2018 cl. 6; or ISO 6507-2: 2005 cl. 5 over the following ranges :	
	100 HV 5 to 700 HV 5	2.8 % of reading
	100 HV 10 to 700 HV 10	1.5 % of reading
	100 HV 30 to 900 HV 30	1.2 % of reading

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Mass and related measurements (cont'd)		
- Volume measurements		
- Volumetric glassware		
- Cylinder	Calibration for volume in accordance with in-house method CAL-VOL-LBW using the tables in BS EN ISO 4787: 2011 for temperature correction over the following ranges :	
	10 ml to 50 ml	0.23 ml
	above 50 ml to 100 ml	0.33 ml
	above 100 ml to 500 ml	1.1 ml
	above 500 ml to 1000 ml	1.8 ml
- Volumetric flask	Calibration of volume in accordance with in-house method CAL-VOL-LBW using the tables in BS EN ISO 4787: 2011 for temperature correction over the following ranges :	
	10 ml to 50 ml	0.12 ml
	above 50 ml to 100 ml	0.17 ml
	above 100 ml to 500 ml	0.6 ml
	above 500 ml to 1000 ml	0.9 ml
- Volumetric plasticware	Calibration for contained capacity in accordance with in-house method CAL-VOL-LBW over the following ranges	
	10 ml to 50 ml	0.12 ml
	above 50 ml to 100 ml	0.17 ml
	above 100 ml to 500 ml	0.6 ml
	above 500 ml to 1000 ml	0.9 ml

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Temperature measurements		
- Dial / analogue thermometer	Calibration for temperature in accordance with in-house method CAL-THERMOMETER over the following ranges :	
	-40 ℃ to 130 ℃	0.6 K
	above 130 ℃ to 320 ℃	6.0 K
- Digital thermometer	Calibration of temperature in accordance with in-house method CAL-THERMOMETER over the following ranges :	
	-40 ℃ to 130 ℃	0.3 K
	above 130 ℃ to 200 ℃	0.7 K
	above 200 ℃ to 320 ℃	1.4 K
- Liquid-in-glass thermometer (LIGT)	Calibration of temperature in accordance with in-house method CAL-THERMOMETER over the following ranges :	
	10 ℃ to 80 ℃	0.3 K
- Temperature recorder with sensor	Calibration of temperature in accordance with in-house method CAL-THERMOMETER over the following ranges :	
	10 ℃ to 80 ℃	0.5 K
- Digital thermometer with thermocouple	Calibration of temperature in accordance with in-house method CAL-THERMOMETER over the following ranges :	
	-40 ℃ to 130 ℃	0.3 K
	above 130 ℃ to 200 ℃	0.7 K
	above 200 ℃ to 320 ℃	1.4 K

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Construction Materials 建築材料		
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Adhesive	Pull-off test of repair mortar	BS 1881: Part 207: 1992 Cl. 8 In-house method BD-MORTAR-POT
	Pull-off test of tiles	Hong Kong Housing Authority Specification Library (2018) FIN5.TI50.8 Hong Kong Housing Authority Specification Library (2022) FIN5.TI50.9
Coating	Pull-off test of adhesion	ASTM D4541-02 Test Method A ASTM D7234-05
Concrete (diagnostic)	Carbonation test	BS EN 14630: 2006 Building Research Establishment Information Paper IP 6/81 Hong Kong Housing Authority Materials Testing Services (2024/2027) for Maintenance & Building Materials Specification Part D Cl. 4.3.1 (Method 2)
	Covermeter survey	BS 1881: Part 204: 1988 + Amd. 6201 Cl. 7.3
	Half-cell potential measurement	ASTM C876-09 (Method A & B for pre-wetting)
	Infrared thermography for detection of building surface defects	Hong Kong Concrete Institute TM1 Issue 2 (2022) + Amd. No. 1/2024
	Resistivity measurement	BS 1881: Part 201: 1986 Cl. 2.3
	Surface hardness measurement	BS 1881: Part 202: 1986 BS EN 12504-2: 2021
	Ultrasonic pulse velocity measurement	BS EN 12504-4: 2004

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Foundation	Crosshole sonic logging test (SOLT)	ASTM D6760-14 ASTM D6760-16
	Pile integrity test (PIT)	ASTM D5882-16
	Pile dynamic test (PDA)	ASTM D4945-12 ASTM D4945-17
	Single hole sonic logging test (SOLT)	ASTM D6760-14 ASTM D6760-16
	Ultrasonic echo sounder test (UEST)	Hong Kong Concrete Institute TM3 Issue 2 (2024)
Foundation (geotechnical monitoring)	Inclination monitoring by inclinometer	In-house method FPT-IH-IM
	Monitoring ground movement using probe-type inclinometers	ASTM D6230-13
	Verticality check using inclinometer	In-house method FPT-IH-VC
	Vibration monitoring	In-house method FPT-IH-VIB
Metallic materials (non-destructive)	Ultrasonic test of H beams with parallel flanges and IPE beams (manual method)	BS EN 10306: 2002
	Ultrasonic test of steel flat product of thickness equal to or greater than 6 mm (reflection method)	BS EN 10160: 1999
Paint & varnish	Dry-film coating thickness	BS EN ISO 2808: 2007, BS 3900-C5: 2007 Method 6B (Wedge cut) Method 7C (Magnetic-induction) Method 7D (Eddy-current)
	Pull-off test of adhesion	BS EN ISO 4624: 2003, BS 3900-E10: 2003 Cl. 9.4.2
Rock	Point load strength index of rock by diametral and axial tests	ASTM D5731-16 International Society for Rock Mechanics (1985) Suggested method for determining point load strength

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Structural fixings	Tensile proof load test of anchors, dowel bars, and channel inserts by incremental loading in the force range 1 kN – 600 kN	BS 5080: Part 1: 1993 Cl. 6, 7.1.1 & 7.1.3 with modifications
	Tensile proof load test of drilled-in anchors used for cantilevered structure/hanger/curtain wall remedial works by incremental loading in the force range 1 kN – 600 kN	Buildings Department PNAP APP-169 (Oct 2023) App. A
	Tensile proof load test of drilled-in anchors used for works other than cantilevered structure/ hanger/curtain wall remedial works in the force range 1 kN – 600 kN	Buildings Department PNAP APP-169 (Oct 2023) App. B
	Tensile proof load test for cementitious or polymer based grouted bolts or dowels or reinforcing bars works or/and steel T-bolts with cast-in channels in the force range 1 kN – 600 kN	Buildings Department PNAP APP-169 (Oct 2023) App. C
	Shear proof load test of anchors, dowel bars, and channel inserts by incremental loading in the force range 1 kN – 600 kN	BS 5080: Part 2: 1986 Cl. 7.1, 7.2.1 & 7.2.3 with modifications
	Shear proof load test of drilled-in anchors used for cantilevered structure/hanger/curtain wall remedial works by incremental loading in the force range 1 kN – 600 kN	Buildings Department PNAP APP-169 (Oct 2023) App. A
	Shear proof load test of drilled-in anchors used for works other than cantilevered structure/ hanger/curtain wall remedial works in the force range 1 kN – 600 kN	Buildings Department PNAP APP-169 (Oct 2023) App. B
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Welds (non-destructive)	Liquid penetrant test (Colour contrast method)	BS 6443: 1984 BS EN 571-1: 1997 BS EN ISO 3452-1: 2013 in conjunction with the following specification(s): BS 5135: 1984 Table 18 & 19 BS EN ISO 5817: 2014 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) (2023 Ed.) Table 14.3b Hong Kong International Airport General Material & Workmanship Specification (GMWS) Issue No. 5b (2019) Vol. 1 – Civil & Structural Works Section 22.6.22
	Magnetic particle test (Magnetic flow method colour contrast technique using permanent magnets, A.C. & D.C. yokes)	BS 6072: 1981 BS EN 1290: 1998 BS EN ISO 9934-1: 2001 BS EN ISO 9934-1: 2016 BS EN ISO 17638: 2009 BS EN ISO 17638: 2016 in conjunction with the following specification(s): BS 4515: Part 1: 2009 Table 9 BS 5135: 1984 Table 18 & 19 BS EN ISO 5817: 2014 Table 1 BS EN ISO 23278: 2015 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) (2023 Ed.) Table 14.3b Hong Kong International Airport General Material & Workmanship Specification (GMWS) Issue No. 5b (2019) Vol. 1 – Civil & Structural Works Section 22.6.22

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Welds (non-destructive) (cont'd)	Ultrasonic test (Butt welds in plates and pipes, 'T' joint welds, nozzle welds & node welds)	BS 3923: Part 1: 1986 (Level 1, 2A, 2B & 3) BS EN 1714: 1998 (Level A, B, & C) BS EN ISO 17640: 2010 (Level A, B, & C) BS EN ISO 17640: 2018 (Level A, B, & C) in conjunction with the following specification(s): BS 5135: 1984 Table 18 & 19 BS EN ISO 5817: 2014 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) (2023 Ed.) Table 14.3b Hong Kong International Airport General Material & Workmanship Specification (GMWS) Issue No. 5b (2019) Vol. 1 – Civil & Structural Works Section 22.6.22
	Visual examination	BS 5289: 1976 BS EN 970: 1997 BS EN ISO 17637: 2011 BS EN ISO 17637: 2016 in conjunction with the following specification(s): BS 4515: Part 1: 2009 Table 9 BS 5135: 1984 Table 18 & 19 BS EN ISO 5817: 2014 Table 1 BS EN ISO 14555: 2017 Table A.5 & A.6 Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) (2023 Ed.) Table 14.3b Hong Kong International Airport General Material & Workmanship Specification (GMWS) Issue No. 5b (2019) Vol. 1 – Civil & Structural Works Section 22.6.22

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Welds (non-destructive) (cont'd)	Visual examination and bend test on stud connectors	<Visual examination as follows:> BS 5289: 1976 BS EN 970: 1997 BS EN ISO 17637: 2011 BS EN ISO 17637: 2016 <together with the following bend test method(s):> BS EN ISO 14555: 2017 Cl. 11.2, 11.3 (excluding Torque wrench method), 12.2 & 12.3 Buildings Department Code of Practice for the Structural Use of Steel (2011) Cl. 14.3.7.3 Buildings Department Code of Practice for the Structural Use of Steel (2011) (2023 Ed.) Cl. 14.3.7.3

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Blocks and bricks	Bending strength of paving flags	BS 7263-1: 2001 Annex E
	Bending strength and breaking load of paving flags	BS EN 1339: 2003 + Corr. 1: 2006 Annex F
	Compressive strength of interlocking blocks	Hong Kong Housing Authority Specification Library (2018) EXT3.T120.8 – EXT3.T150.8 Hong Kong Housing Authority Specification Library (2022) EXT3.T120.9 – EXT3.T150.9
	Compressive strength of paving blocks	General Specification for Civil Engineering Works (2006) Vol. 1 App. 11.1 General Specification for Civil Engineering Works (2020) Vol. 1 App. 11.1
	Dimensions of clay and calcium silicate pavers	BS 6677: Part 1: 1986 App. C
	Dimension of clay pavers	BS EN 1344: 2002 Annex B
	Dimensions of natural stone setts	BS EN 1342: 2001 Annex A
	Dimensions of natural stone slabs	BS EN 1341: 2001 Annex A
	Dimensions of paving blocks	BS 6717: 2001 Annex B BS EN 1338: 2003 + Corr. 1: 2006 Annex C
	Dimensions of paving flags	BS 7263-1: 2001 Annex B BS EN 1339: 2003 + Corr. 1: 2006 Annex C
	Flexural strength of natural stone slabs	BS EN 1341: 2001 Cl. 4.3 BS EN 12372: 2006
	Transverse breaking load of clay and calcium silicate pavers	BS 6677: Part 1: 1986 App. D
	Transverse breaking load of clay pavers	BS EN 1344: 2002 Annex D

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Blocks and bricks (cont'd)	Unpolished slip resistance value of natural stone setts	BS EN 1342: 2001 Annex C
	Unpolished slip resistance value of natural stone slabs	BS EN 1341: 2001 Annex D
	Unpolished slip/skid resistance value of clay pavers	BS EN 1344: 2002 Annex F
	Water absorption of masonry units, segmental pavers and flags (Cold water 24-hour immersion test)	AS/NZS 4456.14: 2003 + Amd. 1 & 2
Dimension stones	Absorption and bulk specific gravity	ASTM C97-02
	Compressive strength	ASTM C170-06
	Flexural strength	ASTM C880/C880M-09
	Strength of individual anchorages	ASTM C1354-96 (Reapproved 2004)

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Construction Materials 建築材料

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Concrete	Sample fresh concrete on site	CS1: 2010 Section 1
	Slump of fresh concrete	CS1: 2010 Section 2 Part I
	Flow table test	CS1: 2010 Section 2 Part IV
	Slump flow test	CS1: 2010 Section 2 Part V
	Stiffening time of fresh concrete	CS1: 2010 Section 3
	Density of compacted fresh concrete	CS1: 2010 Section 5
	Making test cubes from fresh concrete	CS1: 2010 Section 7
	Making test cylinders from fresh concrete	CS1: 2010 Section 9
	Curing test specimens	CS1: 2010 Section 10
	Compressive strength of concrete cubes in the force range 10 kN – 3000 kN	CS1: 2010 Section 12
	Obtaining core samples	CS1: 2010 Section 15
	Compressive strength of concrete cores in the force range 10 kN – 3000 kN	CS1: 2010 Section 15
	Density of hardened concrete	CS1: 2010 Section 16
	Concrete's ability to resist chloride ion penetration	AASHTO T277-07 ASTM C1202-05 ASTM C1202-12 CS1: 2010 Section 19
	Bleeding test	ASTM C232 / C232M-09 Method A
	Removal of concrete cover for reinforcement survey	Hong Kong Housing Authority Materials Testing Services (2024/2027) for Maintenance and Building Materials Specification Part D Cl. 4.2.1
	Temperature	BS 8500-2 2006 Cl. 5.4b
	Water absorption	BS 1881: Part 122: 1983

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Grout	Bleeding and free expansion	General Specification for Civil Engineering Works (2006) Cl. 17.60 Hong Kong Housing Authority Specification Library (2018) PIL1.T320.8 Hong Kong Housing Authority Specification Library (2022) PIL1.T320.9
	Flow of grout for preplaced-aggregate concrete	ASTM C939-02 (flow cone method) ASTM C939/C393M-16a
Manhole covers / steps	Loading test of gully tops and manhole tops	BS EN 124-1: 2015 Cl. 7.2, 7.3, 8.1, 8.2 & 8.3, Annex A & B
	Mass determination and loading test of manhole covers, gully gratings and kerb overflow weirs	Hong Kong Housing Authority Specification Library (2022) DRA2.M650.9 & DRA2.T430.9 to DRA2.T490.9 General Specification for Civil Engineering Works (2006) Cl. 5.95 & App. 5.3 General Specification for Civil Engineering Works (2020) Cl. 5.95 & App. 5.3
Metallic materials	Bend test of carbon steel bars	CS2: 1995 Cl. 6.1 & 6.3
	Bend test of metallic materials	BS EN ISO 7438: 2016
	Bend test of reinforcing bars, wire rods and wires for reinforcement of concrete	BS EN ISO 15630-1: 2010 Cl. 6 BS EN ISO 15630-1: 2019 Cl. 6
	Bend test on welded intersection of welded fabric for concrete	BS EN ISO 15630-2: 2019 Cl. 6
	Bond property of steel reinforcing bars by surface geometry measurement	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 (Rev. 6) Cl. 6.1 & 6.7.2 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 and U-notch impact test	BS EN 10045-1: 1990 BS EN ISO 148-1: 2016 in conjunction with the following specification(s): BS EN 1562: 2019 Cl. 9.4 & Table 3 BS EN 1563: 2018 Cl. 9.2 & Table 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 ISO 898-1: 2009 Cl. 9.14.5 & Table 3 BS EN ISO 898-1: 2013 Cl. 9.14.5 & Table 3
	Mass per meter of steel reinforcing bars, wire rods and wires	BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.3 BS EN ISO 15630-1: 2010 Cl. 12 BS EN ISO 15630-1: 2019 Cl. 12 CS2: 2012 (Rev. 6) Cl. 6.1 & 6.2
	Mass per metre square, pitch and dimension of steel fabric for reinforcement of concrete	BS 4483: 2005 Cl. 7.3, 8.1.3.2 with BS 4449: 2005 + A2: 2009 Cl. 7.3 & BS EN ISO 15630-1: 2002 Cl. 12
	Proof load test of metallic covers in the force range 2.2 kN – 2900 kN	Buildings Department Code of Practice for the Structural Use of Steel (2005) Cl. 16.2.1 Buildings Department Code of Practice for the Structural Use of Steel (2011) Cl. 16.2.1

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Metallic materials (cont'd)	Proof load test of nut in the force range 0.2 kN – 2900 kN	BS 3692: 2014 Annex C.1 BS 4190: 2014 Annex A.1 BS EN ISO 898-2: 2012 Cl. 9.1
	Proof load test of stainless steel nut in the force range 0.2 kN – 2900 kN	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
	Rebend test of carbon steel bars	CS2: 1995 Cl. 6.1 & 6.4
	Rebend test of reinforcing bars, wire rods, welded fabrics or cold reduced wires for reinforcement of concrete	CS2: 2012 (Rev. 6) Cl. 6.1 & 6.5 BS EN ISO 15630-1: 2010 Cl. 7 BS EN ISO 15630-1: 2019 Cl. 7 in conjunction with the following specification(s) BS 4449: 1997 Cl. 11.3 & App. E.1.6 BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.5 BS 4483: 2005 Cl. 7.2.5 & 8.1.3.2
	Tensile test of carbon steel bars in the force range 0.2 kN – 2900 kN	CS2: 1995 Cl. 6.1 & 6.2
	Tensile test of machined bolts and screws in the force range 0.2 kN – 2900 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 EN ISO 898-1: 2009 Cl. 9.7 BS EN ISO 898-1: 2013 Cl. 9.7 BS 3692: 2014 Cl. 14 & 21 BS 4190: 2014 Cl. 15 & 21
	Tensile test of unmachined (finished) bolts and screws in the force range 0.2 kN – 2900 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 EN ISO 898-1: 2009 Cl. 9.2 BS EN ISO 898-1: 2013 Cl. 9.2 BS 3692: 2014 Cl. 14 & 21 BS 4190: 2014 Cl. 15 & 21
	Proof load test of unmachined (finished) bolts and screws in the force range 0.2 kN – 2900 kN	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: 2014 Cl. 14 & 21 BS 4190: 2014 Cl. 15 & 21

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Metallic materials (cont'd)	Tensile test of metallic materials in the force range 0.2 kN – 2900 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 1561: 1997 Cl. 9.1 & Table 1 BS EN 1561: 2011 Cl. 9.1 & Table 1 BS EN 1562: 2019 Cl. 9.1 & 9.2 Table 1 -3 BS EN 1563: 2018 Cl. 9.1 & Table 1 & 3 BS EN 10025-1: 2004 Cl. 7.3.1, 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 10025-6: 2019 Cl. 10.2.1, Table 4 BS EN 10088-2: 2005 Cl. 7.4.2, Table 7 - 11 & Table 17 – 20 BS EN 10088-2: 2014 Cl. 7.4.2 & Table 11 & 17-20 BS EN 10088-3: 2005 Cl. 7.4.2 & Table 8 – 19 & 25 BS EN 10088-3: 2014 Cl. 7.4.2 & Table 8 - 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. 8.4.4 & Table 2 BS EN 10248-1: 2023 Cl. 10.2 & Table 3 BS EN 10255: 2004 + A1: 2007 Cl. 9.3 & Table 1

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Metallic materials (cont'd)	Tensile test of reinforcing bars, wire rod, welded fabric or cold reduced wire for reinforcement of concrete in the force range 0.2 kN – 2900 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 4449: 1997 Cl. 11.1 & 11.2 BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.2, 7.2.3, 8.1.3.1 & 9 BS 4483: 2005 Cl. 7.2.2, 7.2.3, 8.1.3.1 & 9 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 (Rev. 6) Cl. 6.1 & 6.4
	Tensile test & slip/permanent elongation test of mechanical coupler in the force range 0.2 kN – 2900 kN	BS EN ISO 6892-1: 2009 Cl. 10.4 method B & In-house method ST-COUPLER-SLIP BS EN ISO 6892-1: 2016 Cl. 10.3.3 method B & In-house method ST-COUPLER-SLIP BS EN ISO 6892-1: 2019 Cl. 10.3.3 method B & In-house method ST-COUPLER-SLIP in conjunction with the following specification(s): BS 8110: Part 1: 1997 Cl. 3.12.8.16.2 Buildings Department Code of Practice for the Structural Use of Concrete (2004) Cl. 3.2.8.2 Buildings Department Code of Practice for the Structural Use of Concrete (2013) Cl. 3.2.8.3
	Vickers hardness test of metallic materials in scale range of HV0.01 to HV50	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. A4.4 & 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: 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

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Metallic materials (cont'd)	Vickers hardness test of metallic materials in scale range of HV1 to HV50	BS EN 23878: 1993 ISO 3878: 1983
	Weld shear force test on steel fabric for reinforcement of concrete in the force range 0.2 kN – 2900 kN	BS EN ISO 15630-2: 2019 Cl. 7 in conjunction with the following specification(s): BS 4483: 2005 Cl. 7.2.2 & 7.2.4
Structural fixings	Proof load test of spiders in the force range 2.2 kN – 2900 kN	Buildings Department Code of Practice for the Structural Use of Steel (2005) Cl. 16.2.1 Buildings Department Code of Practice for the Structural Use of Steel (2011) Cl. 16.2.1
Welds (destructive)	Bend test on welds in metallic materials	BS EN 910: 1996 BS EN ISO 5173: 2010 + Al: 2011
	Bend test on welded reinforcement steel for concrete	BS EN ISO 17660-1: 2006 Cl. 14.4
	Fracture test on welds in metallic materials	BS EN 1320: 1997 BS EN ISO 9017: 2013
	Impact test on welds in metallic materials using V-notch and U-notch test pieces	BS EN 875: 1995 BS EN ISO 9016: 2011
	Longitudinal tensile test on weld metal in fusion welded joints in the force range 0.2 kN – 2900 kN	BS EN 876: 1995 BS EN ISO 5178: 2011
	Micro hardness test on welds in metallic materials in the scale of HV 0.1 to HV1	BS EN 1043-2: 1997 BS EN ISO 9015-2: 2011
	Macroscopic and microscopic examination on welds in metallic materials	BS EN 1321: 1997 BS EN ISO 17639: 2013
	Macro-etch test on welded reinforcement steel for concrete	BS 7123: 1989 Cl. 12.3.6
	Macro examination of arc stud weld	BS EN ISO 14555: 2017 Cl. 11.6

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Welds (destructive) (cont'd)	Shear test on welded reinforcement steel for concrete in the force range 0.2 kN – 2900 kN	BS EN ISO 17660-1: 2006 Cl. 14.3
	Tensile test on welded reinforcement steel for concrete in the force range 0.2 kN – 2900 kN	BS EN ISO 17660-1: 2006 Cl. 14.2
	Transverse tensile test on weld in metallic materials in the force range 0.2 kN – 2900 kN	BS EN 895: 1995 BS EN ISO 4136: 2011 BS EN ISO 4136: 2012
	Tensile test on welded reinforcement steel for concrete in the force range 0.2 kN – 2900 kN	BS 7123: 1989 Cl. 12.3.5
	Tensile test of arc stud weld	BS EN ISO 14555: 2017 Cl. 11.4
	Vickers hardness test on welds in metallic materials in the scale of HV5 and HV10	BS EN 1043-1: 1996 BS EN ISO 9015-1: 2011

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Coating	Mass per unit area of hot dip galvanized coating by gravimetric method	BS 729: 1971 (App. A - Stripping test) BS 2989: 1982 App. A BS 2989: 1991 App. A BS EN 10346: 2015 Annex A BS EN ISO 1460: 1995 in conjunction with the following specification(s) BS 2989: 1982 Cl. 3.4 BS 2989: 1991 Cl. 3.3 BS EN 10346: 2015 Cl. 8.5.5.1
Concrete (chemical analysis)	Cement and aggregate content (by CaO determination)	BS 1881: Part 124: 1988 Cl. 5.4 & 5.9 CS1: 2010 Section 21.6
	Aggregate/Cement ratio	BS 1881: Part 124: 1988 Cl. 5.9
	Chloride ion content	BS 1881: Part 124: 1988 Cl. 10.2 CS1: 2010 Section 21.10.2
	Sulphate content	BS 1881: Part 124: 1988 Cl. 10.3 CS1: 2010 Section 21.10.3
	Determination of chloride content in hardened concrete	BS EN 14629: 2007 (Method A)

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Metallic materials (chemical analysis)	Elemental composition: -	
Copper and copper alloy	- Aluminium, Arsenic, Antimony, Cadmium, Chromium, Iron, Lead, Manganese, Nickel, Magnesium, Phosphorus, Silicon, Sulphur, Tin, Zinc	In-house method CHM-CU-MULTI (ICP-OES)
	- Copper	In-house method CHM-CU-CU (ICP-OES)
	- Silver	In-house method CHM-CU-AG (ICP-OES)

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Iron (chemical analysis)	Total carbon content	BS EN ISO 15350: 2010 (Method A) ISO 15350: 2000 (Method A) GB/T 20123: 2006 In-house method CHM-STL(IN)-C&S (Carbon-Sulphur Analyser by Infrared Spectrometric Method)
	Sulfur content	BS EN ISO 15350: 2010 (Method A) ISO 15350: 2000 (Method A) GB/T 20123: 2006 In-house method CHM-STL(IN)-C&S (Carbon-Sulphur Analyser by Infrared Spectrometric Method)
	Nitrogen content	BS EN ISO 15351: 2010 ISO 15351: 1999 GB/T 20124: 2006
Steel (chemical analysis)	Total carbon content	BS EN ISO 15350: 2010 (Method A) ISO 15350: 2000 (Method A) GB/T 20123: 2006 In-house method CHM-STL(IN)-C&S (Carbon-Sulphur Analyser by Infrared Spectrometric Method)
	Sulphur content	BS EN ISO 15350: 2010 (Method A) ISO 15350: 2000 (Method A) GB/T 20123: 2006 In-house method CHM-STL(IN)-C&S (Carbon-Sulphur Analyser by Infrared Spectrometric Method)
	Nitrogen content	BS EN ISO 15351: 2010 ISO 15351: 1999 GB/T 20124: 2006
	Carbon Equivalent Value	CS2: 2012 Cl. 1.5.1 BS 4449: 2005 +A2: 2009 Cl. 7.1
	Niobium	In-house Method CHM-STL-NB (ICP-OES)

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Steel (chemical analysis) (cont'd)	- Chromium, Copper, Manganese, Molybdenum, Nickel, Phosphorus, Silicon, Titanium, Vanadium	In-house Method CHM-STL-MULTI (ICP-OES)
Carbon and low alloy steel (chemical analysis)	- Aluminium	In-house Method CHM-STL-AL (ICP-OES)
	- Chromium, Copper, Manganese, Molybdenum, Nickel, Phosphorus, Silicon, Vanadium	In-house method CHM-STL-MULTI(II) (X-Ray Fluorescence Spectrometry)
Stainless steel (Grade 304, 316, 317 and 321) (chemical analysis)	- Chromium, Manganese, Molybdenum, Nickel, Phosphorus, Silicon	BS EN 10315: 2006
Steel reinforcing bar (Product analysis grade 250, 500B & 500C) (chemical analysis)	Carbon, Sulphur, Phosphorus, Nitrogen, Nitrogen binding element (Vanadium), Copper and Carbon Equivalent Value	CS2: 2012 Cl. 1.5.1 in conjunction with SCCT Technical Note No. 3 *Test procedure for compliance testing of total carbon and sulphur*: BS EN ISO 15350: 2010 (Method A) ISO 15350: 2000 (Method A) GB/T 20123: 2006 In-house method CHM-STL(IN)-C&S (Carbon-Sulphur Analyser by Infrared Spectrometric Method) *Test procedure for compliance testing of nitrogen*: BS EN ISO 15351: 2010 ISO 15351: 1999 GB/T 20124: 2006 *Test procedure for compliance testing of copper, phosphorous & nitrogen binding element (vanadium)*: In-house Method CHM-STL-MULTI (ICP-OES) In-house method CHM-STL-MULTI(II) (X-Ray Fluorescence Spectrometry) *Test procedure for compliance testing of carbon equivalent value*: CS2: 2012 Cl. 1.5.1

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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
Tap water (chemical analysis)	Physical Examination: -	
	- Color	APHA 22e 2120 B
	- Conductivity	APHA 22e 2510 B
	- Turbidity	APHA 22e 2130 B
	Non-metallic constituents :-	
	- Chlorine (total residual)	APHA 22e 4500-Cl G
	- Chlorine (free residual)	APHA 22e 4500-Cl G
Tap water (≥ 1 NTU) (chemical analysis)	Trace metals (Total recoverable): - - Aluminium, Antimony, Arsenic, Boron, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Selenium	In-house method CHM-WTR-METALS-ICPMS (ICP-MS)
Potable water (<1 NTU) (chemical analysis)	Trace metals (Total recoverable): - - Aluminium, Antimony, Arsenic, Boron, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Selenium, Mercury	In-house method CHM-WTR-METALS-ICPMS (ICP-MS)
Water and Wastewater (chemical analysis)	Physical Examination: -	
	- pH value	APHA 22e 4500-H^+B
	- Total suspended solid dried at 103 to 105ºC	APHA 22e 2540D
	Organic Pollutants:-	
	- Chemical Oxygen Demand	APHA 22e 5220C

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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	Microbiological tests:-	
	- Total Coliform	DoE (1983) The Bacteriological Examination of Drinking Water Supplies, 1982 (Membrane Filtration Procedure: Section 7.8 and 7.9.4.1; Bacterial Confirmation: Section 7.9.4.3)
	- Faecal Coliform	DoE (1983) The Bacteriological Examination of Drinking Water Supplies, 1982 (Membrane Filtration Procedure: Section 7.8 and 7.9.4.2; Bacterial Confirmation: Section 7.7.6.3)
	- *E. coli*	DoE (1983) The Bacteriological Examination of Drinking Water Supplies, 1982 (Membrane Filtration Procedure: Section 7.8 and 7.9.4.2;Bacterial Confirmation: Section 7.9.4.4 and in-situ urease test)
	- Heterotrophic Plate count (Colony count at 35°C)	APHA 22e 9215 A & B

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Miscellaneous 雜類		
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
Diesel containing ≤ 25 % (w/w) FAME	Total sulfur	ASTM D2622-16 **<*Excluding the following*>** Cl. 5.2, Cl. 5.3 & Cl. 8.1
Diesel fuel containing ≤ 30 % (*V*/*V*) FAME	Total sulfur	ISO 20884:2019 (with modification) **<*Excluding the following*>** Cl. 5.3, Cl. 7 & Cl. 8.1 para. 2
Diesel fuel	Fatty acid methyl ester (FAME)	EN 14078: 2014 **<*Excluding the following*>** Cl. 6