ETS-Testconsult Limited
東業德勤測試顧問有限公司

ADDRESS : 8/F, Block B, Veristrong Industrial Centre,
地址 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心B 座 8 樓

ENQUIRY : Mr Tony WONG Yiu-keung
查詢 黃耀強先生

TELEPHONE : 2695 8318
電話

FAX : 2695 3944
傳真

E-MAIL : etl@ets-testconsult.com
電郵

WEBSITE ADDRESS : http://www.ets-testconsult.com/
網址

CLIENTELE : Public
服務對象 公眾

ETS-Testconsult Limited
東業德勤測試顧問有限公司

ADDRESS
地址

Main Laboratory	:	8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong 香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓
Branch Laboratory	:	G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong 香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下 DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong 香港新界元朗流浮山深灣路 129 區 2176-A 地段
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

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 CQS/002/Z for the performance as specified in ASTM C939-16a Cl. 9	
	Time of efflux of water from cone: 8.0 s	0.06 s
- Compacting bar	Verification in accordance with in-house method CQS/033/Z for the dimensional and mass requirements as specified in CS1: 2010 Vol. 1 App. A10	
	Dimensions of ramming face: 25 mm x 25 mm	0.1 mm
	Length: 380 mm	0.5 mm
	Mass: 1.8 kg	0.05 kg
- Covermeter	Calibration of depth for cover in accordance with in-house method CQS/039/L using a device as specified in BS 1881: Part 204: 1988 Cl. 6.4 (Method C) over the following range :	
	10 mm to 200 mm	0.7 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Cube mould	Verification in accordance with in-house method CQS/008/Z for dimensional requirements as specified in BS 4550-3: Section 3.4: 1978 Cl. 2.3	
	Dimensions: 70.7 mm	0.05 mm
	Flatness: not more than 0.03 mm or 0.06 mm	0.02 mm
	Squareness: not more than 0.5 mm	0.1 mm
	On-site verification in accordance with in-house method CQS/008/Z for dimensional requirements as specified in BS 4550-3: Section 3.4: 1978 Cl. 2.3	
	Dimensions: 70.7 mm	0.05 mm
	Flatness: not more than 0.03 mm or 0.06 mm	0.02 mm
	Squareness: 0.5 mm	0.1 mm
	Verification in accordance with in-house method CQS/034/Z for dimensional requirements as specified in CS1: 2010 Vol. 1 App. A25	
	Dimensions: 100 mm or 150 mm	0.05 mm
	Flatness: not more than 0.03 mm or 0.06 mm	0.02 mm
	Perpendicularity: 0.5 mm	0.1 mm
	Parallelism: 1 mm	0.1 mm
	On-site verification in accordance with in-house method CQS/034/Z for dimensional requirements as specified in CS1: 2010 Vol. 1 App. A25	
	Dimensions: 100 mm or 150 mm	0.05 mm
	Flatness: not more than 0.03 mm or 0.06 mm	0.02 mm
	Perpendicularity: 0.5 mm	0.1 mm
	Parallelism: 1 mm	0.1 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Curing tank	On-site verification for following parameter in accordance with in-house method CQS/035/Z for requirements in CS 1: 2010 Vol. 1 App. A28	
	Temperature distribution at a range of (27 ± 3) ℃	0.6 K
	On-site verification of following parameter in accordance with in-house method CQS/035/Z for requirements in CS 1: 2010 Vol. 1 App. A28	
	Efficiency of circulation	0.1 min
- Drying oven	On-site calibration for temperature at different locations in drying oven in accordance with in-house method CQS/002/T over the following ranges :	
	10 °C to 40 °C	0.11 K
	above 40 °C to 70 °C	0.14 K
	above 70 °C to 300 °C	0.27 K
	above 300 °C to 450 °C	0.55 K

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Dry-well	Calibration for following parameters in accordance with in-house method CQS/004/T over the following ranges :	
	Temperature	
	40 °C to 200 °C	0.073 K
	above 200 °C to 450 °C	0.095 K
	Stability	
	40 °C to 200 °C	0.028 K
	above 200 °C to 450 °C	0.056 K
	Uniformity	
	40 °C to 200 °C	0.086 K
	above 200 °C to 450 °C	0.130 K
	On-site calibration for following parameters in accordance with in-house method CQS/004/T over the following ranges :	
	Temperature	
	40 °C to 200 °C	0.073 K
	above 200 °C to 450 °C	0.095 K
	Stability	
	above 40 °C to 200 °C	0.028 K
	above 200 °C to 450 °C	0.056 K
	Uniformity	
	40 °C to 200 °C	0.086 K
	above 200 °C to 450 °C	0.130 K

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Flow table for determination of flow of concrete	Verification in accordance with in-house method CQS/036/Z for dimensional and mass requirements as specified in CS1: 2010 Vol. 1 App. A15.1	
	Dimensions of metal plate: 700 mm x 700 mm	0.3 mm
	Thickness of metal plate: minimum 2 mm	0.05 mm
	Diameter of central circle: 210 mm	0.05 mm
	Fall height: 40 mm	0.05 mm
	Mass: 16 kg	5 g
- Incubator	On-site calibration for temperature at different locations in incubator in accordance with in-house method CQS/002/T over the following ranges :	
	10 °C to 40 °C	0.11 K
	above 40 °C to 70 °C	0.14 K
	above 70 °C to 105 °C	0.24 K
- Levelling staff	Calibration for length in accordance with in-house method CQS/041/L over the following range :	
	0 m to 5 m	1.5 mm
- Metal mould for determination of flow of concrete	Verification in accordance with in-house method CQS/043/Z for the dimensional requirements as specified in : CS1: 2010 Vol. 1 Cl. A15.2	
	Internal diameter of base: 200 mm	0.1 mm
	Internal diameter of top: 130 mm	0.1 mm
	Height: 200 mm	0.05 mm
	Thickness of metal: 1.5 mm	0.1 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Temperature bath	Calibration for following parameters in accordance with in-house methods CQS/004/T over the following ranges :	
	Temperature	
	10 °C to 70 °C	0.064 K
	above 70 °C to 180 °C	0.099 K
	Stability	
	10 °C to 180 °C	0.036 K
	Uniformity	
	10 °C to 180 °C	0.045 K
	On-site calibration for following parameters in accordance with in-house methods CQS/004/T over the following ranges :	
	Temperature	
	10 °C to 70 °C	0.064 K
	above 70 °C to 180 °C	0.099 K
	Stability	
	10 °C to 180 °C	0.036 K
	Uniformity	
	10 °C to 180 °C	0.045 K
- Rebound Hammer	Verification in accordance with in-house method CQS/026/Z by determining the rebound value using an anvil which complies with BS EN 12504-2: 2001 Cl. 4.2, or BS EN 12504-2: 2012 Cl. 4.2	1 rebound count

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Slump cone	Verification in accordance with in-house method CQS/031/Z for the dimensional requirements as specified in : CS1: 2010 Vol. 1 Cl. A5	
	Internal diameter of base: 200 mm	0.1 mm
	Internal diameter of top: 100 mm	0.1 mm
	Wall thickness: minimum 1.5 mm	0.1 mm
	Height: 300 mm	0.05 mm
- Step wedge	Calibration for thickness of the wedge in accordance with in-house method CQS/010/L over the following range :	
	1 mm to 20 mm	6 μm
- Tamping bar for determination of flow of concrete	Verification in accordance with in-house method CQS/044/Z for the dimensional requirements as specified in CS1: 2010 Vol. 1 Cl. A15.3	
	Length of square section: 200 mm	0.3 mm
	Length of circular handle: 120 mm to 150 mm	0.3 mm
	Dimensions of square section: 40 mm x 40 mm	0.05 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)		
- Tamping rod	Verification in accordance with in-house method CQS/032/Z for the dimensional requirements as specified in CS1: 2010 Vol. 1 Cl. A6	
	Diameter: 16 mm	0.1 mm
	Length: 600 mm	0.5 mm
- Ultrasonic test blocks (V2 calibration block)	Verification in accordance with in-house method CQS/021/Z for the dimensional requirements as specified in BS EN ISO 7963: 2010 Cl. 4 (excluding average surface roughness)	
	Dimensions: 5 mm to 50 mm	0.03 mm
	Angle: 30°	0.1°
- Weld gauge	Calibration for following parameters in accordance with in-house method CQS/009/L	
	Main rule: 0.5 mm to 60 mm	0.3 mm
	Sliding rule: 0.5 mm to 25 mm	0.3 mm
	Vernier rule: 0.5 mm to 25 mm	0.05 mm
	Angle gauge: 90°to 150°	1°
	Main and angle rule: 0.5 mm to 40 mm	0.6 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Electrical measurements		
- Time and frequency measuring instruments		
- Stop watch / Timer	Calibration for time in accordance with in-house method CQS/001/E over the following ranges :	
	0.5 second to 1 hour	0.07 s
	above 1 hour to 2 hours	0.12 s
	above 2 hours to 3 hours	0.18 s
	above 3 hours to 4 hours	0.23 s

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements		
- Angle measurements		
- Bevel protractor	Calibration for angle in accordance with in-house method CQS/008/L over the following ranges :	
	15° to 90°	3.0 min of arc
	above 90° to 140°	5.0 min of arc
- Spirit level	Calibration for angle in accordance with in-house method CQS/021/L over the following range :	
	0 to 1 degree	0.6 min of arc
- Square	Calibration for squareness of edges of blade to working faces of stock in accordance with in-house method CQS/018/L over the following range :	
	- square with inner length of blade:	
	5 mm to 200 mm	9 μm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements (cont'd)		
- Length measuring instruments		
- Calliper	Calibration for length in accordance with in-house method CQS/002/L over the following ranges :	
	0 mm to 300 mm	0.02 mm
	above 300 mm to 600 mm	0.04 mm
- Coating thickness gauge	Calibration for length in accordance with in-house method CQS/013/L over the following range :	
	0 mm to 7 mm	8.3 µm
- Depth gauge	Calibration for length in accordance with in-house method CQS/023/L over the following range :	
	0 mm to 200 mm	0.03 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Dial gauge	Calibration for length using micrometer head in accordance with in-house method CQS/003/L in increasing and decreasing mode over the following range :	
	0 mm to 50 mm	6 μm
	Calibration for length using gauge block in accordance with in-house method CQS/024/L in increasing mode over the following range :	
	0 mm to 50 mm	3 μm
	above 50 mm to 100 mm	5 μm
	Calibration for length using micrometer head and gauge block in accordance with in-house method CQS/024/L in increasing mode over the following range :	
	0 mm to 100 mm	5 μm
- Digital indicator	Calibration for length using gauge block in accordance with in-house method CQS/004/L over the following ranges :	
	0 mm to 25 mm	2 μm
	above 25 mm to 50 mm	5 μm
	Calibration for length using micrometer head in accordance with in-house method CQS/005/L over the following ranges :	
	0 mm to 25 mm	2 μm
	above 25 mm to 50 mm	0.02 mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Displacement transducer (LVDT)	Calibration for length in accordance with in-house method CQS/004/L over the following range :	
	0 mm to 100 mm	9 μm
- Dipmeter / Water level measuring tape	Calibration for length in accordance with in-house method CQS/040/L over the following range :	
	0 mm to 200 m	1.2 mm per 5 m
- Extensometer - Grade D with gauge length from 25 mm to 200 mm	On-site calibration for displacement using calibration rig and verification of grade in in accordance with BS 3846: 1970 (excluding determination of calibration factor) over the following range :	
	0 mm to 6 mm	2.0 μm
- Class 1 with gauge length from 25 mm to 200 mm	On-site calibration for displacement using calibration rig and verification of grade in in accordance with BS EN ISO 9513: 2002 over the following range :	
	0 mm to 6 mm	2.0 μm
- External micrometer	Calibration for travel length in accordance with in-house method CQS/001/L over the following ranges :	
	0 mm to 25 mm	3 μm
	above 25 mm to 50 mm	3 μm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements (cont'd)		
- Length measuring instruments (cont'd)		
- Feeler gauge	Calibration for thickness of blade in accordance with in-house method CQS/007/L over the following range :	
	0.01 mm to 2 mm	3.4 μm
- Measuring tape	Calibration for length in accordance with in-house method CQS/014/L over the following range :	
	0 mm to 200 m	0.68 mm per 5 m
- Micrometer head	Calibration for length in accordance with in-house method CQS/022/L over the following range :	
	0 mm to 25 mm above 25 mm to 50 mm	1.3 μm 2.3 μm
- Plastic foil	Calibration for thickness in accordance with in-house method CQS/013/L over the following range :	
	0.01 mm to 7 mm	5.8 μm
- Steel rule	Calibration for length in accordance with in-house method CQS/015/L over the following ranges :	
	0 mm to 200 mm above 200 mm to 1 m	0.2 mm 0.5 mm
- Ultrasonic thickness gauge	Calibration for thickness in accordance with in-house method CQS/032/L over the following ranges :	
	2 mm to 100 mm above 100 mm to 200 mm	(0.02 + 0.006 L) mm where L is the length in mm (0.2 + 0.006 L) mm where L is the length in mm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Length and related measurements (cont'd)		
- Rotational speed measurements		
- Tachometer (non-contact type)	Calibration for speed in accordance with in-house method CQS/039/Z over the following ranges :	
	60 rpm to 120 rpm	0.04 rpm
	above 120 rpm to 600 rpm	0.02 rpm
	above 600 rpm to 6000 rpm	0.2 rpm
	above 6000 rpm to 9000 rpm	0.4 rpm
	above 9000 rpm to 90000 rpm	2 rpm

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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		
- Weight and balance		
- Electronic balance	Calibration for mass using following OIML Class standard weights (1) E2 weights from 1 mg to 500 g (2) F1 weights from 1 g to 10 kg (3) F1 / F2 weights of 20 kg in accordance with in-house method CQS/001/W over the following ranges :	
	1 mg to 10 g	0.04 mg
	above 10 g to 100 g	0.08 mg
	above 100 g to 250 g	0.13 mg
	above 250 g to 400 g	0.40 mg
	above 400 g to 1 kg	1.0 mg
	above 1 kg to 5 kg	4.6 mg
	above 5 kg to 10 kg	8.6 mg
	above 10 kg to 20 kg	37 mg
	above 20 kg to 50 kg	75 mg
	above 50 kg to 160 kg	7.3 g
	On-site calibration for mass using following OIML Class standard weights (1) E2 weights from 1 mg to 500 g (2) F1 weights from 1 g to 10 kg (3) F1 / F2 weights of 20 kg in accordance with in-house method CQS/001/W over the following ranges :	
	1 mg to 10 g	0.04 mg
	above 10 g to 100 g	0.08 mg
	above 100 g to 250 g	0.13 mg
	above 250 g to 400 g	0.40 mg
	above 400 g to 1 kg	1.0 mg
	above 1 kg to 5 kg	4.6 mg
	above 5 kg to 10 kg	8.6 mg
	above 10 kg to 20 kg	37 mg
	above 20 kg to 50 kg	75 mg
	above 50 kg to 160 kg	7.3 g

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Weight and balance (cont'd)		
- Weights (Standard values)	Calibration for mass in accordance with in-house method CQS/002/W at the following specific nominal values :	
	1 mg	12 µg
	2 mg	12 µg
	5 mg	17 µg
	10 mg	17 µg
	20 mg	17 µg
	50 mg	17 µg
	100 mg	17 µg
	200 mg	26 µg
	500 mg	26 µg
	1 g	0.04 mg
	2 g	0.05 mg
	5 g	0.06 mg
	10 g	0.07 mg
	20 g	0.10 mg
	50 g	0.12 mg
	100 g	0.18 mg
	200 g	0.4 mg
	500 g	4 mg
	1 kg	0.02 g
	2 kg	0.02 g
	5 kg	0.04 g
	10 kg	0.2 g
	20 kg	0.2 g
- Weights (Non-standard values)	Calibration for mass in accordance with in-house method CQS/002/W over the following ranges :	
	1 g to 100 g	0.45 mg
	above 100 g to 200 g	0.86 mg
	above 200 g to 600 g	6.8 mg
	above 600 g to 6 kg	0.07 g
	above 6 kg to 20 kg	0.3 g

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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		
- Force testing machines		
- Concrete testing machine	On-site calibration for compressive force using Grade 1.0 load cells and verification of grade in accordance with BS 1610: Part: 1: 1992 (constant true force method) over the following range :	
	0.2 kN to 3000 kN	0.16 % to 0.40 % of reading
	On-site calibration for compressive force using Class 1.0 load cells and verification of class in accordance with BS EN 12390-4: 2000: Annex B, or CS1: 2010 Vol. 2 App. D (constant true force method for above two standards) over the following range :	
	0.2 kN to 3000 kN	0.16 % to 0.40 % of reading
- Universal testing machine in compression mode	On-site calibration for compressive force using Class 1.0 load cells and verification of class in accordance with BS EN ISO 7500-1: 2004 (constant true force method) over the following range :	
	0.2 kN to 3000 kN	0.16 % to 0.40 % of reading
	On-site calibration for compressive force using Grade 1.0 load cells and verification of grade in accordance with BS 1610: Part 1: 1985, or BS 1610: Part 1: 1992 (constant true force method for above two standards) over the following range :	
	0.2 kN to 3000 kN	0.16 % to 0.40 % of reading

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Force testing machines (cont'd)		
- Universal testing machine in tension mode	On-site calibration for tensile force in accordance with in-house method CQS/012/F over the following range :	
	1 kN to 50 kN	0.26 % to 0.32 % of reading
- 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: 2008 Cl. 7 over the following ranges :	
	1 J to 40 J	0.6 J at 22.2 J
	above 40 J to 220 J	3.3 J at 122.4 J
- Load cell	Calibration for compressive force in accordance with in-house method CQS/009/F over the following ranges :	
	0.2 kN to 50 kN	0.08 % to 0.63 % of reading
	above 50 kN to 300 kN	0.11 % to 0.31 % of reading
	above 300 kN to 3000 kN	0.15 % to 0.88 % of reading
- Proving ring	Calibration for compressive force in accordance with GEOPSPEC 3: App. A: Section A3.1 over the following ranges :	
	0.1 kN to 10 kN	0.10 % to 0.6 % of reading
	above 10 kN to 50 kN	0.11 % to 0.39 % of reading
- Pull-off tester	Calibration for compressive force in accordance with in-house method CQS/010/F over the following range :	
	1 kN to 50 kN	0.17 % to 3.1 % of reading

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Hardness measurements		
- Hardness testing machine	On-site indirect calibration for testing machine for Vickers hardness scales in accordance with BS 427: 1990 cl. 16, 17 & 19, or BS EN ISO 6507-2: 1998 cl. 5 over the following ranges :	
	212 HV 5 to 757 HV 5	2.3 % HV
	210 HV 10 to 768 HV 10	1.9 % HV
	218 HV 30 to 762 HV 30	1.9 % HV

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Pressure measurements		
- Pressure gauge, pressure transducer and pressure recorder	Calibration for pressure in accordance with in-house method CQS/003/P using air as pressure medium over the following ranges :	
	0 bar to 20 bar	0.0036 bar
	On-site calibration for pressure in accordance with in-house method CQS/003/P using air as pressure medium over the following ranges :	
	0 bar to 20 bar	0.0036 bar
	Calibration for pressure in accordance with in-house method CQS/001/P using dead-weight tester with oil as pressure medium over the following ranges :	
	6 bar to 60 bar	0.05 bar to 0.14 bar
	above 60 bar to 200 bar	0.23 bar to 0.48 bar
	above 200 bar to 600 bar	0.48 bar to 1.35 bar
	above 600 bar to 1000 bar	1.35 bar to 2.23 bar
	On-site calibration for pressure in accordance with in-house method CQS/001/P using dead-weight tester with oil as pressure medium over the following ranges :	
	6 bar to 60 bar	0.05 bar to 0.14 bar
	above 60 bar to 200 bar	0.23 bar to 0.48 bar
	above 200 bar to 600 bar	0.48 bar to 1.35 bar
	above 600 bar to 1000 bar	1.35 bar to 2.23 bar

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Pressure measurements (cont'd)		
- Pressure gauge, pressure transducer and pressure recorder (cont'd)	Calibration for pressure in accordance with in-house method CQS/002/P using water as pressure medium over the following ranges :	
	0 bar to 5 bar	0.013 bar
	above 5 bar to 10 bar	0.022 bar
	On-site calibration for pressure in accordance with in-house method CQS/002/P using water as pressure medium over the following ranges :	
	0 bar to 5 bar	0.013 bar
	above 5 bar to 10 bar	0.022 bar
	Calibration for pressure in accordance with GEOSPEC 3 App. A3.2 using water as pressure medium over the following ranges :	
	0 bar to 5 bar	0.013 bar
	above 5 bar to 10 bar	0.022 bar
	On-site calibration for pressure in accordance with GEOSPEC 3 App. A3.2 using water as pressure medium over the following ranges :	
	0 bar to 5 bar	0.013 bar
	above 5 bar to 10 bar	0.022 bar

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Pressure measurements (cont'd)		
- Vacuum gauge and vacuum transducer	Calibration for pressure in accordance with in-house method CQS/003/P over the following range :	
	-1 bar to 0 bar	0.0024 bar
	On-site calibration for pressure in accordance with in-house method CQS/003/P over the following range :	
	-1 bar to 0 bar	0.0024 bar

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)		
- Torque measurements		
- Torque wrench	Calibration for torque in accordance with in-house method CQS/006/F over the following ranges :	
	5 N·m to 25 N·m	0.95 % to 1.48 % of reading
	above 25 N·m to 1000 N·m	0.43 % to 0.64 % of reading

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Temperature measurements		
- Digital / analogue thermometer with sensor and temperature recorder with sensor	Calibration for temperature in accordance with in-house method CQS/005/T at the following specific point :	
	0 °C	0.07 K
	Calibration for temperature using liquid bath in accordance with in-house method CQS/003/T over the following ranges :	
	-20 °C to 0 °C	0.114 K
	above 0 °C to 70 °C	0.080 K
	above 70 °C to 100 °C	0.35 K
	above 100 °C to 180 °C	0.40 K
	Calibration for temperature using dry-well in accordance with in-house method CQS/003/T over the following ranges :	
	40 °C to 100 °C	0.36 K
	above 100 °C to 300 °C	0.46 K
	above 300 °C to 400 °C	0.48 K
	above 400 °C to 450 °C	0.53 K
	On-site calibration for temperature using dry-well in accordance with in-house method CQS/003/T over the following ranges :	
	40 °C to 100 °C	0.36 K
	above 100 °C to 300 °C	0.46 K
	above 300 °C to 400 °C	0.48 K
	above 400 °C to 450 °C	0.53 K

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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*
Temperature measurements (cont'd)		
- Liquid in-glass thermometer	Calibration for temperature in accordance with in-house method CQS/005/T at the following specific point :	
	0 °C	0.07 K
- Liquid in-glass thermometer	Calibration for temperature using liquid bath in accordance with in-house method CQS/003/T over the following ranges :	
	10 °C to 70 °C	0.17 K
	above 70 °C to 130 °C	0.42 K
	above 130 °C to 150 °C	0.58 K
	above 150 °C to 180 °C	0.67 K

[@] Unless otherwise specified, accredited activities are conducted at the laboratory.

* The calibration uncertainty of a device under test, which is usually reported at 95% confidence level, depends on both the CMC of the laboratory and the performance of the device during calibration.

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 adhesive	In-house method TPF/016
Aggregates	Soundness	BS 812: Part 121: 1989 excluding Cl. 4 & App. A BS 6349-1: 1984 App B CS3: 2013 Section 19
Aggregates (chemical analysis)	Acid-soluble materials	BS 812 : Part 119 : 1985 < ***Excluding the following*** > Cl. 4
	Soluble silica content	HKHA MTS (97/99) Specification Part D 1.4.9
	Water-soluble chloride salts	BS 812 : Part 117 : 1988
	Water-soluble chloride ion content	CS3:2013 Section 21.3
	Acid-soluble chloride content	CS3:2013 Section 21.4
	Water-soluble sulphate content	BS 812 : Part 118 : 1988 Cl.5 *Excluding* Cl.4
	Acid-soluble sulphate content	CS3:2013 Section 21.5
	Total sulphate content	BS 812 : Part 118 : 1988 Cl.6 *Excluding* Cl.4
	Total sulphur content	CS3:2013 Section 21.6
	Presence of humus	CS3:2013 Section 21.7

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Cement (chemical analysis)	Aluminum content (Al_2O_3)	BS 4550 : Part 2 : 1970 Cl. 7.1
	Insoluble residue content	BS 4550 : Part 2 : 1970 Cl. 3.1
	Iron oxide content (Fe_2O_3)	BS 4550 : Part 2 : 1970 Cl. 8
	Loss-on-ignition (L.O.I.)	BS 4550 : Part 2 : 1970 Cl. 13.1 BS EN 196-2 : 1995 Cl. 7 BS EN 196-2 : 2013 Cl. 4.4.1
	Magnesia content (MgO)	BS 4550 : Part 2 : 1970 Cl. 9.1
	Manganese oxide content (Mn_2O_3)	BS 4550 : Part 2 : 1970 Cl. 14.1.4
	Phosphorus oxide content (P_2O_5)	BS 4550 : Part 2 : 1970 Cl. 14.2.2
	Potassium oxide content (K_2O)	BS 4550 : Part 2 : 1970 (AMD 4260) Cl. 16.1 < ***Excluding the following*** > Cl.16.1.3.2 BS EN 196-2 : 2013 Cl. 4.5.19 (Reference method)
	Sodium oxide content (Na_2O)	BS 4550 : Part 2 : 1970 (AMD 4260) Cl. 16.1 < ***Excluding the following*** > Cl.16.1.3.2 BS EN 196-2 : 2013 Cl. 4.5.19 (Reference method)
	Acid-soluble alkali content (equivalent Na_2O)	BS EN 196-2 : 2013 Cl. 4.5.19 (Reference method)
	Titanium oxide content (TiO_2)	BS 4550 : Part 2 : 1970 Cl. 14.2.1
	Total calcium oxide content (CaO)	BS 4550 : Part 2 : 1970 Cl. 6.1
	Total silica content (SiO_2)	BS 4550 : Part 2 : 1970 Cl. 4.1
	Total sulphur content (SO_3)	BS 4550 : Part 2 : 1970 Cl. 12
	Sulphate content (SO_3)	BS EN 196-2 : 1995 Cl. 8 BS EN 196-2 : 2013 Cl. 4.4.2
	Chloride content	BS 4550 : Part 2 : 1970 Cl. 17 (AMD 5713) BS EN 196-21 : 1992 Cl. 4 BS EN 196-2 : 2013 Cl. 4.5.16
	Ammonium hydroxide group	BS 4550 : Part 2 : 1970 Cl. 5
	Residue insoluble in hydrochloric acid and sodium carbonate	BS EN 196-2 : 1995 Cl. 9 BS EN 196-2 : 2013 Cl. 4.4.3

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Coating	Pull-off test of adhesion	BS EN ISO 4624: 2003, BS 3900-E10: 2003 Cl. 9.4.2 ASTM D4541-02 Test Method A
Concrete	Depth of penetration of water under pressure	CS1: 2010 Section 18 BS EN 12390-8: 2009
	Heat of hydration monitoring (Temperature monitoring of concrete structure from 10 ˚C to 90 ˚C)	In-house method TPF/018
	Obtaining core samples	CS1: 2010 Section 15
	Obtaining drilling powder samples	Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 6.4
	Removal of concrete cover to expose reinforcement	Hong Kong Housing Authority Materials Testing Services (2000/2002) for Construction Materials (Package A) Specification Cl. 4.2.1

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Concrete (chemical analysis)	Cement and aggregate content (by CaO determination)	BS 1881: Part 124: 1988 Cl. .5.4 & 5.9 CS 1 : 1990: Section 21.6.4, 21.6.6 & 21.6.7 CS 1 : 2010: Section 21.6.4, 21.6.6 & 21.6.7
	Aggregate / cement ratio	BS 1881 : Part 124 : 1988 Cl. 5.9
	Original water content	BS 1881 : Part 124 : 1988 Cl. 7 CS1: 1990 Cl. 21.7 CS1: 2010 Cl. 21.7
	Chloride ion content	BS 1881 : Part 124 : 1988 Cl. 10.2 CS1: 1990 Cl. 21.10.2 CS1: 2010 Cl. 21.10.2
	Sulphate content	BS 1881 : Part 124 : 1988 Cl. 10.3 CS1: 1990 Cl. 21.10.3 CS1: 2010 Cl. 21.10.3
	pH value	In-house Method TPC/060
	Detection of PFA	CS1: 1990 Cl. 21.5 CS1: 2010 Cl. 21.5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Concrete (diagnostic)	Carbonation test	Building Research Establishment Information Paper IP 6/81 Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 4.3.1 Method 1
	Covermeter survey	BS 1881: Part 204: 1988 + Amd. 6201 Cl. 7.3 Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 4.3.2 Method 1 & Method 2
	Half-cell potential measurement	ASTM C876-91 Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 4.3.4
	Resistivity measurement	BS 1881 Part 2d: 1986 Cl. 2.3
	Surface hardness measurement	BS EN 12504-2: 2001 BS EN 12504-2: 2012 BS EN 12504-2: 2021
	Ultrasonic pulse velocity measurement	BS 1881: Part 203: 1986 (by direct transmission) BS EN 12504- 4: 2004 (by direct measurement) Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance & Building Materials Specification Part D Cl. 4.1.2
	Infrared thermography for detection of building surface defects	Hong Kong Concrete Institute TM1 (2009) Hong Kong Concrete Institute TM1 Issue 2 (2022)
	Surface penetration radar survey	Hong Kong Concrete Institute TM2 (2009)
Dimension stones	Absorption and bulk specific gravity	ASTM C97-02
	Compressive strength	ASTM C170-90 (Reapproved 1999)
	Flexural strength	ASTM C880-06 ASTM C880-15
	Strength of individual stone anchorages	ASTM C1354-15

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Fibre-reinforced concrete	Flexural toughness and first-crack strength of fibre-reinforced concrete in the force range 1 kN - 80 kN	ASTM C1018-92 ASTM C1018-97 ASTM C1609/C1609M-10
	Flexural strength of fibre reinforced beam specimens in the force range 1 kN - 80 kN	BS EN 14488-3: 2006
Ground water (chemical analysis)	Sulphate content	BS 1377 : Part 3 : 1990 Section 5.2 - 5.5 GEOSPEC 3 : 2001 : Test 9.3 GEOSPEC 3 : 2017 : Test 9.3
	pH value	GEOSPEC 3 : 2001 : Test 9.5 GEOSPEC 3 : 2017 : Test 9.5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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	Crosshole sonic logging test (SOLT)	ASTM D6760-02 ASTM D6760-08
	Pile dynamic test (PDA)	ASTM D4945-00 ASTM D4945-08
	Pile integrity test (PIT)	ASTM D5882-00 ASTM D5882-07
	Plate load test (PLT)	BS 1377: Part 9: 1990 Cl. 4.1 (incremental loading) Buildings Department Code of Practice for Foundations (Apr 2017) Cl. 8.2(2) excluding 8.2(2)(f) to (h)
	Single-hole sonic logging test (SOLT)	In-house method TPN/001
	Compression static loading tests on piles (SLT)	Architectural Services Department General Specification for Building (1993) Section 5.28 BS 8004: 1986 Cl. 7.5.5 Buildings Department PNAP 66 (Nov 1997) Cl. 10 Buildings Department Code of Practice for Foundations (Apr 2017) Cl. 8.4 General Specification for Civil Engineering Works (1992) Vol. 1 App. 8.1 Hong Kong Housing Authority Specification Library (2000) Cl. PIL 1.T660.3 to PIL 1.T.690.3 Cl. PIL 1.T810.3 to PIL 1.T870.3 Cl. PIL 1.T1010.3 to PIL 1.T1020.3 Hong Kong Housing Authority Materials Testing Services (2002/2004) for non-destructive testing for piles Cl. D7 and D9 (c) (viii)
	Tension static loading test on piles (SLT)	Architectural Services Department, Technical Instruction No. 4/2005: Particular Specification for Tension Piles Buildings Department Code of Practice for Foundations 2004 Cl. 8.10
	Ultrasonic echo sounder test (UEST)	In-house method TPN/009
	Borehole video inspection test	Hong Kong Housing Authority Specification (2022/2024) for non-destructive testing for piles Cl. D8 and D10

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Metallic materials (non-destructive)	Ultrasonic testing of metallic material (Reflection method)	BS 5996: 1993 BS EN 10160: 1999
	Ultrasonic testing of H beams with parallel flanges and IPE beams (Manual method)	BS EN 10306: 2002
Paints & Varnishes	Dry-film coating thickness measurement by magnetic method	BS EN ISO 2808: 2001, BS 3900-C5: 1997 (method 6A – Magnetic induction) BS EN ISO 2808: 2007, BS 3900-C5: 2007 (method 7C – Magnetic induction)
	Dry-film coating thickness measurement by eddy current method	BS EN ISO 2808: 2001, BS 3900-C5: 1997 (method 7– Eddy current) BS EN ISO 2808: 2007, BS 3900-C5: 2007 (method 7D – Eddy current)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Polymer modified mortar (chemical analysis)	Sample preparation	HKHA 002 : 1990 Cl.6 with modification
	Polymer solids content	HKHA 002 : 1990 Cl.8 with modification
	Aggregate/cement ratio	HKHA 002 : 1990 Cl.7 with modification
Polymer latex (chemical analysis)	Polymer solids content	HKHA 002 : 1990 Cl.2 with modification
Portland pulverised fuel ash cement (chemical analysis)	Magnesia content	BS 3892 : Part 1 : 1982 App. C
	Sulphur trioxide content	BS 4550 : Part 2 : 1970 Cl. 12
	Loss-on-ignition	BS 4550 : Part 2 : 1970 Cl. 13.2
	Proportion of pulverised fuel ash	In-house Method TPC / 073
Pulverised fuel ash (chemical analysis)	Magnesia content	BS 3892 : Part 1 : 1982 App. C
	Sulphuric anhydride content	BS 4550 : Part 2 : 1970 Cl. 10
	Loss-on-ignition	BS 4550 : Part 2 : 1970 Cl. 13.2
Repair mortar	Pull-off test of mortar	BS EN 1542: 1999 Cl. 7.0 Hong Kong Housing Authority Materials Testing Services (1995) Cl. B1.15 Method 1
	Repair mortar core inspection	BS 1881: Part 120: 1983 Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance and Building Materials Specification Part D Cl. 2.1.22

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Rock	Direct shear strength of jointed rock	ASTM D5607-02
	Point load strength index of rock	ASTM D5731-95 International Society for Rock Mechanics (1985) Suggested method for determining point load strength
	Porosity and density using saturation and buoyancy techniques	International Society for Rock Mechanics (1979) Part 1 Method 3: Suggested method for Porosity/density determination using saturation and buoyancy techniques
	Preparation of rock core specimens and determination of dimensional and shape tolerances	ASTM D4543-04
	Unconfined compressive strength of intact rock core specimens	ASTM D2938-95 (Reapproved 2002) excluding Cl. 5.2, 5.3, 9.3 & 9.4 ASTM D7012-07 Method C, excluding Cl. 5.2-5.7 & 5.9 International Society for Rock Mechanics (1979) Part 1: Suggested method for determining the uniaxial compressive strength of rock materials
	Water content of rock	International Society for Rock Mechanics (1979) Part 1 Method 1: Suggested method for determination of water content of a rock sample
	Dropping test of rock armour to determine the resistance to fracture	General Specification for Civil Engineering Works (2006) Vol. 2 Cl. 21.97 (1) & (2) and Cl. 21.99 (2)
	Particle size distribution of coarse grading of rock armour	BS EN 13383-2: 2002 Cl. 5
	Mass distribution of light and heavy gradings of rock armour	BS EN 13383-2: 2002 Cl. 6 (reference method only)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)	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 density by gas jar method	GEOSPEC 3: 2001 Test 7.1 GEOSPEC 3: 2017 Test 7.1
	Particle density by small pyknometer method	GEOSPEC 3: 2001 Test 7.2 GEOSPEC 3: 2017 Test 7.2
	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 a 1000cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.1 GEOSPEC 3: 2017 Test 10.1

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 susceptible to crushing (using a 1000cc mould and 2.5 kg rammer)	GEOSPEC 3: 2001 Test 10.2 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 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 GEOSPEC 3: 2017 Test 10.8

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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)	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
	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 GEOSPEC 3: 2017 Test 11.3
	Relative compaction of fill material	GEOSPEC 3: 2001 Test 11.4 GEOSPEC 3: 2017 Test 11.4 Buildings Department PNAP 55 (1994) Cl. 2 App. A
	California Bearing Ratio (CBR)	GEOSPEC 3: 2001 Test 12.1 excluding Cl. 12.1.4.11 & 12.1.4.13 GEOSPEC 3: 2017 Test 12.1 excluding Cl. 12.1.4.11 & 12.1.4.13
	Density of soil by linear measurement method	BS 1377: Part 2: 1990 Cl. 7.2

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 II)	One-dimensional consolidation test	GEOSPEC 3: 2001 Test 14.1 GEOSPEC 3: 2017 Test 14.1
	Isotropic compression test in a triaxial cell	GEOSPEC 3: 2001 Test 14.2 GEOSPEC 3: 2017 Test 14.2
	Unconsolidated undrained triaxial compression test without pore pressure measurement	GEOSPEC 3: 2001 Test 15.1 GEOSPEC 3: 2017 Test 15.1
	Isotropically consolidated undrained triaxial compression test with pore pressure measurement	GEOSPEC 3: 2001 Test 15.2 GEOSPEC 3: 2017 Test 15.2
	Isotropically consolidated drained triaxial compression test with measurement of volume change	GEOSPEC 3: 2001 Test 15.3 GEOSPEC 3: 2017 Test 15.3
	Direct shear test (small shear box apparatus)	GEOSPEC 3: 2001 Test 16.1 GEOSPEC 3: 2017 Test 16.1
	Triaxial test on loosely compacted fill material	In-house method TPG/084
Soil (other)	GCO probe test	General Specification for Civil Engineering Works (2006) Vol. 1 App. 7.1
	In-situ redox potential of reinforced fill structure	GEOSPEC 2: 1989 Cl. 5.5
	Time domain reflectometry (TDR) test on soil nails	GEO Guidelines on Test Procedure using Time Domain Reflectometry (TDR) to determine the length of installed soil nails (July 2007)
	Pull-out test of soil nails	ENV 1997-1: Eurocode 7 GEOGUIDE 7 (2017) Cl. 6.3.2 Hong Kong Housing Authority Specification Library (2000) Cl. SLO.T310.3 to SLO.T350.3
	Redox potential	BS 1377: Part 3: 1990 Cl. 11
	Resistivity of soil by open container method	BS 1377: Part 3: 1990 Cl. 10.4
	Resistivity of soil by Wenner probe method	BS 1377: Part 3: 1990 Cl. 10.3 (Amd. 9028)
	Resistivity properties of fill material	GEOSPEC 2: 1989 Cl. 5.4

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (chemical analysis)	Acid-soluble sulphate content and water-soluble sulphate content	BS 1377 : Part 3 :1990 Section 5.2 - 5.3
	Organic matter content	GEOSPEC 3 : 2001 : Test 9.1 GEOSPEC 3 : 2017 : Test 9.1
	Loss-on-ignition (L.O.I.)	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
Solder alloy (chemical analysis)	Elemental composition:-	
- Tin base alloy	Lead content	In-house Method TPC/031/M (ICP-OES)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Steel (chemical analysis)	Elemental composition: -	
- Carbon steel	Carbon, Chromium, Copper, Molybdenum, Manganese, Nitrogen, Niobium, Nickel, Silicon, Sulphur, Phosphorus and Vanadium	In-house Method TPC/022/M (Spark-OES)
- Low alloy steel	Carbon, Chromium, Copper, Molybdenum, Manganese, Nitrogen, Niobium, Nickel, Silicon, Sulphur, Phosphorus and Vanadium	In-house Method TPC/022/M (Spark-OES)
- Carbon steel and low alloy steel	Carbon equivalent value	In-house Method TPC/022/M (by calculation)
- Stainless steel (304, 304L, 316, 316L, 430 and 431)	Carbon, Chromium, Copper, Molybdenum, Manganese, Nitrogen, Nickel, Silicon, Sulphur and Phosphorus	In-house Method TPC/023/M (Spark-OES)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Copper alloy (chemical analysis)		
- Aluminium bronze	Aluminium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Phosphorus, Silicon, Tin, Zinc.	In-house Method TPC/024/M (Spark-OES)
- Brass	Aluminium, Arsenic, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Phosphorus, Silicon, Tin, Zinc.	In-house Method TPC/024/M (Spark-OES)
- Gunmetal	Aluminium, Antimony, Bismuth, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Phosphorus, Silicon, Sulphur, Tin, Zinc.	In-house Method TPC/024/M (Spark-OES)
Water (chemical analysis)	Alkaline carbonates and bicarbonates content	In-house method TPC/039
Structural fixings	Proof load test of spiders in the force range 1 kN - 1000 kN	In-house method TPF/029 in conjunction with the following specification(s): Buildings Department Code of Practice for the Structural Use of Steel (2011) Cl. 16.2.1
	Tensile proof load test of anchor bolts, dowel bars & channel inserts in the force range 1 kN to 1000 kN	BS 5080 Part 1: 1993 Cl. 6, 7.1.1 & 7.1.3 with modification (by incremental loading) In-house method TPF 003
	Shear proof load test of anchor bolts, dowel bars & channel inserts in the force range 1 kN to 500 kN	BS 5080: Part 2: 1986 Cl. 7.1, 7.2.1 & 7.2.3 with modifications (by incremental loading)
	Tightening torque test of anchor bolt in the torque range 50 Nm – 1000 Nm	In-house method TPF/021

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Welds (non-destructive)	Liquid penetrant test (Colour contrast method)	ASME BPVC.V-2019 Article 6 BS 6443: 1984 BS EN 571-1: 1997 BS EN ISO 3452-1: 2013 in conjunction with the following specification(s): ASME B31.1-2020 Para. 136.4.4 ASME B31.3-2020 Para. 344.4.2 ASME BPVC.I-2021 A-270.3 & A-270.4 ASME BPVC.IX-2019 Article I QW-195.2 AWS D1.1/D1.1M: 2020 Cl. 8 Part C BS 2633: 1987 Section 8 BS 2971: 1991 Section 7 BS 4515: Part 1: 2009 Section 12 BS 5135: 1984 Appendix H Table 18 and 19 BS 7123: 1989 Table 7 BS EN 25817: 1992, EN 25817: 1992, ISO 5817: 1992 Table 1 BS EN ISO 5817: 2003, EN ISO 5817: 2003, ISO 5817: 2003 Table 1 BS EN ISO 5817: 2007, EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014, EN ISO 5817: 2014, ISO 5817: 2014 Table 1 BS EN ISO 23277: 2015 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2005) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for Structural Use of Steel 2011 (2021 Edition) Table 14.3b PD 5500: 2018 Section 5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Welds (non-destructive) (cont'd)	Magnetic particle test (Magnetic flow method colour contrast technique using permanent magnets, D.C. and A.C. yokes)	ASME BPVC.V-2019 Article 7 BS 6072: 1981 (1986) 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): ASME B31.1-2020 Para. 136.4.3 ASME B31.3-2020 Para. 344.3.2 ASME BPVC.I-2021 A-260.3 & A-260.4 AWS D1.1/D1.1M: 2020 Cl. 8 Part C BS 2633: 1987 Section 8 BS 2971: 1991 Section 7 BS 4515: Part 1: 2009 Section 12 BS 5135: 1984 Appendix H Table 18 and 19 BS 7123: 1989 Table 7 BS EN 25817: 1992, EN 25817: 1992, ISO 5817: 1992 Table 1 BS EN ISO 5817: 2003, EN ISO 5817: 2003, ISO 5817: 2003 Table 1 BS EN ISO 5817: 2007, EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014, EN ISO 5817: 2014, ISO 5817: 2014 Table 1 BS EN ISO 23278: 2015 Table 1 & Cl. 5 Buildings Department Code of Practice for the Structural Use of Steel (2005) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for Structural Use of Steel 2011 (2021 Edition) Table 14.3b PD 5500: 2018 Section 5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Welds (non-destructive) (cont'd)	Radiographic examination (X-ray and gamma ray)	ASME BPVC.V-2019 Article 2 BS 2910: 1986 BS 2600: Part 1: 1983 BS EN 1435: 1997 BS EN ISO 17636-1: 2013 in conjunction with the following specification(s): ASME B31.1-2020 Para. 136.4.5 ASME B31.3-2020 Table 341.3.2 ASME BPVC.I-2021 PW-51.3 & A-250 ASME BPVC.IX-2019 Article I QW-191.1.2 AWS D1.1/D1.1M: 2020 Cl. 8 Part C BS 2633: 1987 Section 8 BS 2971: 1991 Section 7 BS 4515: Part 1: 2009 Section 12 BS 5135: 1984 Appendix H Table 18 and 19 BS 7123: 1989 Table 7 BS EN 25817: 1992, EN 25817: 1992, ISO 5817: 1992 Table 1 BS EN ISO 5817: 2003, EN ISO 5817: 2003, ISO 5817: 2003 Table 1 BS EN ISO 5817: 2007, EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014, EN ISO 5817: 2014, ISO 5817: 2014 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2005) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for Structural Use of Steel 2011 (2021 Edition) Table 14.3b PD 5500: 2018 Section 5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Welds (non-destructive) (cont'd)	Ultrasonic test (Butt welds in plates & pipes, 'T' joint welds, nozzle welds and node welds)	ASME BPVC.V-2019 Article 4 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 and C) in conjunction with the following specification(s): ASME B31.1-2020 Para. 136.4.6 ASME B31.3-2020 Para. 344.6.2 ASME BPVC.I-2021 PW-52.3 ASME BPVC.IX-2019 Article I QW-191.2.2 AWS D1.1/D1.1M: 2020 Cl. 8 Part C BS 2633: 1987 Section 8 BS 2971: 1991 Section 7 BS 4515: Part 1: 2009 Section 12 BS 5135: 1984 Appendix H Table 18 and 19 BS 7123: 1989 Table 7 BS EN 25817: 1992, EN 25817: 1992, ISO 5817: 1992 Table 1 BS EN ISO 5817: 2003, EN ISO 5817: 2003, ISO 5817: 2003 Table 1 BS EN ISO 5817: 2007, EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014, EN ISO 5817: 2014, ISO 5817: 2014 Table 1 BS EN ISO 11666: 2010 Cl. 5 & Annex A BS EN ISO 11666: 2018 Cl. 6 & Annex A Buildings Department Code of Practice for the Structural Use of Steel (2005) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for Structural Use of Steel 2011 (2021 Edition) Table 14.3b PD 5500: 2018 Section 5
	Ultrasonic thickness measurement	In-house method TPN/004/S

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Welds (non-destructive) (cont'd)	Visual examination	ASME BPVC.V-2019 Article 9 BS 5289: 1976 BS EN 970: 1997 BS EN ISO 17637: 2011 BS EN ISO 17637: 2016 in conjunction with the following specification(s): ASME B31.1-2020 Para. 136.4.2 ASME B31.3-2020 Table 341.3.2 ASME B31.9-2020 Para. 936.6 ASME BPVC.IX-2019 Article I QW-194 AWS D1.1/D1.1M: 2020 Cl. 8 Part C BS 2633: 1987 Section 8 BS 2971: 1991 Section 7 BS 4515: Part 1: 2009 Section 12 BS 5135: 1984 Appendix H Table 18 and 19 BS 7123: 1989 Table 7 BS EN 25817: 1992, EN 25817: 1992, ISO 5817: 1992 Table 1 BS EN ISO 5817: 2003, EN ISO 5817: 2003, ISO 5817: 2003 Table 1 BS EN ISO 5817: 2007, EN ISO 5817: 2007 Table 1 BS EN ISO 5817: 2014, EN ISO 5817: 2014, ISO 5817: 2014 Table 1 Buildings Department Code of Practice for the Structural Use of Steel (2005) Table 14.3b Buildings Department Code of Practice for the Structural Use of Steel (2011) Table 14.3b Buildings Department Code of Practice for Structural Use of Steel 2011 (2021 Edition) Table 14.3b PD 5500: 2018 Section 5

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Asbestos in bulk	Sampling a) Cementitious b) Wet applied c) Dry applied d) Bonded	In-house Method TPE / 001 / A
Asbestos in bulk samples	Bulk material sampling for asbestos identification: - a) Spray coatings, encapsulated sprays and bulk materials b) Pipe/ thermal insulation c) Asbestos insulating board tiles d) Asbestos cement materials e) Gaskets, rope, seals, paper, felt and textiles f) Floor and wall coverings g) Textured decorative coatings h) Debris samples	HSG 248 (2nd edition: 2021) Cl. 4
	Identification a) Determination for presence and type of asbestos in bulk materials	In-house Method TPE / 002 / A (Polarised Light Microscopy) HSG 248 (2nd edition: 2021) App. 2
	b) Asbestos-containing material	Air Pollution Control Ordinance, Section 2 (G.N. 884. Gazette Published on 14/02/2014 No. 07 Vol. 18)
Asbestos air-borne fibres and dust	Air sampling - 10 minute control - 4 hour control - Clearance - Leak - Reassurance - Background - Penultimate - Environmental	In-house Method TPE / 003 / A
Asbestos air-borne samples	Sampling of airborne fibre a) Personal sampling b) Static sampling - Clearance indicator - Background - Leak - Reassurance - Near-source static sampling - Far-source/perimeter/ambient sampling	HSG 248 (2nd edition: 2021) Cl. 5
Asbestos air-borne samples	Fibre counting Airborne fibre concentration	MDHS 39/3 HSG 248 (2nd edition: 2021) App. 1

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Saline water	Physical Examination :-	
	- Total Suspended Solids Dried at 103-105℃	In-house Method TPE/006/W (Gravimetric)
	- Turbidity	In-house Method TPE/005/W (Nephelometric)
Water and Wastewater	Physical Examination :-	
	- pH value	In-house Method TPE/003/W (Electrode)
	- Dissolved Oxygen	In-house Method TPE/004/W (Electrode)
	- Turbidity	In-house Method TPE/005/W (Nephelometric)
	- Total Suspended Solids Dried at 103-105℃	In-house Method TPE/006/W (Gravimetric)
	- Total Dissolved Solids Dried at 180℃	In-house Method TPE/007/W (Gravimetric)
	- Total Solids Dried at 103-105 ℃	APHA 19ed 2540B
	- Colour	APHA 19e 2120 A & B (Visual comparison)
	- Conductivity	In-house Method TPE/028/W (Electrode)
	- Alkalinity - Total	APHA 19e 2320B
	- Settleable Solids	APHA 19e 2540F
	Trace Metals :-	
	- Preliminary Treatment for Metals (Dissolved, total and total recoverable)	In-house Method TPE/012/W (Filtration/nitric acid-hydrochloric acid digestion)
	- Calcium, Magnesium, Potassium and Sodium (Dissolved and total)	In-house Method TPE/014/W (Flame AAS)
	- Barium, Cadmium, Chromium, Copper, Lead Manganese, Molybdenum, Nickel (Dissolved, total and total recoverable)	In-house Method TPE/029/W (ICP-OES)
	- Antimony, Arsenic, Iron, Tin, Vanadium, Zinc (Dissolved and total recoverable)	In-house Method TPE/029/W (ICP-OES)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)	Non-Metallic Constituents :-	
	- Chloride	In-house Method TPE/008/W (Titrimetric)
	- Sulphate	In-house Method TPE/009/W (Gravimetric)
	- Nitrite	In-house Method TPE/010/W (Colorimetric)
	- Residual Chlorine (Free and Total)	In-house method TPE/033/W (DPD colorimetric method)
	- Phosphorus (Reactive)	APHA 23e 4500-P G
	- Phosphorus (Total)	APHA 23e 4500-P H
	- Nitrogen (Ammonia)	APHA 23e 4500-NH_3 H
	- Nitrogen (Total Kjeldahl)	APHA 23e 4500-N_{org} D
	- Nitrogen (Total Organic) (Total Kjeldahl – Ammonia)	In-house method TPE/043/W (By calculation)
	- Nitrogen (Total) (Total Kjeldahl + Nitrate + Nitrite)	In-house method TPE/042/W (By calculation)
	- Nitrogen (Total Oxidised)	In-house Method TPE/037/W (FIA)
	- Nitrogen (Nitrite)	In-house Method TPE/038/W (FIA)
	- Nitrogen (Nitrate)	In-house Method TPE/037/W (By calculation)
	Organic Pollutants :-	
	- Biochemical Oxygen-Demand (BOD_5)	In-house Method TPE/001/W (Electrode) BS 6068 : Section 2.14 : 1990
	- Chemical Oxygen-Demand (COD)	In-house Method TPE/002/W (Titrimetric) APHA 19e 5220 D (Closed reflux)
	- Oil and Grease	APHA 19e 5520 B
	- Anionic Surfactant (as MBAS)	APHA 19e 5540 C
	- Ultraviolet Absorption at 254 nm	APHA 19e 5910 B

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)	Microbial indicators :-	
	- Heterotrophic plate count	APHA 20e 9215A & B (TPE/001/B)
	- 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 (TPE/002/B)
	- 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 (TPE/002/B)
	- Enumeration of Faecal coliform	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK
	- *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: in-situ urease test (TPE/002/B)
		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 (TPE/002/B)
	- Enumeration of *E. coli*	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK
	- Detection of *Enterococcus*	ISO 7899-2: 2000 (by membrane filtration method) (TPE/006/B)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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 (cont'd)	Microbiological tests:-	
	- Detection of *Vibrio cholerae* (including Serogroups O1 and O139)	Centres for Disease Control and Prevention – Laboratory Methods for Diagnosis of Vibrio cholera Ch. V & VI
Drinking water	- *Legionella* spp. including *Legionella pneumophila*	BS EN ISO 11731-2:2008 & BS 6068- 4.18:2004 (TPE/004/B)
Treated Bathing Water, water for human use and consumption	- *Legionella* spp. including *Legionella pneumophila*	BS EN ISO 11731-2:2008 & BS 6068- 4.18:2004 (TPE/004/B)
Water, Wastewater and Cooling Tower Water	- *Legionella* spp. including *Legionella pneumophila*	AS/NZS 3896:2008 (TPE/003/B)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座 8 樓

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
Marine water	Microbial indicators :-	
	- Enumeration of Faecal coliform	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK
	- Enumeration of *E. coli*	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK
	- 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 (TPE/002/B)
	- 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 (TPE/002/B)
	- *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: in-situ urease test (TPE/002/B) 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 (TPE/002/B)
	Microbiological tests :-	
	- Detection of *Vibrio cholerae* (including Serogroups O1 and O139)	Centres for Disease Control and Prevention – Laboratory Methods for Diagnosis of Vibrio cholera Ch. V & VI

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Cement stabilised soil	Testing method of unconfined compressive strength of cement stabilised soil core (with / without capping)	Interim Guidelines on Testing of Unconfined Compressive Strength of Cement Stabilised Soil Cores in Hong Kong (Oct 2017) App. B published by Geotechnical Division of The Hong Kong Institution of Engineers
Metallic materials	Bend test of carbon steel bars	BS 4449: 1988 Cl. 10.2 CS2: 1995 Cl. 6.1 & 6.3
	Bond property of steel reinforcing bars by surface geometry measurement	CS2: 2012 + Amd. 1/2018 + Amd. 2/2018 Cl. 1.7.2, 6.1 & 6.7 excluding 6.7.3 BS EN ISO 15630-1: 2002 Cl. 10, 11.2 & 11.3 in conjunction with following specification(s): BS 4449: 2005 + A3: 2016 Cl. 7.4 & 9
	Charpy V-notch impact test of metallic materials	BS EN 10045-1: 1990 BS EN ISO 148-1: 2010 BS EN ISO 148-1: 2016 in conjunction with the following specification(s): BS 4360: 1986 Cl. 27 BS 4360: 1990 Cl. 25 to 27 BS EN 10025-1: 2004 Cl. 10.2.2 BS EN 10025-2: 2004 Cl. 10.2 & Table 9 BS EN 10025-3: 2004 Cl. 10.2, Table 6 & 7 BS EN 10025-4: 2004 Cl. 10.2, Table 6 & 7 BS EN 10025-5: 2004 Cl. 10.2 & Table 5 BS EN 10025-6: 2004 + A1: 2009 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
	Mass per meter of steel reinforcing bars	BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.3 CS2: 2012 Cl. 1.4, 6.1 & 6.2
	Proof load test of steel nuts in the force range 5 kN – 2000 kN	BS 3692: 1967 App. E.1 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 4395: Part 1: 1969 App. C.1 BS 4395: Part 2: 1969 App. C.1 BS EN 20898-2: 1994, ISO 898-2: 1992 Cl. 5-7 & 8.1 BS EN ISO 898-2: 2012 Cl. 9.1

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Metallic materials (cont'd)	Proof load test of stainless steel nuts in the force range 5 kN - 2000 kN	BS EN ISO 898-2: 2012 Cl. 9.1 in conjunction with the following specification(s): BS EN ISO 3506-2: 1998 Cl. 5 BS EN ISO 3506-2: 2009 Cl. 6
	Proof load test of unmachined (finished) bolts, screws and studs in the force range 5 kN – 2000 kN	BS 3692: 1967 App. D.6 BS 4395: Part 1: 1969 App. B.5 BS 4395: Part 2: 1969 App. B.5 BS EN ISO 898-1: 1999 Cl. 8.5 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
	Rebend test of carbon steel bars	BS 4449: 1988 Cl. 10.3 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 Cl. 1.6.3, 6.1 & 6.5 BS EN ISO 15630-1: 2002 Cl. 7 in conjunction with the following specification(s) BS 4449: 2005 + A2: 2009 + A3: 2016 Cl. 7.2.5 BS 4483: 1985 Cl. 12.1 BS 4483: 1998 Cl. 13.1 BS 4483: 2005 + Amd. 1: 2007 Cl. 7.2.5 & 8.1.3.2 BS 4482: 1985 Cl. 12.2 & App. C.5 with modification
	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 10 kN - 2000 kN	ICC Evaluation Service, Inc. AC133 (Approved May 2008, Effective 1 June 2008) Cl. 4.1.2 ICC Evaluation Service, Inc. AC133 (Approved May 2008, Effective 1 June 2008) Cl. 4.1.2 with modification ICC Evaluation Service, Inc. AC133 (Approved Jan 2010, Effective 1 July 2010) Cl. 4.1.2 ICC Evaluation Service, Inc. AC133 (Approved Jan 2010, Effective 1 July 2010) Cl. 4.1.2 with modification in conjunction with the following specification(s): Buildings Department Code of Practice for Structural Use of Concrete (2013) Cl. 3.2.8.4 (b), (c) & (d)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Metallic materials (cont'd)	Tensile test of carbon steel bars in the force range 5 kN - 2000 kN	BS 4449: 1988 Cl. 10.1 CS2: 1995 Cl. 6.1 & 6.2
	Tensile test for machined bolt, screw and stud in the force range 5 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 EN ISO 898-1: 1999 Cl. 8.1 BS EN ISO 898-1: 2009 Cl. 9.7 BS EN ISO 898-1: 2013 Cl. 9.7
	Tensile test of metallic materials in the force range 5 kN – 2000 kN	BS 18: 1987 in conjunction with the following specification(s): BS 4360: 1986 Cl. 23
	Tensile test of metallic materials in the force range 5 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 4360: 1990 Cl. 23 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 &/or Table 8 BS EN 10025-3: 2004 Cl. 10.2 & Table 5 BS EN 10025-4: 2004 Cl. 10.2 & Table 5 BS EN 10025-5: 2004 Cl. 10.2 & Table 4 BS EN 10025-6: 2004 + A1: 2009 Cl. 10.2, Table 5 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: 1997 Cl. 6.7.1, 9.2 & 9.2.1 BS EN 10219-1: 2006 Cl. 6.7.1, 9.2.1 & 9.2.2
	Tensile test of non-preloaded structural bolting assemblies in force range 5 kN - 2000 kN	BS EN 15048-2: 2007 BS EN 15048-2: 2016

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Metallic materials (cont'd)	Tensile test & slip/permanent elongation test of mechanical couplers for reinforcing bar in the force range 5 kN – 2000 kN	In-house method TPM/056 in conjunction with the following specification(s): BS 8110: Part 1: 1985 Cl. 3.12.8.16.2 BS 8110: Part 1: 1997 Cl. 3.12.8.16.2 General Specification for Civil Engineering Works (1992) Vol. 2 Cl. 15.33 General Specification for Civil Engineering Works (2006) Vol. 2 Cl. 15.35 '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
	Tensile test of reinforcing bars, wire rods, welded fabrics or cold reduced wires for reinforcement of concrete in the force range 5 kN - 2000 kN	BS EN 10002-1: 2001 BS EN ISO 6892-1: 2009 10.4 Method B BS EN ISO 6892-1: 2016 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: 2005 + A2: 2009 +A3: 2016 Cl. 7.2.2, 7.2.3, 8.1.3.1 & 9 CS2: 2012 Cl. 1.6.2, 6.1 & 6.4 BS 4483: 1998 Cl. 13.1 BS 4483: 1985 Cl. 12.1 with modification BS 4483: 2005 + Amd. 1: 2007 Cl. 7.2.2, 7.2.3, 8.1.3.1 & 9 BS 4482: 1985 Cl. 12.1 & App. C.3 with modification
	Tensile test of unmachined (finished) bolts, screws and studs in the force range 5 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: 1967 Cl. 12 BS 3692: 2001 Cl. 11 & 13 BS 3692: 2014 Cl. 14 & 21 BS 4395: Part 1: 1969 Cl. 2.3 BS 4395: Part 2: 1969 Cl. 2.3 BS EN ISO 898-1: 1999 Cl. 8.2 BS EN ISO 898-1: 2009 Cl. 9.2 BS EN ISO 898-1: 2013 Cl. 9.2

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Metallic materials (cont'd)	Vickers hardness test of metallic materials in scale range of HV5, HV10 & HV30	BS 427: 1990 Section 2 BS EN 23878: 1993 BS EN ISO 6507-1: 1998 BS EN ISO 6507-1: 2005
	Weld shear force test of steel fabrics for reinforcement of concrete	BS EN ISO 15630-2: 2002 Cl. 7 ISO 10287: 1992 in conjunction with the following specification(s): BS 4483: 1985 Cl. 12.2 BS 4483: 1998 Cl. 13.2 BS 4483: 2005 + Amd. 1: 2007 Cl. 7.2.4

ETS-Testconsult Limited
東業德勤測試顧問有限公司
G/F, 1B & Workshop, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街 34-36 號豐盛工業中心 B 座地下

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
Welds (destructive)	Vickers hardness test of fusion welded joint in scale range of HV5 and HV10	BS EN 1043: Part 1: 1996 BS EN ISO 9015: 2011
	Charpy V-notch impact test of fusion welded joints	BS EN 875: 1995 BS EN ISO 9016: 2012
	Bend test of fusion welded joints	BS EN 910: 1996
	Bend test on welds in metallic materials	BS EN ISO 5173: 2010 (A1: 2011)
	Bend test on welded reinforcing steel for concrete	BS EN ISO 17660-1: 2006 Cl. 14.4
	Macroscopic examination of fusion welded joints	BS EN 1321: 1997
	Macro-etch test on welded reinforcing steel for concrete	BS 7123: 1989 Cl. 12.3.6
	Macroscopic and microscopic examination of welds in metallic materials	BS EN ISO 17639: 2013
	Fillet weld fracture test	BS EN 1320: 1997
	Fracture test on welds in metallic materials	ASME BPVC.IX-2019 Article I QW-181 & 182 BS EN ISO 9017: 2013
	Guided-bend test on welds in metallic materials	ASME BPVC.IX-2019 Article I QW-160
	Macro-examination on welds in metallic materials	ASME BPVC.IX-2019 Article I QW-183 & 184
	Nick-break test	BS 709: 1983 + Amd. 1& 2 Cl. 7
	Transverse tensile test of fusion welded joints in the force range 5 kN – 2000 kN	BS EN 895: 1995 BS EN ISO 4136: 2012
	Tensile test on welded reinforcing steel for concrete in the force range 5 kN – 2000 kN	BS 7123: 1989 Cl. 12.3.5 BS EN ISO 17660-1: 2006 Cl. 14.2
	Tension test on welds in metallic materials in the force range 5 kN – 2000 kN	ASME BPVC.IX-2019 Article I QW-150
	Longitudinal tensile test of fusion welded joints in the force range 5 kN – 2000 kN	BS EN 876: 1995 BS EN ISO 5178: 2011
	Shear test on welded reinforcing steel for concrete in the force range 5 kN – 2000 kN	BS EN ISO 17660-1: 2006 Cl. 14.3

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Aggregates	Aggregate crushing value	BS 812: Section 110: 1990
	Aggregate impact value	BS 812: Part 112: 1990 CS3: 2013 Section 15
	Alkali silica reaction potential by ultra-accelerated mortar bar test	RILEM TC 106-2: 2000 CS1: 2010 Section 22
	Compacting fraction value of aggregates for granular bed	General Specification for Civil Engineering Works, (1992) Vol. 1 App. 5.2 General Specification for Civil Engineering Works, (2006) Vol. 1 App. 5.2 Hong Kong Housing Authority Specification Library (2008) Cl. DRA 2.T250.5 – DRA 2.T280.5 Hong Kong Housing Authority Specification Library (2012) Cl. DRA2.T250.6 – DRA 2.T280.6
	Clay, silt and dust content	BS 812: Part 1: 1975 + Amd. 4875 (Decantation method)
	Determination of drying shrinkage	CS3: 2013 Section 20
	Elongation index	BS 812: Section 105.2: 1990 CS3: 2013 Section 12
	Flakiness index	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 109: 1990 (Oven drying method) CS3: 2013 Section 18
	Particle density and water absorption	CS3: 2013 Section 17 (Gas jar method and Pycnometer method)
	Particle size distribution	BS 812: Section 103: 1985 + Amd. 6003 (Sieve analysis) CS3: 2013 Section 10 + Amd. No. 1/2013

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Aggregates (cont'd)	Relative density and water absorption	BS 812: Part 2: 1975 + Amd. 4615 (Gas jar method and Pycnometer method)
	Resistance to degradation of small size coarse aggregate by abrasion and impact in the Los Angeles Machine	ASTM C131-03 with modification
	Resistance to degradation of large size coarse aggregate by abrasion and impact in the Los Angeles Machine	ASTM C353-03 with modification
	Sampling	BS 812: Part 102: 1984 CS3: 2013 Section 8
	Shell content	BS 812: Part 106: 1985
	Ten per cent fines value	BS 812: Part 111: 1990 CS3: 2013 Section 16
Blocks & bricks	Compressive strength of interlocking blocks in the force range 50 kN – 3000 kN	General Specification for Civil Engineering Work (1992) App. 11.1 General Specification for Civil Engineering Work (2006) App. 11.1
	Dimension of clay and calcium silicate pavers	BS 6677: Part 1: 1986 App A & C
	Transverse breaking load of clay and calcium silicate pavers	BS 6677: Part 1: 1986 App. D
	Water absorption of masonry units, segmental pavers and flags	AS/NZS 4456: 14: 1997

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Cement	Compressive strength of broken mortar prism in the force range 2 kN – 250 kN	BS EN 196-1: 1995
	Density	BS EN 196-6: 1992 Annex NC
	Fineness	BS EN 196-6: 1992 Cl. 4
	Flexural strength of mortar prism in the force range 2 kN – 250 kN	BS EN 196-1: 1995
	Setting times	BS EN 196-3: 1995 Cl. 6
	Soundness	BS EN 196-3: 1995 Cl. 7
	Standard consistence	BS EN 193-3: 1995 Cl. 5
Concrete	Bleeding of concrete	ASTM C232-99 Method A
	Compacting factor	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: 2010 Section 15
	Compressive strength of concrete cubes in the force range 50 kN - 3000 kN	BS 1881: Part 116: 1983 + Amd. 6097 CS1: 2010 Section 12
	Concrete's ability to resist chloride ion penetration	ASTM C1202-97 ASTM C1202-05 ASTM C1202-07 ASTM C1202-08 ASTM C1202-09 ASTM C1202-10 ASTM C1202-12 AASHTO T277-07 CS1: 2010 Section 19
	Curing of test specimens	BS 1881: Part 111: 1983 (Tropical zone temperature) CS1: 2010 Section 10
	Density of compacted fresh concrete	BS 1881: Part 107: 1983 + Amd. 6085 CS1: 2010 Section 5
	Density of hardened concrete	BS 1881: Part 114: 1983 +Amd. 6098 Section 6 CS1: 2010 Section 16

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Concrete (cont'd)	Flow table test	BS 1881: Part 105: 1984 + Amd. 6087 CS1: 2010 Section 2 Part IV
	Making test cubes from fresh concrete	BS 1881: Part 108: 1983 + Amd. 6105 CS1: 2010 Section 7
	Making test cylinders from fresh concrete	BS 1881: Part 108: 1983 + Amd. 6103 CS1: 2010 Section 9
	Mixing and sampling of fresh concrete in the laboratory	CS1: 2010 Section 11
	Sampling fresh concrete on site	BS 1881: Part 101: 1983 CS1: 2010 Section 1
	Slump	BS 1881: Part 102: 1983 + Amd. 6090 CS1: 2010 Section 2 Part I
	Slump flow test	CS1: 2010 Section 2 Part V
	Stiffening time	CS1: 2010 Section 3 BS EN 13294: 2002 BS 5075: Part 1: 1982 App. C.4
	Temperature monitoring of fresh concrete	BS 5328: Part 4: 1990 Cl. 3.4(b)
	Water absorption	BS 1881: Part 122: 1983

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Grout	Preparation of trial mix	In-house method TPM/001/G
	Making and curing of grout cubes	In-house method TPM/002/G
	Compressive strength of grout cubes in the force range 50 kN - 3000 kN	In-house method TPM/003/G CS1: 2010 Section 12
	Flow of grout for preplaced-aggregate concrete (Flow cone method)	ASTM C939-87 ASTM C939-94a ASTM C939-97 ASTM C939-02 ASTM C939-10
	Bleeding and free expansion	General Specification for Civil Engineering Works (1992) Cl. 7.129 and Cl. 17.60 General Specification for Civil Engineering Works (2006) Cl. 17.60 Hong Kong Housing Authority Specification Library (2004) Section PIL.1.T320.4, Section PSC. T720.4 and Section GRO. T110.4 Hong Kong Housing Authority Specification Library (2008) Section PIL.1.T320.5, Section PSC. T720.5
	Expansion and bleeding of freshly mixed grouts for preplaced–aggregates concrete	ASTM C940-98a (Reapproved 2003)

ETS-Testconsult Limited
東業德勤測試顧問有限公司
DD129 Lot 2176-A Deep Bay Road, Lau Fau Shan, Yuen Long, New Territories, Hong Kong
香港新界元朗流浮山深灣路 129 區 2176-A 地段

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
Pulverized fuel ash	Fineness	BS 3892: Part 1: 1982 App. D BS 3892: Part 1: 1997 Annex D
	Initial setting time	BS 3892: Part 1: 1997 Cl. 10 BS EN 196-3: 1995 Cl. 6.1 & 6.2
	Moisture content	BS 3892: Part 1: 1982 App. B BS 3892: Part 1: 1997 Annex C
	Particle density	BS 3892: Part 1: 1997 Cl. 7 BS EN 196-6: 1992 Annex NC
	Soundness	BS 3892: Part 1: 1997 Cl. 11 BS EN 196-3: 1995 Cl. 7
	Strength factor	BS 3892: Part 1: 1997 Annex F
	Water requirement	BS 3892: Part 1: 1982 App. E BS 3892: Part 1: 1997 Annex E
Repair mortar	Trial mix	In-house method TPM/001/M
	Making test cube	In-house method TPM/002/M In-house method TPM/003M
	Compressive strength of test cubes in the force range of 50 kN - 2000 kN	Hong Kong Housing Authority Materials Testing Services (2000/2002) for Maintenance and Building Materials Specification Part D Cl. 2.1.1
	Flow	BS 4551: 1980 Cl. 12