Issue date: 09 February 2018
Valid until: 22 March 2020

MS ISO/IEC 17025

NO: SAMM 505
(Issue 3, 09 February 2018 replacement of SAMM 505 dated 31 July 2017)

LABORATORY LOCATION: (PERMANENT LABORATORY)

BUILDTEST LABORATORY SDN. BHD.
NO. 12, JALAN PS 8/1
TAMAN PRIMA SELAYANG
68100 BATU CAVES
SELANGOR
MALAYSIA

FIELD(S) OF TESTING: **MECHANICAL & NON-DESTRUCTIVE TEST**

FIELD(S) OF CALIBRATION: **MASS**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2005 (ISO/IEC 17025:2005).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Hardened Concrete	Compressive Strength Test (Cubes, Cores & Cylinders)	BS EN 12390-3: 2009 (Test at ambient conditions)
	Water Absorption of Concrete Specimens	BS 1881-122: 2011 (Test at ambient conditions)
	Density of Hardened Concrete	BS EN 12390-7: 2009 (Volume by Water Displacement Method)
Aggregates	Flakiness Index of Coarse Aggregates	BS 812 : Part 105 : Sect 105.1 : 1989
	Elongation Index of Coarse Aggregates	BS 812 : Part 105 : Sect 105.2 : 1990
	Aggregate Crushing Value (ACV)	BS 812 : Part 110 : 1990 (Test at Dry Conditions)
	Aggregate Impact Value (AIV)	BS 812 : Part 112 : 1990 Clause 7.1 (Test at Dry Conditions)
	Ten Percent Fines Value (TFV)	BS 812 : Part 111 : 1990 (Test at Dry Conditions)

SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Aggregates	Los Angeles Abrasion (LA) of Small-Size Coarse Aggregates	ASTM C131/C131M-14
	Los Angeles Abrasion (LA) of Large-Size Coarse Aggregates	ASTM C535-12
	Particle Size Distribution By Sieving Method	BS EN 933-1 : 2012
	Determination of Materials Finer than 75 µm by Washing	ASTM C 117-13 (Procedure A - Washing with Plain Water)
	Particle Density and Water Absorption of Coarse Aggregates	BS 812 : Part 2 : 1995 Clause 5.3 - Wire Basket Method (Test at Ambient Conditions)
	Particle Density and Water Absorption of Fine Aggregates	BS 812 : Part 2 : 1995 Clause 5.5 - Glass Jar Method (Test at Ambient Conditions)
	Organic Impurities in Fine Aggregates for Concrete	ASTM C40/C40M-11
Soil	Moisture Content	BS 1377 : Part 2 : 1990 Clause 3.2 (Oven-drying Method)
	Dry Density / Moisture Content Relationship of Soils by 2.5kg Rammer Method	BS 1377 : Part 4 : 1990 Clause 3.3
	Dry Density / Moisture Content Relationship of Soils by 4.5kg Rammer Method	BS 1377 : Part 4 : 1990 Clause 3.5
	Laboratory California Bearing Ratio (CBR)	BS 1377 : Part 4 : 1990 Clause 7
Masonry Units	Compressive Strength Test (Clay, Calcium Silicate and Aggregate Concrete Masonry Units)	BS EN 772-1 : 2011 + A1 : 2015

SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Steel Reinforcing Bar	Tensile Tests for determination of: - Yield strength - Tensile strength - Mass per meter - Percentage elongation after fracture - Percentage total extension at maximum force Force range: up to 1500kN	MS ISO 15630-1 : 2012 Clause 5 ISO 6892-1 : 2016 MS 146:2014
	Bend Test	MS ISO 15630 – 1: 2012 Clause 6 ASTM E 290 – 14 MS 146:2014 ISO 7438:2016
	Rebend Test	MS ISO 15630 – 1 : 2012 Clause 7 MS 146 : 2014 Clause 7.3.5 MS 145 : 2014 Clause 7.2.5
Steel Wire	Tensile Tests for determination of: - Mass per metre - Yield strength (determined from 0.2% proof strength) - Tensile strength - Tensile/yield strength ratio - Percentage total elongation at maximum force	MS ISO 15630-1 : 2012 Clause 5 ISO 6892-1 : 2016 MS 144:2014
	Bend Test	MS ISO 15630 – 1: 2012 Clause 6 ASTM E 290 – 14 MS 146 : 2014 ISO 7438 : 2016
	Rebend Test	MS ISO 15630 – 1 : 2012 Clause 7 MS 146 : 2014 Clause 7.3.5 MS 145 : 2014 Clause 7.2.5

SCOPE OF TESTING: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Steel Fabric	Tensile Tests for determination of: - Yield strength (determined from 0.2% proof strength) - Tensile strength - Tensile/yield strength ratio - Percentage total elongation at maximum force	EN ISO 15630-2 : 2010 Clause 5 ISO 6892-1 : 2016 MS 145:2014
	Bend Test	MS ISO 15630 – 1: 2012 Clause 6 ASTM E 290 – 14 MS 146 : 2014 ISO 7438 : 2016
	Rebend Test	MS ISO 15630 – 1 : 2012 Clause 7 MS 146 : 2014 Clause 7.3.5 MS 145 : 2014 Clause 7.2.5

Signatory(ies):

1. **Ip Kwok Khuen**
2. **Tang Wei Luen**
3. **Ip Kar Mun**

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SCOPE OF TESTING: MECHANICAL

SITE: CATEGORY I

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Soil	In-situ California Bearing Ratio (CBR)	BS 1377 : Part 9 : 1990 Clause 4.3
	In-situ Density Test by Small Pouring Cylinder Method	BS 1377 : Part 9 :1990 Clause 2.1 – Small Pouring Cylinder Method
	In-situ Density Test by Large Pouring Cylinder Method	BS 1377 : Part 9 :1990 Clause 2.2 – Large Pouring Cylinder Method

Signatory(ies):

1. **Ip Kwok Khuen**
2. **Tang Wei Luen**

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SCOPE OF TESTING: NON-DESTRUCTIVE TEST

SITE TESTING: CATEGORY I

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Method/ Equipment/Technique
Hardened Concrete	Surface Hardeness Testing by Rebound Hammer in the range of 20 to 55 rebound number, R	BS EN 12504 – 2 : 2012

Signatory(ies):

1. **Ip Kwok Khuen**
2. **Tang Wei Luen**

*** The expanded uncertainties are based on an estimated confidence probability of not less than 95% and have a coverage factor of k=2 unless stated otherwise**

SCOPE OF CALIBRATION: MASS

SITE CALIBRATION: CATEGORY I

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(±)*	Remarks
Balance	Up to 30 kg	0.1 g	ASTM E 898 – 88 (Reapproved 2013 – Calibrated by Using Standard Weights)

Signatory(ies):

1. **Ip Kwok Khuen**
2. **Ip Kar Mun**