Issue date: 26 March 2025
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NO: SAMM 397

LABORATORY LOCATION/ CENTRAL OFFICE:	BS EN Test Sdn Bhd 3, Jalan Rajawali 3 Bandar Puchong Jaya 47100 Puchong, Selangor , 47100, SELANGOR MALAYSIA
ACCREDITED SINCE :	26 MARCH 2025
FIELD(S) OF TESTING:	MECHANICAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

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).

CENTRAL LOCATION:	BS EN Test Sdn Bhd 3, Jalan Rajawali 3 Bandar Puchong Jaya 47100 Puchong, Selangor , 47100, Selangor
FIELD(S) OF TESTING :	MECHANICAL,

SCOPE OF TESTING : MECHANICAL

Material / Product Tested	**Type Of Test / Properties Measured / Range Of Measurement**	**Standard Test Methods / Equipment / Techniques**
Aggregate	Particle Size Distribution (Sieve Analysis)	MS 30: Part 4: 1995 BS EN 933-1:2012 /
	Soundness of Aggregates by use	ASTM C88-18 clause 6.1.2
	Determination of Particle Size	In-House Method CML-SOPT-02
	Determination the Resistance to	AASHTO T96-02(2019) and ASTM
	Determination of Water -	Clause 7
	Sieve Test	BS 812-103.1: 1985
	Determination of water soluble chloride salts	BS 812 : Part 117 :1988
	Determination of sulphate content	BS 812 : Part 118 :1988 (Gravimetric)
	a) Determination of Particle Size Distribution of Fine and Coarse	MS 30: Part 4 : 1995 MS EN 933-1 : 2011

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Determination of Aggregate	BS 812: Part 110: 1990
	Determination of the aggregate	BS 812: Part 110: 1990
	Determination of the aggregate	BS 812: Part 110:1990
	*-œDetermination of Loose BulkBS EN 1097-3:1998 *-œDetermination of Loose Bulk	*-œDetermination of Loose Bulk
Concrete	Compressive Strength Test on Concrete Cube	BS EN 12390-3:2019 MS EN 12390-3:2012
	Compressive Strength of Concrete	BS EN 12390-3:2019
	Compression	None
	Rapid Chloride Penetration Test (RCPT)	ASTM
	Density Test of Hardened	MS EN 12390-7: 2012
	Compressive Strength of	BS EN 12390-3: 2009 /
	Determination of depth of	BS EN 12390-8: 2009 /
	Compressive Strength of	BS EN 12390-3: 2009 /
	Determination of chloride content	BS 1881: Part 124 : 1988, Clause 10.2
	Determination of sulphate content	BS 1881: Part 124 : 1988, Clause 10.3
	Determination of compressive strength	BS EN 12390: Part 3: 2009 & MS EN 12390: Part 3: 2012
	None	None
	Concrete Cube Compressive Strength	MS 26: Part 2: 1991 Section 3 MS EN 12390-3: 2012
	Density of Hardened Concrete Cube	MS 26: Part 2: 1991 Section 1 MS EN 12390-7: 2012
	Concrete Cube Compressive Strength	MS EN 12390-3: 2012
	Cube Compressive Strength	BS EN 12390-3:2019 MS EN 12390-3:2012
	Core Compressive Strength	BS EN 12390-3:2019 MS EN 12390-3:2012
	Water Absorption	BS 1881: Part 122:2011+A1:2020 MS 26: Part 2, Section 9: 1991
	Water Permeability	BS EN 12390-8:2019 MS EN 12390-8:2012
	Initial Surface Absorption (ISAT)	BS 1881: Part 208:1996
	Density of Concrete	BS EN 12390-7:2019 MS EN 12390-7:2012
	Compressive Strength of Concrete Cube	MS EN 12390 : Part 3 : 2012
	Determination of Compressive	BS EN 12390 : Part 3 : Annex B
	Compressive Strength of	BS EN 12504-1:2019
	Ultrasonic Pulse Velocity Test	BS EN 12504 -” 4: 2021
	Ultrasonic Pulse Velocity Test	BS EN 12504 -” 4: 2021
	c) Weld	None
	a) Tensile	BS EN ISO 15630-2: 2010

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	c) Rebend	sampling
	Initial Surface Absorption	BS 1881:Part 208:1996
	Electrical Indication of	None
	ii Yield Strength	None
	iii Elongation after Fracture	None
	iv Elongation at Maximum	None
	Forces (as defined in	None
	MS ISO 15630-1: 2012)	None
	Cubes	None
	Compressive Strength of Concrete	BS 1881: Part 120: 1983
	Cores	BS EN 12504-1: 2019
	Height of Compacted Bituminous	None
	Paving Mixture Specimen	None
	Compressive Strength of Test SpecimensBS EN 12390-3:2019 Compressive Strength of Test Specimens	Compressive Strength of Test Specimens
	Density of Hardened ConcreteBS EN 12390-7:2019 Density of Hardened Concrete	Density of Hardened Concrete
	Depth of Penetration of Water Under PressureBS EN 12390-8:2019 Depth of Penetration of Water Under Pressure	Depth of Penetration of Water Under Pressure
	Cored Specimen- Taking,BS EN 12504-1:2019 Cored Specimen- Taking,	Cored Specimen- Taking,
Coupler Bar	Tensile Strength Test	BS EN ISO 6892-1: 2019 /
Soil	Particle Density Determination by	BS 1377: Part 2: 1990: clause 8.3
	Mechanical Analysis (Clay, Silt, Fine & Coarse Sand)	In-house method (Ref. No. S1) based on The Bouyoucos Hydrometer method for Particle Size Analysis, Texas A&M University System
	pH	MS 2457 : 2012
	Conductivity (Cond.)	MS 2458 : 2012
	Organic Carbon (Org. C)	MS 2459 : 2012
	Total Nitrogen (N)	MS 678 : Pt. to 1980, Part II
	Phosphorus (Available)	In-house method (Ref. No. S2) based on J. Sci. Fd. Agric. Vol. 21, 275-278 and MS 678: Pt. VI to IX:
	Sample Preparation	In-house Method ITC/TM/S01 based on MS 678: Part 0: 1980
	pH	MS 2457: 2012
	Nitrogen	MS 678: Part II: 1980- (a)
	Organic Carbon	MS 2469: 2012

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Total Phosphorus	In-house Method based on MS 678: Part VIII: 1980
	Available Phosphorus	In-house Method ITC/TM/S08 based on A laboratory manual of methods of Soil Analysis research Branch Agriculture Department Sarawak 1993, clause 19
	Exchangeable Cations (K,Mg,Ca)	In-house Method ITC/TM/S06 based on MS 678: Part IV: 1980
	Cation Exchange Capacity	In-house Method ITC/TM/S07 based on MS 678: Part V: 1980
	Particle Size Analysis	In-house Method ITC/TM/S10 based on ASA-SSSA, Methods of Soil Analysis 1986, Part 1, Chapter 15
	Determination of In-situ Density	BS 1377: Part 9: 1990
	2.5 kg Rammer	BS 1377-2:2022
	Clay, Silt, Fine Sand &	In-house Method, S1, Based on
	Phosphorus (total)	In-house Method, S5, Based on MS 678:Pt. VI to IX:1980, Part VIII
	Phosphorus (total)	In-house Method, S6, Based on MS 678:Pt. VI to IX:1980, Part VIII and QuikChem® Method 12-115-01-1-N
	Cation Exchange Capacity (C.E.C)	MS 678:Pt. to V:1980, Part V
	Cation Exchange Capacity (C.E.C)	In-house Method, S7, Based on MS 678:Pt. to V:1980, Part V and QuikChem® Method 13-107-06-2-D
	Total Exchangeable Bases: Potassium (K)	MS 678:Pt. to V:1980, Part IV (Flame photometry)
	Total Exchangeable Bases: Potassium (K)	In-house Method, S8, Based on MS 678:Pt. to V:1980, Part IV and QuikChem® Method 12-119-03-1-C
	Sodium (Na)	In-house Method, S9, Based on MS 678:Pt. to V:1980, Part IV
	Calcium (Ca)	MS 678:Pt. to V:1980, Part IV (Atomic Absorption Spectrophotometry)
	Magnesium (Mg)	MS 678:Pt. to V:1980, Part IV (Atomic Absorption Spectrophotometry)
	Determination of Particle Size	Part 2: MS 1056 2013 Section 10.2

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Mechanical Analysis (Clay, Silt, Fine & Coarse Sand)	In-house Method, Ref. No. S1, Based on The Bouyoucos Hydrometer Method for Particle Size Analysis,
	Arsenic (As)	None
	Determination of Electrical Conductivity in Soil Sample	In-House Method P702-07 base on MS 2458:2012
	Moisture Content Test - Oven Drying Method	MS 1056: Part 2: 2005
	Liquid Limit Test - Casagrande Method	MS 1056: Part 2: 2005
	Liquid Limit Test - Cone Penetrometer Method	MS 1056: Part 2: 2005
	Plastic Limit Test	MS 1056: Part 2: 2005
	Plasticity Index	MS 1056: Part 2: 2005
	Linear Shrinkage	MS 1056: Part 2: 2005
	Specific Gravity- Small Pyknometer Method	MS 1056: Part 2: 2005
	Particle Size Distribution -" Wet Sieving Method	MS 1056: Part 2: 2005
	Sedimentation -" Hydrometer Method	MS 1056: Part 2: 2005
	Compaction Test	MS 1056: Part 4: 2005 (Clause 4.2, 4.5, 4.6)
	Determination of pH value	BS 1377 : Part 3: 1990, Clause 9
	Determination of chloride content	BS 1377 : Part 3: 1990, Clause 7
	Determination of sulphate content	BS 1377 : Part 3: 1990, Clause 5 (Gravimetric)
	Determination of organic matter content	BS 1377 : Part 3: 1990, Clause 3
	Determination of moisture content	BS 1377 : Part 2: 1990, Clause 3.2
	Determination of particle size distribution	BS 1377 : Part 2: 1990, Clause 9.3
	Determination of In-situ Density and Moisture Content	Soils for Civil Engineering Purposes, BS 1377:1990, Part 9: Clause 2.1-Sand Replacement
	Determination of In-situ Density and Moisture Content	Soils for Civil Engineering Purposes, BS 1377:1990,
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2.4
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2
	Particle Size Distribution	BS 1377: Part 4: 1990, Clause 9.5
	Field Density Test: Core Cutter	BS 1377: Part 9: 1990, Clause 2.4
	Determination of Moisture	BS 1377:Part 2:1990 Clause 3.2
	Particle Size Distribution	BS 1377: Part 2: 1990, Clause 9.2 & 9.3
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2
	California Bearing Ratio (Soaked)	BS 1377: Part 4: 1990, Clause 7

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Dry Density / Moisture Content Relationship (4.5 kg Rammer Method)	BS 1377: Part 4: 1990, Clause 3.6
	Liquid Limit (Casagrande Apparatus Method)	BS 1377: Part 2: 1990, Clause 4.5
	None	Part 2: BS 1377 1990, Clause 5.3 & 5.4
	Dry Density / Moisture Content	Part 4: MS 1056 2005, Clause 4.5 & 4.6
	Dry Sieving Method	MS 1056 Part 2 : 2005, Clause 10.3 Part 2 : 1990, Clause 9.3 BS 1377
	Determination of Moisture Content	BS 1377: Part 2: 1990 Clause 3.2
	Moisture Content	BS 1377 Part 2: 1990 : Clause 3.2
	Liquid Limit (Cone Penetrometer Method)	BS 1377 Part 2: 1990 : Clause 4.3
	In-situ Density Test by Sand	None
	pH	MS 2457: 2012
	Electrical Conductivity	MS 2458: 2012
	Available Phosphorus	In-house method S07 based on Bray & Kurtz, 1945 & ICP-OES
	Total Nitrogen	MS ISO 13878: 2014
	Total Phosphorus	In-house method S13 based on EPA Method 3050B & ICP-OES
	Determination of Particle Density (Small Pyknometer Method)	BS 1377:1990 Part 2, Clause 8.3
	Determination of Particle Size Distribution (Dry Sieving Method)	BS 1377:1990 Part 2, Clause 9.3
	Determination of Particle Size Distribution (Wet Sieving Method)	BS 1377:1990 Part 2, Clause 9.2
	Determination of Particle Size	None
	Determination of Water Content	BS 1377: Part 2
	Determination of pH value of fine	BS 1377-3: 2018
	Determination of Soil pH	MS 678: Part - V: Part |, Soil pH:
	None	None
	Total Recoverable Elements	USEPA 200.2 Rev. 2 : 8 EMMC
	Chloride	MS 678: Part VI to
	In-situ Density Test	BS 1377: Part 9:1990 Clause 2.1
	Moisture Content	BS EN ISO 17892-1:2014
	Particle Size Distribution -" Wet	BS EN ISO 17892-4:2016
	Arsenic, Mercury, Cadmium,	EPA 3050 B
	Loss on Ignition	BS 1377 part 3: 1990 (Clause 4)
	Carbonate	BS 1377 Part 3: 1990 (Clause 6.3)
	Moisture Content	BS 1377-1: 2016
	In-situ California Bearing Ratio (CBR)	BS 1377 : Part 9 : 1990 Clause 4.3
	Moisture Content	BS 1377-1: 2016

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	In-situ California Bearing Ratio (CBR)	BS 1377 : Part 9 : 1990 Clause 4.3
	pH Value	BS 1377-3:1990:9.5
	None	None
	Aluminum (Al)	USEPA 200.2, Revision 2.8, 1994
	Particle Size Distribution (gravel,	In House Method 0588 based on
	Determination of Particle Size Distribution for Soils	BS 1377: Part 2: 1990 Clause 9
	Determination of Moisture Content	BS 1377: Part 2: 1990 Clause 3.2
	Determination of the Liquid Limit (Casagrande apparatus method)	BS 1377: Part 2: 1990 Clause 4.5
	Determination of the Plastic Limit and Plasticity Index	BS 1377: Part 2: 1990 Clause 5
	Determination of dry density/moisture content relationship (Rammer Method)	BS 1377: Part 4: 1990 Clause 3.3, 3.4, 3.5 & 3.6
	Determination of dry density/moisture content relationship (Vibrating Hammer Method)	BS 1377: Part 4: 1990 Clause 3.7
	Determination of soil density test	BS 1377: Part 2: 1990 Clause 7
	Determination of The Moisture	BS 1377: Part 2:1990: Method 3.2
	Determination of In-Situ Density	BS 1377: Part 9: 1990
	Determination of The Moisture	BS 1377: Part 2:1990: Method 3.2
	Toxicity characteristic leaching	USEPA 1311: 1992
	Phosphorus, P Sulphur, S	None
	SVOCs (Refer to Appendix 2 and 3 for	EPA Method 3510C: 1996
	Determination of Moisture Content	BS 1377:2:1990, Clause 3.2 MS 1056:2:2005, Clause 4.2
	Determination of Density	BS 1377:2:1990, Clause 7.2 MS 1056:2:2005, Clause 8.2
	Linear Shrinkage	BS 1377:2:1990, Clause 6.5 MS 1056:2:2005, Clause 7.5
	Determination of Particle Density	BS 1377:2:1990, Clause 8.3 MS 1056:2:2005, Clause 9.3
	Determination of Liquid Limit Using Casagrande Method	BS 1377:2:1990, Clause 4.5 & 4.6 MS 1056:2:2005, Clause 5.5 & 5.6
	Determination of Liquid Limit Using Cone Penetrometer Method	BS 1377:2:1990, Clause 4.3 & 4.4 MS 1056:2:2005, Clause 5.3 & 5.4
	Determination of the Plastic Limit	BS 1377:2:1990, Clause 5
	Maximum dry density / Moisture content relationship	BS 1377: Part 4: 1990
	Shear Strength Test without	None
	The laboratory Vane e	BS 1377: Part 7: 1990: Clause 3
	Field Density Test (Sand Replacement Method)	BS 1377: Part 9:1990 Clause 2.1
	Plastic limit test	Test instruction reference to BS

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Moisture content	BS1377-2, Clause 4.1
Steel Bar	Tensile Strength Test	BS EN ISO 6892-1: 2019 /
	Tensile Strength Test	MS ISO 15630-1:2012, Clause 5
	Bend and Rebend Test on	MS ISO 15630-1 : 2012
	Tensile Testing to measure yield	None
	Metallic Material -" Tensile Testing at	MS ISO 6892: 2002 (Excluding Site
	Ambient Temperature (Max 500 KN)	Sampling) & MS 146: 2014
Welded Steel Fabric	Tensile Strength Test	BS EN ISO 6892-1: 2019 /
	Elongation Test	BS EN ISO 6892-1: 2019 /
	Tensile Strength & Elongation Test (Up to 1000kN)	BS EN ISO 6892-1:2019
	Tensile Strength & Elongation Test (Up to 1000kN)	ISO 6892-1:2019
	Bend Test	MS ISO 7438:2017
	Rebend Test	MS ISO 15630-1:2012 MS ISO 15630-2:2012 Based on product specification
	Determination of Weld Strength	MS 145: 2014
	Determination of Weld Strength	MS 145: 2014