

QUALITY MANUAL:

SCOPE OF QUALITY MANAGEMENT SYSTEM

Document No.: GEO/QM/01/02

Revision: 4

Issued Date: 15/11/2024

Note: This document is written to address requirements of:

- ISO 17025 Clause 5.3 and 8.8.2 (b)
- ISO 17020
- ISO 17065

1.0 SCOPE

NO	TYPE OF TESTING	STANDARD
1	CONSTRUCTION MATERIALS TESTING: SOIL	
1.1	Moisture Content	
	Oven Drying Method	BS 1377: Part 2: 2022, Clause 4.1 MS 1056-2:2005 (reconfirmed 2013), Clause 4.2*
	Water Content	BS EN ISO 17892-1:2014+A1:2022
	Speedy Moisture Tester	ASTM D 4944-2011*
1.2	Atterberg Limit (Fall Cone Method)	BS 1377: Part 2: 2022, Clause 5.2 & 5.3, 6 BS EN ISO 17892-12:2018+A2:2022 Clause 5.3, 5.5 MS 1056-2: 2005 (reconfirmed 2013), Clause 5.3, 5.4 & 6*
1.3	Shrinkage Characteristics: Linear Shrinkage (LS)	BS 1377: Part 2: 2022, Clause 7 MS 1056-2:2005 (reconfirmed 2013), Clause 7.5*
1.4	Density-Linear Measurement	BS 1377: Part 2: 2022, Clause 9 BS EN ISO 17892-2: 2014: Clause.5.1 MS 1056-2:2005 (reconfirmed 2013), Clause 8.2*
1.5	Particle Density- Small Pyknometer Method Particle Density- Pycnometer by Fluid Displacement	BS 1377: Part 2: 2022, Clause 8 BS EN ISO 17892-3:2015: Clause 5.1 MS 1056-2:2005 (reconfirmed 2013), Clause 9.3 & 9.4*
1.6	Particle Size Distribution- Sieving, Hydrometer and Combined Tests	BS 1377: Part 2: 2022, Clause 10 BS EN ISO 17892-4:2016: CL. 5.2, 5.3 & 5.5 MS 1056-2:2005 (reconfirmed 2013), Clause 10.2, 10.3 & 10.5*
1.7	Dry density/Moisture Content Relationship of Soil 2.5 kg / 4.5 kg rammer / Vibration	BS 1377: Part 2: 2022, Clause 11.3 & 11.4, Clause 11.5 & 11.6, Clause 11.7 MS 1056-4:2005 (reconfirmed 2013), Clause 4.3, 4.4, 4.5, 4.6 & 4.7*
1.8	California Bearing Ratio (CBR)	BS 1377: Part 2: 2022, Clause 15 MS 1056-4:2005 (reconfirmed 2013), Clause 8*
1.9	Incremental Loading Oedometer	BS EN ISO 17892: Part 5:2017 MS 1056-5:2014, Clause 4*
1.10	Permeability Tests Constant Head (Non-cohesive soil) Falling head (Cohesive soil)	BS 1377: Part 5: 1990: CL.5* BS 1377: Part 5: 1990: CL.5*
1.11	Direct shear box test	BS 1377: Part 7: 1990: CL. 4*
1.12	Unconfined Compressive Strength 38 mm/ 50 mm/ 70 mm/ 72 mm ϕ	BS EN ISO 17892-7:2018* MS 1056-7:2013, Clause 8.2*
1.13	Unconsolidated Undrained Shear Strength Test (UU) 38 mm/ 50 mm/ 70 mm/ 72 mm ϕ	BS EN ISO 17892-8:2018* MS 1056-7:2013 Clause 9*
1.14	Conso. Undrained Shear Strength Test (CIU, CID) 38 mm/ 50 mm/ 70 mm/ 72 mm ϕ	BS EN ISO 17892-9:2018* MS 1056-8:2013 *
1.15	Compressive Strength for Cement Mixed Soil	BS EN 12504-1:2019* BS EN 12390-3:2019*
1.16	Static Modulus of Elasticity for Cement Mixed Soil	ASTM C 469/C469-14*
1.17	Peat by Laboratory Testing	
	Moisture, Ash and Organic Matter	ASTM D2974-14*
	PH of Peat Materials	ASTM D2976-15*
	Fiber Content by Dry Mass	ASTM D1997-13*
	Specific Gravity by Water Pycnometer	ASTM D854-14*
	Degree of Humification of Peat	ASTM D5715-14*

NO	TYPE OF TESTING	STANDARD
1	CONSTRUCTION MATERIAL TESTING: SOIL	
1.18	Other Test for Soil	
	Organic matter	BS 1377: Part 3:1990: CL.3*
	Loss on Ignition	BS 1377: Part 3:1990: CL.4*
	Total/ Soluble Sulphates	BS 1377: Part 3:1990: CL.5*
	Carbonate	BS 1377: Part 3:1990: CL.6*
	Chloride	BS 1377: Part 3:1990: CL.7*
	pH Value (Electrometric Method)	BS 1377: Part 3:1990: CL.8*
	Thermal Resistivity **	IEEE 442-1981 Reaffirmed 2003 **
	Electrical Resistivity (Wenner Probe) **	BS 1377: Part 3:1990: CL.10.3 **
2	CONSTRUCTION MATERIAL TESTING: AGGREGATE	
2.1	Aggregate Crushing Value (ACV)	BS 812: Part 110: 1990
2.2	Aggregate Impact Value (AIV)	BS 812: Part 112: 1990
2.3	Ten Percent Fines Value (TFV)	BS 812: Part 111: 1990
2.4	Particle Shape of Flakiness Index	BS EN 933-3: 2012 BS 812-105.1:1989
2.5	Elongation Index	BS 812: Section 105.2: 1990
2.6	Particle Shape-Shape Index	BS EN 933-4: 2008
2.7	Particle Density and Water Absorption	BS EN 1097-6:2022
2.8	Particle Size Distribution- Sieving Method	BS EN 933-1: 2012
2.9	Determination of Shell Content- Percentage of Shell in Coarse Aggregate	BS EN 933-7:1998
2.10	Sand Equivalent Test	BS EN 933-8:2012+A1:2015* ASTM D 2419-14*
2.11	Loose Bulk Density and Voids	BS EN 1097-3:1998
2.12	Clay Lumps and Friable Particles in Aggregates	ASTM C 142/C142M-17
2.13	Soundness of Aggregate	ASTM C88/C88M-18
2.14	Methylene Blue Test	BS EN 933-9:2009+A1:2013**
2.15	Determination of Drying Shrinkage	BS EN 1367-4:2008**
2.16	Determination of Polished Stone Value	BS EN 1097-8:2009**
2.17	Alkali Reactivity of Aggregate Test- Mortar Bar	ASTM C1260-14**
2.18	Chemical Analysis on Aggregate	BS EN 1744-1:2009+A1:2012*
2.19	PH Value	BS 1377-3:2018+A1:2021, Clause 12
2.20	Determination of Potential Presence of Humus (Organic Impurities)	BS EN 1744-1:2009+A1:2012, Clause 15.1
2.21	Determination of the Water Content by Drying in a Ventilated Oven	BS EN 1097-5:2008
2.22	Organic Impurities in Fine Aggregate for Concrete	ASTM C40/C40M-20
3	CONSTRUCTION MATERIAL TESTING: ASPHALT MIXTURES	
3.1	Marshall Stability and Flow of Asphalt Mixtures	ASTM D6927-22
3.2	Thickness or Height of Compacted Asphalt Mixture Specimens	ASTM D3549/D3549M-18 (Method A)
3.3	Quantitative Extraction of Asphalt Binder from Asphalt Mixtures	ASTM D2172/D2172M-17e1 (Method A-Centrifuge Extraction)
3.4	Bulk Specific Gravity & Density of Non-Absorptive Compacted Asphalt Mixtures	ASTM D2726/D2726M-21

NO	TYPE OF TESTING	STANDARD
4	CONSTRUCTION MATERIAL TESTING: CONCRETE	
4.1	Compressive Strength of Test Specimens	BS EN 12390-3:2019
4.2	Density of Hardened Concrete	BS EN 12390-7:2019
4.3	Depth of Penetration of Water Under Pressure	BS EN 12390-8:2019
4.4	Determination of Water Absorption	BS 1881-122:2011+A1:2020
4.5	Cored Specimen- Taking, Examining and Testing in Compression	BS EN 12504-1:2019
4.6	Determination of Secant Modulus of Elasticity in Compression	BS EN 12390-13:2021
4.7	Carbonation Depth in Hardened Concrete by the Phenolphthalein Method	BS EN 14630:2006*
4.8	Initial Surface Absorption of Concrete	BS 1881-208:1996
4.9	Flexural Strength of Test Specimens	BS EN 12390-5:2019
4.10	Tensile Splitting Strength of Test Specimen	BS EN 12390-6:2023
5	CONSTRUCTION MATERIAL TESTING: BRICKS	
5.1	Determination of Dimension for Masonry Unit	BS EN 772-16:2011*
5.2	Determination of Water Absorption for Masonry Unit	BS EN 772-11:2011* MS 1933-11:2007*
5.3	Compressive Strength	MS 1933-7:2007*
6	CONSTRUCTION MATERIAL TESTING: ROCK	
6.1	Unconfined Compressive Strength of Intact Rock Core Specimens	ASTM D7012-2014e1 Method C
6.2	Point Load Strength Index of Rock and Application to Rock Strength Classifications	ASTM D5731-16
6.3	Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compression	ASTM D7012-2014e1 Method D
7	CONSTRUCTION MATERIAL TESTING: METALLIC MATERIAL	
7.1	Metal & Metal Product (Steel Bar) Tensile Properties Bend Performance	MS 145:2014, Clause 7.3.3 MS ISO 6892-1:2017 ISO 6892-1:2019 MS ISO 15630-1:2012 BS EN ISO 15630-1:2019 BS EN ISO 15630-2:2019
7.2	Multi Wire Steel Strand (PC Strand)	ASTM A1061/A1061M-2016*
7.3	Mechanical Coupler	ISO 15835-1:2009*
7.4	Welds and Welded Test Specimens (Welded Steel Fabric) Tensile Properties Bend Performance Weld Shear Force	MS 145:2014, Clause 8.1.3.1 MS ISO 15630-2:2012 BS EN ISO 15630-2:2019 MS ISO 6892-1:2017 ISO 6892-1:2019 MS 145:2014, Clause 7.2.5 MS ISO 15630-2:2012 BS EN ISO 15630-2:2019 MS 145:2014, Clause 7.2.4 MS ISO 15630-2:2012

		BS EN ISO 15630-2:2019
7.5	Bolts, Screws and Studs Tensile	ISO 898-2:2013*
NO	TYPE OF TESTING	STANDARD
7	CONSTRUCTION MATERIAL TESTING: METALLIC MATERIAL	
7.6	Steel Products (tubular, bar, fasteners, round wire product) Tensile	ASTM A370:2017*
7.7	Metal & Metal Product (Weldable Reinforcing Steel) Tensile test properties Bend Performance (Bend, Ageing & Re-bend Test) Dimensions, Mass Per Meter and Tolerances	BS 4449: Clause 7.2.3 MS 146, Clause 7.3.5 BS 4449, Clause 7.2.5 BS EN ISO 15630 Part 1, Clause 12 MS 146 Clause 7.4 BS 4449 Clause 7.3
7.8	Metal and Metal Product (Steel Wire) Tensile test properties Bend Performance (Bend, Ageing & Re-bend Test) Dimensions, Mass Per Meter and Tolerances	BS NE ISO 15630-1: Clause 5 ISO 6892-1 MS 144, Clause 7.2.3 BS EN ISO 15630-1, Clause 5 & 7 MS 144, Clause 7.2.4 BS 4449, Clause 7.2.5 BS EN ISO 15630-1: Clause 12 MS 144, Clause 7.3 BS 4449, Clause 7.3
7.9	Metal & Metal Product (Multi-Wire Steel Prestressing Strand)	ASTM A1061/A1061M, Clause 9 BS EN ISO 15630-3, Clause 5
7.10	Metal & Metal Product (Reinforcement Couplers for Mechanical Splices of Bars) Tensile Test Properties Slip Test	BS EN ISO 15835-2, Clause 5.3 BS EN ISO 15835-2, Clause 5.4 BS 8110-1, Clause 3.12.8.16.2
8	CONSTRUCTION MATERIAL TESTING: FIELD	
8.1	In-situ Density Test SRM-Small Pouring Cylinder SRM- Medium Pouring Cylinder SRM-Large Pouring Cylinder Core Cutter	BS 1377-9:1990: Clause 2.1 In House Method GEO/CMT/TM/06/014 with reference to BS 1377-9:1990 BS 1377-9:1990: Clause 2.2 BS 1377-9:1990: Clause 2.4
8.2	In-Situ Vertical Deformation and Strength Test	
	Plate Loading Test	BS 1377-9:1990: Clause 4.1*
	Maintained Load Test	BS 1377-9:1990: Clause 4.2*
	Insitu California Bearing Ratio	BS 1377-9:1990: Clause 4.3
	JKR/Mackintosh Probe Test	In house method based on JKR Specification (GEO/CMT/TM/06/01)
8.3	Non- Destructive Testing	

	Rebound Number	BS EN 12504-2:2021*
	Electromagnetic Covermeter	BS 1881-204:1988*
	Ultrasonic Pulse Velocity (UPV)	BS EN 12504-4:2021*
NO	TYPE OF TESTING	STANDARD
8	CONSTRUCTION MATERIAL TESTING: FIELD	
8.3	Penetration Resistance of Hardened Concrete Using Steel Probe (Windsor Probe)	ASTM C803-C803M-18*
	Magnetic and Non-Magnetic Coatings	ASTM B499-09, ASTM B530-09 (2014)*
8.4	Others	
	Prime & Tack Coat Test	In house method based on JKR Specification (GEO/CMT/TM/06/12)*
	Concrete/asphalt coring work	In house method (GEO/CMT/TM/06/09 GEO/CMT/TM/06/11)*
9	CONSTRUCTION MATERIAL TESTING: GEOTEXTILE	
9.1	Wide-width Tensile Test of Geotextile Geosynthetics—Wide Width Tensile Test	ASTM D4595-23* BS EN ISO 10319:2015*
9.2	Prefabricated Vertical Drain (PVD) Discharge Capacity Test	ASTM D4716 / D4716M-22
	Geosynthetics—Test Method for the determination of water discharge capacity for prefabricated vertical drains (Index Test)	BS EN ISO 12958-1: 2020*
	Geosynthetics—Test Method for the determination of water discharge capacity for prefabricated vertical drains (Performance Test)	BS EN ISO 12958-2: 2020*
9.3	Prefabricated Vertical Drain (PVD) Discharge Capacity with kinks (NUS Method 2)	ASTM D4716 / D4716M-22*
	Geosynthetics—Test Method for the determination of water discharge capacity for prefabricated vertical drains (Index Test) - NUS Method 2	BS EN ISO 12958-1: 2020*
	Geosynthetics—Test Method for the determination of water discharge capacity for prefabricated vertical drains (Performance Test) - NUS Method 2	BS EN ISO 12958-2: 2020*
9.4	Apparent Opening Size of Geotextile Determination of the Characteristic Opening Size	ASTM D4751-21a* BS EN ISO 12956: 2020*
9.5	Geosynthetics Nominal Thickness of Geotextile Geosynthetics—Determination of Thickness at Specific Pressure—Part 1: Single Layers	ASTM D5199-12 (Reapproved 2019) * BS EN ISO 9863-1:2016 + A1:2019*
9.6	Trapezoid Tearing Test of Geotextiles	ASTM D4522 / D4533M-15 (2023) *
9.7	Grab Breaking Load and Elongation of Geotextiles	ASTM D4632 / D4632M-15a (2023) *
9.8	Water Permeability of Geotextiles by Permittivity	ASTM D4491 / D4491M-22*
	Determination of water permeability characteristic normal to the plane, without load	BS EN ISO 11058:2019*
9.9	In-Plane Permeability of Geotextile	ASTM D4716 / D4716M-22*
	Geotextiles and geotextile –related products—Determination of water flow capacity in their plane (Index Test)	BS EN ISO 12958-1: 2020*

	Geotextiles and geotextile-related products— Determination of water flow capacity in their plane (Performance Test)	BS EN ISO 12958-1: 2020*
NO	TYPE OF TESTING	STANDARD
9	CONSTRUCTION MATERIAL TESTING: GEOTEXTILE	
9.10	Static Puncture Strength of Geotextiles	ASTM D6241-22a*
	Geosynthetics—Static Puncture Test (CBR Test)	BS EN ISO 12236: 2006*
9.11	Measuring Mass per unit area of Geotextiles	ASTM D5261-10 (Reapproved 2018) *
	Geosynthetics—Determination of mass per unit area of geotextiles and geotextile related products	BS EN ISO 9864: 2005*
9.12	Geosynthetics—Dynamic Perforation Test (Cone Drop Test)	BS EN 918 / ISO 13433: 2006*
9.13	Geosynthetics—Tensile test for joint / seams by widewidth strip method	ISO 10321: 2008 *
	Strength of Sewn or Bonded Seams of Geotextiles	ASTM D4884 / D4884M-22*
9.14	Deterioration of Geotextiles by Exposure of Light, Moisture and Heat in A Xenon Arc-Type Apparatus	ASTM D4355 / D4355M-21*
9.15	Standard Test Method for Index Puncture Resistance of Geomembrane and Related Product^	ASTM D4833 / D4833M-07 (Reapproved 2020) *
9.16	Standard Test Method for Breaking Force and Elongation of Textile Fabric (Stip Method)	ASTM D5035-11 (Reapproved 2019) *
9.17	Tensile Properties of Geogrids by the Single or Multi- Rid tensile Method	ASTM D6637 / D6637M-15 (2023) *
10	PILE DYNAMIC AND INTEGRITY TESTING	
10.1	High Strain Dynamics Testing of Deep Foundation	ASTM D4945-17
10.2	Strain Transducer Sensitivity (Pile Dynamics, Inc Models)	In house method- “BDI Automated Strain Transducer Calibration System (ASTCS)”
10.3	Low Strain Impact Integrity Testing in Deep Foundations	ASTM D5882-16*
10.4	Integrity Testing by Ultrasonic Crosshole Testing Calibration for Determination of Calibration Factor/ Sensitivity for Strain Transducer (PDI Model)	ASTM D6760-16* In House Method (GEO/PDI/TM/04/01)*
10.5	Measuring inclination and shaft profile of deep foundation (SHAPE Method)	ASTM D8232-18*
10	PILE DYNAMIC AND INTEGRITY TESTING	
10.6	Standard test method of energy measurement for dynamic penetrometers	ASTM D4833-16*
11	GEOTECHNICAL INSTRUMENTATION AND MONITORING	
11.1	Inclinometer	In House Method (GEO/GIM/TM/03/01, GEO/GIM/TM/03/02)*
12.2	Settlement Marker	In House Method (GEO/GIM/TM/01/01, GEO/GIM/TM/01/02)*
10.3	Piezometer Water Standpipe	In House Method (GEO/GIM/TM/04/01, GEO/GIM/TM/04/02)*
10.4	Tilt Meter	In House Method (GEO/GIM/TM/05/01)*
10.5	Vibration Monitoring	In House Method (GEO/GIM/TM/07/01)*
10.6	Crack Monitoring	In House Method (GEO/GIM/TM/06/01)*
10.7	Displacement Marker	In House Method (GEO/GIM/TM/02/01, GEO/GIM/TM/02/02)*

10.8	Noise	In House Method (GEO/GIM/TM/08/01)*
NO	TYPE OF INSPECTION	STANDARD
1	Falsework and Scaffolding In Construction Work	Internal Inspection Method (with refer to CIS 22 and CIS 23)*
NO	TYPE OF CERTIFICATION	PROGRAMME
1	Falsework and Scaffolding In Construction Work	Product Certification Systems

Remarks:

1. For testing scopes:

- all the scopes are SAMM accredited except scopes marked with *.
- All the scopes will be tested in Geonamics Laboratory as per address below except the scopes marked with **.

2. For inspection scopes:

- In progress of MIBAS application under Department of Standard Malaysia and CIDB.

This document is written to address requirements of ISO 17025 Clause 5.3 and 8.8.2 (b), ISO 17020 and ISO 17065.

a) The above scopes tabulated in the tables applied as outlined below:

- 1) Provision of Geotechnical Investigation, Instrumentation Monitoring and Testing on Varies Foundation, Slopes, Earth Retaining and Underground Structures.**
- 2) Provision of Construction Materials Testing on Soil, Rock, Concrete, Steel and Asphalt/Bituminous Materials.**
- 3) Provision of Inspection and Certification Services on Construction Material**

b) The above scopes included the head office and projects applied as address stated belows:

GEONAMICS (M) SDN BHD (Reg.no.: 342862-w)

HEAD OFFICE: NO.6 , LOT 25,

JALAN UDANG HARIMAU 1,

MEDAN NIAGA KEPONG,

51200 KUALA LUMPUR

c) The products and services that are within the scope of Geonamics quality management system are classified as Construction Material Testing (CMT), Geotechnical Instrumentation and Monitoring (GIM), Pile Dynamic and Integrity Testing (PDI), Ground Investigation & Geophysical Test (GIG), Material Inspection Team (MIT) and Material Certification Panel (MCP)

Note: (1) The company may undertake other testing works when there are opportunity arises.

(2) No Design and Development of Products and Services is provided under



Geonamics (M) Sdn. Bhd.