



UGANDA NATIONAL BUREAU OF STANDARDS

CERTIFICATE OF LABORATORY RECOGNITION

Certificate No: UNBS/LRS/0001

This certificate is valid as per the scope stated in the accompanying schedule of recognition, Annex "A" which is an integral part of the present certificate bearing the above recognition number for

PHYSICAL, CHEMICAL AND MECHANICAL TESTING OF CIVIL ENGINEERING MATERIALS

In accordance with the recognised International Standard **ISO/IEC 17025:2017**

Being supplied to

SMAT TECHNICAL SERVICES LIMITED

Plot 805, Mawanda Road, Upper Nsooba, Mulago - Kampala
P. O. Box 16537, Kampala Uganda.

The recognition demonstrates technical competence and the operation of a laboratory quality management system to perform the tests as described in the Annex. While this certificate remains valid, the recognised laboratory above is authorised to use the relevant UNBS recognition number to issue facility reports and /or certificates.

Recognition Decision Date: 2024-05-08
Date of original issue: 2016-11-16
Certificate Issue No: 04

Effective Date: 2024-05-08
Expiry date: 2026-11-15
Certificate Issue date: 2024-05-08

Management Signatory
UGANDA NATIONAL BUREAU OF STANDARDS



ANNEX A

SCHEDULE OF RECOGNITION – TESTING LABORATORIES

Facility Number	UNBS/LRS/0001	S/N	Technical Signatories	Method
SMAT Technical Services Limited P.O Box 16537, Kampala Uganda Plot 805, Mawanda Road, Upper Nsooba, Mulago		1.	Eng Simon P. Kisitu	ASTM D2726-96 and AASHTO T-166, BS EN 12697-30:2012, AASHTO 245-97, AASHTO T 44 – 97 or ASTM D 2042 93, AASHTO T-51, AASHTO T 209-99, ASTM D2041-95, ASTM D 88-94 & ASTM D 2170, AASHTO T53-96, ASTM D36/ D36M-14 (2020), ASTM D3203 and AASH (1998), ASTM D 6931:2002, AASHTO T 240, ASTM D2172-88, Method B and BS EN 12697 – 1: Part 1: 2020, ASTM D5 /D5M-20, ASTM D92-90, AASHTO T228-2022, Marshall Method, BS EN 12697 – 13: Part 13: 2000, AASHTO T 55 – 89 (2000) / ASTM D 95-83 (1990), BS EN 12697:11-2020 BS EN ISO 17892-12:2018 +A2:2021, BS 1377-2 :2022, BS 1377- 9:1990, AASHTO T 216/ ASTM D 2435M-11 9 (2020), BS EN ISO 17892-5:2017, BS EN ISO 17892—7&8:2018, BS 1377- 3:2018+A1:2021, BS EN ISO 17892-12:2018, BS EN ISO 22476-1:2013, BS EN ISO 17892-12:2018, IS 2720-40:1977, ASTM C 597-09 and BS EN 12504-4:2021, BS 1881- 204, US EAS 412-2:2013
		2.	Richard Tumwesigye	US EAS 148-3:2017, US EAS 148-1:2017, BS EN 196-7:2007, BS EN 196-3:2016, BS EN 196-1:2016, BS EN 196-6:2018, BS EN 933-3:2012, BS EN 933-4:2008, AASHTO T 105-00/ ASTM C 114-99, AASHTO T-2/ ASTM C40-98, AASHTO T 96 -99, BS EN 1744-1:2009+A1:2022, AASHTO 182-84, ASTM D2726-96 and AASHTO T-166, BS EN 12697-30:2012, AASHTO 245-97, AASHTO T 44 – 97 or ASTM D 2042 93, AASHTO T-51, AASHTO T 209-99, ASTM D2041-95, ASTM D 88-94 & ASTM D 2170, AASHTO T53-96, ASTM D36/ D36M-14 (2020), ASTM D3203 and AASH (1998), ASTM D 6931:2002, AASHTO T 240, ASTM D2172-88, Method B and BS EN 12697 – 1: Part 1: 2020, ASTM D5 /D5M-20,

			ASTM D92-90, AASHTO T228-2022, Marshall Method, BS EN 12697 – 13: Part 13: 2000, AASHTO T 55 – 89 (2000) / ASTM D 95-83 (1990), BS EN 12697:11-2020
	3.	Shaminah Nantono	BS EN 12390- 3: 2019, BS EN 1338:2003, BS EN 772-1:2011+A1: 2015, US 2032:2019, BS EN 12390- 2: 2019, US 65:2019, US 2033:2019, SANS 927:2013, AASHTO T 032-96, BS 6717:2001, ASTM C39/C39M, BS EN 206:2013+A2:2021, SABS Method 836 of TMH 1: Method B10, BS 1881: Part 206:2013+A2:2021, BS EN 12504 – 4 :2004, BS EN 12390-7:2019, BS EN 12350-6:2019, BS EN 12350- 2:2019, BS EN 12350-7:2019, US EAS 412-2:2013, BS EN 933-3:2012, BS EN 12626:2002+A1:2008, ASTM C33/C33M-18, BS EN 933-4:2008, ASTM C127-15, BE EN 933-1:2012, BE EN 933-2:2020, TMH 1: Method B13, AASHTO T 96-99, BE EN 1097- 8:2020, BS 812-110:1990, BS EN 1097-2:2020, BS 812-112:1990, TMH 1: Method B11, BS 812-111:2020, BE 812-111:2021, BS EN 933- 8:2012+A1:2015, TMH 1: Method B16 & BS EN 1097-3:1998, BE EN 933- 4:2008, BS EN 933-1:2012
	4.		
Material or products tested	Type of tests/property measured, Range of Measurement	Standard specifications, Techniques/Equipment used	
TESTING FIELD - MATERIALS			
Aggregates (Coarse and Fine)	Flakiness Index	BS EN 933-3:2012, BS EN 12626:2002+A1:2008, ASTM C33/C33M-18	
	Average Least Dimension by computation	BS EN 933-4:2008, 933-3:2012	BS EN
	Specific Gravity and Water Absorption	ASTM C127-15	
	Particle Size Distribution	BS EN 933-1:2012, BS EN 933-2:2020	
	Determination of Fineness Modulus of Fine Aggregates	TMH 1: Method B13	
	Los Angeles Abrasion Value (LAAB)	AASHTO T 96 - 99, BS EN 1097-8:2020	

	Aggregate Crushing Value (ACV)	BS 812-110:1990, BS EN 1097-2:2020
	Aggregate Impact Value (AIV)	BS 812-112:1990
	Determination of Adhesion of Bituminous binder to stone aggregate (Riedel & Weber)	TMH 1: Method B11
	10% Fines value (Dry)	BS 812-111:2020
	10% Fines value (Wet)	BS 812-111:2021
	Sand Equivalent	BS EN 933-8:2012+A1:2015
	Dry Bulk Density	TMH 1: Method B16 & BS EN 1097-3:1998
	Elongation Index	BS EN 933-4:2008
	Determination of Organic Impurities in Sand	AASHTO T-2 / ASTM C40-98
	Sodium Sulphate Soundness	AASHTO T 96 - 99
	Silt Content	BS EN 933-1:2012
	Determination of moisture content	BS EN 1097-5:2008
	Bitumen Affinity	AASHTO 182-84
Concrete & Bricks	Compressive Strength of concrete cubes	US EAS 131-1:2008 BS EN 12390- 3: 2019
	Compressive Strength of concrete pavers	US 65:2019 BS EN 1338:2003
	Compressive Strength of concrete masonry blocks	US 2032:2019, US 2033:2019, BS EN 772-1:2011+A1: 2015,
	Compressive Strength of Clay Bricks	AASHTO T32 - 96
	Compressive Strength of Precast concrete Kerbs	BS 6717:2001, SANS 927:2013
	Compressive Strength of concrete cylinders	ASTM C39/C39M

	Concrete mix design	EN 206:2013+A2:2021
	Determination of shrinkage properties of concrete aggregates	SABS Method 836 of TMH 1: Method B10, EN 206:2013+A2:2021
	Indication of compressive strength by Rebound Hammer	BS EN 206:2013+A2:2021
	Concrete Strength by Ultrasonic Pulse Velocity (UPV)	ASTM C 597-09 and BS EN 12504-4:2021
	Concrete Rebar Locator Scans	US ISO 19595:2017
	Density of Hardened Concrete	BS EN 12390-7:2019, EN 206:2013+A2:2021
	Density of fresh concrete	BS EN 12350-6:2019, EN 206:2013+A2:2021
	Slump test	BS EN 12350-2, EN 206:2013+A2:2021
	Air content	BS EN 12350-7:2019, US EAS 94:2002
Soils and Gravel	Liquid Limit	BS EN ISO 17892-12:2018 +A2:2022, BS 1377- 2:2022
	Plastic Limit	
	Plasticity Index	
	Linear Shrinkage	
	Shrinkage Limit	
	Bulk Density	
	Specific Gravity/Relative Density	
	Particle Size Distribution to No. 200 Sieve	
	Particle Size Distribution by Hydrometer Analysis	
	California Bearing Ratio	

	Moisture Density Relationship (BS Heavy)	BS 1377- 2:2022
	Moisture Density Relationship (BS Light)	
	Moisture Density Relationship (Mod. Proctor)	
	Unconsolidated undrained triaxial test (UU)	BS 1377-2:2022, BS EN ISO 17892-7:2018
	Consolidated undrained triaxial test (CU)	
	Consolidated drained triaxial test (CD)	
	One Dimension Consolidation	AASHTO T 216 (2007), ASTM D 2435M-11 9 (2020)
	Permeability – Constant Head and falling Head	BS EN ISO 17892-5:2017
	Direct Shear	BS EN ISO 17892-9:2018
	Organic Matter Content	BS 1377-3:2018+A1:2021
	Sulphate Content test	
	Chloride Content	
	Natural Moisture Content	BS EN ISO 17892-12:2018
	PH Value (PH meter)	BS 1377-3:2018+A1:2021
	Soil resistivity (in-situ)	BS EN ISO 22476-1:2013
	Dispersivity Test	BS EN ISO 17892-12:2018
	Free swell index	IS 2720-40:1977
Fillers (Cement and Lime)	Taking and Preparing Samples of Cement	US EAS 148-3:2017
	Setting time (Initial and Final)	US EAS 148-3:2017
	Determination of Strength	US EAS 148-1:2017
	Fineness	BS EN 196-6:2018

	Loss on ignition (900°C – 1000°C)	AASHTO T 105-00/ ASTM C 114-99
	Purity of Lime	US 288: 2001
	Normal Consistency of hydraulic cement	
	Testing Cement in a Reference Concrete	BS EN 196-1:2016
Bitumen and Bituminous Mixtures	Bulk Density of Saturated Surface Dry Asphalt Mix Samples	ASTM D2726-96 and AASHTO T-166, BS EN 12697-30:2012
	Marshall Stability and Flow	AASHTO 245-97
	Solubility of Bituminous materials	AASHTO T 44 – 97 or ASTM D 2042 -93
	Ductility for Bitumen at 25°C	AASHTO T-51
	Maximum theoretical specific gravity of mix	ASTM D2041-95, AASHTO T 209-99
	Viscosity of bitumen at 60°C (Viscosity Saybolt & Viscosity Kinematic)	ASTM D 88-94 & ASTM D 2170
	Softening Point	AASHTO T53-96, ASTM D36 / D36M - 14(2020)
	Volume Analysis to determine VMA, VIM & VFB	ASTM D3203 and AASHTO T-269 97 (1998)
	Indirect Tensile Strength (ITS)	ASTM D 6931:2002
	Effect of Heat and Air in a moving film of Bitumen (RTFO)	AASHTO T 240
	Determination of Binder Content using paraffin and Aggregate Grading by Extraction	ASTM D2172-88, Method B and BS EN 12697 – 1: Part 1: 2020
	Penetration at 25°C	BS 2000: Part 49
	Flash and Fire Point by Cleveland Open Cup	ASTM D92-90

	Specific Gravity of Bitumen	AASHTO T 228-2022
	Asphalt Mix design (AC 14 & AC 20)	Marshall Method
	Measurement of temperature of bituminous mixtures	BS EN 12697 – 13: Part 13: 2000
	Water in Petroleum Products and Bituminous Material by Distillation	AASHTO T44 -97
	Bitumen Affinity	BS EN 12697:11-2020
Steel	Bending test (For any Diameter)	US- EAC: 412 Part 2: 2019
	Tensile Strength Test	US- EAC: 412 Part 2: 2019
	Elongation	US- EAC: 412 Part 2: 2019
	Mass per unit length	US- EAC: 412 Part 2: 2019
TESTING FIELD – CHEMISTRY		
Water	pH Value	BS 1377-3:2018+A1:2021
	Organic impurities	BS 1377-3:2018+A1:2021
	Sulphates	BS 1377-3:2018+A1:2021
	Chlorides	SANS 374:2005

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MANAGER CERTIFICATION DEPARTMENT