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

P. O. Box 16537, Kampala.
Plot 805 Mawanda Road, 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: 2022-01-03
Date of original issue: 2016-11-16
Certificate Issue No:03

Effective Date: 2022-01-03
Expiry date: 2023-11-15
Certificate Issue date: 2022-01-03

.....

Executive Director
UGANDA NATIONAL BUREAU OF STANDARDS

ANNEX A

SCHEDULE OF RECOGNITION – TESTING LABORATORIES

Facility Number	UNBS/LRS/0001	S/N	Technical Signatories (TS) and Analysts (A)	Method
SMAT Technical Services Limited P.O. Box 16537, Kampala. Plot 805 Mawanda Road, Kampala, Uganda.		1.	Eng Simon P. Kisitu (TS)	ASTM D2726-96 and AASHTO T-166, BS EN 12697-30:2012, AASHTO T-205-97, AASHTO T 44 – 97 or ASTM D 2042 - 93, AASHTO T- 51, ASTM D2041-95, ASTM D 88-94 & ASTM D 2170, AASHTO T 53-96, ASTM D3203 and AASH (1998), ASTM D 3967, AASHTO T 240, ASTM D2172-88, Method B and BS EN 12697 – 1: Part 1: 2000, BS 2000: Part 49, ASTM D92-90, AASHTO M82-75, Marshall Method, BS EN 12697 – 13: Part 13: 2000, AASHTO T 55 – 89 (2000) / ASTM D 95-83 (1990), AASHTO T 44 – 97 or ASTM D 2042 – 93, BS EN 1008:2002, US ISO 19595:2017 US 2032:2019, US 2033:2019, BS EN 196-1:2016, ASTM E 3013 M-17, US EAS 94:2002, ASTM C150 / C150M – 20, US EAS 148-1:2017, US EAS 148-6:2017, US EAS 148-3:2017, BS EN 12390 - 3: 2009
		2.	Aisha N. Zaid (TS&A)	BS EN ISO 17892-12:2018, BS 1377-4:1990, BS 1377- 7:1990, AASHTO T 216-83/ ASTM D 2435M11, BS EN ISO 17892-5:2017, BS EN ISO 17892—7&8:2018, BS 1377- 3:2018, BS EN ISO 17892-2:2018, BS EN ISO 22476-1:2012, BS EN ISO 17892-12:2018, ISO 2720-40:1977, BS EN 1008:2002, US ISO 19595:2017, US 2032:2019, US 2033:2019, ASTM E 3013 M-17, US EAS 94:2002, ASTM C150 / C150M – 20, BS EN 12390 - 3: 2009, ASTM D 3967
		3.	Gloria Agnes Namugabwe (A)	BS EN 933-3:2012, BS EN 933-4:2008 ASTM C127-15 and ASTM C128-15

				BS EN 933-1:1997 and BS EN 9332:1996 TMH 1: Method B13, BS EN 1097-8:2000 BS 812-110:1990, BS 812-112:1990 TMH 1: Method B11, BS 812-111:1990 BS EN 933-8:2012, TMH 1: Method B16, BS EN 933-4:2008, AASHTO T-2 /ASTM C40-98, BS 812-121:1989 BS EN 933-1, AASHTO 182-84, BS EN 196-1:2016, AASHTO T 105-00/ ASTM C 114-99, US 288: 2001, AASHTO, T129-01 and ASTM C187-98, BS 1377- 3: 2018, SANS 374:2005 , BS EN 1008:2002, US ISO 19595:2017, US 2032:2019, US 2033:2019, ASTM E 3013 M-17, US EAS 94:2002, ASTM C150 / C150M – 20, US EAS 148-1:2017, US EAS 148-6:2017, US EAS 148-3:2017, BS EN 12390 - 3: 2009, BS EN 12390-7, AASHTO T-166, ASTM D 3967
		4.	Shaminah Nantono (A)	BS EN 12390 - 3: 2009, BS EN 1338:2003, BS EN 772-1:2011, BS EN 12390- 3: 2009, SANS 927:2013, AASHTO T 022-92, American Concrete Institute method, SABS Method 836 of TMH 1: Method B10, BS 1881: Part 208: 1986 or ASTM C805, ASTM C 597-09 and BS EN 12504 – 4 :2004, BS 1881- 204, BS EN 12390-7, BS EN 12350-6, BS EN 12350-2, BS EN 12350-7, US EAS 412-2:2019, BS EN 1008:2002, US 2032:2019, US 2033:2019, US EAS 94:2002, ASTM C150 / C150M – 20, US EAS 148-1:2017, US EAS 148-6:2017, US EAS 148-3:2017, AASHTO T-166, ASTM D 3967
Material or products tested	**Type of tests/property measured, Range of Measurement**	**Standard specifications, Techniques/Equipment used**		
TESTING FIELD – CIVIL ENGINEERING MATERIALS				

Aggregates (Coarse and Fine)	Flakiness Index	BS EN 933-4:2008
	Average Least Dimension by computation	
	Specific Gravity and Water Absorption	
	Particle Size Distribution	
	Determination of Fineness Modulus of Fine Aggregates	BS EN 933-4:2008
	Los Angeles Abrasion Value (LAAV)	
	Aggregate Crushing Value (ACV)	
	Aggregate Impact Value (AIV)	
	Determination of Adhesion of Bituminous binder to stone aggregate (Riedel & Weber)	
	10% Fines value (Dry)	
	10% Fines value (Wet)	
	Sand Equivalent	
	Dry Bulk Density	
	Elongation Index	
	Determination of Organic Impurities in Sand	
	Sodium Sulphate Soundness	
	Silt Content	
	Bitumen Affinity	
Concrete	Compressive Strength of concrete cubes	US EAS 131-1:2008
	Compressive Strength of concrete pavers	US 65:2019
	Compressive Strength of concrete masonry	US 2032:2019, US 2033:2019

	blocks	
	Compressive Strength of Precast concrete Kerbs	BS EN 206:2013, BS EN 196-1:2016, SANS 927:2013
	Compressive Strength of concrete cylinders	
	Concrete mix design	
	Determination of shrinkage properties of concrete aggregates	
	Indication of compressive strength by Rebound Hammer	
	Concrete Strength by Ultrasonic Pulse Velocity (UPV)	
	Density of Hardened Concrete	
	Density of fresh concrete	
	Slump test	
	Air content	
	Concrete Rebar Locator Scans	ASTM E 3013 M-17
Bricks	Compressive Strength of Clay Bricks	US EAS 94:2002
Soils and Gravel	Liquid Limit	BS EN ISO 17892-12:2018
	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	BS 1377- 4:1990
	Moisture Density Relationship (BS Heavy)	
	Moisture Density Relationship (BS Light)	
	Moisture Density Relationship (Mod. Proctor)	
	Unconsolidated undrained triaxial test (UU)	BS 1377- 7:1990
	Consolidated undrained triaxial test (CU)	
	Consolidated drained triaxial test (CD)	
	One Dimension Consolidation	AASHTO T 216-83/ ASTM D 2435M11
	Permeability – Constant Head and falling Head	BS EN ISO 17892 - 5:2017
	Direct Shear	BS EN ISO 17892—7&8:2018
	Organic Matter Content	BS 1377- 3:2018
	Sulphate Content test	
	Chloride Content	
	PH Value (PH meter)	
	Natural Moisture Content	BS EN ISO 17892-12:2018
	Dispersivity Test	

	Soil resistivity (in-situ)	BS EN ISO 22476 - 1:2012
	Free swell index	IS 2720 - 40:1977
Fillers (Cement and Lime)	Taking and Preparing Samples of Cement	ASTM C150 / C150M - 20
	Setting time (Initial and Final)	US EAS 148-3:2017
	Determination of Strength	US EAS 148-1: 2017
	Fineness	US EAS 148-6:2017
	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	AASHTO, T129-01 and ASTM C187-98
	Testing Cement in a Reference Concrete	
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 T-205-97
	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
	Viscosity of bitumen at 60°c (Viscosity Saybolt & Viscosity Kinematic)	ASTM D 88-94 & ASTM D 2170
	Softening Point	AASHTO T53-96
	Volume Analysis to determine VMA, VIM & VFB	ASTM D3203 and AASH (1998)
	Indirect Tensile Strength (ITS)	ASTM D 3967

	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 12697 – 1: Part 1: 2000
	Determination of Binder Content using methylene chloride and Aggregate Grading by Extraction	ASTM D2172-88, Method 12697 – 1: Part 1: 2000
	Penetration at 25°C	US EAS 982-1
	Flash and Fire Point by Cleveland Open Cup	ASTM D92-90
	Specific Gravity of Bitumen	AASHTO M82-75
	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 T 55 – 89 (2000) / ASTM D 95-83 (1990)
	Solubility of Bituminous materials	AASHTO T 44 – 97 or ASTM D 2042 93
	Bitumen Affinity	
Steel	Bending test (For any Diameter)	US EAS 412 Part 2: 2019
	Tensile Strength Test (8mm – 16mm, 16mm – 28mm & 28mm - Above)	
	Elongation	

	Mass per unit length	
Water	pH Value	BS EN 1008:2002
	Organic impurities	
	Sulphates	
	Chlorides	SANS 374:2005

ISSUED BY

UGANDA NATIONAL BUREAU OF STANDARDS

.....

MANAGER CERTIFICATION DEPARTMENT