Kenya Bureau of Standards

METROLOGY SERVICES
Work Capability Schedule

- **Calibration**
- **Instrumentation**
- **Production**
- **Training/knowledge transfer/advisory**

NOTE:
KEBS reserves the right to review these charges without giving notice as need arises.

2012

FOREWORD NOTES

1. These are the details of the equipment/ instruments/ gauges that are calibrated/ serviced/ repaired for the customers.

2. Included is also the know transfer aspect.

3. Proof of payment or an order is required before work can commence.

Content

A Calibration charges

A1 AC/DC LABORATORIES

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Voltage Reference Standards	1 year		10
2	Current Reference Standards	"		10
3	Resistance Reference Standards	"		10
4	Capacitance Reference Standards	"		10
5	Inductance Reference Standards	"		10
6	Voltmeters and Ammeters	"		7
7	Capacitance, Inductance & Resistance (Meggers) Meters	"		7
8	AC/DC bridges	"		10
9	Multimeters	"		7
10	Voltage / Current Sources (power supplies)	"		7
11	Laboratory Resistors, Inductors & Capacitors	"		3
12	Potentiometers	"		7
13	Voltage Dividers	"		10
14	Power Meters	"		7
15	pH Meters	"		5
16	Turbidity Meters	"		5
17	Conductivity Meters	"		5
18	Aircraft Fuel Quantity Gauges	"		7
19	Standard Cell Enclosures	"		10
20	Meter calibrators	1 year		10
21	Portable Wheatstone Bridges	"		10
22	Ratio Standards	"		10
23	Decade Resistance Boxes	"		7

A2. Acoustics and Vibration laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Sound level meter	1 year		7
2	Dose meter	1 year		7
3	Sound calibrator	1 year		7
4	Accelerometer	1 year		5
5	Vibration meter	1 year		5
6	Charge amplifier	1 year		5
7	Audiometer	1 year		4

A3. Density/ Viscosity laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)

1	Hydrometer	1 year		10
2	Pycnometers/Density cup	,,		15
3	Densimeters	,,		10
4	Viscometers (i) Glass capillary type (ii) Rotary type (iii) ISO cup	,,		17
5	Viscometer standard fluids (per sample	,,		10
6	Product samples (i) Ordinary samples (ii) Reference standard samples	On demand 1 year		10
7	Bitumen/tar samples	On demand		10
8	Refractometers (handheld)	1 year		10
9	Refractometers (digital)	1 year		10
10	Penetrometer	1 year		20

A4. Energy & Transformer Laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Rotating reference watt- hour meter	1 year		7
2	Single phase watt-hour meter	"		7
3	Polyphase watt-hour meter	"		7
4	Power factor meter	"		7
5	Maximum Demand indicator	"		7
6	Var-hour meter	5 year		7
7	Standard voltage transformer	"		7
8	Standard current transformer	"		7
9	Trivector	"		7
10	Ordinary Voltage transformer	1 year		7
11	Ordinary Current transformer	1 year		7
12	Electronic Watt-hour meter (Class 0.2 & 0.5)	"		7
13	Any high voltage test	N/A		7
14	Spark Tester	1 year		7
15	Sensitivity Tester	N/A		7
16	Any High Voltage source	"		7
17	Reference Sub-Standard Electronic Meter	"		7
18.	Use of meter Testing bench by other Laboratories	"		7

A5. Force laboratory

No.	Equipment / Instrument	Recommended Interval of		Average Turnaround Time

		Calibration		(Days)
1	Proving ring	1 year		14
2	Load cell	"		10
3	Portable axle bridge	"		12
4	Compression/tensile testing machine i) Single gauge/range ii) Two to three ranges/gauges iii) More than three ranges/gauges	"		14
5	Proving column	"		14
6	Dynamometers	"		14
7	Universal testing machine i) 6 ranges and below ii) more than 6 ranges	" "		14
8	Aircraft weighing kit each load cell	"		12
9	Hardness tester	"		14
10	Tensiometers	"		10
11	Torque meter	"		10
12	Torque wrench	"		10
13	Torque watch	1 year		10
14	Torque gauge	"		10
15	Box testing machine	"		14
16	Flat Crush tester	"		14
17	Load testing machine	"		14

A 6. Industrial Measurement/Length Laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Micrometer for external/internal measurement	1 year		10
2	Micrometer heads	"		10
3	Setting rods (each)	"		8
4	Vernier callipers (0-200 mm) (0-300mm)	1 year "		10 10
5	Gear tooth micrometer/vernier callipers	"		14
6	Dial test indicator & gauges of linear measurement 0 -10 mm 10 mm and above	"		10
7	Limit gauges/Go not Go gauges (per dimension)	On demand		10
8	Gauges for screw threads	"		14
9	Plug, ring and calliper gauges	"		14
10	Vernier/micrometer depth gauges	"		8
11	Vernier height gauges	"		8
12	Thickness gauges	On Demand		8
13	Bevel protractors	"		9

14	Spirit levels for use in precision engineering	On demand		10
15	Engineering square including cylindrical & block squares	On demand		10
16	Clinometers	"		10
17	Optical square prism	1 year		10
18	Precision polygons	"		10
19	Dividing heads & circular tables	2 years		10
20	Gauge blocks (0-85 pieces) (86-120 pieces)	"		20
21	Combinational angle gauge	"		10
22	Standard scales	3 years		10
23	Assessment of surface squares	On demand		10
24	Assessment of departures from geometrical (roundness parallelism alignment and squareness	"		10
25	Measurement and testing of gears and threads	"		10
26	Surface plate (tables)	"		14
27	Tachometers	1 Year		8
28	Cloth meters	On demand		8
29	Magnetic Stirrer	On demand		8
30	Centrifuge	"		8
31	Dipping tapes	1 Year		8
32	Skirt angle gauge	on demand		10
33	Tape measures	1 year		10

A7. Mass Laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
BALANCES				
1	Up to 3 kg	1 year		7
2	3 kg - 60 kg	1 year		7
3	60kg - 300 kg	1 year		7
4	300kg - 3000 kg	1 year		7
WEIGH BRIDGES / SCALE (Exclusive of hiring of weights.)				
5	3Tons - 10Tons	1 year		7
6	10 Tons -30 Tons	"		7
7	Above 30 Tons	"		7
BATCHING PLANTS				
8	Upto 1000 Kg	1 year		7
9	Above 1000 Kgs	"		7
MASSES				
10	Class M_1 (Less than 1 Kg)	1 year		14
11	Class M_2 (More than 1 kg)	1 year		14

12	Class M_1 Set	1 year		14
13	Class F_2 Set	1 year		14
14	Class F_1 Set	1 year		14
15	Class E_2 Set	1 year		14
MOISTURE INSTRUMENTS				
16	Moisture content balance	1 year		7
17	Moisture content instrument	1 year		7

A8. Photometry laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Spectrophotometer	1 year		7
2	Photometer	1 year		8
3	Illuminance meter	1 year		6
4	Colorimeter	1 year		8

A9 Pressure laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Industrial Pressure gauge (bourdon tube)	1 year		8
2	All Test Pressure Gauges	"		8
3	Vacuum Gauges (other types)	"		8
4	All types of Tyre Pressure gauges	6 months		8
5	Sphygmomanometer (blood pressure gauges)	6 months		8
6	Combination gauges (vacuum & normal pressure)	"		8
7	Force Test Gauges (bourdon tube)	"		8
8	Pressure Balance (dead weight tester)	1 year for accredited centres 3 years for others		21
9	Gas Regulators for welding & allied equipment	1 year		8

A10 Ionizing Radiation Dosimetry laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Survey meter	1 yr		11

2	Beeper	1 yr		11
3	Ionization chamber	1 yr		11
4	Dosimeter	1 yr		11
5 5.1 5.2 5.3	TLD/Film budges 0-25 25-50 Over 1000	1 yr		11
6	Kair measurements(per position)	-		-

A11 Thermometry / Humidity laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	General Laboratory glass thermometers / Std.	1 year		8
2	Dial gauge thermometers	"		8
3	Clinical thermometers	"		8
4	Thermocouple	"		10
5	Digital indicators (temperature)	"		8
6	Resistance thermometers	"		10
7	Temperature controller	"		8
8	Ovens	"		10
9	Furnaces	"		10
10	Incubators			10
11	Autoclave	"		10
12	Water bath	"		8
13	Oil baths	"		8
14	Sand baths	"		10
15	Humidity/Temp. recorders	"		8
16	Humidity meter	"		8
17	Driers	"		8
18	Digital thermometers (including probe)	"		8
19	Humidity cabinets	"		10
20	Contact thermometers	"		8
21	T/C potentiometers	1 Year		8
22	Max/ Min wall thermometer	"		8
23	Wet/ dry bulb thermometer	"		8

A12 Time & Frequency laboratory

No.	Equipment / Instrument	Recommended Interval of Calibration		Average Turnaround Time (Days)
1	Atomic Frequency/Time Standard	1 year		15
2	Crystal/Reference Oscillators	"		15

3	Frequency counters/timers	"		4
4	Modulation/Spectrum/Signal Analyzers	"		15
5	Oscilloscopes	"		4
6	Oscilloscope calibration systems			
	i) Calibration generator	"		5
	ii) Time mark generator	"		5
	ii) level sine wave generator			5
7	Signal/function generators	"		5
8	Navigation aid/test equipment	"		15
9	Power meters (RF/Audio)	"		4
10	RF Attenuators	"		4
11	Mains powered Timers	"		4
12	Stopwatches/clock/chronograph	"		4
13	GPS master clock / timing receiver	"		15

A13. Volume/Flow laboratory

No.	Equipment / Instrument	Max. Interval Of Calibration		Average Turnaround Time (Days)
1	Tanks not more than 20L capacity	1 year		9
2	Tanks larger than 20 but less than 200L	"		9
3	Tanks larger than 200 but less than 500 L	"		10
4	Tanks larger than 500 but less than 1000 L exclusive	"		10
5	Tanks from 1001 - 3000 L	"		10
6	Tanks from 3001 - 5000 L	"		10
7	Tanks from 5001 - 7000 L	"		10
8	Tanks from 7001 - 9000 L	"		11
9	Tanks from 9001 - 11,000 L	2 years		11
10	Tanks from 11,001 - 13,000 L	"		11
11	Tanks from 13001 - 15,000 L	"		11
12	Tanks from 15,001 - 17,000 L	"		11
13	Tanks from17,001- 191,000 L	"		12
14	Tanks from 19,001 - 21,000 L	"		12
15	Tanks from 21,001 - 23,000 L	"		12
16	Tanks from 23,001 - 25,000 L	"		12
17	Tanks from 25,001 - 27,000 L	years		12
18	Tanks from 27,001 - 29,000 L	5years		12
19	Tanks from 29,001 - 31,000 L	5 Years		12
20	Tanks from 31,001 - 35,000 L	"		12
21	Tanks from 35,001 - 50,000 L	"		12

22	Tanks from 50,001 - 60,000 L	"		12
23	Tanks from 60,001 - 70,000 L	"		12
24	Tanks from 70,001 - 80,000 L	"		12
25	Tanks from 80,001 - 90,000 L	"		12
26	Tanks from 90,001-100,000 L	"		12
27	Tanks from 100,001-120,000 L	"		12
28	Tanks from 120,001-500,000L	"		12
29	Tanks from 500,001- 1,000,000L	"		12
30	Tanks from 1000,001- 3,00,000 L	"		12
31	Tanks from 3,000,001 to 5,000,000 L	"		12
32	Tanks from 5,000,001 to 7,000,000 L	"		12
33	Tanks from 7,000,001 to 9,000,000 L	"		12
34	Tanks from 9,000,001 to 12,000,000 L	"		12
35	Tanks from 12,000,001 to 15,000,000 L	"		12
36	Tanks from 15,000,001 to 20,000,000 L	"		12
37	Tanks from 20,000,001 to 25,000,000 L	"		12
38	Tanks from 25,000,001 to 30,000,,000 L	"		12
39	Tanks from 30,000,001 to 40,000,,000 L	"		12
40	Tanks Above 40,000,001	"		12
41	Prover tanks 5 L	1 Year		4
42	Prover tanks 10 L	"		4
43	Prover tanks 20 L	"		4
44	Prover tanks 50 L	"		4
45	Prover tanks 100 L	1 Year		4
46	Prover tanks 200 L	"		4
47	Prover tanks 250 L	"		5
48	Prover tanks 500 L	"		5
49	Prover tanks 1000 L	1 Year		6
50	Prover tanks 2500 L	"		8
51	Prover tanks 4000 L	"		8
52	Prover tanks 5000 L	"		8
53	Volumetric glassware	"		4
54	Water meter upto 1"	"		4
55	Water meter 2"	"		5
56	Water meter 3"	"		5
57	Water meter 4"	"		6
58	Water meter 5"	"		6
59	Water meter 6"	"		6
60	Water meter above 6"	"		6
61	Oil meters	6 months		8
62	Oil master meter	1 year		8
63	Fuel dispenser	1 year		8
64 *Charts certification and endorsement*				
64.1	Endorsement per chart			
64.2	Tanks from 500,001 to 1,000,000L ,Certification per tank	"		12
64.3	Tanks from 1000,001 to 3,00,000L,			12

	Certification per tank	"		
64.4	Tanks from 3,000,001 to 5,000,000L, Certification per tank	"		12
64.5	Tanks from 5,000,001 to 7,000,000L, Certification per tank	"		12
64.6	Tanks from 7,000,001 to 9,000,000L, Certification per tank	"		12
64.7	Tanks from 9,000,001 to 12,000,000L, Certification per tank	"		12
64.8	Tanks from 12,000,001 to 15,000,000L, Certification per tank	"		12
64.9	Tanks from 15,000,001 to 20,000,000L, Certification per tank	"		12
64.10	Tanks from 20,000,001 to 25,000,000 L, Certification per tank	"		12
64.11	Tanks from 25,000,001 to 30,000,000L, Certification per tank	"		12
64.12	Tanks from 30,000,001- 40,000,000L Certification per tank,	"		12
64.13	Tanks Above 40,000,001L, Certification per tank	"		12

B. Instrumentation services

No.	Equipment / Instrument	Recommended interval of service		Average Turnaround Time (Days)
1	Temperature controllers	As required		12
2	Ovens			12
3	Incubators			12
4	Autoclaves			12
5	Water baths			12
6	Oil baths			12
7	Sand baths			12
8	AC/DC bridges			10
9	Humidity meter			10
10	Furnaces			10
11	Driers			10
12	Digital thermometers			12
13	Contact thermometers			12
14	Rotating reference watt-hour meter			12
				12

15	Single-phase watt-hour meter			
16	Poly-phase watt-hour meter			12
17	Power factor meter			12
18	Maximum demand indicator	As required		12
19	Reactive energy (var-hour) meter			12
20	Electronic meter tester/calibrator			12
21	Atomic standard			14
22	Counter			10
23	Crystal oscillation			10
24	Timers			10
25	Frequency meter			14
26	Spectrum analysers			14
27	Modulation analyzers			14
28	Oscilloscopes			14
29	All kinds of signal generators			14
30	Navigation and test aid equipment			14
31	Attenuators			14
32	Stop-watches			10
33	Voltage reference standard			12
34	Resistance reference standard			12
35	Capacitance/inductance standards			12
36	pH meter	As required		12
37	Voltmeter & ammeters			12
38	Meggers			12
39	Potential meters			12
40	Multimeters			12
41	Differential voltimeters			12
42	Voltage/current sources			12
43	Kelvin ratio bridges			12
44	Decade resistance, Inductance/ Capacity reference standards			12
45	Voltage dividers			12
46	Power supply units			12
47	Power meters			12

48	Turbidity meters			12
49	Analytical/Precision balance			14
50	Viscometers mechanical			12
51	Viscometers Electro/Mechanical			12
52	Talameters			12
53	Polarimeters			12
54	Shakers			10
55	Moisture content determination balance	As required		12
56	Xenotest			14
57	Trash selector			12
58	Abrasion tester			12
59	Carpet testing machine			12
60	Universal testing machine			14
61	Pilling tester			12
62	Washing machine			12
63	Force machine			14
64	Hardness tester			14
65	Vacuum pumps			12
66	X-ray machines			14
67	Centrifuges			14
68	Autoclaves			12
69	Spectrophotometers			14
70	HPLCS			14
71	Chromatography			14
72	Computers			10
73	Climate chambers			12
74	Auto-analysers			12
75	Distillers			10
76	Heavy duty electro-mechanical	As required		12
77	Cash registers/ calculators			10
78	Bomb calorimeters			12
79	Overhead projectors			12
				12

80	Overhead cranes			
81	Conductivity meters			12
82	ARC welders			12
83	Fume extractors			10

C. Production services

No.	Job specifications	Job details		Average Turnaround Time (Days)
1.	Sheet metals -Soft materials -Medium carbon, low carbon Stainless/ hardened steels	Cutting 0.1mm-2mm 2.1mm-3mm 3.1mm-4mm 4.1mm-5mm 5.1mm-6mm 6.1mm-7mm 7.1mm-8mm 8.1mm-9mm 9.1mm-10mm 0.1mm-1mm 1.1mm-2mm 2.1mm-3mm 3.1mm-4mm		10
2.	Medium/low carbon steel metal bars	Cutting 1.0mm-1.5mm 1.51mm-3.0mm 3.01mm-5.0mm 5.01mm-8.0mm 8.01mm-10.0mm 10.01mm-15.0mm 15.01mm-20.0mm 20.01mm-30.0mm		10
3.	Stainless/hardened Metal bars steels	Cutting 1.0mm-1.5mm 1.51mm-3.0mm 3.01mm-5.0mm 5.01mm-8.0mm 8.01mm-10.0mm		10
4.	All materials	Grinding Normal Precision Sharpening Precision grinding		12
5.	All materials	Drilling holes 0.1mm-10mm 10.1mm-20mm 20.1mm-30mm 30mm-40mm		8
6.		Lathe work		12
7.		Milling-normal -Special		12
8.		Tapping/Die cutting		8
9.		Shaping		8

10.		Arch Welding -General -Special		12
11.		Letter punching		10
12.		Soldering		10
13.		Bending		10
14.		Brazing		10
15.		Rolling		10
16.		Consultancy and design		14
17.		Riveting		8
18.		Marking		10
19.		Fitting		12
20.		Painting- spray -Brush		7
21		Chippings for Chem./analysis		5
	PREPARATION OF WELD SAMPLES			
22	Tensile Test Piece	Material preparation shopping hour		14
23		Welding 5 hours @ Ksh.1000		
24		Lathe work 2 hours		
25		Final shopping 2 hours		
26	Impact Test Piece	Material preparation 1 hour		10
27		Welding 1 hour		
28		Cutting 1 hour		
29		Final shapping/notch		
30		Cost of material		
31	Mattress Sample	Full test preparation per sample		8
32	Pangas	3 test pieces		7
33	Square Sections	0.1-2mm 3 tensile test pieces		10
34		2.1-3mm 3 tensile pieces		
35		3.1-4mm 3 tensile pieces		
36		4.1mm-6mm 3 tensile pieces		
37		jembe, forks, spades		8
38		PVC pipes		6
	Welded	I & T section, cutting + grinding as per thickness + precision grinding.		
38.1		3mm		12
38.2		4mm		
38.3		5 mm		
38.4		6mm		
39	Braking Linings			
39.1	Asbestos			14
39.2	Train brakes			
39.3	Engraving, All steels			14
40	Aluminum, Brass and other Soft materials			
40.1	Material preparation			12
40.2	Marking			
40.3	Engraving			
41	Plastics & other soft none metal Engraving materials			
41.1	Material preparation			12
41.2	Marking			
41.3	Engraving			

D. Training/knowledge transfer & advisory services

No.	Item	Charges (KES)
1	Laboratory attachment per week/person (Introduction)	30,000
2	Laboratory attachment per month /person (advanced)	120,000
3	Professional consultation in a field of measurement (Per hour)	5,000

4	Radiation safety assessment (per visit)	10,000
5	Production services consultation	500