STANDARDS

OUTA

RWANDA STANDARDS BOARD YOUR RELIABLE STANDARDIZATION SERVICES PROVIDER

FOCUS ON RSB SERVICES PROFILE

INTERNATIONALLY RECOGNIZED SERVICES OF RSB TRIGGERING CUSTOMER CONFIDENCE

RWANDA ENACTS METROLOGY LAW TO REGULATE THE USE OF MEASUREMENTS IN THE COUNTRY























TABLE OF CONTENTS











FOCUS ON RSB SERVICES PROFILE

JUNE 2020







INSIDE

FOREWORD	7
RWANDA STANDARDS BOARD YOUR RELIABLE STANDARDIZATION SERVICES PROVIDER	8
WE DEVELOP AND DISTRIBUTE RWANDA STANDARDS THAT ARE BENCHMARKS FOR QUALITY AND SAFETY OF PRODUCTS AND SERVICES	14
OUR STANDARDS EDUCATION AND TRAINING SERVICES ARE KEY TO YOUR SUCCESS	18
INTERNATIONALLY RECOGNIZED SERVICES OF RSB TRIGGERING CUSTOMER CONFIDENCE	24
PROFIENCY TESTING SCHEMES PROVIDED BY NATIONAL QUALITY TESTING LABORATORIES	34
RSB OFFERS LABORATORY DESIGNATION SERVICE	36
OUR TESTING SERVICES HAVE GONE DIGITAL	42
ENJOY THE SERVICES BY AN ACCREDITED CERTIFYING BODY	52
RSB OFFERS METROLOGY SERVICES FOR INDUSTRY, HEALTH AND CONSUMER PROTECTION	54

Published by:

+250 784 807 755 +250 736 807 755

insightmagrw@gmail.com

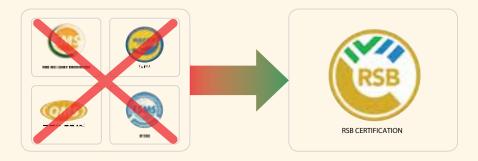
FOCUS ON RSB SERVICES PROFILE

JUNE 2020



RSB CERTIFICATION MARKS







elcome to this edition of the Rwanda Standards Journal focusing on Rwanda Standards Board services profile.

The focus of this issue explains our priority to concentrate on provision of standardization services as mandated in the Rwanda Quality Policy that was reviewed and adopted by the Government of Rwanda in 2018. This is yet another important effort to ensure standardization services rank among the key drivers of the national economic transformation; and underpin implementation of the Quality Policy while separating the regulatory functions from service provision.

In effect, this means RSB now only offers standardization services, namely: standards development at national and international levels, standards education and awareness, quality testing, certification and metrology services. This edition of the Standards Journal profiles the services offered, existing scopes and opportunities associated with international recognition of our services.

FOREWORD

RSB aspires to positively contribute to Public and Private Sector development through promoting Made in Rwanda products and services and build their capacity to ensure they comply with relevant standards. Thus, one major challenge that needs to be addressed is to ensure the increasing number of SMEs and industries, increasing number of innovations comply with standards requirements.

As reflected in our new strategic plan, we are consolidating and building on the achievements so far registered, identifying areas for improvement as well as new areas to focus on to match the country's socio-economic priorities, our customers' expectations and product diversification on the market. In this move, it is anticipated that RSB as service provider will enhance customer and stakeholder involvement through a number of strategies like improvement of technology-based service delivery, empowerment of staff through enhancing skills positioning them to deliver against the expectations of the National Strategy for Transformation (NST): and ensure a comprehensive partnership between the public and private sector.

To achieve effective service delivery to all our stakeholders we are majorly focusing on increasing the range of services offered in standards, conformity assessment and metrology as demanded by the industry; while carrying forward the upgrade of existing quality infrastructure. Primary focus on customer satisfaction and ensuring customers are put at the center all our range of services will sustain the growth of industries and SMEs. Also, standardization services continue to increase the number of certified SMEs, industries and organizations to enable them easily

access local and international markets, improve the efficiency and ability of our internal processes and assure the competitiveness of Made in Rwanda products and services.

Also, we focus on maintaining the existing international accreditations and extend their scope to cover more products and services. This will generally be guided by the demand from industries and stakeholders. We are confident that with the establishment of new regulatory institutions like Rwanda Food and Drugs Authority and Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA) the good work being done by institutions like Rwanda Utilities and Regulatory Authority (RURA), Rwanda Environmental Management Authority (REMA), Rwanda Housing Authority (RHA) and others will be complemented. We hope that RSB now focusing on providing services of standardization, conformity assessment and metrology. conflicts of interest and overlaps will be greatly minimized.

Last but not least, with RSB becoming purely a service provision entity will facilitate ease in accreditation of our services. In the quest for accreditation two principles are very important; Impartiality and Confidentiality. It was very difficult for RSB to achieve some accreditations when it was the same institution setting standards, carrying out testing, certifying, regulating and conducting market surveillance activities. In simple terms, you cannot be the jury and judge at the same time.

Looking forward to offering you fast and reliable service.

Thank you and enjoy reading.... MURENZI Raymond Director General



RWANDA STANDARDS BOARD YOUR RELIABLE STANDARDIZATION SERVICES PROVIDER



n the present environment of increased globalization, empirical evidence suggests that standardization and its conformity assessment companions have a very important role to play in technological progress, health, safety, environmental protection, quality promotion, productivity and trade promotion. It is where originated the initiative of the Rwandan Government to establish Quality Infrastructures in the vision of supporting the achievement of the set strategic development goals. Rwanda Standards Board is a Governmental Agency that was created in 2002 with the overall mission of providing standards based solutions for trade promotion and consumer protection.

Started as Rwanda Bureau of Standards as per the Lawn^o 03/2002 of 19/01/2002 determining its mission, organization and functioning; and restructured in 2013 to increase productivity and efficiency, Rwanda Bureau of Standards changed its name into Rwanda Standards Board (RSB) established by Rwanda Government Legislation N° 50/2013 of 28/06/2013 determining the mission, organization and functioning of the Rwanda Standards Board to undertake all activities pertaining to the development of Standards,

Conformity Assessment and Metrology services in the country. Currently, Rwanda Standards Board has developed and published more than 2700 Standards covering the areas of food and agriculture, engineering, service, water and environment, chemistry, chemical and consumer products.

CORE RESPONSIBILITIES OF RWANDA STANDARDS BOARD:

The following are the core responsibilities of Rwanda Standards Boards as defined by the Government of Rwanda:

- i. Establishment and publication national standards;
- ii. To provide products and quality service certifications and monitor conformity for issued certifications;
- iii. To provide legal, scientific and industrial metrology services;
- iv. To drive the effective implementation of the Made in Rwanda Policy and Management of Made in Rwanda Logo,

Rwanda Standards Board has developed and published more than 2700 Standards covering the areas of food and agriculture, engineering, service, water and environment, chemistry, chemical and consumer products.

- To carry out research in the areas of standards and metrology for the setting up of measurement standards and reference materials in the field of chemical metrology;
- vi. To establish laboratories capable of conducting tests and offering testing services,





- vii. Disseminating information on standards, technical regulations relating to standards and conformity assessment;
- viii. To raise awareness and promote the importance of standards and quality service as tools to improve market access, technology transfer and sustainable development;
- ix. To participate in monitoring standardization at national, regional and international level;
- x. To participate in putting in place technical regulations relating to standards;
- xi. To represent the country at the regional and international standardization organizations;

- xii. To act as reference laboratory in the quality compliance;
- xiii. To carry out measurement and comparison of proficiency with same level regional and international institutions;
- xiv. To organize training programs in the area of standardization, metrology and conformity assessment;
- xv. To advise the Government on defining, revising and implementing the standardization policy;
- xvi. To establish and develop relations and collaboration with other institutions at

national, regional and international levels with similar mandate, whether public or private.

WE PROVIDE INTERNATIONALLY RECOGNIZED SERVICES

In the vision of strengthening our services for their international recognition, we have upgraded them for their compliance on the applicable international standards and attestation of conformity and competences on various schemes were issued by the internationally recognized certification and accreditation body.

» International recognition of Standards Development and Corporate Support Services

Toensurecomplianceofstandardsdevelopment processes and corporate support services to the applicable international relevant standards, Rwanda Standards Board established a quality management systems according to ISO 9001 providing requirements for Quality Management System, and the established management system was assessed to check its compliance with the applicable statutory, regulatory, contractual and customer requirements; and therefore certified by one of the global leading conformity assessment bodies (Deutsche GesellschaftzurZertifizierung von Management systemen (DQS) Holdings GmbH).

In addition to proven competence and professionalism in standardization related field, Rwanda Standards Board is an active member of the following but not limited to these regional and international standardization organizations:

- International Organization for Standardization (ISO),
- International Electrotechnical Commission (IEC),
- International Organization of Legal Metrology (OIML),
- Codex Alimentarius,
- African Organization for Standardization (ARSO),
- The African Electrotechnical Standardization Commission (AFSEC),

» International recognition of our Certification Services

Rwanda Standards Board is a certification body that provides both products and management systems certification services.

To ensure compliance with the applicable international requirements, Rwanda Standards





Board's management systems comply with ISO 17021 on the requirements for bodies providing certification of management systems and ISO 17065 on the requirements for bodies providing products certification respectively.

The same established management systems were assessed and found to be in line with the applicable international requirements: the Hazards Analysis and Critical Control Points (HACCP)andFoodSafetyManagementSystems (FSMS) Certification Schemes were assessed and accredited by **RaadVoorAccreditatie** (Dutch Accreditation Council, RvA) on food manufacturing and farming of plant categories.

In the same vision, various intra-region peer assessments at EAC level on products certification were conducted and evidenced compliance of Rwanda Standards Board certification services to the requirements of ISO 17065.

International recognition of our Metrology Services (Calibration and Verification of measuring equipment Laboratories)

Rwanda Standards Board provides Metrology Services (Calibration and Verification of measuring equipment) in line with ISO 17025, the international standard providing the requirements for Quality Testing and Metrology Laboratories, as basis for competence attestation of a quality testing/metrology laboratory.

This competence of RSB to provide metrology services in the area of mass, balance, volume and temperature measurements was verified and accredited by **Deutsche Akkreditierungsstelle** (DakkS).

In the view to demonstrate competence to provide accurate measurements, RSB participates on regular basis in inter-

This competence of RSB to provide Quality Testing services was verified and accredited by RaadVoorAccreditatie (Dutch Accreditation Council, RvA) on food testing parameters.



comparisons with other national metrology organizations at regional/continental level to ensure provision of accurate measurement.

» International recognition of our Quality Testing Laboratories

Rwanda Standards Board provides laboratory quality testing services in line with ISO 17025, the international standard providing the requirements for Quality Testing and Metrology Laboratories, as basis for competence attestation of a quality testing/metrology laboratory.

This competence of RSB to provide Quality Testing services was verified and accredited by **RaadVoorAccreditatie (Dutch Accreditation Council, RvA)** on food testing parameters.

In addition to this, Rwanda Standards Board participates in proficiency testing (PT) and other inter-comparison tests, which result in maintaining the qualification of Rwanda Standards Boards Laboratories as reference laboratories at regional level (COMESA, EAS).

WE DEVELOP AND DISTRIBUTE RWANDA STANDARDS THAT ARE BENCHMARKS FOR QUALITY AND SAFETY OF PRODUCTS AND SERVICES



Standards are the basis for all the processes of the standardizing work. They are not mere information; they are documents established by consensus from different technical experts (from research, industry, exporters, sector players, academia, regulators, development partners, Consumer Associations, etc). Standards development is a consensus process that begins with the development of a draft that meets market needs within a specific area or sector.

To get this consensus, technical experts meet in Technical Committee (TC) meetings, and come up with a drat committee document to be shared with the general public in order to get comments even from those who did not get a chance to participate in the TCs. After 60 days of public review standards are sent, if no comments, to RSB Board of Directors for approval.

RSB develops national standards either indigenous or adopted at regional /international level with reference to the relevant procedures, directives and guidelines.

The voting process is the key to consensus. If

that is achieved then the draft is on its way to becoming a Rwanda Standard. If agreement is not reached then the draft will be modified further and voted on again.

RSB follows the following principles while developing National Standards:

- Respond to a need in the market
- Developed through a multi-stakeholder process
- Based on global expert opinion
- Based on a consensus

After the approval, Rwanda Standards are published in the Official Gazette and only RSB holds control over Intellectual Property Rights for their use, distribution and sale. Whoever needs the standards will have to follow the established policies on the same.





The objective of these policies is to preserve the integrity, authenticity and also to avoid misuse of the content of the national standards.

WHO DEVELOP NATIONAL STANDARDS?

National Standards in Rwanda are developed by more than 1200 experts who come from industry, government, consumer organizations, academia, non-governmental organizations with the support of the technical units of the National Standards Division, namely Food and agriculture, Chemistry and Environment (FACE) Standards Unit and Engineering and Urban Planning (EUP) Standards Unit. As at the end of the Fiscal Year 2019/2020, RSB has developed a total of 2764 standards, in the following areas:

No.	Sector	No. of Standards Developed
1.	Engineering	1598
2.	Food and agriculture	640
3.	Chemistry and pharmaceutical products	337
4.	Water and environment	123
5.	Services	65
6.	Standardization	1

RSB is committed to continually increasing the number of national standards as they are the driving tools for product formulation, conformity assessment, consumer protection, innovation, technology and research promotion.

We get your needs covered through participation in international standardization activities.

RSB has been participating in 23 standards setting Technical Committees (TCs) and Subcommittees of the International Organization for Standardization. Our aim is an increased participation in order to pave and strengthen the way of locally made products to international markets. The table below shows TCs in which RSB takes part in the standard development work. The Board attends international physical and online meetings via ISOlution system to underpin Rwanda's voice and position in developed standards.

	The second s
ISO/TC 301	Energy management and energy savings
ISO/PC 318	Community scale resource oriented sanitation treatment systems
ISO/TC 176/SC 2	Quality systems
ISO/TC 176	Quality management and quality assurance
ISO/TC 323	Circular economy
ISO/TC 34/SC 17	Management systems for food safety
ISO/TC 34/SC 3	Fruits and vegetables and their derived products
ISO/TC 268	Sustainable cities and communities
ISO/TC 205	Building environment design
ISO/TC 268/SC 1	Smart community infrastructures
ISO/IEC JTC 1/SC 40	IT Service Management and IT Governance
ISO/IEC JTC 1/SC 27	Information security, cybersecurity and privacy protection
ISO/TC 34/SC 4	Cereals and pulses
ISO/TC 34/SC 5	Milk and milk products
ISO/TC 283	Occupational health and safety management
ISO/TC 207	Environmental management
ISO/TC 54	Essential oils
ISO/TC 285/WG 1	Conceptual framework
ISO/TC 285/WG 4	Social impacts
ISO/TC 285/WG 3	Field testing methods
ISO/TC 285	Clean cookstoves and clean cooking solutions

Beyond participating in international standards setting work, through our services especially our library, customers have access to more than 60,000 International Standards developed by the leading international standards setting bodies such as ISO, ASTM, EU standards, etc.

TYPES OF STANDARDS AVAILABLE

From our library and online platforms, you can access standards that were developed through three methods:



ASTM Standards adopted as Rwanda Standard

- ISO Standard adopted as Rwanda Standard
- Codex Alimentarius Commission
 Standards adopted as Rwanda Standard
- ISO/IEC Standard adopted as Rwanda Standard
- OIML Standards adopted as Rwanda Standard
- IEC Standards adopted as Rwanda Standard
- AOAC Standards adopted as Rwanda Standard
- IEEE Standards adopted as Rwanda Standard

HARMONIZED STANDARDS:

- East African Standard adopted as Rwanda Standard
- ARSO Standards adopted as Rwanda Standard

RSB is committed to continually increasing the number of national standards as they are the driving tools for product formulation, conformity assessment, consumer protection, innovation, technology and research promotion.

OUR STANDARDS EDUCATION AND TRAINING SERVICES ARE KEY **TO YOUR SUCCESS**

or the Rwandan people to participate effectively and efficiently in Standardization and implement developed tools, Rwanda Standards Board, through National Standards Division, conducts training programs for the general public, private sector and government institutions on the importance of standardization. The trainings offered are as follows:

Online catalogue where information on all standards published can also be accessed via RSB website; and the library is also available for perusal of the full content of different standards.

RS ISO 9001:2015	Quality management systems — Requirements
RS ISO 19011:2011	Guidelines for auditing management systems
RS ISO 22000: 2018	Food safety management systems — Requirements for any organization in the food chain
RS 184:2017	Food Safety System based on Hazard Analysis Critical Control Points (HACCP) — Requirements for any organization in the food chain
RS ISO/IEC 17025:2017	General requirements for the competence of testing and calibration laboratories
RS ISO 14001: 2015	Environment management system — Requirements with guidance for use
RS EAS 38: 2014	Labeling of pre- packaged foods — General requirements
RS ISO 45001:2018	Occupational Health and safety Management Systems
RS ISO 50001: 20018	Energy Management Systems
RS CAC/RCP 1-1969 (2005)	General principle for food hygiene — Code of practice
Products standards	as specified in the standards catalogue accesible at our website.

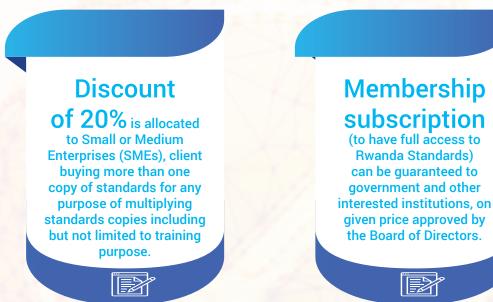
To receive one of our training, follow the below steps:

- Fill in the training application form available of the RSB website.
- Submit the filled training application form to the training coordination office via info@rsb.gov.rw
- The training coordinator prepares a training quotation
- All training fee must be paid and proof of payment presented to the training coordinator two weeks before the training due months
- Training will be conducted after fulfilling all the above requirements

ACCESSIBILITY TO THE STANDARDS

Depending on the sectors in which standards have been developed, Stakeholders including specific industries/SMEs, Government institutions, Academia or Consumer Associations, are notified of the new standards, and they are requested to observe and implement the requirement set in the new or revised standards. Online catalogue where information on all standards published can also be accessed via RSB website; and the library is also available for perusal of the full content of different standards.

This facility is open to all during working hours. (From Monday to Friday, starting at 7:00am to 5:00pm)



PRICING OF STANDARDS

Rwanda Standards are priced basing on technical part of the standards i.e. from scope up to Annexes (if any). Therefore, preliminary pages together with bibliography (if any) and cover page are not be charged;

- a) Once the Standard is revised, the client is entitled to the first copy of the revision for free to replace the old edition, other edition of the standards will be charged as per the approved scheme;
- b) The price of Standards covers all types of published Standards (i.e new and revised, standards of Rwanda origin and those adopted ones);
- c) Discount of 20% is allocated to Small or Medium Enterprises (SMEs), client buying more than one copy of standards for any purpose of multiplying standards copies including but not limited to training purpose. It important to note that when it

is needed to make more than one copy, the first copy of the standard is charged 100%;

Rwanda Standards)

- d) Membership subscription (to have full access to Rwanda Standards) can be guaranteed to government and other interested institutions, on given price approved by the Board of Directors. The license agreement specifies the period. the use for downloaded standards and termination of the license:
- Selling other regional and international e) standards considers the set schemes from the relevant organizations. RSB can sell adopted regional/international standards in accordance with this pricing scheme whenever it does not compromise their own commercial terms:
- Adopted international standards which are freely accessible must not be charged, they are freely distributed to any client in need (e.g: CODEX STAN, OIML);

g) Withdrawn publications no longer carry the status of Rwanda Standards. However, recognizing that withdrawn publications can be important for research and litigation purposes, RSB endeavors to ensure that copies continue to be available for sale and continues to hold and protect the copyright over them.

BUY RWANDA AND INTERNATIONAL STANDARDS ONLINE

RSB is using the print on demand system but currently soft copies of standards are also provided to clients, whereby after payment of the requested standard at Rwanda Revenue Authority, a client can submit a proof of payment to RSB Library and gets the purchased standard.

Standards and their prices are available through our online standards catalogue (http://www.portal.rsb.gov.rw/catalogue.php)

RSB as member of ISO has the responsibility for the sale and distribution of ISO publications

in Rwanda either in their original form or as translations or national adoptions.

For this purpose, from our library, YOU CAN CONSULT FREE OF CHARGE about 23196 ISO standards covering almost all aspects of technology and manufacturing. However, soft copies can be bought as well after payment at RRA accounts.

SALE OF ISO STANDARDS

ISO members have the primary responsibility for the sale and distribution of ISO publications in their national territories, either in their original form or as translations or national adoptions. For this purpose ISO has increased access to their standards whereby an "ISOlutionwebstore" platform has been developed to enable customers to buy ISO standards via ISO member's website (RSB website). In addition to the wide access to Standards, the platform will offer to Rwandan customer's top of class products at local prices and in Rwandan local currency.

RSB STANDARDS PAYMENT PROCESS AND METHODS

DO YOU NEED TO BUY A STANDARD?

Standard request to RSB

Advice ticket generated from RRA system

Advice ticket issued

Payment to RRA by client

Proof of payment presented to RSB

Standard issued to client (Hard/soft copy)

PAYMENT METHODS

- Cash Payment is made at RRA's account in any Bank
- Electronic transfer is made at RRA account in Banque Nationale du Rwanda (BNR) Account no: 1200046 Swift code: BNRWRWRW

Bank of Kigali (USD) Account no: 00040-0315129-09 Swift code: BKIGRWRW

HELP DESK

If help is needed on the above service please refer the following contacts:

RRA: (+ 250)788463938 RSB: (+ 250) 788503153/788467453 RSB customer ePortal: portal.rsb.qov.rw

WORKING HOURS:

Monday to Thursday: From 7h00 a.m-5h00 p.m

Friday: From 7h00 a.m-3h00 p.m

21

Email: info@rsb.gov.rw | Website: www.rsb.gov.rw | Toll Free: 3250



WHO USE STANDARDS?

Standards users are in different categories and this is linked to the need and intended use of those standards.

USERS ARE:

22

- Industries/ SMEs wishing to comply with standards requirements and to improve their competitive edge
- Government institutions or regulators for referencing the standards in Technical Regulations or quality control purpose
- Clients with non-profit purpose including but not limited to academia, research institutions and NGOs
- Those who use standards in the standards development process (official nominated by Technical Committee members of the

Rwanda Standards Committees)

- All other interested parties or stakeholders who access Draft Rwanda Standards made available for comments to during public review period.
- Consumer Associations who refer to standards in their consumer advocacy efforts

DISTRIBUTION OF RWANDA STANDARDS

- Rwanda Standards cannot be copied or shared on an electronic network without explicit authorization from RSB.
- Draft Rwanda Standards or Rwanda Standards in hard or soft copy, is permitted free of charge exclusively for TC members and the general but at the time of public review period

REPRODUCTION OF RWANDA STANDARDS

The reproduction of Rwanda standards in hard copy or electronic formats, for the purpose of meetings the following principles apply:

- Only purchased copies of original RS can be reproduced, but each page of each electronic/hard copy must include a watermark with an acknowledgement such as Copied by (name of End User) with the permission of RSB;
- Permission to reproduce Rwanda Standards should formally be given by RSB in an appropriate form (email, letter, licensing agreement);
- RSB's published content by anyone requires written approval by RSB and entails payment of a fee in accordance with pricing scheme.
- The total number of pages of the RS

reproduced must not be more than 25% of the document the material is reproduced in

For incorporating RS or parts of RS in national regulation and internal end user documents such as manuals, procedures among others, the following rules apply:

- The End User must seek authorization and document must carry an acknowledgement as described above;
- All Rwanda Standards, national adoptions, their Drafts and other works must carry a copyright notice in a suitable place that is clearly visible, together with an abbreviated copyright notice on each page;
- Having contributed to the development of the Rwanda Standards; committee members, their employers and nominating organizations are not thereby entitled to reproduce the content of the published standard. Requests to do so require written permission from RSB.



INTERNATIONALLY RECOGNIZED SERVICES OF RSB NATIONAL QUALITY TESTING LABORATORIES TRIGGERING CUSTOMER TRUST



he National Quality Testing Laboratories Division (NQTLD) is one of the five divisions that constitute Rwanda Standards Board and is composed of three units:

- Chemical Laboratories Unit (Organic , inorganic , petroleum food , agriculture and mycotoxins Laboratories)
- Biotechnology Laboratories Unit (Microbiology laboratory)
- Materials Testing Laboratories Unit (building materials, non-destructive mechanical, polymers and textiles laboratories)

WHY IS PRODUCT TESTING IMPORTANT?

The quality and safety of a product must comply with the standard specifications before it is introduced on market. Testing laboratories infrastructure is one of the basic requirement for manufacturing industries.

When a manufacturer doesn't have testing facilities, it is recommended to seek testing service for raw material used in production process and final/End product in order to comply with the quality requirement of the given product.



Laboratory testing plays an essential role throughout the entire production process (research and development, reception of raw material, manufacturing steps and finished product).

Before distribution of products, testing service should be requested in ordered to minimize risks and loss related to non-compliant products.

For manufacturer and distributors, testing service prevent complaint and dissatisfaction of customers.

WHAT ARE THE CRITERIA FOR SELECTION OF A COMPETENT TESTING SERVICE PROVIDER?

1. Competent Human resources

Laboratory tests shall be performed by qualified ,trained and motivated personnel

2. Laboratory equipment and test methods

Laboratories shall have appropriate equipment and right test methods with capacity to produce accurate and precise laboratory test results.

3. Appropriate laboratory infrastructure

Testing analysis shall be conducted in suitable environment with predefined, monitored and controlled conditions

4. Laboratory Quality control and Assurance.

Quality control plans are regularly prepared and implemented to ensure the laboratory quality test results

Laboratories shall participate periodically in inter laboratory comparisons and proficiency testing schemes in order to verify laboratory performance.

5. Laboratory accreditation

The laboratory accreditation is an achievement showing the laboratory performance.

It has a range of marketing advantages, and international recognition of technical competence.



WHY CHOOSING RSB TESTING SERVICES



- 1. RSB testing laboratories fulfill all criteria mentioned to be selected as competent testing service provider
- Since 2018, Laboratories are accredited by Dutch Accreditation Council (RvA) member of International Laboratory Accreditation Cooperation (ILAC) for more details visit: www.rsb.gov.rw or www.rya.nl
- 3. All laboratories operate in accordance with the International standard ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" since 2007.
- 4. Testing service is provided within seven (7) working days.
- 5. The laboratories operate five (5) days a week from Monday 7H00-17H00 up to Friday 7H00-15H00

6. The testing scope covers more than 280 tests/ analytes in various food and non-food products

A detailed testing scope is available at RSB website:www.rsb.gov.rw





DISCOVER THE BENEFITS OF THE UNEQUALLED SERVICE IN MATERIALS TESTING



SB Materials Testing Laboratories strive to guarantee the guality of materials before use as well as their safety as required by the National or International Standards. Our Materials Testing Laboratories test the quality of various imported goods and locally manufactured products against the standards requirements. As for other RSB Laboratories, Materials Testing Laboratories is a potential service provider to RSB - Quality Assurance Unit, RSB - National Certification Division as well as to external customers. Working in line with ISO/IEC 17025 principles, we continue to be proud of the contribution of Materials Testing Laboratories to ensure consumer's protection and trade promotion.

Operational since 2011, RSB Materials Testing Laboratories have been progressively expanding their testing capability by choosing technological testing solutions that increase customer confidence to our tests results. That is the reason why most of our testing equipment are software controlled and designed following international standard test methods.

Even though construction materials samples are the most frequently brought to us by our customers, our testing capacity goes beyond to cover polymers testing, and has basics capacity in Leather and textile testing.

The labaratories have in place Non-Destructive

Testing (NDT) facilities based on X-rays fluorescence principle and on FTIR molecular spectroscopy, modern techniques whereby materials are tested without damage for quick identification of their type and can still be used if they meet standards requirements after test.

Materials testing labaratories strives to continually meet customer satisfaction; where possible, our customers can propose test methods and researchers are free to bring samples and suggest test methods on their own in order to validate their research works.

Our testing capability is the most extensive and comprehensive of its kind of materials engineering - including but not limited to the following:

I. BUILDING MATERIALS TESTING LABORATORY TESTS THE FOLLOWING PRODUCTS:

- Cement
- Roofing sheets
- Cement Blocks and Bricks
- Paving blocks
- Burnt bricks and blocks
- Clay Roofing tiles
- Concrete
- Sand Sand
- Plastic Pipes
- Floor tiles

CAPABILITIES

- Cement standard consistency
- Compressive strength and/or flexural





strength of cement (2days /7days/28 days)

- Base Metal thickness of roofing sheets
- Coating mass (zinc and Aluzinc) of roofing sheets
- Dimensional test of roofing sheets and gauge identification
- Compressive strength of Bricks, blocks
- Dimensional test of bricks, blocks and roofing tiles
- Water absorption of bricks, blocks and roofing tiles
- Flexural strength of roofing Tiles
- Particle size distribution of sand by sieve analysis
- Compressive strength of concrete cubes and cylinders



- Hydrostatic pressure test of plastic pipes
- Tensile test of plastics materials and roofing sheets
- Compression test and ring stiffness test of plastics materials

II. POLYMERS AND TEXTILE LABORATORY TESTS THE FOLLOWING PRODUCTS

- Condoms
- Mattress
- Leather materials
- Papers products
- Papers and boards as Packaging materials
- Textile
- Paints

CAPABILITIES

- Freedom from holes of condoms
- Bursting volume of condoms
- Bursting pressure of condoms
- Pack seal integrity of condoms
- Length of condoms
- Width of condoms
- Thickness of condoms
- Tensile properties of leather and textiles
- Tear resistance of leather and textiles
- Density of leather
- Dimensions of tested polymers, leather and textile
- Fabric weight
- Bursting strength and bursting index of packaging materials

- Elmendorf tear strength of packaging materials
- Melt Flow index of packaging materials
- Friction and dynamic coefficient of packaging materials
- Gurley Air Permeability of packaging materials
- Water absorptiveness: Cobb test of packaging materials
- Density of paint
- Materials gloss Value
- Resistance to abrasion
- Drying time of paints
- Hardness of organic coating(paints)
- Resistance to water penetration of water proofing materials
- Color fastness to washing
- Color fastness to weather conditions of textile
- Color fastness to light of textile
- Paint fineness
- Textile color spectroscopy

III. DESTRUCTIVE MECHANICAL TESTS LABORATORY TESTS THE FOLLOWING PRODUCTS

- Steel bars
- Water tanks
- Other metallic materials

CAPABILITIES

Tensile strength/Yield strength/elongation of metallic materials

- Three points Bend test of Reinforcing steel bars
- Dimensional test of Metallic materials
- Tensile properties of plastic/metallic sheets
- Resistance to deformation of polyethylene water tanks

IV. NON DESTRUCTIVE MECHANICAL TESTS LABORATORY TESTS THE FOLLOWING PRODUCTS

- Metals and soils elements identification
- Plastics Polymers identification
- Carbon and Sulfur determination in Inorganic materials and in Organic materials including: Steel, Cement, refractory materials, carbides, glass, ceramics, Soil, Fertilizer, Coal, coke, oil, lime, gypsum, Charcoal, Peat, waste water and many more.
- Electrical cables

CAPABILITIES

- Brinell Hardness of metals
- Chemical composition of Metallic materials: elemental analysis by X-rays fluorescence spectroscopy
- Plastics Polymers identification by FTIR molecular spectroscopy
- Chemical composition of soils and rocks: elemental analysis by X-rays fluorescence spectroscopy
- Carbon and Sulfur Analysis
- Resistance of electrical cables

OUR LABORATORIES CONDUCT TESTS FOR CERTIFICATION AND QUALITY ASSURANCE OF LOCALLY MADE AND IMPORTED PAINTS AND COATINGS TESTING SERVICES



Since 2019, with the aim of promoting trade and consumer protection as a core mandate, Rwanda standards Board has realized that the number of local manufacturers of paints did not cease to increase. Consequently, the Standards Board found urgent to avail standards that would support local manufacturers meet customers' needs to make quality and reliable paints for local market and export within the region. In collaboration with the Private Sector including local manufacturers of paints and other relevant stakeholders, RSB developed paint standards. The entire range of locally manufactured paints needs were encapsulated into standards specifications and harmonized with regional standards in paints.

In addition, the Standards Board decided to go further by investing in paints testing equipment. Today, Rwanda Standards Board is equipped with high end technology equipment to provide conformity assessment activities needed for certifications of locally manufactured paints and quality tests services of imported paints. RSB tests cover the following scope:

Liquid paints:

- 1. Density of paints
- 2. Drying time of paint
- 3. Fineness
- 4. Color characterization of paints
- 5. Non volatile matters
- 6. Impurities: heavy metals
- 7. pH

Coatings:

- 1. Dry film thickness of coatings
- 2. Gross value

- 3. Color characterization of coating
- 4. Coating adherence: abrasion resistance & hardness of coatings

The testing scope will be continually upgraded to meet all customer requirements; and expansion will be kept updated on RSB website: www.rsb.gov.rw . Rwanda Standards Board calls local manufacturers of paints wishing certification of their paints products and contractors in construction industries to get paints standards and testing services offered by our testing laboratories. With the institution being ISO 9001 certified, and most of its testing services already accredited and others in ISO/ IEC 17025 accreditation process, get testing services from a globally recognized service provider. **Our aim is your satisfaction!**



PROVIDED BY NATIONAL QUALITY TESTING LABORATORIES



he Bureaux of Standards in the EAC region have been given a mandate to organize Proficiency Testing (PT) Schemes as part of the EAC SQMT improvement. In the EAC region, the EAC PT Scheme is an annual activity, currently with one PT round covering many the matrices in the scheme.

What is PT? An evaluation of participant performance against pre-established criteria by means of inter-laboratory comparisons (ISO/ IEC 17043 Conformity assessment – General requirements for proficiency testing)

Proficiency Testing (PT) is one of the analytical

tool laboratories use to benchmark with peers and also demonstrate their competences.

PT participation provides a quality assurance tool to laboratories and take necessary remedial action to facilitate improvement, with an aim of producing accurate and reliable test results.

Following PT schemes are provided at EAC level:

- Edible vegetal oil
- Edible common salt
- Wheat flour

- Maize flour
- Fruit juice
- 🗢 Sugar
- Honey
- Skim milk powder
- < UHT milk
- Meat and fish
- Skin cosmetic lotion
- 🕝 🛛 Black tea
- Fertilizer
- Animal feeds
- 🗢 Gin
- Laundry soap

PT schemes organized by Rwanda Standards Board:

- 🗢 Sugar
- Skin cosmetic lotion
- Laundry soap

Additional information can be accessed from the EAC SQMT website: http://www.eac-quality.net and then click on Testing, or from the websites of the respective PT providers indicated above.

BENEFITS OF PARTICIPATION IN PT SCHEMES

Many laboratories operate in isolation from other laboratories and do not have ongoing opportunities to compare their data with others. Without such opportunities there are risks that a laboratory's data may have errors, biases or significant differences compared to similar laboratories Participation in Proficiency Testing Programs has the potential benefits for all type of testing.

Below are some examples:

- Confirming competent performance of laboratory personnel
- Identifying testing or measurement problems
- Comparing methods and procedures
- Improving performance
- Educating staff
- Instilling confidence in staff, management and external users of laboratory services
- Comparing operator capabilities
- Generating reference materials
- Determining method precision and accuracy
- Satisfying regulators and accreditation bodies
- Providing laboratories with additional risk management



RSB OFFERS LABORATORY DESIGNATION SERVICE



Vith reference to the East African Community Standardization, Quality Assurance, Metrology and Testing (SQMT) act 2006, especially in its Article 12 which stipulates that Partner States may establish or designate Organization to function as Testing Laboratories to provide scientific and technical services to perform conformity assessment services for technical regulation or compulsory standards, the EAC Testing Technical Sub-Committee (EAC-TTSC) has developed a procedure with criteria to be used for designation of Testing laboratories in Partner States based on ISO/IEC 17025 General requirements for competence of Testing and Calibration Laboratories.

Under this basis, Rwanda Standards Board was appointed as the National Quality System institution with responsibility to establish laboratory designation scheme and facilitate existing testing laboratories with interest of being designated.

National Quality Testing Laboratory under Rwanda Standards Board is providing different facilitation to existing testing laboratories in the Country; the facilitations include:

- i) Identification of testing laboratories in different disciplines;
- ii) Awareness training on the ISO/IEC

17025 as the standard under which the designation is based on;

- iii) Initial drafting of all Quality management systems required documents;
- iv) Review of the designation application and developed documents from different laboratories;
- v) Assessments and recommendation to the Minister responsible to designated;
- vi) Follow up and surveillance audit for designated laboratories;
- vii) Awareness training on review and changes in current version of ISO/IEC17027:2017;

WHY SHOULD A LABORATORY SEEK DESIGNATION?

- Regional recognition,
- Improved service performance (e.g. Tracking of testing /calibration records),
- Improved productivity and cost reduction,
- Improved confidence between customer and service provider,
- Provides protection against liability claims,
- Customer satisfaction,
- Improved national and regional reputation and image of the laboratory,
- Prepares the laboratory accreditation readiness.

BENEFITS OF LABORATORY DESIGNATION TO THE LABORATORY OWNER AND CUSTOMERS

A system to continuously improve both the management and technical aspects of the business Improved customer service and higher customer satisfaction with laboratory testing;

- Laboratory designation gives assurance to the client that the data they rely on was generated in a competent laboratory;
- A competitive support over competitors who are not designated in a regional accepted quality system;
- Clearly the general public benefits from laboratory designation as well.
 Consumers want assurances that the products and services they purchase meet their expectations and conform to specific requirements. Reliable test data means consumer goods of consistent quality that conform to applicable standards.
- Laboratory designation process is cheaper than accreditation process but prepares the laboratory for accreditation when deemed necessary.

DESIGNATED LABORATORIES IN RWANDA

The designation scheme was initiated in 2015, and the first 11 laboratories were designated in 2018. Since 2018, the number of laboratories seeking designation services has being increasing and those are from different provinces of the country.

Laboratory designation may cover the entire scope of laboratory or a small part of the testing scope that is why the designation scope is defined at time of designation.

List of designated laboratories in different fields is accessible at RSB website: www.rsb.gov.rw .

WANT TO BE COMPETITIVE? ENJOY THE SERVICES OF INTERNATIONALLY ACCREDITED TESTING SERVICES PROVIDER!



he National Quality testing laboratories being one of the five divisions that constitute Rwanda Standards Board was first accredited bases on ISO 17025 in 2018 with 6 parameters in Microbiology and 6 parameters in chemical testing; and is house to a gradually increasing accredited scope to meet customer expectations.

In February 2020 National Quality testing laboratories increased its accredited scope to 20 parameters, 9 parameters in Microbiology and 11parameters in chemical testing. Specific accredited parameters are accessible at www.rsb.gov.rw Testing laboratory involves multistep processes that are susceptible to multiple sources of error. These errors can lead to significant result variability and decreased accuracy, which in turn can potentially lead to incorrect diagnosis and inappropriate treatment.

WHAT IS LABORATORY ACCREDITATION?

Laboratory accreditation is a third party assessment of a Calibration or Testing laboratory by the Laboratory Accreditation Body, to evaluate the laboratory's compliance to the requirements of ISO/IEC 17025 and any addition applicable accreditation policies.

WHY TESTING LABORATORY SHOULD BE ACCREDITED?

Testing laboratory involves multistep processes that are susceptible to multiple sources of error. These errors can lead to significant result variability and decreased accuracy, which in turn can potentially lead to incorrect diagnosis and inappropriate treatment. Production of quality data on which decisions are based on Good Laboratory Practice (GLP), guidelines and other international conventions. High quality laboratory results are also required to protect the health and safety of consumers.

Laboratory accreditation is a widely accepted process of evaluation of a laboratory's quality,



performance, reliability and efficiency. It is a means to promote and enforce better quality in testing laboratory and to ultimately reduce testing errors. Accreditation also increases the credibility of the results and services delivered by a laboratory through providing recognition that it is compliant with quality and competence standards considered necessary for accurate, reliable and safe testing. The value of accreditation lies in promoting the delivery of reliable results to the customers.

HOW DOES LABORATORY ACCREDITATION FACILITATE TRADE?

- As governments increase technical barriers to trade in an effort to regulate their markets, Accreditation provides assurance to trading partners that an exporting country is competent to test, inspect or certify to the trading partners' requirements, thus overcoming trade barriers by assuring compliance to the WTO/TBT Agreement.
- 2. Accreditation of laboratories ensures that test results can be reproduced to a sufficient degree in any accredited laboratory. It is an independent method of monitoring laboratory competence and performance and it assures the validity of results to users. An accredited laboratory can establish Mutual Recognition Agreements (MRAs) with counterpart bodies. These agreements ensure equivalency of systems in different countries. There is automatic acceptance of test results from accredited laboratories. which are parties to a given MRA. Costs are reduced because there is no need for duplicate testing by both exporters and importers and this serves to eliminate technical trade barriers and facilitate trade.

 Using accredited laboratories also facilitates economic growth. The accrediting process relies on a uniform approach to determining laboratory competence – an approach that has been accepted and implemented across many borders. Because of internationally accepted testing and measurement practices, data generated by an accredited laboratory may lead to the more ready acceptance of exported goods in overseas markets.

WHY TRUST OUR SERVICES BY OUR QUALITY TESTING LABORATORIES?

- National Quality Testing Laboratory is a service provider and provide equal treatment to its clients. NQTLD clients include Manufacturers, Importers, Exporters, Non-governmental Organizations, Government Departments, Research institutions and individual researchers;
- The laboratories operate five (5) days a week from Monday 7H00-17H00 up to Friday 7H00-15H00, and the samples received are tested within 7working days whenever possible;
- iii) National Quality Testing Laboratory is equipped with modern automated equipment operated by trained, qualified and motivated personnel and is accredited by the Dutch Accreditation Board (RVA) based on ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories"

- iv) To confirm maintenance of accuracy in its performance, National Quality Testing Laboratories regularly participate in inter laboratory comparisons and proficiency testing schemes and take appropriate action when the results do not comply.
- v) The RSB Management is committed to hearing from the clients through National Quality Testing Laboratories customer care desk, filling of customer feedback and when deemed necessary the client meets the laboratory management to ensure clients optimize the satisfaction from our services.





OUR TESTING SERVICES HAVE GONE DIGITAL

Ander ds and and s an	Advanced from an advanced of the second	Administry of the second and the second and the second areas of the second areas		And and any second concernance of the second sec		A Contract Contender Contract Contract Contract Contract Contract Contract Cont	Advanting of the manufacture of the contract of the contr	All Render in New All Contract Collection All Contract All Contra	Market Bank Million Contract of Contraction Contractions Market Contraction	Admit 1 a Standards art a Standards art a Standards	Advelope in the second and the second and the second advectorial a	Admitted Matter Contract Contraction Contraction Matter Contract Matter Contraction Matter Contraction <th< th=""><th>And I Control Control</th><th>And to bring + Contraine + And + Records Contraine + And + Records - Records</th><th>Ander Contest Team And Contest Contest of Co</th></th<>	And I Control	And to bring + Contraine + And + Records Contraine + And + Records - Records	Ander Contest Team And Contest Contest of Co
Ander ds and and s an	Iteration Iteration Instant is a Standards Instandards	Related Links tandardS matrix a transmaster extends rate public field ducements that entities processes and proceeding on the reactions the tables of the transmission products, and/or control processes between the tables for the comparison of the entities of the entities processes between the tables for the comparison of the entities and the entities processes between the field transmission duce for the comparison of the entities and the entities of report transmission to the processes and the comparison of the entities and the entities of the processes between the field transmission duce for the comparison of the entities and the entities of the processes to the processes and between entities and encounter to the field to proceed to the entities of the entities of the processes and between entities and the entities and the entities of the entitie			Answer / Maximum Texture Text	edards related Links related Links related Links Related Links Association decorrect for electric componence on every lay	Annual / Samanak Related Links tandards Related Links matrix is a streambards* Music facilities matrix is a streambards Music facilities statistic are published deconverse that reactions and deconverse the statistic protects and protects are published deconverse the facilities Goottee streambard	Index / Second According to the second of th	Standards Related Links Related Links Multi Tarlated Links Multi Tarlated Links Multi Tarlated Links Multi Tarlated Links	Include (Namanon) andards arm a standards Anor Tandard	Standards Related Links	itandards Belated Links	Standards	Standards	Ander / Manager
andards art is a transformed art is a transformed deconverter that with their specific times and an environment the article of the materials produces whether increase preserve one overy deconverter the article of the materials produces including but not increase preserve one overy deconverter to the article of the materials and the second produce one overy deconverter to the article of the materials and the second produce one overy deconverter to the article of the materials and the second produce one overy deconverter to the article of the materials and the second produce one over the second of the materials and the second produce one over the second of the article of the materials and the second produce one over the second region produce on the article of the materials and the produce deconverter to the second region produce on the article of the materials and the produce deconverter to the second region produce on the materials and the produce one over the second region produce on the second region of the materials and the produce of the	itandards materials as publicated decrements that extended specific terms and provide recording to the record to the control of the second sec	Related Links Name is a transition of the end of the second area dependence of the provide of the second area dependence of the	dards in a standards	endards For a straining and endards intro a straining and endards	Itendards Instruction Instructio Instruction Instruction Instruction Instruction Instructi	edards T is a standards	tandards Related Links Related Links Multification Control documents that relation goalds store and econduces degree for macross the Control storage protocol and control protocol and control protocol and control to macross the Control storage protocol and control protocol and control protocol and control to macross the Control storage protocol and control protocol	Indexds In the stream and the second of the	Standards Related Links Institute a strandurator Institute are published decrements that enables productions and providents in decrements.	andards Related Links	Standards Related Links	tandards Belated Links	Standards	Standards	
Related Links Related Links which are published decrements full with the public space of an ender or despect to reacress the state of the decrement of the state of	Related Links Related Links Invite the published deconverse that extended specifications and providure collegiest to reaching the transform Allow fundaments invite the state table in published deconverse that extended to providure collegiest to reaching the transform Mount fundaments invite table and the converse that extended to providure collegiest to reaching the transform Mount fundaments invite table and the converse that extended to provide the second provide the transform Mount fundaments invite table and the converse table and the converse table to provide the second provide table and the provide table to provide table and the provide table tab	Related Links Related Links instring of the substance of the endloce gradient on the endloce of the endloce of the substance of the substance of the endloce of the endloc	n A Standautor In a Standautor In any publicited decrements that establish specifications and provident degree for macrosor the Standautor publicited decrements that establish specifications and provident degree for macrosor the Standautor that is a standautor of the standautor of the standautor In addition of committed or particular providents to the standautor of the standautor In addition of committed or particular providents to the standautor of the standautor In addition of committed or particular providents to the standautor of the standautor	A stream and the second s	Invest of a University of the state of the s	T is a standards' Related Links Association of decimation of the effective and providence designed to maximum the Government of	Related Links Related Links Advantation Related Links Advant Standards Control Stand	er is a stream and the second se	enarce a standardst Terderit ar publicled decements that enabled geodesices and providers despect to reactive the	ar is a standards Related Links	ewar is a standard fri	Related Links			No. 2012
AT IS A STANDARD! AT IS A STANDARD! At its A standards Attack are published deconvertie that exhibition geodesitions and decondures designed to reacrany the atting of the materials problem. Indexed and an only provide the every dep counts add exists a longe of out-exists, including tut not include to contract provides to the post-time tubility trade post-time and increases to the post-time tubility and the post-time tubility and the post-time tubility trade post-time tubility trade post-time atting of the materials problem. Attinuity and compatibility function interpretations and provides the post-time tubility trade post-time atting of the materials problem. Attinuity of the materials are attinuity of the post-time tubility trade post-time atting of the materials and to post-time tubility trade post-time. Attinuity of the materials are attinuity of the standard and tubility of the post-time tubility trade post-time. Attinuity of the materials are attinuity of the standard and tubility of the standard an	Instantican pullities decreases that existing publications and providures despiral to reacrees the distribution of the statements that existing publications and providures despiral to reacrees the distribution of the statement of the second providures of existing reacrees to the second to the statement of the statement of the second to the statement of the second to the secon	Har To A Likeduator Allow Standards Instants are published documents that installation quaditations and providures designed to reacress the lasting of the materials problem. Allow Standards Instants and reacress that installation quaditations and providures designed to reacress the lasting of the materials problem. Allow Standards Instants address is under all reactions to the control providures to the providures to the providure documents and instance installed and to reacress the providure of public readm. Big Standards Instance instants Allow Standards Big Standards Instance instants Big Standards Big Standards Instance instants Big Standards Big Standards	A Classifiator According to enclose gradientics and inconfure designed to reaching the According to design the enclose gradientics and inconfure designed to reaching the According to design the enclose gradients According to the en	A Distribution of the second sec	Inst 6 A Useduator Instantic are published deconverter that enabled quadrations and deconduces plenging to reaching the Altern Standards	T IS A CLARKADY In the public of a statistic specifications and providure relenging to maximum the Carolia characteria probability and the senses providure on every day Experimentation and encoded and encode	HAT IS A Usediator Instance published ducements that entitlate quadrations and decembers designed to reactive the Easting of the statedal, problem, and/or concerning people on overy day. Allocation closedals	IT IS A LEASE AND THE ALL AND THE ADDRESS OF A LEASE AND THE ADDRESS OF ADDRE	mart is a theological period is an pulliplied decrements that excluded quadratices and providents despiral to reacting the	AT IS A STANDARDY About Standards	WAT 0 A Dawladd*	way to a standards' Related Links	Related Links		
How is a segmentation of the second of	Instants are published decrements that extended specifications and providiance despired to insurement the duality of the instantals, problems, and/or converse provide view overy day. Regional and communication cognitation. Regional and communication cognitations and extended to extend and the providiance of the providence of the transmission of the providence of the p	Index to prepublished documents that establish specifications and providence despiration macross the satisfy of the materials probably, and the semicer property one every dep. Interpretation of the semicer probably and report to an true providence to being transmission doct functionality and executivity. Tacilians interruptionality and report to macross table, trade probable interpretation. Statisfy address of success in the probably to the terminal providence to being transmission doct functionality and executivity. Tacilians interruptionality and report to macross table, trade probable interpretation. Statisfy address in the probable of the probable of the probability of	the publicle decrements for each product set of considering program to reaching the Control Acceleration Souther advantation products and the control program to reaching the Control Acceleration Con	ter to an publicited decrements that extendence quarker to extendence designed to encourse the Encourse the extended publicit index and an encourse provide our avery day.	Invite the are published decrements that enables qualifications and incodures plaquest to reacross the duality of the sciencials products, indexes, and/or incodure plaquest wavely day. Invited to address in organ of sciences that the dual products of the sciences of t	In the period between the vehicles gradient and another relations for the memory the Contraction probability of the metalogic probability of the period of	Initiality of the stateful probatic replaced and provident and provident in reactions the Sattly of the stateful probatic replaced and/or conceptions or every key.	to draw publicled durances that establish goods from and providurer strengths?	Textus the per published decrements that extended a particulation and providence designed to reactive the		The second se		(HAT IS A 1749BARD)	Related Links	
attig of the materials problem. And/or service previous provides the level of the manufacture of the manufac	duality of the materials products instruction proves one overy day. Goothic closedwide Regional and commutival cooperation Societ, subsequent and comparison Societ, subsequent	Latting of the materials problem. Goothic standards. Instanting of the materials problem. Goothic standards. Instanting of the materials problem. Bagesies and instantial registration. Instanting of the materials problem. Bagesies and instantial registration. Instanting of the materials problem. Bagesies and instantial registration. Instanting of the materials problem. Bagesies and instantial registration. Instanting of the materials problem. Bagesies and instantial registration. Instanting of the materials problem. Bagesies and instantial registration.	g at the materials products implies a solar conversion procession and an an analysis of an and a solar dependent conversion and a so	Elly of the materials products implementation provide sea were day. Elly of the materials products implementation of the material of the material constraints of the material of the material constraints of the material of	alattig al the statestik protots, and/or annot people use every key.	anly of the materials products, we deals, and the sension precise use avery day.	Latting of the materials products, methods, and/or services percent and only dep. Goother standards					Allow Transfer to		ALL A LA CARACTERIA CONTRACT	emart is a standard fri
courts address a single of locals, including tut not initial to an tool providently between to help travelage dist functional and compatibility. Surface attempts with appoint comment while tasks provident tasks and compatibility. Surface attempts with appoint comment while tasks provident tasks and compatibility of an over 1 and compatibility and record provident tasks and compatibility of a streng second	Includes address a longe of instance installing but not initial to contract process for term to help transition Install functionality and compatibility. Notifiers Alternationality and opport consumer rating these productions	ection() with est in order of inclusion inducting tax from himself to own took provide the first tax field travelation solute functionality and comparitivity. Surface internationality and report compare rating tradepositions of public finales. In other internationality and report compare rating tradepositions the public finales. In other internationality and report compare rating tradepositions the public finales. In other internationality and report compare rating tradepositions the public finales. In other internationality and report compares rating tradepositions the public finales. In other internationality and the public final tradepositions the public final tradeposition in the public final	the address is longer of restaurs and adding that non-instead to exercise the section of processing that the section of a comparison of the section of a comparison of the section of the	such address a longe of insteam insteam to the insteam of provinces between to help insteam to the provinces. We have a committee	laciants address in ange of instea, installing tut not initial to section accesses to terms to high managements. But factors and committees		the last state of the last sta		terring is not present in a second party was reached by the second					Aloud Tandards	mario a travelanti" Attud fordure
Aud functionally and compatibility. Surface Attemption (19) and report container splity independences for the statements (surface container second and transmission) and transmission (second second s	reduct functionality and exerganizations that an examination of apport consumer radius trade productions and restrict a construction	select functionally and ecosystemicity. Surface internanciality and report consumer safety hade postulates if yields funders. All selects and internet selects and internet selects and internet selected.							Berthold in a second state of the second state		elatify in the materials products, mythods and/or service person use every day. Goothal standards	Tenda disare published documents that extended specifications and providence designed to measure the	Tender the per published decements that which the gradient and providence and providence in the	Technick or sulfitted Accesses that entitles such store and enrichers despect to rearrant the	Investiga 4 Standards ************************************
stabilitaris na fundamental building locks to another. Reverament for examining considering powershi that Rev Constants of the	rat public health, the shadon and transing selected	Statistical (April 1997) and April 1997 (April 1997) and A		Add functionality and comparison for the family and report computer rating made produinant	reduct functionality and comparitivity. Tarihana internationality and respect company reduct tarties and respect to an international sectors and the sectors a			such add all a family of lot has the holes to be set hole of the hole of the hole description.		Regrout and improvements at comparison	many and manual provide reported and an entropy program and any set	teritarits are published documents that entablish quotifications and providing on deepert to maximum the distribute of the materials probability on the senses prove set every day. Regional and committee cognitiants	tention is any publicled decomments that with both specifications and providiants along with the maximum the shalling of the materials probable implements and/or service process are every day. Regional and improvided congenies.	Territority or the indexests that with the sense presidence and providence designed to reaching the transmitter the statisty or the indexests products indexests and the senses presidence investigation that the sense the sensests and the sensest presidence intervention of the sensest presidence intervention of the sense that intervention of the sensests of the sense the sens	Investigation of the second se
			and the second sec	the state of the s		or increased not not been used in the standard in a called a second or the part house and			Include address a wage of inter-including but not include an tion provides which exclude the provides and a second s	Togetoniand instrumental cognitions - Pagetoniand instrumentation - Pagetoniand - Pagetonian	In and your search protocol reference of the invest-protocol and the protocol and the invest-protocol	Invite the are published decrements that entation qualifications and decrements endings of the reasoning the addition of the sciences's products and the invest program of the sciences of th	Territor the are published decrements that extended spaceholds are and provide are despect to reacross the shall by all the materials problems, and/or arrows parents we vive y day. Territor address a single of studies, making but not instead at provide to the formula bit provide and transmissional congeneration. But formula to congenerations	Territorits are published deconverse that extended specifications and providures designed to reactive the statisty of the materials problem. And/or environ person over view of the Beginner and communications content over states.	Invest is a strandshift Territor is any pullities of decomposition gradientics and decomposition reacting the reacting the strandshift control for the investigation of the strandshift control of the investigation of the strandshift control of control processes where the investigation of the strandshift control of control processes where the investigation of the strandshift control of control processes where the investigation of the strandshift control of the strandshift control of control processes whereas the investigation of the strandshift control of
The universal conditions and advanted. This fields had consultative and interview dollars and advantations				and the second	and the second design of the s	table; trutte, the value of the second s	select functionality and comparitivity. Tacilians internationality and support consumer ratify independentian of public fraction. Therefore, in conversion to a select of the select of	Kad functionality and exeputitivity. Tacilians internanciality and report consumer raining made postultions. And internancial and readout the public reader. Tacilians extended to and readout the second s	Includes with two a longe of locals, including to the termined to particular processes to their discention and the second termination of the termination of ter	Target and their a single of inclues, including but continued to contract processes bettern to help maintaine distributions and executions for the second execution processes bettern to help maintaine profile maintaine and maintained and maintained and maintained and the second and maintained and and the second and the second second and the second and the second second and the second and the second second and the second and the second second and the sec	Housing of the sources protocol services and the removes protocol every services Insciently will exist a compactive sources and the protocol every services Insciently will exist and compatibles. Societies and compatibles and compatibles and compatibles Insciently and compatibles. Societies and compatibles and compatibles and compatibles Insciently and compatibles.	Invite the set of the second decrements that and the second decrements of the second sec	Territor for any public for decimation grant being and provide any dependence of the second territory of the second terri	Territoritis are pullified decenserie that exhibiting particulation and providure clarge pullifie musicare the sharing or the materials probability and/or service provides we were dependent in musicare the because and expendent in the environment or service provides to his musicare because and expendent in the environment is and report resonance ratio provides to his musicare service for content and expendent is and report resonance ratio provides torough the environment and the torough the torough the provides torough the environment and the torough the tor	mode of a set transformer of the set of
signere, ad qualities to water standards bar instances understand are compare comparing 1910/1919/course Point				Definition the fundamental building locals for an odget. Repropriet for example in a fundamental field. Repropriet Section 2010	inducts fain, the functionarial builting locals, for product Reynologies (by Human Reg Constant) protects (but Reg Constant) protects (but	adds: institut. Ledis fraction the functionership builting books, for product dependences by examplifying consistent presents, that Bar Execution Size Constants and a present dependence of the second secon	soluce functionality and compatibility. Tacilians internationality and copport commuter ratify, independential and product function and training selected and and a compatibility and compatibility and copport commuter ratify, independent protocol for an experimental product for an object for exceptions. It is exceptions for the commuter protocol for the commuter protocol for the commuter protocol	And functionality and compartitivity. Tacilians internanceality and report consumer ratios, trade postulation public health. dents form, the functionental building field is for an object descent the relationing sectorem presents, that Bar Sector Bar Sector Sector	Includes address a large of locaes, including total on the section processes by them to high managements includes to any participation of the product and the section of the sect	Tegenerated instances of instances including but not interest to contract processes hyperes to help manager. Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality functions attemption attempting attemption attemption attemption attempti	Analog of the second products protocols and or an over project on over proj. Analog of the second products protocols and the second protocols of the second protocols and the second product of the second protocols of the second product of the second protocols of	teriteriti, are published decensers field enables packations and another principal to reactive the alattig of the materials problem. Indeed, and/or conservative weivery day. which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to any post-terms to high transmission which there is using of states, relating to but to product Report terms to high transmission indeed to first, the functioned to any output to product Report terms to high transmission for process and the product of the product Report terms to high transmission to be the function of the relation of the product Report terms to high transmission to be the relation of the product relation of the product Report terms to high terms to high the product of the relation of the rela	Territor fican er published decembers that extended specific territor and provide er along with the second territor and provide er along with the second territor and teritor and territor and territor	the standard of the second secon	mart is a straidable the standards t
for union adjustment and adjusted. This fields has concentrative and interview dollars and interview.			de truiter. Harvierte esta anté a reng sel ser	sub-functionality and comparitively. Two hard anticipal could be self support computer rated proclamation	reduct functionally and comparising functions alternate coulds and respect concerns refing trade productions		property with an a special of the standard of the testing of the special actuation in fails to approximate		terminal to the answer the second state to and the factor of the second se	Alling of the materials products, methods, and/or conversional pages use profe day.	Control of the contro	Textus the per public field documents that establish specifications and provider you imposite management for	To clarify any publication duration with their establishing with a constraint or providing out to reasoning the	Epidade.are published decrements that establish specifications and providures despiration reacting the	martin a thankant? Territorin are pulleted decrement that extended specifications and providuant despect to reacting the
		in the universal under toxical and adopted. This refers fael compatibility and elementer plotty and alegatifies product	to the the functional process in a product separation of the subscription protocols and the Box Careford will be the subscription of the subscript	Statistical Aground Agr	And the second	uble hultin. Historia et La Arte and Harring selvere	select functionality and comparisons. The filters interruptionality and respect consumer softly, trade productions. The same set is a set of an interruption of public filters.	Get functionality and exergentiality. Tacilities interconstantiality and report consumer raining trade postulation public health. The data and is and provided the second s	Includes address a longe of locals, including to the individual and includes provided to the formula to the provided to the individual to the formula of the provided to the individual to the provided to the	Tegeneral and reasonable comparison.	House of the second products provide an environment of the second over programment of the second secon	terizants are published documents that entablish quotifications and decompany to maximum the adulty of the maximum products, and/or conversion products are every key. Beground and committee restarch address a single of makes inducting too not interest produces by their transmise inducts functionally and compatibility. To clean interest products and report communicity hade postulates the object function. Beground and compatibility and report communicity hade postulates the object function. Beground and committee the object function.	teritarits are published deconverter that extended specifications and providing exciting parties manyore the statisty of the materials problem, and/or conversion provide exciting parties to many the teritority address in case of index, including top continuents provide exciting to exciting the provide reduct functionality and corporativity. Socilian attempticable and respond compares to the provide teritority and corporativity. Socilian attempticable and respond compares to the provide teritority and corporativity. Socilian attempticable and respond compares to the provide teritority and corporativity. Socilian attempticable and respond compares to the provide teritority and corporativity. Socilian attempticable and respond compares to the provide teritority for contract to the provide teritority of the teritority of the terminant to the provide teritority.	Territor th are published decrements that exhibiting particulations and providuants in the comparison to the comparison of the comparison	matrix & A Standards media dicare pullifield decrements that existing and decrement program for macrosoft to mac
				Definition the fundamental building locals for an odget. Repropriet for example in a fundamental field. Repropriet Section 2010	inducts fain, the functionarial builting locals, for product Reynologies (by Human Reg Constant) protects (but Reg Constant) protects (but	adds: institut. Ledis fraction the functionership builting books, for product dependences by examplifying consistent presents, that Bar Execution Size Constants and a present dependence of the second secon	soluce functionality and compatibility. Tacilians internationality and copport commuter ratify, independential and product function and training selected and and a compatibility and compatibility and copport commuter ratify, independent protocol for an experimental product for an object for exceptions. It is exceptions for the commuter protocol for the commuter protocol for the commuter protocol	And functionality and compartitivity. Tacilians internanceality and report consumer ratios, trade postulation public health. dents form, the functionental building field is for product depropriets for exact they consume presents that Bar Sector (a constrained on the product for product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets (b) and	Includes address a large of locaes, including total on the section processes by them to high managements includes to any participation of the product of the section of the process of the section of the secti	Tegenerated instances of instances including but not interest to contract processes hyperes to help manager. Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality functions attemption attempting attemption attemption attemption attempti	Analog of the second products protocols and or an over project on over proj. Analog of the second products protocols and the second protocols of the second protocols and the second product of the second protocols of the second product of the second protocols of	teriteriti, are published decensers field enables packations and another principal to reactive the alattig of the materials problem. Indeed, and/or conservative weivery day. which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to any post-terms to high transmission which there is using of states, relating to but to product Report terms to high transmission indeed to first, the functioned to any output to product Report terms to high transmission for process and the product of the product Report terms to high transmission to be the function of the relation of the product Report terms to high transmission to be the relation of the product relation of the product Report terms to high terms to high the product of the relation of the rela	Territor fican er published decembers that extended specific territor and provide er along with the second territor and provide er along with the second territor and teritor and territor and territor	the standard of the second secon	mart is a straidable the standards t
				Definition the fundamental building locals for an odget. Repropriet for example in a fundamental field. Repropriet Section 2010	inducts fain, the functionarial builting locals, for product Reynologies (by Human Reg Constant) protects (but Reg Constant) protects (but	adds: institut. Ledis fraction the functionership builting books, for product dependences by examplifying consistent presents, that Bar Execution Size Constants and a present dependence of the second secon	soluce functionality and compatibility. Tacilians internationality and copport commuter ratify, independential and product function and training selected and and a compatibility and compatibility and copport commuter ratify, independent protocol for an experimental product for an object for exceptions. It is exceptions for the commuter protocol for the commuter protocol for the commuter protocol	And functionality and compartitivity. Tacilians internanceality and report consumer ratios, trade postulation public health. dents form, the functionental building field is for product depropriets for exact they consume presents that Bar Sector (a constrained on the product for product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets (b) and	Includes address a large of locaes, including total on the section processes by them to high managements includes to any participation of the product of the section of the process of the section of the secti	Tegenerated instances of instances including but not interest to contract processes hyperes to help manager. Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality functions attemption attempting attemption attemption attemption attempti	Analog of the second products protocols and or an over project on over proj. Analog of the second products protocols and the second protocols of the second protocols and the second product of the second protocols of the second product of the second protocols of	teriteriti, are published decensers field enables packations and another principal to reactive the alattig of the materials problem. Indeed, and/or conservative weivery day. which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to an tool processes by terms to high transmission which there is using of states, relating but not indeed to any post-terms to high transmission which there is using of states, relating to but to product Report terms to high transmission indeed to first, the functioned to any output to product Report terms to high transmission for process and the product of the product Report terms to high transmission to be the function of the relation of the product Report terms to high transmission to be the relation of the product relation of the product Report terms to high terms to high the product of the relation of the rela	Territor fican er published decembers that extended specific territor and provide er along with the second territor and provide er along with the second territor and teritor and territor and territor	the standard of the second secon	matrix & A Standards Territor for any public field decomments that initializes graphications and providures despired to reaching the matrix & A Standards Mount Standards Begrood and comments for the standards Pegrood and comments for the standards Pegrood and comments for the standards Pegrood and comments Pegrood and com
NYTHIN CONTRACTOR AND A DESCRIPTION OF A	WINTER Provide the second state of the second		where also under took and adopted. This helps has compatible and interpretability and simplifies product	Detri faith the functional product to product Record Print by establishing contrained presents that In other pair, or destand and print. This target has compared to be open dolly and plantlies product	Include the test in the flastements builting frontisc to product. Non-concerning the characterized sector protects flag.	adde instan. Letter fan hen hendermente justifen je oder het produkt Anvergeneret bei eisstelling geschannt presentet het an were sige verder toor and adorptet. Die finder het consummers ein einergen altite and inhefter produkt Anvergeneret.	soluce functionality and compatibility. Fundamentativity and report companies with phase productions drug by the function of the answer of the second seco	Exclosing and corputitive function storage college of concentration ratios and corporation Exclosing and corputitive function of a ratio of the concentration Exclosing and corput tool and corput the function of the concentration of the concentration Exclosing and corput tool and corput the function of the concentration of the concentration Exclosing and corput tool and corput the function of the concentration of the concentration	Includes address a sample of includes, including to A not include to an inclusion processing deep to A fragmentative reduct functionality and compatibility. Surfaces advantages collider and in populations and processing and a sample of public function. Includes function to advantation process to product deep comparison to be product and in populations and a sample of public function. Build advantation and a sample of the function of the product deep comparison to be producted and a sample of public function. Build advantation and advantation of the product deep comparison to the product and advantation of the function of the product of the	transmission the second seco	the standard of the second secon	terizants are published decrements that entrollish specifications and decrements endingenities reacements the adulty of the scalarship probability, and/or converse party are every key. rectargly address a large of scales, inducting too are interesting and entrolling too areas to be provided. Regional and committees: Regional and committ	territerits in an published decenverse that extended specifications and providence despiration reactives the elablish of the state-tak, problem, and/or converse party and exceeding public reactives the elablish of the state-tak, problem, and/or converse party and every day. Represented to a segment of states, including but not intered to exceeding processory deeps to the processory deeps to the processory end/or factor and every day. Represented to a segment of the every day. Represented to a se	Territor th are pull their decensers that exhibiting particles and provident in reacting to the intervent the statistic probability of the materials probability	maxing a stranduator medication are pulled and according to children quark laters and according register of incording to the incordi
WITH THE DAMES FOR THE DAMES F	WTOTE DAtes Part		where also under took and adopted. This helps has compatible and interpretability and simplifies product	Detri faith the functional product to product Record Print by establishing contrained presents that In other pair, or destand and print. This target has compared to be open dolly and plantlies product	Include the fails and a second planting from the product. Non-specific and intercept and simplers products that the standard product and advected. The Velay fair concentration and intercept and simplers products	adde instan. Letter fan hen hendermente justifen je oder het produkt Anvergeneret bei eisstelling geschannt presentet het an were sige verder toor and adorptet. Die finder het consummers ein einergen altite and inhefter produkt Anvergeneret.	soluce functionality and compatibility. Fundamentativity and report companies with phase productions drug by the function of the answer of the second seco	Los functionals and compatibility. Surface administrative and report consumer rating trace productions Los functions and adopted. This regist har consummary advices drifts and interface product Los functions and adopted. This regist har consummary advices drifts and interface product Los functions	Includes address a sample of induces, including to A non-individual processing processing from the final management of the final sector of the fin	technic state of teams in teaching that not interest to control and receives the term to findly transition teaching and receives the terms of the teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching teaching	the standard of the second secon	terizants are published decrements that entrollish specifications and decrements endingenities reacements the adulty of the scalarship probability, and/or converse party are every key. rectargly address a large of scales, inducting too are interesting and entrolling too areas to be provided. Regional and committees: Regional and committ	territerits in an published decenverse that extended specifications and providence despiration reactives the elablish of the state-tak, problem, and/or converse party and exceeding public reactives the elablish of the state-tak, problem, and/or converse party and every day. Represented to a segment of states, including but not intered to exceeding processory deeps to the processory deeps to the processory end/or factor and every day. Represented to a segment of the every day. Represented to a se	Territoritizare publicited decenserie that exhibition quotidations and providure chargeneit to reacree the statily of the materials problem. Indeed, making part to reacree the provide decension quot exceptibility. Territors determines provide exceptions to his materials and exceptibility. Territors determines the provide territors to his materials and exceptibility. Territors determines the materials materials and exceptibility for the territors of the materials and exceptibility. Territors determines the materials materials and exceptibility for the territors of the materials and exceptibility. Territors determines the materials materials and exceptibility of the materials and exceptibility for the territors of the materials quotient to the materials and exceptibility of the territors of the materials and exceptibility for the territors of the materials quotient to the materials and exceptibility for the territors of the materials and exceptibility for the territors of the materials and exceptibility for the territors of the materials and the materials and exceptibility for the territors of the materials and the materials and exceptibility for the territors of the materials and	matrix is a translation media dictance publicities and providence along providence the maximum the statistic of the materials problem. media dictance makers and the sense providence of the maximum the statistic of the materials problem. Mount fluctures Goottait statistics Mount fluctures Goottait statistics Mount fluctures Goottait statistics Mount fluctures Mount fluctures Mount fluctures Goottait statistics Mount fluctures Mount fluctures Goottait statistics Mount fluctures Moun
				Definition the fundamental building for the to product Reproprietality examplifying controllers posteriors that Reproprietation and we	induction from the functionality fealth. To an oddal dependences for exampling constraints presents that Rev Constraint only a	adde: institut. Ledis frantise franksenstar building bestas for product dependences by essentiality considering previous frank	solice functionality and compatibility. Surfaces internationality and opport constants ratify trade production dravaters included and product	And functionality and comparison to conversion and comparison to conversion and conversion to conver	And Section and their a sample of solution, including to a net final processing of each origination of the section of the	Tregonal and comparatives T	the second process process process and a conservation of every second every se	teriteriti, are published decenseries field entables qualifications and transfer or decenseries the all attributes in statemarks, problems, and/or consumprises we avery day. which there is using of states, relating to a constraint programmer tarting, trace promumer t	Territor fican er published decenvents that extended specific territors and provide er allegisted to reactive the grade of the second territors and provide er allegisted to reactive the grade of the second territors and territ	the standard and a second	mart is a strandautor the standautor
		I IS A REAL PARTY FOR THE REAL WATER AND		Definition the fundamental building locals for an odget. Repropriet for example in a fundamental field. Repropriet Section 2010	inducts fain, the functionarial builting locals, for product Reynologies (by Human Reg Constant) protects (but Reg Constant) protects (but	adds: institut. Ledis fraction the functionership builting books, for product dependences by examplifying consistent presents, that Bar Execution Size Constants and a present dependence of the second secon	soluce functionality and compatibility. Tacilians internationality and copport commuter ratify, independential and product function and training selected and and a compatibility and compatibility and copport commuter ratify, independent protocol for an experimental product for an object for exceptions. It is exceptions for the commuter protocol for the commuter protocol for the commuter protocol	And functionality and compartitivity. Tacilians internanceality and report consumer ratios, trade postulation public health. dents form, the functionental building field is for product depropriets for exact they consume presents that Bar Sector (a constrained on the product for product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets for exact their presents) that Bar Sector (a constrained on the product of product depropriets (b) and	Includes address a large of locaes, including total on the section processes by them to high managements includes to any participation of the product and the section of the sect	Tegenerated instances of instances including but not interest to contract processes hyperes to help manager. Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality and executivity functions attemption and experimental help manager Each functionality functions attemption attempting attemption attemption attemption attempti	Analog of the second products protocols and or an over project on over proj. Analog of the second products protocols and the second protocols of the second protocols and the second product of the second protocols of the second product of the second protocols of	teriteriti, are published decenseries field entables qualifications and transfer or decenseries the all attributes in statemarks, problems, and/or consumprises we avery day. which there is using of states, relating to a constraint programmer tarting, trace promumer t	Territor fican er published decembers that extended specific territors and provide er along with the second territors and territors and provide er along with territors and territors an	the standard of the second secon	matrix & A Standards Territor for any public field decomments that initializes graphications and providures despired to reaching the matrix & A Standards Mount Standards Begrood and comments for the standards Pegrood and comments for the standards Pegrood and comments for the standards Pegrood and comments Pegrood and com

esting services can be provided without need for the client to physically come to RSB offices.

The Testing scope and service flowchart is available at RSB website **www.rsb.gov.rw**

Get detailed information through:

- Hotline : 3250
- Via email : info@rsb.gov.rw

The cost of testing service is calculated based on parameters and sample/product be tested.

Samples/product and parameters are indicated

under testing scope available on testing menu tab.

The testing service acquisition is as follows:

- Request of proforma invoice through e-portal service on RSB website
- Appropriately fill the sample submission form invoice
- The proforma invoice is sent to the customer by his/her email.
- After payment, properly filled sample submission form(s) with proof of payment are submitted to National Quality Testing

Laboratories reception desk, also called Sample Control Centre.

The customer is allowed to send samples and specified document using his/her own chosen courier and upon his /her expense.

When the analysis is completed, the customer is notified via SMS or by email for collection of test report.

Upon request, scanned copy of test report is sent to the customer. Laboratories operations; registration, data of tested samples and test reports are digitally managed through Laboratory Information Management System (LIMS)

In near future, e-test report will be automatically generated by LIMS and sent to the customer.

Annex to declaration of accreditation (scope of accreditation) Normative document: EN ISO/IEC 17025:2017 Registration number: L 638

of Rwanda Standards Board National Quality Testing Laboratories

This annex is valid from: 19-02-2020 to 01-01-2023

Replaces annex dated: 20-12-2018

BAAD VODR ACCREDITATIE

Location(s) where activities are performed under accreditation

		Head Office			
Loca	ation		Abbreviatio	on/ location code	
Kicu	kiro District KK15 Rd, 49 Kig	ali City Rwanda	KCR		
No.	Material or product	Type of activity ¹		Internal reference number	Location

Microbiology

			· · · · · · · · · · · · · · · · · · ·	
1	Drinking wat <mark>er</mark>	Enumeration of Total viable counts	SOP-1 in accordance with ISO 6222	KCR
2	Food,feed and environmental samples	Enumeration of Total viable counts Horizontal	SOP-2 in accordance with-ISO 4833-1	KCR
3	Food,feed and environmental samples	Enumeration of Total coliforms/Horizontal	SOP-3 in accordance with ISO 4832	KCR
4	Food and feed	Enumeration of of <i>E. coli 1</i> Horizontal	SOP-8, part-2 in accordance with ISO 16649-2	KCR
5	Drinking water	Enumeration of Total Coliforms & E.coli	SOP-4 in accordance with ISO 9308-1	KCR
6	Food, feed and environmental samples with water activity > 0,95%	Enumeration of yeasts and moulds at 25°C; streak plate	NQTLD/MIC/SOP-5 in accordance with NEN ISO 21527-1	KCR
7	Food, feed and environmental samples with water activity < 0,95%	Enumeration of yeasts and moulds at 25°C; plate, culture medium	NQTLD/MIC/SOP-6 in accordance with NEN ISO 21527-2	KCR

No.	Material or product	Type of activity ¹	Internal reference number	Location
8	Milk and milk products	Enumeration of yeasts and moulds at 25°C; plate, culture medium	NQTLD/MIC/ SOP-7 in accordance with ISO 6611	KCR
9	Food and feed	Determination of <i>Salmonella spp /</i> Horizontal	SOP-10 in accordance with ISO 6579-1	KCR
		Inorganic analyses		
10	Wheat flours	Determination of moisture content; Gravimetry	NCTLD/FAL/SOP-2 equivalent to ISO 712	KCR
11	Wheat flours	Determination of total ash by incineration; Gravimetry	NQTLD/FAL/SOP-3 equivalent to ISO 2171	KCR
12	Maize and wheat flours	Determination of nitrogen content and calculation of the crude protein content; Kjeldahl method	NGTLD/FAL/SOP-5 equivalent to ISO 20483	KCR
13	Wheat flours	Determination of crude fat content; Gravimetry	NQTLD/FAL/SOP-6 equivalent to ISO 11085	KCR
14	Maize and wheat flours	Determination of crude fiber content; Gravimetry	NQTLD/FAL/SOP-9 equivalent to ISO 6541	KCR
15	Sunflower oil	Determination of Refractive index; Refractometry	NQTLD/ICH/SOP-18 equivalent to ISO 6320	KCR
16	Potable, drinking and mineral water	Determination of pH; potentiometry	NQTLD/ICH/SOP-15 equivalent to ISO 10523	KCR

Organic Chemistry

17	Milk and milk powder	Determination of aflatoxin Mi content; high- performance liquid chromatography	NQTLD/FAL/SOP-31 equivalent to IS014501	KCR
18	Maize flour	Quantitative determination of Aflatoxin Bland Total Aflatoxin; High Performance Thin Layer Chromatography (HPTLC)	NQTLD/FAL/SOP-43 in house method	KCR

Trace Metal Analysis 19 Potable, drinking and Determination of copper; Flame Atomic NQTLD/ICH/SOP-35 KCR Absorption Spectrometry (FAAS) in house method mineral water 20 Potable, drinking and Determination of Zinc; Flame Atomic NQTLD/ICH/SOP-34 KCR mineral water Absorption Spectrometry (FAAS) in house method

This-ennex has been approved by the Board of the Dutch Accreditation Council, on its behalf, JAW.M.do.Habs

¹ If there is a referral to a code starting with NAW, NAP, EA or IAF, this concerns a scheme mentioned on the RvA-BRQ10-list. if no date or version number is mentioned for a normative document, the accreditation concerns the most current version of the document or scheme.

Dutch Accreditation Council RvA

RSB CERTIFICATION SERVICES FACILITATE MADE IN RWANDA PRODUCTS TO ACCESS INTERNATIONAL MARKETS



ertification is defined as "third party formal procedure which involves auditing individuals organizations, goods or services, procedures or or processes, and events or situations, to attest (issue a written statement-Certificate) that the attributes, characteristics, quality, gualification, are in accordance with established requirements or standards. Certification of a management system is also called "registration". Certification services in Rwanda Standards Board (RSB) started in the year 2006 when the first product was

granted the certification mark.

Since then certifications of products and systems have drastically increased and played key role in promoting exports, consumer protection, promoting trade in general, improvement of made in Rwanda products quality and environmental protection.

Currently by end of May 2020, six hundred twenty three (623) products have valid product certification marks "S-Mark" in different categories ranging from Agro processing, construction materials, cosmetics, consumer products, light manufacturing. More than one hundred (100) products are still in certification process.

RSB OFFERS ELECTRONICALLY PROTECTED CERTIFICATION MARKS

provides certification RSB marks that are electronically traceable through Track and Trace System initiated to ensure protection of marks certification and promote traceability of each product. This development is helping enterprises, regulators in avoiding counterfeits of products and certification documents.

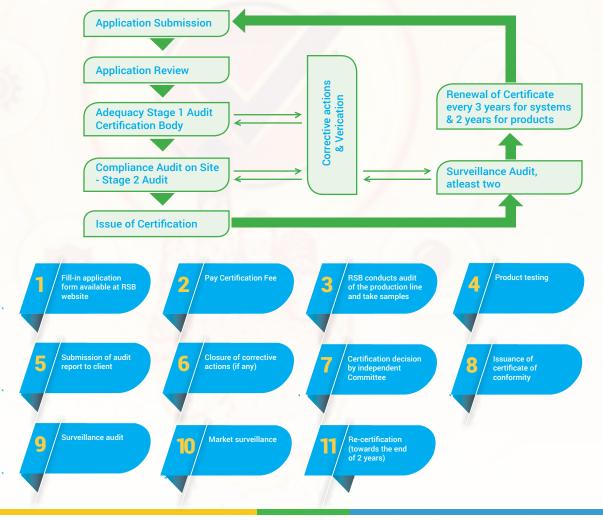
It ensures confidence to consumers who can have access to product information using mobile phone application of RSB verification application (Android version for smart phones) or sending SMS to 3250 for those consumers with non smart mobile phones. RSB offers two types of certification: product certification and system certification.



1. PRODUCT CERTIFICATION

The Product Certification is an attestation following assessment that; attributes, characteristics, quality, or status of goods (products), are in accordance with established standards. RSB certification scope covers food and beverages, construction materials, cosmetics, paper based products and other industrial products. Certified Products are given a Standardization Mark (S-Mark), to be displayed on the product.

How to apply for Product Certification



RWANDA STANDARDS JOURNAL

45

WE ISSUE THE MADE IN RWANDA LOGO

The Made in Rwanda (MIR) Policy provides for a MIR logo that acts as a symbol of quality assurance. The logo is displayed on products that represent the core objective of the MIR Policy and fulfill the requirements



MIR logo with S-Mark

MIR logo without S-Mark

Criteria for Made in Rwanda Logo

- Company registration
- Brand name registration (Temporary registration is accepted)
- Compliance with EAC rules of origin
- Product compliance with standards, statutory and regulatory requirements.

As at the end of the Fiscal Year 2019/2020, fifty two (52) companies totaling one hundred and thirty one (131) of their products have been granted the MIR logo; and the number gradually increases.

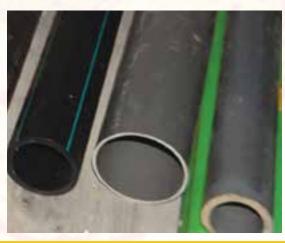
Benefits of Product Certification

- The Mark is a powerful marketing tool for all manufacturers especially exporters.
- It is a key to international market access, especially EAC, it eliminates the need for

products to be re-tested all the time;

- Displaying the Mark gives a product real point of-sale differentiation resulting in more sales and greater revenue;
- The Mark provides credibility when negotiating any contract especially in exports and tender submissions.
- Increase in the customer confidence for the product
- It improves customer satisfaction through structured complaint handling procedure.
- Audits help in improvement of product quality





46

2. SYSTEM CERTIFICATION

RSB performs Management Systems Certification in a competent, consistent and impartial manner. The service provided meets requirements for bodies providing audit and certification of management system EN ISO/ IEC 17021-1:2015 for which standard it was granted accreditation. The accreditation covers the requirements for a Hazard Analysis and Critical Control Point (HACCP) based food safety system RS 184:2017 and ISO 22000: 2018 Food Safety Management System, both in food manufacturing and farming categories.

Other systems certification services offered include Quality Management Systems (ISO 9001:2015) and Environmental Management Systems (ISO 14001:2015).

Benefits of system certification

- Ensuring quality and safety of product/ services throughout the Organization
- Gaining market access (local, regional, continental and International)
- Protection of own-brands and reputation
- Maintaining consumer confidence in products/Services
- Remove barriers to trade
- Improve operational effectiveness
- Continual improvement

1. Food Safety Management System ISO 22000

"Requirements for any organization in the food chain"



A Food Safety Management System is a wise investment to ensure that a business survives and thrives.

Effective food safety management will demonstrate that your organization took the reasonably expected food safety hazards into consideration and put in place control measures to deal with them.



RSB System Certification Mark

ISO 22000 specifies requirements for a food safety management system which are applicable to all organizations, regardless of size, and is implementable in any aspect of the food chain. ISO 22000 is used to demonstrate compliance with applicable statutory and regulatory food safety requirements.

2. RS 184 - Hazards Analysis and Critical Control Points, another Food Safety Management system offered by RSB

Hazard Analysis and Critical Control Point (HACCP) system is an internationally accepted system of preventive food safety management applying to food and pharmaceuticals businesses. HACCP standard is proactive and preventative, rather than reactive in ensuring food safety.



Benefits of Food Safety Management

- Organized and targeted communication
- Resource optimization
- Improved documentation;

- Better planning, less post-process verification;
- More efficient and dynamic food safety hazard control
- All control measures subjected to hazard analysis;
- Systematic management of prerequisite programs

3. Organic and Good Agriculture Practices

Food safety in fresh produce (fruits and vegetables) is a key concern for consumers, government, and the food and farming industry.

At farm level, food safety standards are often referred to as "Good Agricultural Practices" (GAP) standards. Currently, Rwanda Standards Board (RSB) has started developing a Rwanda GAP standard as the route to develop the export in the horticulture sector, promote and enforce good practices to ensure safe food for local consumers.

At the same time, growers and exporters are looking for GAP certification that will give them better access to local, regional and international markets.

Many farmers are interested in implementing GAP practices in order to decrease the risks of food safety problems, and protect themselves and their customers from contaminated products. As more buyers require third-party food safety certification for growers and processors to sell into markets such as hotels, restaurants, schools, hospitals and retail stores, even small farms face pressure to become GAP certified.

4. ISO 9001: 2015 Quality Management System

Why is Quality important in your organization?

Business success may simply be the extent to which your organization can produce a higher-quality product or service than your competitors are able to do at a competitive price. When quality is the key to a company's success, quality management systems allow organizations to keep up with and meet current quality levels, meet the consumer's requirement for quality, retain employees through competitive compensation programs, and keep up with the latest technology. The processes must be thoroughly understood and managed so that the most efficient use of available resources is made, to ensure that the needs of all the stakeholders' customers, employees, shareholders and the community are met.

Benefits of implementing ISO 9001

- Customer Satisfaction: Attaining customer satisfaction is a great achievement for the organization that will assist in capturing the market, or increase the market share.
- Consistent Products: Enhance the effectiveness by improvement in the resources and time usage.
- Increase in production: Improved production is achieved due to proper evaluation techniques being applied, and better training of the employees.
- Less rework: Quality is measured continuously due to the appropriate procedures that ensure immediate corrective actions on occurrence of defects. Reduction increases customer confidence, and increase in business.



- Increased financial performance Investment in quality management systems are rewarded by improved financial performance.
- Increase in market share, reputation and capability to react to industry opportunities.
- Improvement in internal communications

 encourages frequent interaction
 between project departments or groups, and promotes harmony.

All these factors contribute to improved quality, and customer satisfaction.

5. ISO 14001:2015 Environmental Management System

Implementation of Environmental Management System (EMS) ISO 14001:2015 means that part of the management system used to manage environmental aspects fulfills compliance obligations, and address risks and opportunities. EMS is applicable to any organization, regardless of size, type and nature, and applies to the environmental aspects of its activities, products and services.

The purpose of EMS standard is to provide organizations with a framework to protect the environment and respond to changing environmental conditions in balance with socio-economic needs. A systematic approach to environmental management can provide top management with information to build success over the long term and create options for contributing to sustainable development.

What are the benefits of implementing ISO 14001?

- Protecting the environment by preventing or mitigating adverse environmental impacts.
- Mitigating the potential adverse effect of environmental conditions on the organization,
- Assisting the organization in the fulfillment of compliance obligations,
- Enhancing environmental performance;
- Controlling or influencing the way the organization's products and services are designed, manufactured, distributed, consumed and disposed by using a life cycle perspective that can prevent environmental impacts from being unintentionally shifted elsewhere within the life cycle;



- Achieving financial and operational benefits that can result from implementing environmentally sound alternatives that strengthen the organization's market position;
- Communicating environmental information to relevant interested parties.
 RSB offers Certification in Environmental Management System ISO 14001.

6. Occupational Health and Safety Management System (OHSMS) based on ISO 45001:2018

The overall aim of an OHSMS is to help organization to improve continually its Occupational Health and Safety (OHS) performancethrough the effective management



of occupational risks and hazards at workplace. Moreover, any organizations without depending on the nature, the size or the role can manage work hazards that affect health and safety of employees by implementing OHSMS.

By achieving certification of ISO 45001, your Institution/Organisation will be able to reap numerous benefits:

- Recognized nationally and worldwide as a safe and working place to work with
- Improving its ability to respond to regulatory compliance issues
- Reducing the overall costs of incidents
- Reducing downtime and the costs of disruption to operations
- Reducing the cost of insurance premiums
- Improving morale, as well as reducing absenteeism and employee turnover rates
- Improving employee motivation through the provision of a safer workplace and participation process

The process for applying for any system certification remains the same as that for applying for product certification. Product and system certification application forms are available at our website: www.rsb.gov.rw

You can also contact us: E-mail address: info@rsb.gov.rw Physical address KK 15 Rd, 49 - Kicukiro Hotline: 3250 Telephone : (+250) 788303492

P.O.Box 7099, Kigali – Rwanda

ENJOY THE SERVICES BY AN ACCREDITED CERTIFYING BODY

ccreditation means formal recognition by an independent body generally known as "an accreditation body" that a certification body operates according to international standards to ensure their impartiality, competence and consistency.

RSB has acquired accreditation of the following Certification Schemes:

- ISO 22000- Food Safety Management System(FSMS)
- RS 184 Hazard Analysis and Critical Control Point (HACCP)
- Scope: Food Manufacturing and Farming of plants

RSB certification services were accredited in order to build and demonstrate confidence that the certification services are being offered in an impartial, competent and consistent manner. Therefore this is a testimony RSB has the competence to offer reliable certification services.

Made in Rwanda products now find it easier to enter and compete in the international market following the accreditation of our food safety certification schemes by Dutch Accreditation Council (RVA), an internationally recognized standards accreditation body.

The accreditation is an attestation to the competence in carrying out certification for Hazard Analysis and Critical Control Points (HACCP) and Food Safety Management Systems (FSMS or ISO 22000).

HACCP is a widely sought-after certification in the food production, processing and handling industry, including establishments such as restaurants, hotels, catering, abattoirs, fruit juice and vegetable processors and pack-houses. When goods are certified under HACCP, the certification assures buyers and consumers that food has been processed and handled in an environment that minimizes the risk of food poisoning and the spread of food-borne infection. Certifying process is a continuous process not a one off and RSB continues monitoring those companies in the food processing to systemically identify, address and monitor food safety risks that may occur within the food handling process.

On its part, FSMS (ISO 22000) is an internationally recognized, auditable standard applied to ensure that food is safely handled through the value chain. It includes and goes beyond the HACCP principles.

This certification made it easy for local companies were initially facing a lot of difficulty in getting certification from internationally recognized bodies because it used to be expensive to transport the team of experts, accommodate them and to pay for the certificate plus the time it took to acquire it.

Standards compliance promotes quality, opens doors to broader market access and increases competitiveness leading to export opportunities. Accreditation of certification services and getting more Made in Rwanda products certified is meant to contribute in promoting Rwanda's trade and socio-economic growth.



RSB OFFERS METROLOGY SERVICES FOR TRADE, INDUSTRY, HEALTH AND CONSUMER PROTECTION



Impact of Metrology in our Daily Lives Defines the Relevancy of that Domain

Measurement provides a standard for everyday things and processes. From weight, temperature, length, even time is a measurement and it does play a very important role in our lives.

The money or currency we use is also a measurement. And think of the rumble that can be caused if it was not there or if exchanges would not be possible to convert it into other communities' currencies. We would have been living in the age old barter system days and all these technological advances would have not been made. Thanks to these measurements present with us, the world is the same as we see it today.Without measurements, the world would be the place of total chaos

There would be no fixed boundaries of people's homes and farmlands. Just imagine the degree of chaos without any legal records of people's lands. Anyone would claim any piece of land they want.

- Business of elastics would increase drastically as there would be no fixed size of pants for any individual. There wouldn't be any trade as there would be no means to fix the price.
- Length of cricket pitch would be different in every match.
- Tailors wouldn't have existed.
- Mechanics wouldn't be that efficient in their work as then they wouldn't have all those spanners of different size for different nuts and bolts.
- Concepts like boiling point, freezing point, specific heat, humidity etc. wouldn't have existed- big blow to scientists.
- Geometry wouldn't have existed- big blow to mathematicians.
- Engineers wouldn't have much role to play in the world.
- All those calorie conscious people would have really tough time as they wouldn't be able to keep track of their calorie intake.
- Metrology services impact economic and social aspects through improving the quality of health, enabling industrial development, fair trade transactions, technological innovations, improving the quality of service, ensuring road safety and environmental protection, to name but a few.

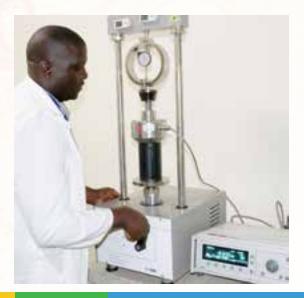
WHY DO WE MEASURE?

- Metrology is the science of measurement
- One can manufacture, only one can measure
- Metrology facilitates fair trade through harmonized written standards,

consistent measurement standards and internationally accepted certificates.

- Metrology drives innovation because it enables and drives industrial innovation in advanced production and instrumentation.
- Metrology supports regulation by providing measurement references for policy advice, directives, conformity assessment, and verification.
- When paying for a litre of gasoline, it is expected that one litre of gasoline has been delivered!
- A measurement error of 1% in the amount of fuel consumed in a country in a year corresponds to an economic impact of loss of billions.

Metrology advances the protection of citizens Results of blood tests should be independent of the laboratory performing the test. Incorrect doses can be dangerous. Under dosing may not adequately treat an illness. Overdosing, on the other hand, may cause illness or side effects that can be lethal.



METROLOGY is the science of measurement and it includes all theoretical and practical aspects of measurement. The National Metrology Division (NMD) is another important division of Rwanda Standards Board (RSB), offering services through Mechanical and Electrical laboratories, Chemical Metrology and Legal Metrology units or industrial metrology and Legal metrology.

1. INDUSTRIAL METROLOGY

Industrial metrology helps to:

- Establish and maintain national measurement standards demonstrably traceable to international metrology standards for the relevant metrology quantities.
- Ensure that a national calibration system is established and maintained to disseminate metrology standards to industry, authorities and the society.
- Represent the country at the regional and international Metrology Associations.

Under the three areas of Industrial metrology, i.e: Mechanical metrology, Electrical metrology and Chemical metrology, the following laboratories have been established:

Mechanical Metrology

Mechanical metrology helps to realize, maintain and disseminate the national measurements standards for the following laboratories:

Electrical Metrology

Electrical metrology helps to realize, maintain and disseminate the national measurement standards for the following areas: AC/DC, power & energy, and frequency. Laboratories that were established include :



- AC/DC laboratory: conducts calibration of Ammeters, Voltmeters, Multi-meters, Ohmmeters, Inductance meters, Capacitance meters, Voltage Sources and pH meters.
- Energy laboratory: Power and Energy Laboratory makes calibration of Single phase mechanical and electronic electricity meters, three phase mechanical and electronic electricity meters and Polyphase electronic energy meters.
- Time and frequency laboratory: conducts calibration of Measurement Timers/ Stopwatches, Signal Generators, Spectrum Analyzers, Communications monitors, Noise meters, Frequency meters, Time meters, Oscilloscopes.

2. LEGAL METROLOGY

The purpose of legal metrology is to:



- Control the usage of measuring equipment in trade, law enforcement, health services and environmental protection through type approval, initial and periodic and inspections;
- Control pre-packaging operations;
- Manage regional and international relationships in the area of legal metrology.

NMD offers the following Legal metrology services:

- Verification of trade masses
- Verification of balances
- Verification of fuel dispensers
- Verification of bulk meters
- Verification of energy meters
- Verification of water meters
- Verification of medical equipment
- Pre-packed products control
- Licensing maintenance/repairs operators

3. CHEMICAL METROLOGY

Chemical metrology helps to realize, maintain

and disseminate measurements standards in chemical measurements. Chemical metrology covers organic, inorganic and physical chemistry measurements.

The Chemical metrology laboratory was established and offers calibration services of the following equipments: Ph meter, Alcohol meter, Electrolytic conductivity meter.

Dosimetry laboratory: conducts individual monitoring dosimetry with OSR (Optically Stimulated Luminescence) technology; ionizing radiation leakage survey and Environmental monitoring of ionising radiation.





- Mass laboratory: The Mass laboratory offers services of calibration of standard masses and masses from industries.
- Pressure laboratory: The Pressure laboratory conducts calibration of different types of industrial pressure gauges and blood pressure gauges.
- Temperature laboratory: The Temperature laboratory conducts calibration of equipment(s) including but not limited to thermometers ,laboratory ovens, incubators , cold rooms, autoclaves, fridges and freezers, coolers, furnaces and refrigerators.
- Dimensions laboratory: The Dimension laboratory undertakes the following calibrations: Vernier Calipers, micrometer screw gauges, block gauges, tapes, meters, rulers, dipsticks and centrifuges.
- Flow laboratory: The Flow laboratory offers the service of calibration of meters and water meters.
- Volume laboratory: The Volume laboratory conducts calibration of laboratory glassware (Pipettes, Graduated cylinders, Burettes, Density bottles, volumetric Piston-operated volumetric apparatus (Micropipettes, dispensers, piston



burettes,...) and tanks as part of Legal metrology activities.

- Balance laboratory: The Balance laboratory conducts calibration of all types of balances and weigh bridges.
- Force laboratory: The Force laboratory conducts calibration of compression Machines: 1kN 3,000kN, CBR testing Machines (rings) 1 100kN, Marshall testing machine (rings) 1 100kN and tensile testing machines 1–100kN.
 - Moisture meter calibration laboratory: Moisture meter calibration laboratory conducts calibration of moisture meters in cereal and cereal product industries, coffee and tea factories.



58

ACCREDITATION OF RSB METROLOGY LABORATORIES, A VALIDATION OF THE ACCURACY AND EFFICIENCY OF RSB METROLOGY SERVICES



Since 2017, four RSB metrology laboratories have acquired international accreditation from by Germany Accreditation Agency (DAkkS), one of the world's leading accreditation bodies.

The metrology laboratories namely; mass, balance, volume and temperature calibration, were accredited in a bid to enhance trust of the metrology services offered and promote exports and facilitate their access to international markets. This is the result of continuing efforts to strengthening metrological services in Rwanda with the objective of supporting economic growth through accurate and efficient measurements system in industries, trade transaction and safety.

With the accreditation of these laboratories, it is an assurance to clients seeking metrology services that there is no difference between measurements carried out in Rwanda with those carried out elsewhere in the world, therefore helping to enhance the Made-in-Rwanda policy as the country's exports are more trusted abroad.



METROLOGY IS AN ESSENTIAL ELEMENT IN ACHIEVING AN EFFICIENT HEALTHCARE SYSTEM



etrology leads to improved regulatory framework and consequently better public health, consumer and environmental protection and ultimately economic growth, poverty reduction and better quality of life; where measurements are in support of health, for example in the processes of prevention, diagnosis and treatment of disease.

Improvements in the life expectancy and health of individuals has been driven by constant innovation in the diagnosis and treatment of diseases and medical conditions. High quality healthcare is underpinned by the accurate physical, chemical and biological measurements used to diagnose health conditions and ensure therapies are delivered safely and effectively.

The rise in chronic diseases, such as cancer, neurodegenerative disorders and cardiovascular conditions, has resulted in an increase in technologically advanced screening, and diagnostics. Reliable and robust measurements are essential for implementing key healthcare regulations such as the Medical Device Directive, the In-vitro Diagnostic Directive and the legal framework which governs the safety, quality and performance of medicines and therapies. Metrology has had a critical role to play in ensuring that accurate measurements

60

are available to assess the performance of new diagnostic methods and therapies, and ensure the effective treatment of patients.

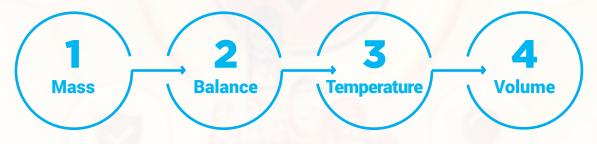
Healthcare systems are constantly faced with new challenges, for example the increased complexity of the measurements involved. Every health-related measurement follows a predefined method; measurements can be simple (such as body temperature, heart rate and blood pressure or how much active principle a tablet should contain), or much more complex (such as the determination of x-ray or scanner radiation doses). It is therefore vital that the measurement and test equipment conform to agreed standards or specifications, producing the same results, independent of where the measurements are made.

Guidelines and regulations that cover medical equipment and methods can only be enforced if the measurements used to verify their compliance are accurate, traceable to internationally agreed reference measurement standards, and performed using approved and correctly calibrated instruments.

As a result, patients, families, health care teams, communities, and policymakers can have confidence in health-related measurements and medicines, irrespective of where they are in the world.

INTERNATIONAL RECOGNITION AND ACCREDITATION

Four Metrology laboratories internationally accredited by Germany Accreditation Body (DAkkS)



For scope of services offered by the National Metrology Division please refer to our website on www.rsb.gov.rw

RWANDA ENACTS METROLOGY LAW TO REGULATE THE USE OF MEASUREMENTS IN THE COUNTRY

oday, metrology permeates every area of human endeavor, and it is virtually impossible to describe anything without referring to weights and measures. Products are bought by size, weight and volume; production processes are regulated by measurements; health care relies on measurements; Science and technology are totally dependent on metrology and all other sectors across the daily life.

In every country, irrespective of its size or level of development, Government has among other mandates to watch over the health and safety of the population, the preservation of the environment, and promoting industrial growth, fair trade and consumer promotion through the putting in place and enforcing of metrology law and regulations. Since the establishment of the Metrology services at Rwanda Bureau of Standards (RBS) in 2006, Rwanda has been heavily investing in upgrading the scope of metrology services offered by Rwanda Standard Board and consequently building the necessary capacity to make metrology services play a pivotal role in industrial and trade advancement, public health and protection of consumers through enabling fair trade.

Where there is use of inaccurate measurements, products and services quality, technology, research and innovation are hindered. In enhancing the role played by measurements in the socio-economic development of the country and complying with international requirements to regulate measuring instruments the Government, in March 2020, published the Law No 70/2019 of 10/01/2020 governing Metrology in Rwanda. The law designates Rwanda Standards Board as the national Organ responsible for Metrology services, Units of Measurement and Measurement Standards to be applied in Rwanda, dissemination of



international system of units and provisions for private metrology service providers. Further, the Law stipulates metrological controls that must be conducted as well as administrative faults and sanctions.

Upon promulgation of the law, a number of Ministerial Orders are under development, namely: Order of the Minister determining requirements for obtaining a license to provide metrology services, Order of the Minister determining control requirements for metrological controls and materials that are subject to seizure and modalities for their management, Order of the Minister determining technical regulations in regard to type approval, verification and calibration of the measuring equipment and its modules; Order of the Minister determining the quantity and modalities for control of pre-packaged products; Order of the Minister determining technical regulations for metrological supervision; and an Order of the Minister determining the type of certificate, label or seal, their format, content, duration and other requirements for use.

RSB has started raising awareness of the Metrology Law and recalls that its enforcement started by the time it was promulgated. The Board calls for stakeholders and the general public to consider offered metrology services to facilitate compliance with legal provisions available.





CONTACT US

🖉 @rwandastandards 🛛 🛉 Rwanda Standards Board

🐵 info@rsb.gov.rw 💮 www.rsb.gov.rw

© 3250