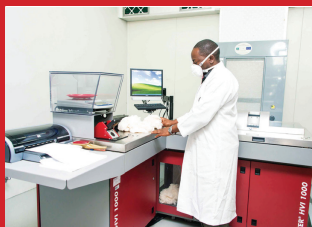


TANZANIA BUREAU OF STANDARDS (TBS)



THE TBS TEST HOUSE



**“Know the quality status of your
products before buying them”**



Standards Mark of Quality

Mark applied on the product with a number for the
relevant Tanzania Standard (TZS....)

“The Home of Standards”

INTRODUCTION

The TBS Test House was established in 1982 to assist manufacturers to improve the quality of their products, provide facilities for the testing of products to ensure their suitability for their intended use, and verify pre-export and pre-import product quality. The TBS Test House provides quick, accurate and confidential test facilities for type testing, audit testing, technical guidance and advice on test methods and training of laboratory personnel.

CHEMISTRY LABORATORY

The Chemistry Laboratory at the TBS Test House was established to provide test facilities and services for all chemical and allied products. The laboratory has been **Accredited** since 2008 in fuel and water matrices by SADCAS.

The laboratory is well equipped with instruments like the Atomic Absorption Spectrophotometer (AAS), Flame Photometer and UV/Visible Spectrophotometer enable the laboratory to give accurate and quick test results. The samples tested cover a large variety e.g. soaps, detergents, mosquito coils, water, industrial chemicals, petroleum, pharmaceuticals and cosmetic products.

Currently it provides Proficiency Testing for Fertilizer and Salt samples for East Africa country members.



The CFR machine used to test Research Octane Number (RON) in petrol

MATERIALS TESTING LABORATORIES

Incorrectly designed or specified materials and equipment can cause serious injury and/or considerable damage to property. In order to minimize these hazards, TBS offers the facility for materials testing. Only through vigorous testing and competent assessment of components and equipment can the user be assured that they meet the relevant safety requirements.

The Materials Testing Laboratory (MTL) is divided into three sections: Building and Construction, Mechanical Engineering and Electrical Engineering. The three sections mentioned can help you in matters of type testing (to any national or international standards) as well as testing for certification for the purpose of approving products which are manufactured in accordance with established Tanzania standards. Activities in respective sections are detailed below:

BUILDING AND CONSTRUCTION LABORATORY

The Building and Construction Laboratory is accredited laboratory which is designed for testing building materials as well as building components and completed structures. The section is well equipped with modern facilities e.g. three universal testing machines of different sizes for compression, tensile and bending tests and crushing machine for large structures.

Building materials that can be tested include pengrade bitumen and cutback bitumen, cement, aggregates, fresh and hardened concrete, timber and reinforced concrete structures. There are also resources for carrying out tests on building components such as bricks and blocks, concrete pipes, fibre boards, plastic pipes (UPVC, HDPE, LDPE, PPR Pipes), density and moisture content of compacted soil (troxler machine), wood poles and concrete poles, Thermoplastic road mark paint and glass beads and on constructions like geotextile materials, ICL, wall units and roof tiles and floor structures of timber.

Among the properties of building materials and products investigated are strength and deformation properties, tightness, composition and dimensional accuracy. In completed structures the laboratory can check material properties, carrying and design.

The Laboratory can also be at your service with field investigations like for instance various load tests and drilling of concrete cores from completed structures for testing of strength.

MECHANICAL ENGINEERING LABORATORY

The Mechanical Engineering laboratory is **Accredited** laboratory since 2019 by SADCAS. This laboratory is equipped with modern facilities for testing metallic materials with a wide range of tests being carried out to determine different properties of

metals like tensile strength, impact strength, hardness, fatigue, heat treatment and crack detection.

Metallic materials that can be tested include cooking utensils, roofing sheets, iron ingots, steel plates, reinforcement bars, retro-reflective number plates, water pipes, agricultural equipment, and auto parts.

Tests include microstructural analysis of materials, bend tests, deep drawing on steel sheets and other non-destructive tests. The laboratory can also offer consultancy services on fields such as failure analysis of materials and suitability of use.

Other materials tested in the laboratory include helmets, tyres & tubes and furnitures.

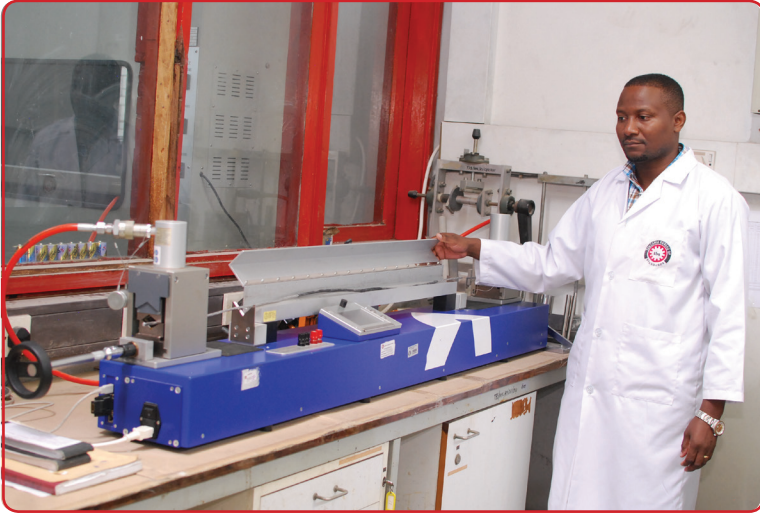


Testing of hoses in the Mechanical Engineering Laboratory

ELECTRICAL ENGINEERING LABORATORY

The Electrical engineering laboratory is ISO/IEC 17025 **Accredited** laboratory by SADCAS since 2019. The laboratory performs various testing for electrical products from installation materials and equipment to electrical and electronic appliances. The lab performs safety and performance testing for conformity assessment against national, regional and/or internationally recognised standards. Also laboratory receives requests from customers who wish to perform type testing on their samples.

Apart from testing activities, the laboratory coordinates Inter laboratory Comparisons (ILCs) across East Africa region currently in the area of electric cable and solar modules testing.



Sample analysis in the electrical engineering laboratory

FOOD LABORATORY

Food laboratory is implementing Laboratory Quality management System since 2007 and is ISO 17025 **Accredited** by SADCAS. Food laboratory has two sections, Food Chemistry and Microbiology section which provide testing services for food, agriculture products, cosmetics and environmental samples.

Chemistry section carries out proximately analysis, analysis of contaminants such as metals, mycotoxins, pesticide residues and higher alcohols. It also carries out analysis of other quality parameters such as acidity, pH, total solids, minerals etc.

Microbiology section carries out analysis of hygiene indicator microorganisms and spoilage microorganisms such as total plate count, Enterobacteriaceae, coliforms, yeast and moulds.

The laboratory also carries out analysis of wide range of food pathogens such as Salmonella, E.coli, Staphylococcus, Vibrios, Pseudomonas, Listeria, Enterococcus etc. Food laboratory is also EAC PT National coordinator for fruit juice and honey. Currently it provides Proficiency Testing for Honey in the area of HMF, acidity, water insoluble matter, ash content lead and zinc and Fruit juice in the area of pH, brix, acidity, vitamin C. Alcohol, Copper, lead, arsenic and Iron.



Sample analysis in the food laboratory

THE TEXTILE AND LEATHER LABORATORY

The Textile and Leather Laboratory was established in 1982 to provide test facilities for both the textile and leather industries. The modern equipment in both the physical as well as the chemical sections enables it to accept work from any source – government departments, private companies, exporters as well as importers and research institutions. It also trains textile and leather analysts in good laboratory techniques. Physical testing is done at ISO commended atmospheric conditions for tropical countries.

The main textile testing equipment are the fibrograph, Pressley strength tester, cotton trash analyser, Ulster yarn evenness tester, and instron tensile strength tester. Other

important test equipment are xenon arc for testing colour fastness to artificial light, exposure rack for testing colour fastness to daylight, perspirometer and washing machine.

Leather testing equipment includes the water vapour permeability tester, tensometer, permeometer, penetrometer, flexometer and shrinkage temperature apparatus. The leather testing equipment can test various types of leather including shoe upper, sole, garment and upholstery.



Sample preparation in the Textile and leather laboratory

METROLOGY LABORATORY

Metrology, the science for measurements, plays a very vital role in the industrial and economic development of a country. The importance of metrology in industry can be summarized in interchangeability, security and optimal dimensioning. To ensure standardization, quality control and reliability of industrial products, it is essential to inspect the materials and components, to inspect parts and sub-assemblies on the production line and then to test and evaluate the final products. These industrial goods, which may be meant for consumption within the country or for exports, have to be tested and evaluated using measuring instruments of guaranteed accuracy.

Similarly, all scientific and technological activities are based on accurate measurements. To ensure guaranteed accuracy of measuring instruments, it is essential that they should be periodically calibrated against accurate standards which in turn should have their calibration traceable to the National Measurement Standards.

In Tanzania, the statutory responsibility for establishing custody and maintenance of the National Measurement Standards related to all physical parameters, at internationally accepted level of accuracy, is entrusted to the Metrology Laboratory at TBS. The laboratory undertakes apex level calibration of measurement standards and precision instruments in various fields of measurements such as length, mass, temperature, force, volume (including vertical and horizontal bulk storage tanks), pressure, D.C. and A.C. measurements. So far **Five (5)** Metrology Fields have been **Accredited** by the South African National Accreditation System (SANAS).



Metrologist performing calibration in the Metrology Laboratory

PACKAGING TECHNOLOGY CENTRE

In its efforts to support a coordinated development of the packaging industry, the government of Tanzania established the Packaging Technology Centre (PTC) at Tanzania Bureau of Standards. The packaging services provided by the Packaging Technology Centre include testing packages and packaging materials to ensure quality, provision of

training to the industries and small and medium enterprises (SMEs) on matters concerning quality packaging designs, conducting research and consultancy work on issues pertaining to quality packaging and provision of third party certification for packaging materials and packages produced according to acceptable standards. Other services are developing national standards on packages and packaging materials, facilitation of imports and exports of the packaging materials against relevant standards and provision of information on packaging standards, requirements and technology.



Testing of packaging materials in the Packaging Technology Centre

COTTON LABORATORY

Cotton is one of the largest international commercial crops in the world. TBS has a laboratory which has capacity of testing cotton quality in different grades. The TBS Cotton Laboratory represents both East and Central African countries. The need for cotton has been increasing yearly as a result issues of quality have been of paramount important, therefore cotton laboratory provides solution to all cotton stakeholders. The main parameters currently checked in testing cotton samples at the Cotton Laboratory include micronaire, strength, length (UHML), length uniformity (UI) and colour grade.



TANZANIA

BUREAU OF STANDARDS (TBS)

The Home of Standards

For all your construction requirements.

TBS does not just offer various standards on building and construction, but also provides testing of various building and construction materials through its material testing laboratory (MTL) which has three sections:

- Building and Construction
- Mechanical Engineering
- Electrical Engineering





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