

THE TBS TEST HOUSE



TANZANIA BUREAU OF STANDARDS

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TBS - Your Partner in Quality

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.

Tests can be carried out to Tanzania standards, other national and ISO standards or to company specifications. Any test is accepted if it is within the capability of the laboratory. Its state-of-the-art instruments like the Atomic Absorption Spectrophotometer (AAS), Flame Photometer and U V / V i s i b l e 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, minerals, industrial chemicals and pharmaceuticals.



Chemistry Laboratory

Materials Testing Laboratory

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 of 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:



*Materials Testing Laboratory
(Building and Construction)*

Building and Construction

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

Building Materials that can be tested include cement, aggregates, fresh and hardened concrete, timber and reinforcing steel bars. There are also resources for carrying out tests on building components such as bricks and blocks, concrete pipes, fibre boards etc. and on constructions like wall units and roof and floor structures of timber and steel.

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

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

Mechanical Engineering

The Mechanical Engineering Section 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.



Materials Testing Laboratory (Mechanical)

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

Tests include micro-structural 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.

Electrical Engineering

The Electrical Engineering Section is designed for testing household and similar electrical appliances as well as electrical materials and accessories. It is concerned mainly with SAFETY testing to Tanzania and international standards (IEC).

Tests in the mentioned specifications cover electrical safety as well as safety from mechanical and thermal hazards. It implies therefore that the risks of burns, electric shock, mechanical injury and damage to the surroundings from fire are covered. The tests are rigorous and designed to check both for danger arising from conditions of normal and abnormal uses. Moreover, the laboratory can handle cable testing used in transmission and distribution of power systems as well as winding enamel wires used in transformers, motors and generators. The section is also equipped with a modern multiple Earth Loop Tester for determination of Earth Loop impedance's, prospective short circuit currents and for earth leakage circuit breaker testing in buildings.

Food Laboratory

The Food Laboratory at the TBS Test House provides test facilities for all food and agricultural products. Tests can be carried out to Tanzania, other national and ISO standards as well as the client's specifications.



Food Chemical Laboratory

This laboratory consists of two sections: The Food Chemical which performs chemical analysis and the Food Microbiology which checks that food products are manufactured with due regard to good manufacturing practices. The Food Chemical Section does routine tests like moisture content, oil content, protein, crude fibre, ash, and acid insoluble ash. Special tests like vitamins content, mineral content, sugar content, detection for mycotoxins are also carried out. The Food Microbiology Section performs tests which include total plate count, mould and yeast count and coliform detection.

In addition, the Food Laboratory provides special service to exporters of fish and fish products e.g. prawns and lobsters by issuing them with a sanitary certificate which certifies that a particular consignment conforms to the code of hygiene.



Food Microbiology Laboratory

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.



Textile and Leather Laboratory

Leather testing equipment include the water vapour permeability tester, tensometer, permeometer, penetrometer, flexometer and shrinkage temperature apparatus. These leather testing equipment can test the following types of leather: shoe upper, sole, garment, and upholstery. This Laboratory is also well equipped to test quality of Condoms.

Metrology Laboratory

Metrology, the science for measurement, 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. A product of modern technology includes frequently the results of thousands of measurements, providing its necessary quality and eventually functionality.

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 our country, the statutory responsibility for establishing custody, and maintenance of the 'National Measurement Standards' related to all physical parameters, at internationally accepted level of accuracy, has been 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.

TBS instruments used in calibrating other instruments and measuring equipment in the country, are re-calibrated by the National Physical Laboratory (NPL) in South Africa to ensure that their accuracy is maintained. The NPL maintains traceability of its primary standards to international standards in Paris.

The Metrology Laboratory doesn't only do calibration, but it does it with promptness. The laboratory is equipped with a mobile calibration facility which provides on-site fast and convenient services at the customer's location, thus ensuring promptness, saving time and averting transport costs on the part of the customer.

Effective from December 11, 2006, four metrology fields have been accredited by the South African National Accreditation System (SANAS). The fields are mass, small volume, temperature and time and frequency. With this accreditation, the laboratory became the 33rd laboratory in the list of accredited laboratories in the world and fourth only to South Africa, Egypt and Kenya in Africa.



Metrology Laboratory

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