मानकः पथप्रदर्शकः

सत्यमेव जयते

G20 भारत 2023 INDIA
वसुधैव कुटुम्बकम्
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ANNUAL REPORT
2023-24

Central Laboratory, Sahibabad
Bureau of Indian Standards

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

Plot No. 20/9, Site-IV, Sahibabad Industrial Area, Sahibabad, Ghaziabad-201010,
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मानकः पथप्रदर्शकः

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MESSAGE FROM HEAD CENTRAL LAB

Shri Shyam Sunder
Scientist G & Head (Central Laboratory)

The Central Laboratory (CL) of the Bureau of Indian Standards plays a crucial role in upholding quality standards across various sectors in India. With the responsibility of testing over 800 Indian standards, CL is essential for fostering a robust quality culture in the country.

The laboratory faces both significant opportunities and challenges. On one hand, the increasing demand for reliable testing supports industrial growth and regulatory compliance. On the other hand, operationalizing new quality control orders in Mechanical, Electrical, and Chemical sectors requires constant adaptation and resource management.

Despite these challenges, CL has made remarkable strides in delivering timely and accurate test results, which are vital for ensuring compliance and promoting safety across industries. This commitment not only enhances product quality but also supports India's broader goals of economic development and consumer protection.

Our initiative and investment in automated equipment and advanced technologies have significantly transformed our testing processes at the Central Laboratory. This state-of-the-art technology enhances accuracy and efficiency across all sections, ensuring that we consistently achieve reliable and repeatable results.

With these innovations, we are able to deliver results within optimal time frames, boosting our credibility and reinforcing our commitment to quality. This technological advancement not only streamlines operations but also positions us to meet the growing demands of various industries while maintaining the highest standards of excellence.

During the year 2023-24, the Central Laboratory expanded its capabilities by establishing new testing facilities for a variety of products, including pavers, hand blenders, conduits, electrical

appliances, containers, plastic feeding bottles, poultry feed, skin powder for infants, and lipsticks. This expansion not only increased our testing capacity but also ensured the timely execution of proposals.

The Mechanical section saw enhancements in testing for footwear, plywood, toys, cement, helmets, and metals. Similarly, the Chemical section improved its testing capabilities in pesticides and building materials, while the Electrical section developed a new air delivery setup for fan testing and a single-phase motor testing setup. Additionally, the Referral Assay Lab significantly boosted its output for gold sample testing by acquiring a micro balance.

Achieving these advancements required meticulous planning, collective effort, and unwavering leadership support. As a result, the Central Laboratory successfully tested over 28,412 samples in 2023-24, generating a notional income of 1,719.60 lakhs. This accomplishment is a testament to our commitment to quality and excellence in testing services.

Nethertheless, initiatives such as conclave, industry meet, exposure visit for Industries, technical workshop ,outreach programme for academia has enhanced our transparency resulting in cultivating a strong relationship with our stakeholders and has enhanced our collective ability to address the various challenges faced during testing from equipment handling to its optimization and has also raised appetite for research and analysis.

In line with our commitment to environmental responsibility, we have implemented several sustainable initiatives within our laboratory operations. Key installations include a gas manifold system, a Sewage Treatment Plant (STP), an Effluent Treatment Plant (ETP), and a rainwater harvesting system.

Additionally, we are actively pursuing ongoing projects such as solar panel installations and exploring the potential implementation of an underground fire fighting tank. These measures are designed to significantly reduce our environmental footprint while promoting sustainability within our testing processes. By prioritizing these initiatives, we aim to contribute positively to the environment and set a standard for responsible laboratory practices.

As we celebrate our achievements, I want to express my heartfelt gratitude to my seniors for their exceptional leadership and unwavering support. I also extend my sincere appreciation to all members of the Central Laboratory family for their dedication, hard work, and passion in pursuing our objectives.

Our accomplishments would not have been possible without the trust and support of our valued stakeholders. This success is a testament to our collective efforts, and I am deeply honored to lead and be part of such an exceptional team. I look forward to your continued support as we embark on the exciting initiatives that lie ahead in the coming years.

OVERVIEW OF CENTRAL LABORATORY

ITO support the activities of conformity assessment schemes, the Bureau of Indian Standards (BIS) has established eight laboratories across the country, addressing the testing needs of samples generated from various compliance programs. The journey began with the establishment of the Central Laboratory at Manak Bhavan, New Delhi (HQ) in 1962.

The foundation for the current Sahibabad location was laid in 1973 by Sh. C. Subramanium, then Minister of Industrial Development, Science and Technology and President of the Indian Standards Institute. Testing operations commenced at Sahibabad in 1981, and by 1982, all testing activities had transitioned from the BIS HQ to the Sahibabad facility. This evolution underscores BIS's commitment to enhancing its capabilities and ensuring the highest standards of quality and compliance across the nation.

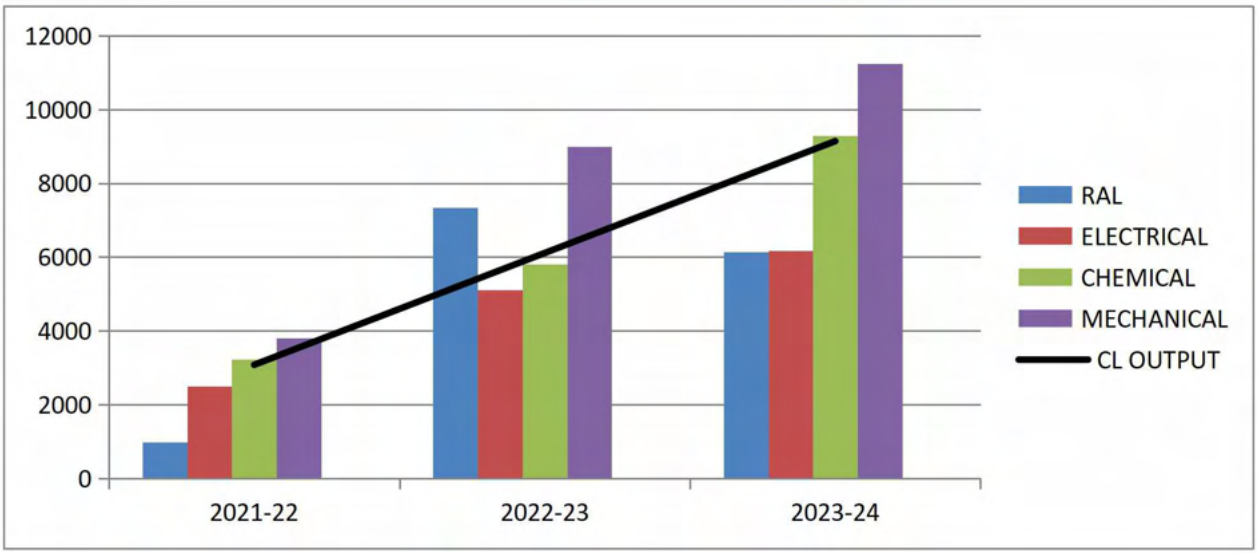
The Central Laboratory at Sahibabad is equipped with comprehensive testing facilities across chemical, microbiological, electrical, and mechanical disciplines. To ensure adherence to internationally accepted practices, it has been accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) in accordance with the IS/ISO/IEC 17025 standard.

The laboratory is fully equipped to test products according to 388 Indian Standards, with additional partial testing capabilities for 467 more. In the past year, the Central Laboratory successfully tested 28,412 samples from various products under the Certification Scheme, which includes gold samples analyzed at the Referral Assaying Laboratory.

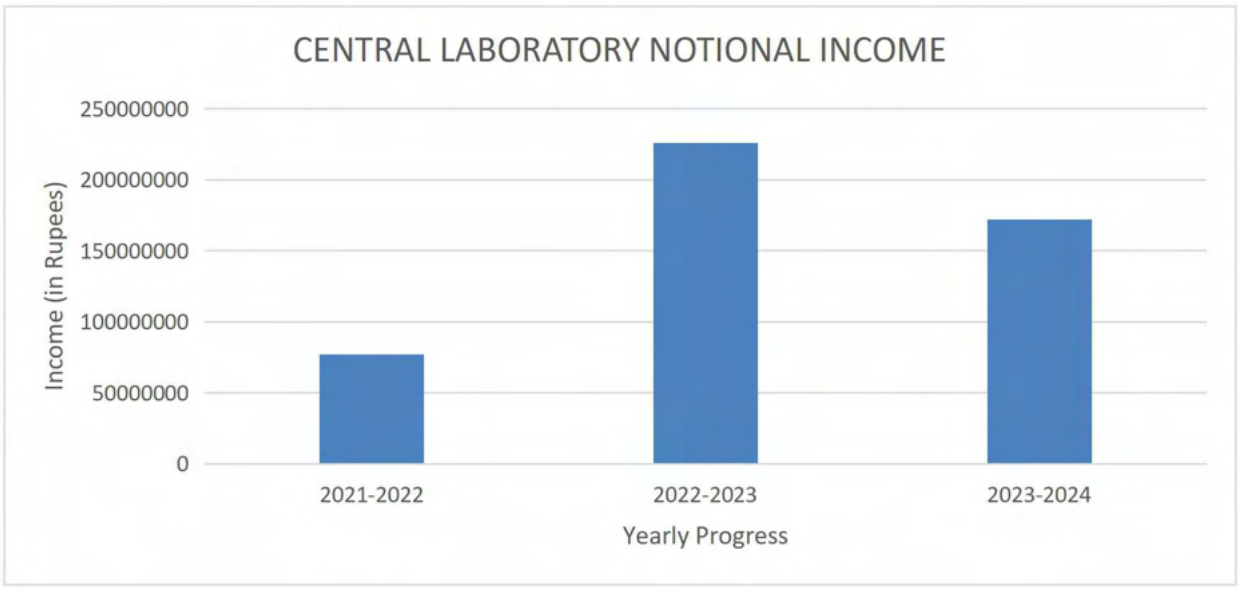
Additionally, approximately 943 samples were tested under Quality Assurance Activities, encompassing tests conducted during proficiency testing and inter-laboratory comparison programs. This robust testing capacity highlights our commitment to quality assurance and regulatory compliance.

The Central Laboratory has made significant strides in enhancing its testing capacity over the past years, leading to a remarkable increase in output from 20,056 reports in 2022-23 to 21,985 reports in 2023-24. This improvement reflects our commitment to meeting the growing demands for quality assurance.

Additionally, the Central Laboratory has played a crucial role in supporting the BIS hallmarking scheme. The Referral Assay Lab has substantially increased its testing capacity from 80 samples per month to 600 samples per month. During the FY 2022-23 CL, has tested 7545 gold samples and 6100 gold samples in FY 2023-24. These efforts demonstrate our dedication to maintaining high standards and ensuring compliance of hall marking scheme.



With the increase in the output of test reports, the notional income of Central Lab has also increased many-folds. The of Central Lab generated the notional income of Rs. 769.7598 lakhs in FY 2021-22, Rs. 2257.134 lakhs in FY 2022-23 and Rs 1719.6002 lakhs in FY 2023-2024.



Moreover, Central Lab has also executed the civil works of the laboratory premises which includes painting of walls of the corridors, digital customised wall paper, glass film on toughened glass doors, strengthening of the building with beautification, Installation of play-panes.

Central Lab also facilitates Exposure visits for the students and Manufacturers, Capsule courses, ITP visits at CL, and various stakeholder visits to impart to them the testing activities of Central Laboratory. During the year, CL has done more than 156 such visits to such stakeholders in our country.

The Central Laboratory has testing facilities for more than 800 products. The executive team of Central Lab consists of 12 Scientific Officers, One AD (A&F) and one Head of the Lab. Based on the testing field and discipline, the testing laboratory is divided in following five parts:

a. **Chemical Section:** Focuses on analysing chemical properties and compositions of various products.

b. **Microbiological Section:** Conducts tests to detect and quantify microorganisms in products.

c. **Electrical Section:** Evaluates electrical appliances and components for safety and performance.

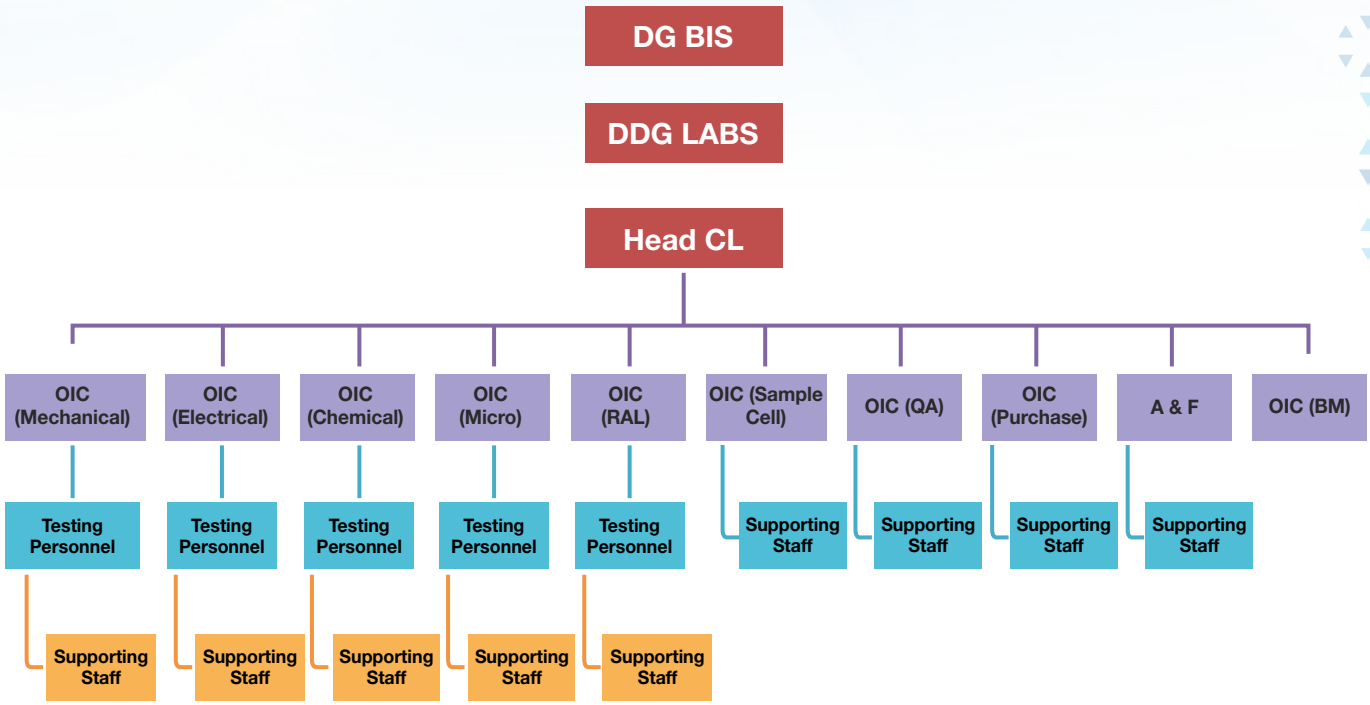
d. **Mechanical Section:** Assesses the mechanical properties of materials and products.

e. **Referral Assay Lab:** Specializes in the testing of precious metals, particularly gold samples, ensuring compliance with hallmarking standards.

Apart from the testing sections, Central Lab also has four following allied sections which provide constant support for continuous and un-interrupted working of the testing labs:

a. Sample Cell
b. Admin & Finance
c. Building Maintenance
d. Quality Assurance

OUR ORGANIZATIONAL STRUCTURE:



QUALITY POLICY OF BIS LABORATORIES

BUREAU OF INDIAN STANDARDS
QUALITY POLICY

BIS Laboratories provide dedicated testing services to facilitate smooth operation of Bureau's product conformity assessment schemes with high degree of credibility, integrity, competence, impartiality and consistent operation.

BIS laboratories are, therefore, committed to provide timely and efficient services to meet the following objectives:

(i) To become the national benchmark of excellence in laboratory quality management system in the country.

(ii) To follow the requirements of IS/ISO/IEC 17025, customers, regulatory authorities and organizations providing accreditation.

(iii) To maintain the highest degree of professional ethics and integrity among the laboratory staff.

(iv) To undertake laboratory activity in impartial manner and to maintain confidentiality for all information obtained or created during the performance of laboratory activities.

(v) To maintain effectiveness of laboratory activities by employee motivation, continuous monitoring, optimum utilization of available resources, transfer of knowledge through sustained training and continual up-gradation of facilities and resources with technological advancements.

(vi) To perform test activity in accordance with methods prescribed in relevant Indian Standard.

Director General

Place: New Delhi
Date: 10-06-2021

NABL ACCREDITATION OF CENTRAL LAB:

Central Lab has been granted accreditation by NABL as per IS/ISO/IEC 17025 (Accreditation Certificate Number TC-11330, issue date 28.01.2023 valid till 27.01.2025)

National Accreditation Board for Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

CENTRAL LABORATORY, BUREAU OF INDIAN STANDARDS

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

20/9, SITE-4, SAHIBABAD INDUSTRIAL AREA, GHAZIABAD, UTTAR PRADESH, INDIA

in the field of

TESTING

Certificate Number: TC-11330

Issue Date: 28/01/2023 Valid Until: 27/01/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : BUREAU OF INDIAN STANDARDS

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

LIST OF PRODUCTS FOR WHICH CL IS CENTRE OF EXCELLENCE

- Testing of PDW/ Drinking water and other food items
- Testing of various types of Steel and Steel products
- Testing of safety of Electrical/ Electronic Items
- Testing of Cables, Conductors and related products
- Testing of Energy Meters

MECHANICAL TESTING SECTION

The mechanical testing section has facilities for more than 400 products under 15 subsections. The team of Mechanical section consists of 4 officers in charge, 9 Laboratory Officers, 6 Technical Assistants, 17 Contractual Testing Personnel and 5 Technicians.

The mechanical section has 15 sub-sections which are as follows:

Cement, Paver & Allied products	Medical	LPG Section	Fire Fighting	Cooker Section
Helmet	Plywood	Metal	Cylinder Section	PVC
Sanitary	Toy	Footwear	Rubber	Miscellaneous

The Mechanical Laboratory consists of various sub-sections, namely the Cooker testing section, where domestic pressure cookers are tested for safety and performance criteria. The Gas Stove section tests LPG Gas Stoves and Gas Geysers for mechanical parameters, with a focus on safety and performance due to mandatory certification requirements. The LPG Cylinder section tests various LPG-related products and has a complete facility as per IS 3196: Part 1. In the Cement Section, multiple cement products are tested, with complete facilities available for most of the cement related product. The Paver Section is already equipped with a complete test facility. The Toy Section ensures toy safety with a complete test facility as per IS 9873: Part 1. The Metal Section tests nearly 150 products for endurance and durability, with complete facilities for most of the products. In the Helmet Section, protective helmets of four varieties are tested, with a unique high-velocity impact absorption test facility. The Plywood Section tests 14 types of plywood, with most products having complete test facilities. The PVC Pipe Section test 24 products and majority has complete test facilities. The Medical Section assesses 22 products, including personal protective equipment, with complete test facilities. The Footwear Section tests different footwear types for safety, with a partial test facility for around 16 Indian Standards and is in process of completing facility for 27 Indian Standards. Additionally, the Mechanical section houses a workshop with various tools for sample preparation.

State-of-the-Art Test Facility

The testing facility has undergone automation and modernization to meet industry requirements and technological advancements. This includes incorporating automation features into newly acquired equipment and retrofitting old machinery, such as adding a tensile testing machine in the plywood testing section, an impact testing machine in the helmet section, and a CO/CO2 meter in the LPG stove section. Additionally, the mechanical lab has upgraded its facilities with state-of-the-art equipment, including hardness testers and optical testing machines, to enhance testing capabilities and accuracy across various sectors. Cutting machines have also been integrated into the workshop to optimize sample preparation processes in the Central Lab.

Impact Absorption Test Apparatus

Impact absorption test in the helmet section is a state-of-the-art facility in the Central Laboratory. It is one of the most important high-velocity impact absorption test apparatus, which is one of the best equipment in our country for testing two-wheeler helmets as per IS 4151:2015. During the test, the helmet is subjected to impacts from different angles and at various speeds to evaluate its ability to absorb and distribute the energy generated during a collision.

Dynamic Strength Tester

Dynamic strength test equipment for toys is designed to evaluate the mechanical strength and durability of toys under various dynamic forces. This equipment typically includes mechanical systems that can simulate the repetitive stresses and impacts that toys may endure during play.

CO/CO2 Analyzer

This detector primarily senses carbon monoxide (CO) and carbon dioxide (CO2) gas produced during the incomplete combustion of LPG and measures the CO/CO2 ratio of the exhaust gases of any burner.

Optical Error Measurement Test Bench

Optical error measurement test bench is a dedicated machine which is used to measure the deviation of the light path as it passes through the optical material, causing objects to appear shifted or displaced from their actual position.

Slip Resistance Tester

Slip resistance testing for footwear assesses a shoe's grip and stability on various surfces, typically using a tribometer to measure the coefficient of friction between the shoe sole and the surface.

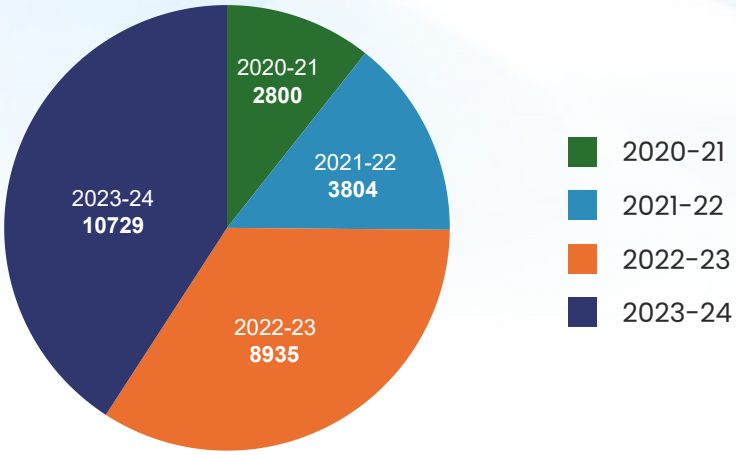
The Vickers hardness test provides a precise and reliable measure of a material's resistance to deformation i.e. hardness. This tester is used to measure the hardness of materials, especially metals and ceramics. It operates on the principle of pressing a diamond indenter into the surface of the material under a specific load and measuring the resulting hardness.

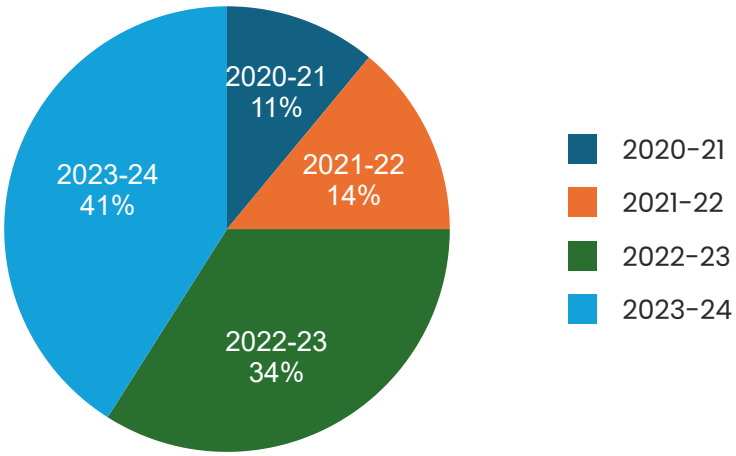
Vickers Hardness Tester

Average Speed Tester

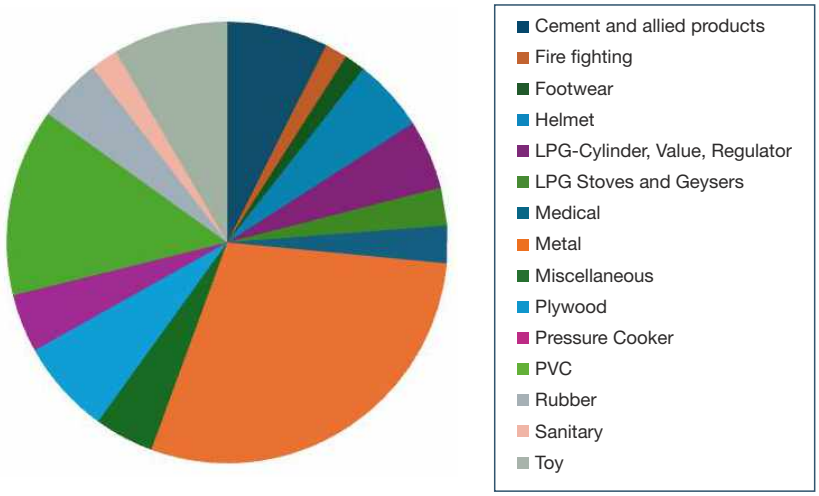
An average speed tester for toys is a device or system used to measure and display the average speed of toy vehicles or objects. It typically consists of sensors, a timer, and a digital display. Toys, such as cars or drones, are placed on a designated track or path, and the tester records the time it takes for the toy to travel from one point to another.

Sample testing Output of Mechanical Section:





Yearly output of Mechanical Laboratory



Testing Section wise samples tested in Financial year 2023-24

EXCLUSIVE TEST FACILITY AT THE MECHANICAL SECTION IN CL

IS 2925 (1984)	Specification for industrial safety helmets (Second Revision)
IS 15558 (2005)	Mini domestic water heater for use with LPG - Specification
IS 4151 (2015)	Protective helmets for motorcycle riders - Specification
IS 9973 (1981)	Specification for visor for scooter helmets
IS 16018 (2012)	Wheeled fire extinguishers - Performance and construction - Specification
IS 3055 Part-1	Clinical thermometers: Part 1 solid stem type - Specification
IS 8088	Tricycle, hand propelled - specification (First Revision)
IS 17154	Battery Operated Motorized Tricycle - Specification
IS 8086	Rehabilitation equipment - Wheelchairs, folding, junior size - Specification (First Revision)
IS 7454	Rehabilitation Equipment Wheelchairs, Folding, Adult Size- Specification (Second Revision)

IS 3319	Blades, surgical, detachable (Bard Parker Type) and handles - Specification (Fourth Revision)
IS 3829 Part- 1	Specification for steam sterilizers: Part 1 horizontal cylindrical and horizontal rectangular steam sterilizers, pressure type (For Hospital And Pharmaceutical Use) (Second Revision)
IS 3829 Part- 2	Specification for steam sterilizers: Part 2 horizontal cylindrical high speed steam sterilizers, pressure type (First Revision)
IS 3829 Part- 3	Specification for steam sterilizers: Part 3 pressure sterilizers, vertical cylindrical type
IS 2266	Steel wire ropes for general engineering purpose - Specification (Fifth Revision)
IS 4521	Wire ropes used in oil wells and oil well drilling - Specification (Second Revision)
IS 2365	Steel wire suspension ropes for lifts, elevators and hoists - Specification (Second Revision)
IS 1855	Stranded steel wire ropes for winding and man - Riding haulages in mines - Specification Third Revision

Creation of New Test Facilities:

S.No.	IS No.	TITLE
1	IS 5557: 2004	Industrial and protective rubber knee and ankle boots
2	IS 5557 (Part 2): 2018	All rubber gum boots and ankle boots
3	IS 5676: 1995	Moulded solid rubber soles and heels
4	IS 6664: 1992	Rubber microcellular sheets for soles and heels
5	IS 6719: 1972	Solid PVC soles and heels
6	IS 6721: 1972	PVC sandal
7	IS 10702: 1992	Rubber Hawaii Chappal
8	IS 11544: 1986	Slipper, rubber
9	IS 12254: 1993	Polyvinyl chloride(PVC) industrial boots
10	IS 13893: 1994	Polyurethane sole, semirigid
11	IS 13995: 1995	Unlined moulded rubber boots
12	IS 16645: 2018	Moulded plastics footwear- Lined or Unlined polyurethane boots for general industrial use
13	IS 16994: 2018	Footwear for men and women for municipal scavenging work
14	IS 1989 (Part 1): 1986	Leather safety boots and shoes for miners
15	IS 1989 (Part.2): 1986	Leather safety boots and shoes for heavy metal industries
16	IS 3735: 1996	Canvas Shoes Rubber Sole
17	IS 3736: 1995	Canvas Boots Rubber Sole
18	IS 3976: 2018	Safety Rubber Canvas Boots for Miners
19	IS 11226: 1993	Leather safety footwear having direct moulded rubber sole
20	IS 14544: 1998	Leather safety footwear with direct moulded polyvinyl chloride (PVC) sole
21	IS 15844: 2010	Sports footwear
22	IS 17012: 2018	High ankle tactical boots with PU – Rubber sole
23	IS 17037: 2018	Anti-riot shoes
24	IS 17043: 2018	Derby shoes
25	IS 15298 (Part 2): 2016	Personal protective equipment – Part 2 Safety Footwear
26	IS 15298 (Part 3) : 2019	Personal protective equipment – Part 3 Protective Footwear
27	IS 15298 (Part 4) : 2017	Personal protective equipment – Part 4 Occupational Footwear

Upgradation of Existing Test Facility:

S.No.	ISs	TITLE
1	IS 15658: 2021	Concrete Paving Blocks
2	IS 7466 : 1994	Rubber Gasket for Pressure Cooker
3	IS 8042: 2015	White Portland Cement - Requirement
4	IS 3055: 1994	Clinical Thermometer - Specification
5	IS 778 : 1984 (Partial to Complete)	Specification for copper alloy gate, globe and check valves for waterworks purposes
6	IS 9890 : 1981 (Partial to Complete)	Specification for general purpose ball valves
7	IS 1879 : 2010 (Partial to Complete)	Malleable cast iron pipe fittings
8	IS 1239 (Part 2) : 2011 (Partial to Complete)	Steel tubes, tubulars and other steel fittings - Specification: Part 2 steel pipe fitting
9	IS 2266 : 2019 (Partial to Complete for 18 mm to 26 mm)	Steel wire ropes for general engineering purpose
10	IS 4521 : 2001 (Partial to Complete for 18 mm to 26 mm)	Wire ropes used in oil wells and oil well drilling
11	IS 2365 : 2018 (Partial to Complete for 18 mm to 26 mm)	Steel wire suspension ropes for lifts, elevators and hoists
12	IS 1855 : 2022 (Partial to Complete for 18 mm to 26 mm)	Stranded steel wire ropes for winding and man - Riding haulages in mines
13	IS 1856 : 2021 (Partial to Complete for 18 mm to 26 mm)	Steel wire ropes for haulage purpose

Major Test Facility Creation/ Upgradation:

Computerized Automatic Flexural Strength Test Machine

Computerized Automatic Flexural Strength Test facility is developed in Cement and allied sections for testing flexural strength of paver as per IS 15658: 2021.

Automatic Air Permeability Apparatus (Blaine type).

Updated testing facility to determine the fineness of the cement samples according to IS 4031-2 for various types of cement i.e IS 269, IS 1489-1, IS 1489-2, IS 455, IS 8041, IS 8042 etc. in Cement and allied section of mechanical laboratory has been developed.

The new version of Automatic Air Blaine's apparatus minimized the time in conducting above test, and improved testing efficiency by reducing human intervention in determining the time required for test.

Automatic Planetary Mortar Mixer

Automatic Planetary Mortar Mixer testing facility is developed in Cement section for the enhancing the testing of Drying Shrinkage test in Cement Testing Section as per IS 1489-1:2015 when tested as per IS 4031-10:1988 and IS 4031-7:1988 .

Reflectometer or Reflectance phototypesetter

Testing facility to determine the whiteness of White Portland Cement samples from reflectometer or reflectance phototypesetter in Cement section has been developed. Reflectometer is used for measuring degree of whiteness of White Portland Cement samples (in terms of reflectance of neat cement ring) , as per IS 8042.

With installation of Reflectometer, Cement section of Mechanical section completed testing facility for White Portland Cement as per IS 8042:2015.

Autoclave Apparatus

To enhance the testing facility for testing rubber samples in the Rubber sub section of the mechanical laboratory, an autoclave apparatus has been installed.

With installation of this new Autoclave test facility, rubber section of Mechanical section completed testing facility for Rubber gasket of Pressure Cooker as per IS 7466:2023.

Comparative bath

Automatic Comparative Bath for testing accuracy Test of Clinical Thermometer as per IS 3055 (Part 1 and 2) in Medical Section of Mechanical Laboratory, has been developed.

Automatic Vibration Table

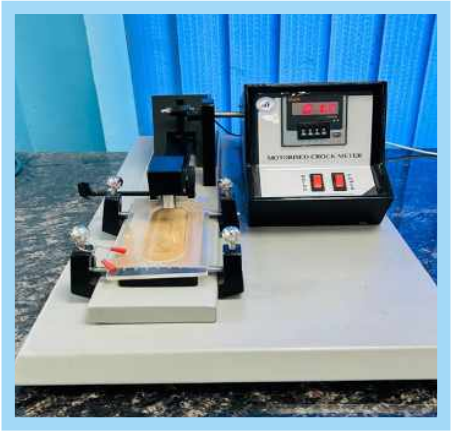
An automatic vibration table has been installed to enhance the test facility for the testing of leakage test as per Cl. 4.6.3 of IS 15410:2003. This machine simulates transportation vibrations to ensure that the containers can withstand the carefulness of shipping and handling.

Velcro Fatigue Tester

A Velcro Fatigue Tester has been installed to enhance the testing facilities for various footwear products in accordance with IS 15844: Part 1, Part 2, and Part 3. This equipment is crucial for determining the peel strength and longitudinal shear strength of touch-and-close fasteners, commonly known as Velcro, both before and after repeated use. The tests are conducted following the standards outlined in IS 8158:18 & 19 and ISO 22776 & 22777. By simulating the repeated opening and closing of Velcro fasteners, the Velcro Fatigue Tester ensures that these fasteners maintain their performance and durability over time, thus contributing to the overall quality and reliability of the footwear products.

Crock Meter

A Crock Meter / Rubbing Fastness Tester (Electronic) is an essential piece of equipment used to determine the resistance of the colour of textiles, including those used in footwear products, floor coverings, and other pile fabrics, to rubbing off and staining other materials. This device measures how much colour is transferred from the textile to other surfaces when rubbed against standard materials. The testing is conducted according to IS/ISO 105-X12: 2016, ensuring that the textiles used in various types of footwear products, such as those specified in IS 15844-P1:2023 and IS 15844-P2:2023, meet the required standards. This helps in assessing the durability and quality of the colour in the textiles, ensuring they maintain their appearance and do not stain other materials during use.



Leather Cracking Tester

The Grain Cracking and Crack Index tester is an essential piece of equipment used to determine the resistance of leather to grain cracking and to measure the Grain Crack Index. These tests are conducted in accordance with IS 5914 (Part 7):2023. The tester evaluates various types of footwear products, including those specified in IS 6721:2023, IS 1989-1:1986, and IS 1989-2:1986. By simulating conditions that may cause the leather to crack, this equipment helps ensure the durability and quality of the leather used in footwear, guaranteeing that it can withstand wear and tear without compromising its structural integrity or appearance.

CHEMICAL TESTING SECTION

The chemical section of the central laboratory is a state-of-the-art testing laboratory (with chemical test facility for more than 300 Indian Standards), where we perform rigorous testing on basic consumer products that form an integral part of our daily lives. The Chemical Section employs cutting-edge technology and advanced analytical methods such as ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry), GCMS/MS (Gas Chromatography - Mass Spectrometry), LCMS/MS (Liquid Chromatography - Mass Spectrometry), HPLC (High Performance Liquid Chromatography) and other analytical instruments through which we conduct comprehensive assessments to detect and quantify trace elements and contaminants in Packaged drinking water, toys, food products, chemicals, etc.

The Chemical testing section has testing facilities for more than 300 products falling under 12 subsections. The team's Chemical section consists of 03 officers in charge, 03 Laboratory Officers, 6 Technical assistants, 4 Technicians and 4 Multi-Tasking Staff.

Regarding metals testing, we employ Spark Emission Spectrometry, a technique known for its ability to deliver consistent and reproducible results. In addition to our work with water and metals, we evaluate a diverse range of products including insecticides, herbicides, paper, stationery products, cement and various chemicals that fall under Quality Control orders. Furthermore, we extend our testing to commonly used items like soaps, detergents, paints, and primers.

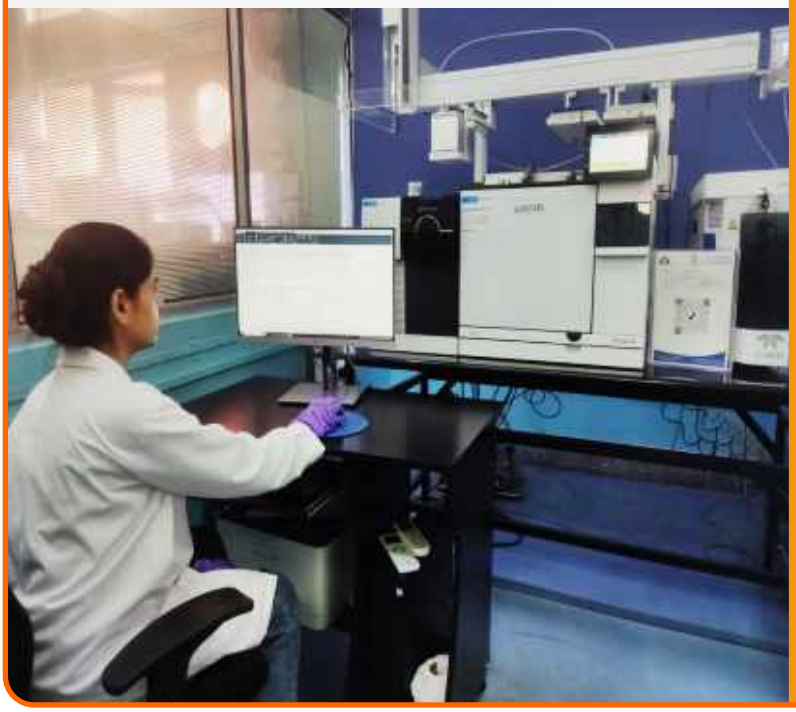
The Chemical section has 12 sub-sections which are as follows:

- Building Material
- Metal
- Paints
- Stationary
- Food including water
- Pesticides
- Toys
- Footwear
- PVC
- Chemicals
- Miscellenous
- Microbiology

State-of-the-Art Test Facility

In our state-of-the-art chemical laboratory, employ cutting-edge technology and advanced analytical methods such as ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry), GCMS/MS (Gas Chromatography - Mass Spectrometry), LCMS/MS (Liquid Chromatography - Mass Spectrometry) and HPLC (High-Performance Liquid Chromatography) and Microwave digester through which we conduct comprehensive assessments to detect and quantify trace elements and contaminants in water samples.
When it comes to metals testing, we employ Spark Emission Spectrometry, a technique known for its ability to deliver consistent and reproducible results.

Gas Chromatography-Mass Spectrometry/Mass Spectrometry (GC-MS/MS)



Gas Chromatography-Mass Spectrometry (GC-MS) is a powerful analytical technique used in chemistry to separate and identify complex mixtures of compounds. It combines two essential components: a gas chromatograph, which separates the mixture into its individual components, and a mass spectrometer, which analyzes the mass and structure of these components.

Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS

LC-MS/MS, for Liquid Chromatography-Mass Spectrometry/Mass Spectrometry, is a powerful analytical technique used in chemistry. It combines the separation capabilities of liquid chromatography with the high sensitivity and specificity of mass spectrometry to identify and quantify complex mixtures of molecules in various samples.

Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES)

Inductively Coupled Plasma-Optical Emission Spectroscopy, is an analytical technique used for elemental analysis. ICP-OES equipment utilizes a high-temperature plasma source to atomize and ionize samples, and then measures the emitted light at specific wavelengths to identify and quantify the elements present.

Microwave Digester

A microwave digester at Central Laboratory ensures precise and consistent sample preparation by maintaining controlled temperature and pressure conditions, leading to accurate results in subsequent analytical methods. Its advanced technology minimizes contamination and loss of volatile elements, enhancing the reliability of analyses such as ICP-OES or AAS.

High-Performance Liquid Chromatography (HPLC)

High-Performance Liquid Chromatography (HPLC) equipment is a versatile and widely used analytical tool in chemistry. It is designed to separate, identify, and quantify components in a liquid sample by forcing it through a column filled with a stationary phase, allowing different compounds to be separated based on their chemical properties and interactions.

Spark Optical Emission Spectrometer (Spark-OES)

Spark-OES (Spark Optical Emission Spectrometer) is an analytical instrument used primarily for the qualitative and quantitative analysis of metallic elements in solid samples. It operates by generating a high-energy spark or arc discharge on the surface of the sample, which excites the atoms in the sample to emit characteristic wavelengths of light. By measuring the emitted light, the Spark-OES spectrometer can identify and quantify the elemental composition of the sample.

Carbon- Sulphur Analyzer (CS - Analyzer)

Carbon- Sulphur Analyzer, is a vital instrument employed in chemical laboratories for the precise quantification of carbon content in various samples. It operates on combustion principles, where the sample is heated to release carbon compounds, which are then measured and analyzed to determine carbon and Sulphur concentrations.

EXCLUSIVE TEST FACILITY AT THE CHEMICAL SECTION IN CL

IS 3470 & IS 15030	Various Chemicals such as Hexane, Benzene, Terephthalic Acid, Sulphuric Acid etc.
IS 2074	Paints and Primers such as Ready Mixed Paints, Cement Paints etc.
IS 1848, IS 14490	Stationery products such as Plain copier paper, Writing and printing papers, Packages for explosives etc.
14186 & 15227	Pesticides such as DeltaMethrin, Malathion, Chlorpyrifos etc.
IS 1786 & IS 2830	Chemical Analysis of Metal by Spark OES
IS 1746	Shoe polish, paste - Specification (Third Revision)
IS 5339	Skin Powder for Infants
IS 6356	ToothPaste - Specification
IS 9875	Lipstick - Specification (Second Revision)
IS 10523	Baby toilet soap - Specification (First Revision)

Creation of New Test Facilities:

S.No.	IS No.	TITLE
1	IS 7129	POTASSIUM CARBONATE ANHYDROUS
2	IS 9873: Part 6	Chemical Testing of phthalates in Toys
3	IS 4105	Specification for Styrene (Vinyl Benzene) (Second Revision)
4	IS 9875	Lipstick
5	IS 2080	Specification for stabilized hydrogen peroxide
6	IS 3205	Specification for precipitated barium carbonate, technical New test facility created
7	IS 9873(Part 3)	Safety of Toys Part 3 Migration of Certain Elements
8	IS 6356	Toothpaste
9	IS 1069	Quality tolerances for Water for Storage Batteries
10	IS 17945	Food For Special Medical Purpose Intended For Infants
11	IS 7021	Protein - Rich Food Supplements for Infants and Pre-School Children - Specification

Upgradation of Existing Test Facility:

S.No.	IS No.	TITLE
1	IS 14151(Part 1)	Irrigation Equipment - Sprinkler Pipes - Specification : Part 1 Polyethylene Pipes
2	IS 553	Specification for rosin (Gum Rosin)
3	IS 1580	Bituminous compounds for waterproofing and caulking purposes – Specification
4	IS 1374	Poultry feeds
5	IS 5339	Skin powder for infants - Specification
6	IS 12540	Specification for Acrylonitrile
7	IS 3470	Hexane, food grade - Specification
8	IS 517	Specification for Methanol (Methyl Alcohol)
9	IS 6100	Specification for sodium tripolyphosphate, anhydrous, technical
10	IS 2052	Compounded feeds for cattle - Specification
11	IS 1051	Specification for pyrethrum extracts
12	IS 14314	Thinner
13	IS 1848 (Part 1 & 2)	Writing and printing paper
14	IS 14490	Photo copier paper
15	IS 6956	Cover paper
16	IS 15410 (Partial to Complete)	Containers for Packaging of Natural Mineral Water and Packaged Drinking Water
17	IS 15609 (Partial to Complete)	Polyethylene Flexible Pouches for the. Packing of Natural Mineral Water and Packaged Drinking
18	IS 14625 (Partial to Complete)	Plastics Feeding Bottles
19	IS 798	Ortho phosphoric acid
20	IS 12744	Primer
21	IS 16141	Imidacloprid Suspension Concentrate
22	IS 14314	Thinner
23	IS 1848 (Part 1 & 2)	Writing and printing paper
24	IS 14490	Photo copier paper
25	IS 6956	Cover paper

Upgradation of Existing Test Facility:

S.No.	IS No.	TITLE
26	IS 15410	Containers for Packaging of Natural Mineral Water and Packaged Drinking Water
27	IS 15609	Polyethylene Flexible Pouches for the. Packing of Natural Mineral Water and Packaged Drinking
28	IS 14625	Plastics Feeding Bottles
29	IS 798	Ortho phosphoric acid
	IS 12744	Primer
30	IS 15298 (Part 2): 2016	Personal Protective Equipment - Safety Footwear
31	IS 15298 (Part 3): 2019	Personal protective equipment – Part 3 Protective Footwear
32	IS 15298 (Part 4) : 2017	Personal protective equipment – Part 4 Occupational Footwear
33	IS 5557 (Part 2): 2018	All rubber gum boots and ankle boots: Part 2 occupational purposes
34	IS 6719: 1972	Solid PVC Soles and Heels
35	IS 6721: 1972	Specification for PVC sandal
36	IS 11544: 1986	Specification for slipper, rubber
37	IS 12254:1993	Polyvinyl chloride (PVC) Industrial boots - Specification (First Revision)
38	IS 5557: 2004	Industrial and protective rubber knee and ankle boots - Specification (Fourth Revision)
39	IS 5676: 1995	Moulded solid rubber soles and heels – Specification (Second Revision)
40	IS 6664: 1992	Rubber microcellular sheets for soles and heels - Specification (First Revision)
41	IS 10702: 1992	Rubber hawai chappal - Specification (Second Revision)
42	IS 13893: 1994	Polyurethane soles semi-rigid - specification
43	IS 13995: 1995	Unlined moulded rubber boots - Specification
44	IS 16645: 2018	Moulded Plastics Footwear Lined or Unlined Polyurethane Boots for General Industrial use Specification
45	IS 16994: 2018	Footwear for Men and Women for Municipal Scavenging Work
46	IS 1989 (Part 1): 1986	Specification for leather safety boots and shoes: Part 1 for miners

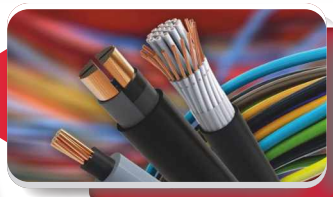
Upgradation of Existing Test Facility:

S.No.	IS No.	TITLE
47	IS 1989 (Part 2) : 1986	Specification for leather safety boots and shoes: Part 2 for heavy metal industries (Fourth Revision)
48	IS 3735: 1996	Canvas Shoes, Rubber Sole
49	IS 3736: 1995	Canvas boots, rubber sole - Specification (Second Revision)
50	IS 3976: 2018	Safety Rubber Canvas Boots for Miners Specification
51	IS 11226: 1993	Leather safety footwear having direct moulded rubber sole specification (First Revision)
52	IS 14544: 1998	Leather safety foot wear with direct moulded polyvinyl chloride (PVC) sole - Specification
53	IS 15844: 2010	Sports Footwear Specification
54	IS 17012: 2018	High ankle tactical boots with pu - Rubber sole - Specification
55	IS 17037: 2018	Anti riot shoes - Specification
56	IS 17043: 2018	Derby shoes - Specification
57	IS 15844-1: 2023	Sports Footwear: General Purpose
58	IS 15844-2: 2023	Sports Footwear: Performance Sports Footwear
59	IS 6721:2023	Sandal and Slippers
60	IS 10702:2023	Hawai Chappal
61	IS 14544 : 2022	Leather safety and protective footwear with direct moulded polyvinyl chloride PVC sole

ELECTRICAL TESTING SECTION

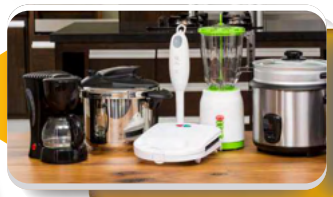
The Electrical testing section has testing facilities for more than 70 products falling under 6 subsections. The team Electrical section consists of 3 officers in charge, 5 Laboratory Officers, 3 Technical assistants, and 1 Technicians.

The Electrical section has 6 sub-sections which are as follows:



Electrical Cables

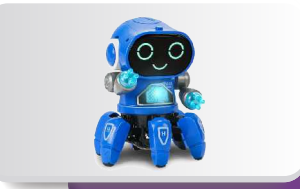
Wiring Accessories



Domestic Appliances

Energy Meter

Motor & Fan



Electrical Toys

The Electrical Laboratory consists of various sub-sections, namely the cable section has a test facility of Electric cables, Overhead Conductors, Conduits, CTDS, Insulating Mats, etc. are tested for Electrical parameters, with a focus on safety and performance due to mandatory certification requirements. The Electrical Wiring Accessories section has a test facility for Switches, Sockets, Adhesive insulating Tapes, Electrode Holders, Ceiling Rose, MCB, RCCB, etc. The Toy Section ensures safety of toy with a complete test facility as per IS 15644. The electrical Appliances section has a test facility for Electric Iron, Juicers, Food mixers, Room heaters, Storage water heaters, Immersion rods, geysers, Hand blenders, Electric kettle, Electric coffee maker and safety of Domestic Appliances, etc. to ensure the safety and performance. The motor section has a test facility for Single-phase AC Motors, Ceiling fans, Exhaust fans, Fan regulators, etc. In the Energy meter testing section, there is a fully automatic test bench for accurate results.

The electrical section has increased its testing capacity to 525 samples/month in 2023-24 from 480 samples/month in 2022-23 with the help of augmentation of test facilities, automation of equipment and optimum utilization of manpower.

CL has been designated as the “Centre of Excellence” for Electrical Appliances.

State-of-the-Art Test Facility

In our advanced Electrical laboratory, we utilize cutting-edge technology and advanced analytical methods, including an Automatic Eddy Current Dynamometer for motor testing, Air delivery setups for ceiling fans, an Automatic Cable Slicing machine, and Cable dimension measuring device

Automatic Cable Dimension Machine

- The is a specialized equipment used for measurement of cross-sectional of cable samples - geometrical measurement of insulating skins and cable sheaths. It captures high-resolution live images of cable samples with a diameter of up to 150 mm.
- The highly flexible and versatile software evaluates these images for precision measurement and generates report useful to set up extruders efficiently and stay within the given tolerance

Automatic Cable Slicing Machine

- This is specialized equipment designed to cut and prepare cables and wires for various types of testing. With the pneumatic cutter, the operator can easily cut samples of XLPE cables from 20 mm to 150 millimetres using special pneumatic blade arrangement. Pneumatic cutter is capable to cut cross section samples and split samples of appropriate thickness with adjustment from 0.8 mm to 2.0 mm.
- The machine handles a wide range of cable types and sizes, ensuring precise and efficient slicing. It prepares samples much faster than manual methods, significantly reducing the time required for preparation

Fully Automatic Eddy Current Dynamometer for motor testing

A Fully Automatic Eddy Current Dynamometer is an advanced testing instrument used for assessing the performance and efficiency of electric motors. It operates by applying a controlled load to the motor and measuring its response, allowing for precise characterization of parameters like torque, speed, power, and efficiency. This automated system ensures accurate and repeatable testing, making it an essential tool in motor development, quality control, and research applications.

Air delivery setups for ceiling fans

Air delivery setups for ceiling fans utilize sensors and smart technology to optimize airflow and comfort automatically. This satup is a state of art facility of electrical section which is utilize for determine the Air delivery of different size of ceiling fans automatically.

EXCLUSIVE TEST FACILITY AT THE ELECTRICAL SECTION IN CL

- All types of Energy Meter
- Ceiling Fan & Electronic Regulator
- Single Phase AC Motor
- MCB and RCCB

Creation of New Test Facility

Coffee maker (IS 302 PART 2 SEC 15):
In the appliance section of the Electrical Section a new equipment for switch endurance test as per Cl. 24.1.3 of IS 302-2-15 were installed.

Electric cattle (IS 302 PART 2 SEC 15):

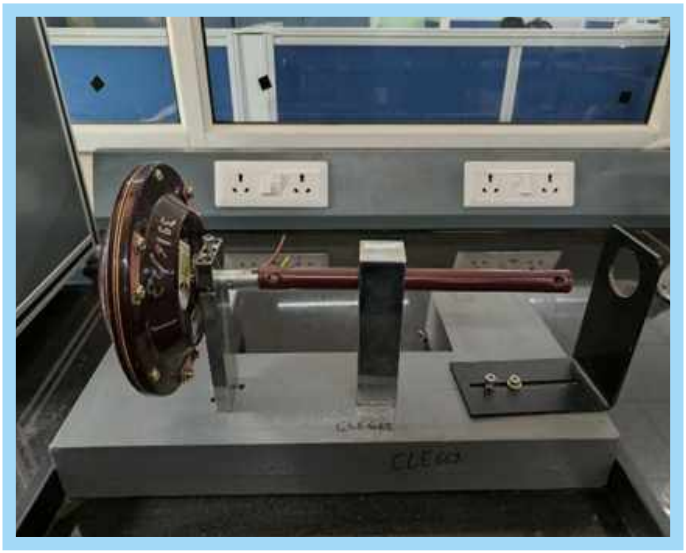
Electrical section also install a new test facility for Stand withdrawal test of electrical Kettle as per cl 22.103 of IS 302-2-15, during which 10000 operation of kettle withdrawal from its stand is performed.

Capacity augmented:

A new test corner with the data logger is installed in appliances section to increase the capacity of the section for Heating (Cl. 11) and Abnormal Test (Cl. 19) of IS 302-1 carried out on Room Heaters, Electrical Irons, Immersion Road and similar electrical appliances.

Upgradation of Existing Test Facility:

As the IS 374 for Ceiling Fan has been brought under mandatory certification, Electrical section has completed the test facility from earlier partial test facility by installing Torque test apparatus, Endurance test setup for four fans at a time and pull test apparatus for ceiling fans apart from state of art air delivery test setup.



(Torque test apparatus on fan)

(Endurance test apparatus for fan)

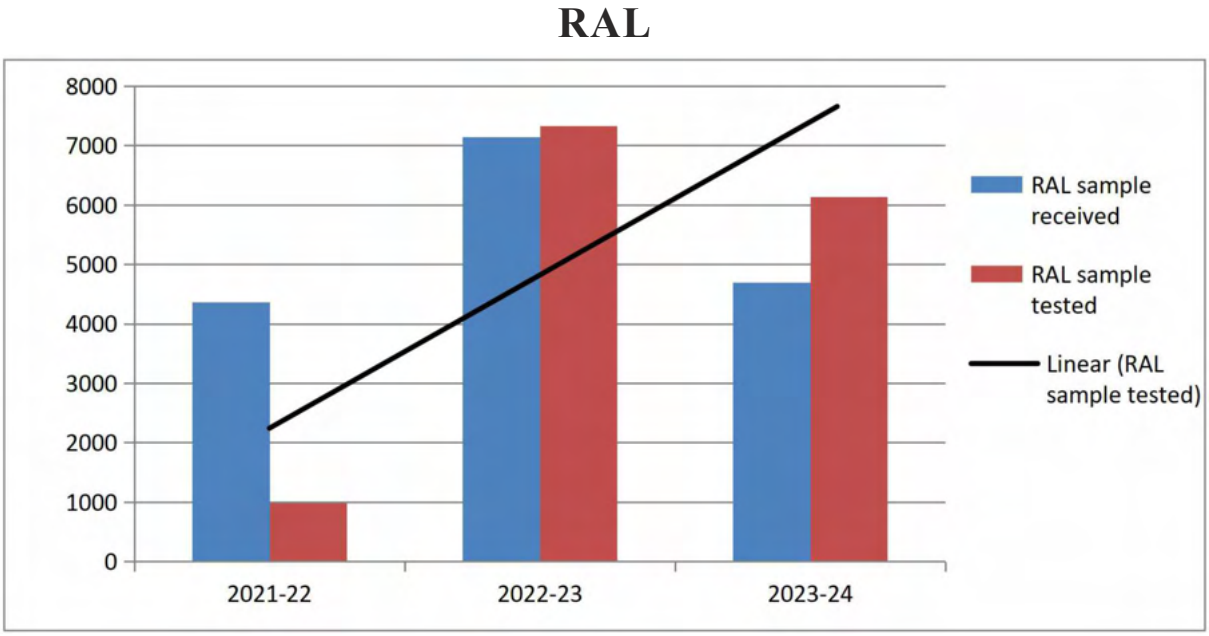
(Pull test apparatus for fan)

REFERRAL ASSAY LABORATORY (RAL)

In 2000, the Indian government introduced the Hallmarking scheme for gold and extended it to silver articles in 2005. The Bureau of Indian Standards (BIS) established Referral Assay Laboratories to test samples under these schemes. BIS's Central Laboratory also set up a Referral Assay Lab (RAL) in 2017 for hallmarked gold jewellery and artefacts, following IS 1417:2016 standards.

Gold samples are tested using X-ray fluorescence spectroscopy and Fire Assay methods, involving stages like cupellation and parting to remove impurities and determine the gold content.

In 2020, CL RAL had a monthly testing capacity of 70-80 samples, but with additional resources and manpower, it increased to 600 samples per month (about 8-fold increase). During the period of 2023-2024, CL RAL successfully issued 6100 test reports. Highest test reports 867 were issued in the month of June 2023.



AUTOMATION AND UPGRADATION IN TESTING FACILITIES IN RAL:

- Procurement of Microbalance integrated with PC for RAL:

With the aim of doubling the gold testing capacity of RAL at Central Lab, Purchase Order for one additional Microbalance was placed successfully in March 2023.

Installation of two new fume-hoods with centralised scrubber in RAL:

RAL identified the requirement of new fume-hoods with centralised scrubber of double capacity than the existing one in order to double the testing output of RAL. For better protection of surrounding environment and compliance to the CPCB guidelines, a purchase order was placed on GeM portal for installation of the fume-hoods with centralised Scrubber.

Installation of Silver Recovery Plant in RAL:

RAL of CL installed a silver recovery plant in RAL for the purpose of recovering Silver reagent, from the used parting acid, used as CRM in Fire Assaying of gold samples as per IS 1418. Since for one sample of 22 K (916 fineness), apprx 0.7 gm Silver CRM is used. Therefore with testing capacity of 1000 samples per month in future, this project intends to recover 8.4 Kg of silver (99.99 % pure) annually, which means saving more than Rs. 8 Lakhs per year of the Bureau. After recovery of the silver from used parting acid, the acid waste is transferred to the Effluent Treatment Plant (ETP) for its environmental friendly disposal.

Purchase of Cupellation Feeder for substantial reduction in exposure time to hazardous lead fumes in RAL during cupellation:

It was observed that the testing personnel are prone to a prolonged exposure to the lead fumes during the charging of samples in cupellation furnace. Since the testing of multiple samples (usually a batch of 10 samples) is carried out simultaneously and therefore, all the samples are charged into the furnace one by one. It increases the total charging time in the cupellation furnace. This results in a lead fume exposure time of approximately 5 mins.

The Referral Assay Lab of CL purchased an cupellation feeder for charging all the samples simultaneously into the cupellation furnace. After the use of this feeder, now the lead exposure time has been decreased drastically from 5 minutes to 10 seconds.

Use of Full-face Respirators and PPEs for enhanced safety of testing personnel:

For ensuring better safety of testing staff, full face respirators were procured in RAL for each testing personnel. These full face respirators helps testing personnel in avoiding the direct exposure with hazardous chemical fumes.

CONCLAVES ORGANISED AT CENTRAL LAB

Conclave Organised on Domestic Electrical Appliances Section of Central Lab

A one-day interactive session with instrument manufactures for Testing equipment for Domestic Electrical Appliances and exhaust fans was organized at Central Laboratory, Sahibabad on 13th April 2023.

The event was attended by instruments manufacturers, colleagues from other BIS labs and Central lab and the session was inaugurated by DDGL through video conferencing.

The interaction was Split into two session during the first technical session after a brief introduction of the Central Laboratory, Bureau of Indian Standard, the thrust area of Automation was explained to the participants by Sumit Bhardwaj, OIC(Electrical) with the help of existing testing methodology and equipment followed by a visit to the respective section for practical demonstration. In the second session of the conclave, manufactures were invited to share their views.

One-day Cement Conclave for Testing Equipment at Central Laboratory, Sahibabad held on 26th Apr 2023.

A Cement Conclave was organized on 26 April 2023 aiming to bring together manufacturers and BIS to foster collaboration and facilitate the development of high-quality testing equipment that complies with BIS standards. Mrs Nishat S Haque, DDG lab during her keynote address, apprised participants that through these conclaves BIS is looking forward to bringing the latest technologies and automation into the lab environment to enhance overall productivity with minimum human interface. Also, these conclaves can act as an input to existing Indian Standards.

During the conclave, participants gave presentations on physical and Chemical analysis of Cement and deliberated on various latest emerging technology in the field of cement testing.

During the conclave, Shalu Varshney, OIC (Mech), presented a brief over of Central Laboratory and apprised participants upon various existing facilities for testing various parameters of Cement against existing Indian standards such as IS 4031 (all parts) for physical testing of Cement and IS 4032 for Chemical analysis of Cement.

Representatives from Thermo Fisher Scientific, Spectro Amextex Instruments India P Ltd, Avdsy Engg & Marketing Pvt Ltd., Priority Solutions, Aimil India Ltd, Ferroteck Ltd. shared online demo, and various practices followed globally for testing based on their experience from different prominent Cement industries.

The conclave was attended by around 40 participants, which includes, representatives of five OEM/ equipment manufacturers participated physically, representatives of three OEM participated virtually, CL officials, Officers of Northern Regional Laboratory, Officers of Eastern Regional Laboratory, Officers of Bangalore Branch Laboratory and Officers of Guwahati Laboratory. All testing personnel of the Mechanical Section of CL were also present during the conclave. The Conclave proved to be a productive tool for exchange of ideas and exploring global best practices, and it demonstrated the commitment of both the BIS and OEM/ Equipment Manufacturers to advancing the state of the art in laboratory testing.

SUSTAINABILITY AND SAFETY PROJECTS OF CENTRAL LABORATORY

Disposal of hazardous chemical waste

Safely disposing of chemical waste is vital for the environment and human health. In the Central laboratory's chemical section, waste management starts with segregation, labeling, and compatible container storage. Waste is then incinerated, treated chemically, or sent to approved facilities. Compliance with regulations prevents environmental harm.

The Central Lab partners with an MoEF & CC-approved company, endorsed by CPCB and authorized by UPPCB, for chemical waste disposal. Additionally, hazardous waste from gold sample assaying in RAL is legally handled by an another UPPCB-authorized Common Hazardous Waste Transport, Storage and Disposal Facility (CHW-TSDF) through an agreement with the Central Lab.

Installation of effluent treatment plant (ETP) in RAL

The installation of the Effluent Treatment Plant at RAL of CL signifies a proactive approach towards managing hazardous waste in laboratory operations. It reflects the laboratory's dedication to safeguarding the environment, maintaining the highest safety standards, and fostering a culture of responsible waste management.

Safety measures in Chemical Lab Section:

a)The safety shower station is essential equipment for every laboratory that uses chemical & hazardous substances. It serves the purpose of reducing workplace injury & keeping laboratory staff away from various dangers.

b)In order to ensure the safety of testing staff, full face respirators are available in RAL for each testing personnel. These full face respirators helps testing personnel in avoiding the direct exposure with hazardous chemical fumes such as lead oxide.

Installation of STP (Sewage Treatment Plant)

To advance the sustainability project, the central laboratory has implemented a sewage treatment plant, a pivotal step towards achieving the overarching sustainability objectives of the laboratory. With the installation of this modern STP, the central laboratory now possesses the capability to efficiently manage and treat its sewage, thereby facilitating the sustainable development of our laboratory facilities.

Accessibility of firefighting system in all area of CL

A robust fire safety system, in collaboration with the Central Public Works Department (CPWD), is being diligently instituted at the Central Laboratory. This system features a substantial three hundred-thousand-liter water storage tank, accompanied by a dedicated pump room. The primary function of this infrastructure is to facilitate the efficient distribution of water to all designated firefighting points situated throughout the Central Laboratory premises. This comprehensive firefighting system stands as a critical component in safeguarding the laboratory against potential fire hazards, ensuring the safety and security of personnel and valuable as

MODERNISATION AND INFRASTRUCTURAL DEVELOPMENT

Event Wall

Recognizing the importance of highlighting our standard promotion, training sessions, and exposure visits, Central Lab has undertaken an initiative to create an Event-Wall. This platform allows us to showcase vibrant images capturing recent lab events in a dynamic and engaging manner. The Event-Wall has been thoughtfully designed to enable periodic updates, ensuring a fresh display of our latest accomplishments and activities.

Conference room Renovation

Renovation of the conference room with Elegant wooden panelling has been installed on the walls to create a sophisticated and professional ambiance, A prominent BIS logo has been set up on the back wall, enhancing the room's branding and aesthetic appeal. A large interactive panel display has been installed to facilitate visual presentations, interactive sessions, and seamless communication during meetings.

Installation of laboratory Furniture

The installation of new laboratory furniture at Central Lab aims to create a more efficient and comfortable workspace for the workforce. This upgrade includes modern workstations, ergonomic chairs, testing tables and specialized storage units designed to optimize functionality and organization.

Street Light installed on the side of road at Central Lab

Street lights have been installed along the roadside at Central Lab to enhance safety and visibility. This progressive effort reflects a commitment to improving infrastructure and ensuring a safer environment for the community.

Newly Installed Electric Sub-Station with transformers, LT panel & Servo

The newly installed electric sub-station at Central Lab includes advanced transformers, a low-tension (LT) panel, and a servo stabilizer, significantly enhancing the facility's power management capabilities. This installation ensures a reliable and stable electricity supply, crucial for powering sensitive laboratory equipment and maintaining optimal operational conditions.

Truss for plywood testing

The truss setup allows for comprehensive structural integrity testing of plywood, ensuring it meets high safety and durability standards, it can accommodate various sizes and types of plywood, making it a versatile tool for multiple testing scenarios, Thorough truss testing ensures that plywood products are safe for end-users, reducing the risk of accidents and increasing overall safety in construction and other applications

Digital Customized Wallpaper

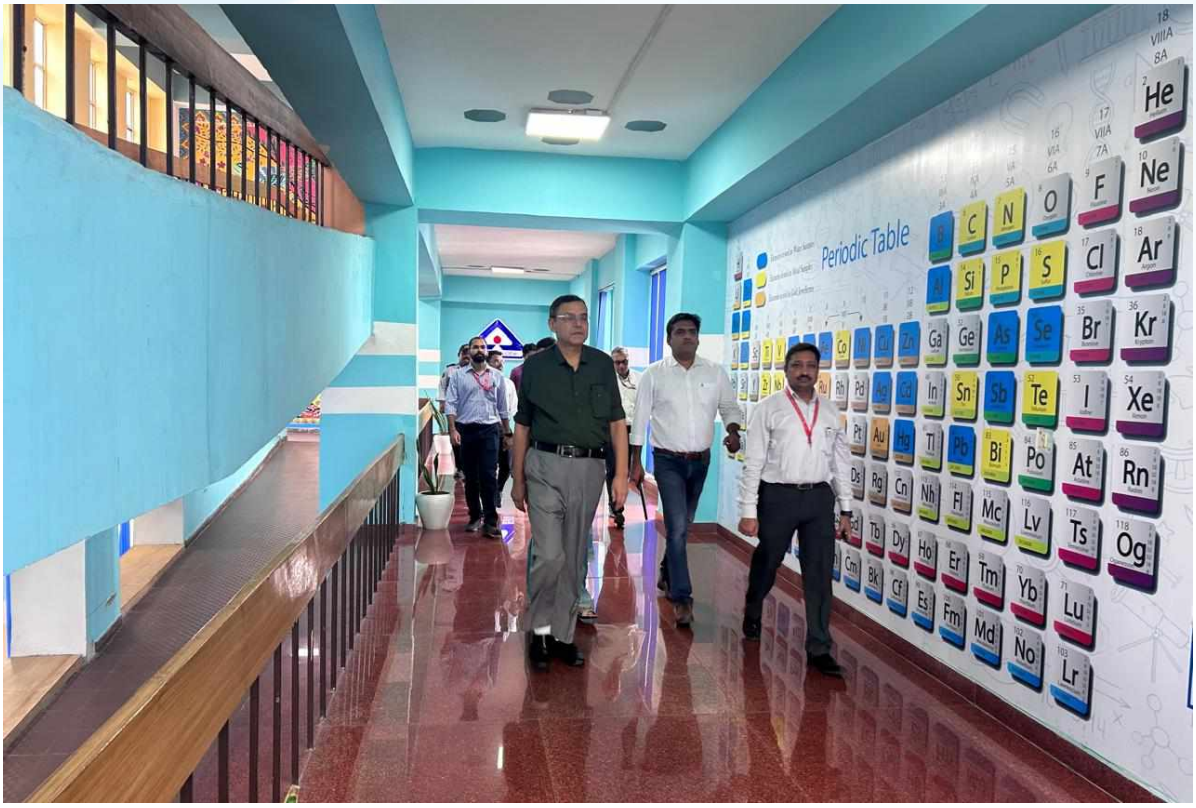
Digital customized wallpaper has significantly enhanced the visual appeal of the laboratory, transforming it into a modern and inviting space. Featuring inspirational quotes, scientific themes, and motivating imagery, the designs aim to uplift employee morale and foster creativity. This thoughtful aesthetic not only creates a professional atmosphere but also leaves a positive impression on visitors, reinforcing the lab's commitment to innovation and collaboration.

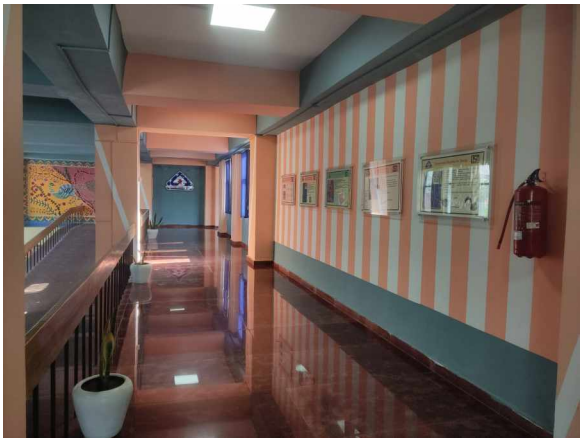
Installation of Play-Panes

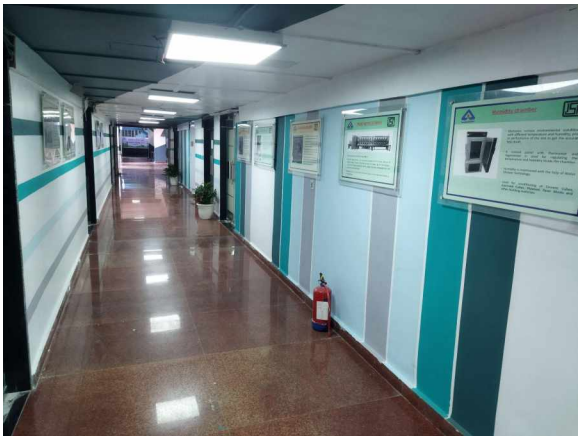
Central laboratory installed play panes which has significantly contributed to the well-being of our staff by providing a dedicated space for relaxation and recreational activities With play-panes available, employees are able to take short breaks and engage in physical activities, leading to higher productivity and better focus upon returning to work tasks. The play-panes encourage social interaction and team-building activities, which have strengthened team dynamics and fostered a more collaborative work environment Play-panes serve as a stress-relief zone where employees can unwind, helping to manage work-related stress and maintain mental health. The modern and well-equipped play-panes make our laboratory a more attractive workplace, aiding in the recruitment and retention of top talent Access to recreational facilities has enhanced employee engagement, making them feel valued and appreciated, which in turn has led to higher levels of loyalty and commitment to our laboratory.

Painting on the walls of the corridors

The painting of corridors and walls has greatly enhanced the overall appearance of our facility, fostering a welcoming and visually appealing environment. This commitment to a well-maintained and attractively painted interior reflects our dedication to professionalism and high standards, leaving a positive impression on visitors. The fresh, vibrant colors creates a positive and uplifting atmosphere, improving the mood and well-being of both employees and visitors. By investing in the upkeep and improvement of our workspace, we reinforce our commitment to a comfortable and supportive environment, ultimately nurturing a positive organizational culture.







Glass Film on toughened glass doors

installation of a toughened glass door with a specific film clearly indicates the entrance to the testing area, improving the accessibility within the laboratory. Toughened glass is designed to be more durable and resistant to impact, ensuring a safer environment for employees and visitors by reducing the risk of accidents and injuries. It enhances the overall aesthetic of the laboratory, reflecting a professional and high-tech image to all who enter. The customized film applied to the glass door can feature the testing activity, safety symbols, or other relevant information, reinforcing our identity and clearly marking the testing area. It reduce noise levels from the testing area, creating a quieter and more focused environment in adjacent spaces.. The film is a strategic enhancement, improving safety, visibility, and aesthetics while clearly demarcating the testing area within the Central Laboratory. It is our commitment to maintaining a state-of-the-art facility that meets the highest standards of safety and professionalism.

New Seminar Room

The merging of the old conference room and training room has created a new, spacious seminar room with a seating capacity for 65 persons, the room is equipped with an audio-visual system, ensuring high-quality presentations and electronic lectern has been installed, allowing for interactive presentations. The seminar room is designed to be versatile, suitable for a variety of events including seminars, workshops, training sessions, and large meetings, making it a multifunctional asset for our organization.

Combining the conference and training rooms into a single seminar room increases efficiency in space utilization and offers a convenient, central location for large gathering, the room is a strategic enhancement that significantly improves our capacity to host larger and more interactive events, demonstrating our commitment to providing top-tier resources and environments for our staff and visitors of Central laboratory. This Seminar room is equipped with acoustic wall as well.

CL EMERGES AS A LEARNING CENTRE

The Central Laboratory plays a pivotal and instrumental role in providing immersive insights into the intricate world of testing activities, extending its enlightening embrace to a diverse array of stakeholders. These include the inquisitive minds of students from schools and colleges, the skilled personnel of various manufacturing industries, international trainees, and management trainees. In its noble pursuit of knowledge dissemination, the Central Laboratory serves as a beacon, casting its illuminating light on the inquisitive minds and future visionaries.

During the year 2023-2024, the Central Laboratory has organized over 156 exposure visits for various stakeholders. This initiative has established the Central Laboratory as a rapidly emerging hub for experiential learning.

Exposure visit of school students at Central Lab

Capacity Building Programme organized by NITS at Central Lab with officials of Central Board of Indirect Taxes and Customs (CBIC).

Visit of Director General of the Sri Lanka Standards Institution (SLSI) at Central Lab:

Dr. Siddhika Senaratne, Director General of Sri Lanka Standards Institute (SLSI) visited the Central Laboratory. Discussion on working on LIMS were held and she was impressed by the functioning of LIMS.

MAJOR EVENTS AT CENTRAL LAB

World Environment Day Celebration:

World Environment Day was celebrated at the Central Lab on 5th June 2023 to promote awareness and encourage action to protect the environment. In line with this year's theme, employees of the Bureau of Indian Standards (BIS) actively participated by planting small saplings in the garden area of the Central Lab (CL).

Swachhta Pakhwara:

Swachhta Pakhwara, or the Cleanliness Fortnight, is an initiative launched by the Government of India to promote cleanliness and hygiene across the nation. This campaign aligns with the larger Swachh Bharat Mission (Clean India Mission), which was launched in 2014 to enhance sanitation and encourage community participation in maintaining cleanliness.

Blood Donation Camp:

A Blood Donation camp was organized in Central Laboratory in supervision of All India Institute of Medical Sciences (AIIMS) on 12th June 2023. Blood donation is a critical component of modern medicine. It provides essential support for patients undergoing surgeries, those with chronic illnesses, trauma victims, and individuals receiving cancer treatment. Each donation can save multiple lives, making it one of the most selfless acts an individual can undertake.

Yoga Day:

Central Laboratory celebrated International Yoga Day on 21st June 2023 under the theme of "Yoga for Vasudhaiva Kutumbakam, which translates to "Yoga for the World as One Family." Established by the United Nations in 2014, this day aims to raise awareness about the benefits of yoga and promote physical, mental, and spiritual well-being worldwide.

Central Laboratory organized a group yoga session under which approx. About. 200 employees of Central Laboratory participated in a group yoga session near the parking shed to promote inclusivity and community spirit on International Yoga Day. CL had distributed approx. 200 T-shirts to all participating employees.

International Yoga Day 2023 was a celebration of unity, health, and well-being, highlighting the importance of yoga in today's fast-paced world.

Exposure visit of Power Ministry at Central Lab on 26th July 2023

Celebration of Independence Day and Republic Day at Central Lab:

Like every year, Independence Day & Republic Day was celebrated with full zeal and enthusiasm in CL. This day holds profound significance, representing the struggles and sacrifices made by countless freedom fighters to secure India's sovereignty.

On this day the CL is decorated with flowers and garlands. The celebration begins with the hoisting of the national flag, followed by singing of the national anthem and patriotic songs and cultural programmes. This day holds immense significance as it represents the country's commitment towards democracy, justice and equality.

National Sports Day 2023:

CL has celebrated the “National Sports Day 2023” on August 29, commemorating the birthday of hockey legend Dhyan Chand. This day aims to promote sports and physical fitness among citizens, honoring the contributions of athletes and encouraging a culture of sportsmanship across the nation.

The theme for National Sports Day 2023 was "Sports are an enabler to an inclusive and fit society” encouraging participation in sports at all levels, regardless of age, gender, or ability. This theme highlights the significance of sports in fostering teamwork, resilience, and overall well-being.

On this day CL had organized various sports competitions on running on heels, musical chair (women), musical chair (Men), Lemon Race etc. followed by the prize distribution.

National Sports Day 2023 was a celebration of athletic spirit and the vital role of sports in society. As the nation honors its sports heroes and encourages the next generation of athletes, the message is clear: sports have the power to uplift, unite, and inspire.

G-20 Participation:

Central Laboratory has set up a mini lab for testing of water samples at G-20 summit held on 05 -10 september 2023 at ITPO, Bharat Mandapam, Pragati Maidan.

हिंदी पखवाड़ा:

केंद्रीय प्रयोगशाला में हिंदी पखवाड़ा, जिसे हिंदी दिवस के साथ 14 सितंबर से 28 सितंबर तक आयोजित किया गया। यह कार्यक्रम हिंदी भाषा के प्रचार-प्रसार और उसकी समृद्धि को बढ़ावा देने के लिए आयोजित किया जाता है। इस दौरान विभिन्न गतिविधियाँ और कार्यक्रम आयोजित किए गए। हिंदी पखवाड़ा हमें यह याद दिलाता है कि भाषा न केवल संवाद का माध्यम है, बल्कि यह हमारी पहचान और संस्कृति का अभिन्न हिस्सा भी है।

Hindi Pakhwada:

Hindi Pakhwada was organized in the Central Laboratory from 14th to 29th September 2023. This program has been organized to promote the Hindi language and promote its richness. Various activities and programs were organized during this period in the Central laboratory. Hindi Pakhwada reminds us that language is not only a medium of communication, but it is also an integral part of our identity and culture.

19th International Training Programme on Management Systems held on 20 Sep 2023:

World Standard Day on 14th October 2023:

To celebrate World Standards Day 2023, the Central Lab (CL) organized a drawing competition for its employees working in CL. The theme for the World Standard Day 2023 was "Shared Vision for better World - Standards for Sustainable Development Goals". The event aims to raise awareness about how standards impact various fields, from technology and safety to sustainability and innovation and to express the significance of standards in every day life.

Vigilance Awareness Week:

Vigilance Awareness Week observed from 30st October to 5th November, 2023 at CL where various events like Pledge, essay writing, quiz competition and poem were organised. These activities aim to promote awareness about vigilance and integrity, encouraging participants to reflect on the importance of ethical practices in everyday life.

Workshop on QCOs: Availability and Challenges (05 Jan 2024):

A workshop on Quality Control Orders (QCO) was organized at the Central Lab (CL), featuring discussions with senior officers from the Bureau of Indian Standards (BIS). This workshop aimed to enhance understanding of QCOs, which are regulatory frameworks implemented by the Government of India to ensure that specific products meet essential safety and quality standards.

BIS Foundation Day (2024): Celebrating Standards and Quality:

BIS Foundation Day was celebrated on 06-01-2024 in CL to commemorate the establishment of the Bureau of Indian Standards (BIS) in 1986. BIS plays a crucial role in developing and promoting standards for products and services, ensuring quality and safety in various sectors. This day highlights the importance of standardization in fostering consumer confidence and facilitating trade.

CL organized various sports competitions like dart competition (only for male), musical chairs (only for women) followed by lunch and prize distribution employees of CL

BIS Foundation Day serves as a reminder of the vital role that standardization plays in ensuring quality, safety, and consumer protection. By celebrating this day, we acknowledge the efforts of BIS and its stakeholders in creating a safer, more reliable marketplace.

15th International Training programme on ''Competence of Laboratories and their Management Systems " from 29 January to 16 February 2024 under 'International Technical and Economic Co-operation' sponsored by Ministry of External Affairs, Govt. of India

Two-day capsule course for Concrete Paving Block held on 14 & 15th, Feb 2024.

International Women's Day (08th March 2025):

Central Laboratory celebrated the International Women's Day (IWD), recognizing the social, economic, cultural, and political achievements of women. The theme for International Women's Day 2024 is "Embrace Equity," emphasizing the importance of not just equality but equity—ensuring that everyone has access to the same opportunities.

On the occasion of International Women's Day, CL organized various competitions for women in the laboratory premises like dart competition, debate on women's rights etc., after which all the women employees of the Central Laboratory were gifted a sapling by the Head CL.

International Women's Day 2024 is a powerful reminder of the ongoing struggle for gender equity and the vital role that everyone plays in this movement.

Workshop organised at Central Laboratory with Technical Department

The primary objective of these workshops was to identify gaps in standards and testing methods, as well as to promote the application of standardized procedures. This initiative provided a valuable platform for knowledge sharing and collaboration among team members, fostering a culture of continuous improvement and innovation. Participants engaged in meaningful discussions and practical sessions, enhancing their understanding and proficiency in implementing effective testing protocols.

Workshop with Textile Department on 26th March 2024

Workshop with Electronics & Information Technology Department on 19th March 2024:

CENTRAL LABORATORY TEAM

S.No.	Name of Officer	Designation	Section
1	Shyam Sunder	Scientist - G	Head Central Lab
2	Shalu Varshney	Scientist-D	Mechanical
3	Vishant Rawat	Scientist-D	Quality Assurance
4	Sumit Bhardwaj	Scientist-D	Electrical
5	A.K. Mohindroo	Scientist-D	Sample Cell
6	Pavan Kumar Ora	Scientist-C	Chemical
7	Devesh Kumar	Scientist-C	Chemical
8	Vipul Bohara	Scientist-C	Mechanical
9	Vishal Kumar	Scientist-C	Mechanical
10	Mukund Madhav Mishra	Scientist-C	Mechanical
11	Raju Sharma	Scientist-B	Electrical
12	Simesh Kumar	Scientist-B	Chemical
13	Sandeep Khokhar	Scientist-B	Electricall
14	Gayatri Dureja	Astt. Director	Administration & Finance

मानकः पथप्रदर्शकः

Central Laboratory, Sahibabad

Bureau of Indian Standards

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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