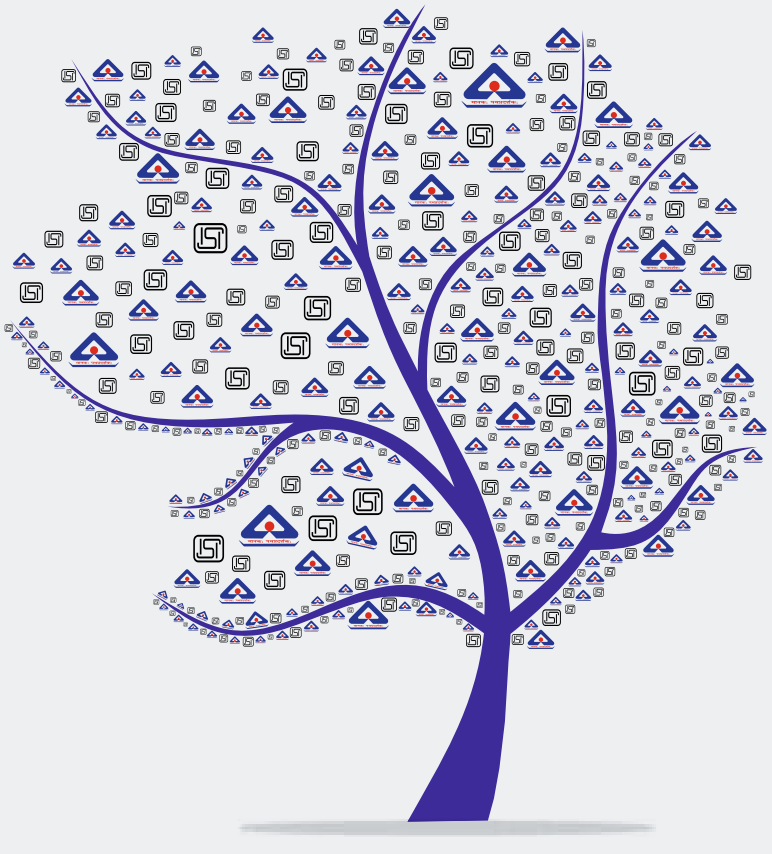
ANNUAL REPORT

2024-25



EASTERN REGIONAL LABORATORY
BUREAU OF INDIAN STANDARDS
KOLKATA


BUREAU OF INDIAN STANDARDS
REGIONAL MEET ON
APRIL 2024

ANNUAL REPORT

2024-25

Director's Message...

The Eastern Regional Laboratory (ERL) of the Bureau of Indian Standards (BIS) has made significant progress in ensuring quality and excellence. The laboratory has seen a remarkable increase in the number of tests it has conducted, with a record of 17,939 test reports issued in 2024-25. This achievement is a testament to the efforts made in augmenting the capacity of the lab through continuous modernization and automation of its test facilities.

To meet evolving demands of the regulatory landscape, ERL has been continuously upgrading its facilities, modernizing its processes, and improving its analytical capabilities. The laboratory has also made significant strides in digital transformation, which has enhanced its efficiency and accuracy. ERL has taken several initiatives to ensure the quality of its work, including participating in exercises that validate the precision and reliability of its testing processes.

In addition to its operational achievements, ERL has emphasized outreach and capacity building. The laboratory has hosted exposure visits for students and academic institutions and conducted training programmes to improve industry readiness and awareness of standardization and good lab practices.

The laboratory's new facilities have been designed to support higher throughput and safer working environments. ERL is committed to upholding public trust, supporting regulatory integrity, and fostering a culture of quality. The laboratory's achievements are a result of the hard work and dedication of its team, and it appreciates the support and collaboration of BIS Headquarters, Regional & Branch offices, and stakeholders.

Looking ahead, ERL is poised to support the next phase of quality ecosystem expansion and remains focused on building a world-class laboratory ecosystem. The laboratory is committed to sustainability and environmental responsibility, and it aims to serve with greater impact, agility, and accountability.

Subhadip Basu
Sc-F/Senior Director & Head
Eastern Regional Laboratory

Table of Contents

Framework

01

Our Team

Shantanaba Majumder

OIC(M1) & Scientist-D, Joint Director

Mr. Shantanaba Majumder holds a B.Tech in Civil Engineering from West Bengal University of Technology and an M.Tech from IIT Guwahati, specializing in Hydraulics, Water Resources, and Environmental Engineering. Since his joining BIS in 2016, he has worked in Conformity Assessment in Chhattisgarh and West Bengal and has been posted at ERL, Kolkata since 2022. He has been instrumental in establishing the LPG Cylinder testing facility at ERL. He has been overseeing the Quality Assurance section, Building renovation projects, and he is currently posted at OIC of Mechanical-1 section (other than Metals). Additionally, he is a certified auditor for IS/ISO/IEC 17025:2017 and Assaying and Hallmarking Centres.

K. S. Rao

OIC(E) & Scientist-C, Deputy Director

Mr. K. S. Rao completed his B.Tech in 1993 from Jawaharlal Nehru Technological University and has contributed over 33 years of service to BIS. Before joining BIS, he worked in the fields of printing technology, oil extraction mills, and other sectors. At BIS, he has held key roles in both laboratory and certification departments, playing a pivotal role in increasing the output of the Electrical Section. Known for his excellent organizational skills and extensive technical knowledge, he has led the Electrical Section to achieve new milestones in modernization and automation. He has superannuated on 31st December 2024.

Abhinav Kumar Singh

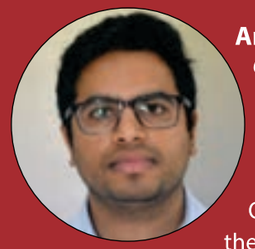
OIC(M2) & Scientist-C, Deputy Director

Mr Abhinav Kumar Singh, a Mechanical Engineer from the 2017 batch of IIT Kanpur, joined BIS in September 2020. Prior to joining BIS, he worked as a Mechanical Maintenance Manager in the Hot Rolling Mill at Tata Steel, Jamshedpur. Since joining BIS, he has worked in the Central laboratory, the Lab Policy and Planning Department and ERL, Kolkata. He is in charge of the Metal Testing lab (Mechanical-2). He is an auditor for 'Laboratory Quality Management System & Internal Audit as per IS/ISO/IEC 17025:2017' and for Assaying and Hallmarking Centres.

Tarique Sajjad

OIC(QA) & Scientist-C, Deputy Director

Mr Tarique Sajjad, a Mechanical Engineer from B.I.T. Sindri (2018 batch), serves as a Scientist-C/Deputy Director and Officer-in-Charge of the Quality Assurance and Sample-Cell at the Eastern Regional Laboratory, BIS. Since joining BIS in 2020, he has been with ERL and has played a key role in significantly increasing the Mechanical Section's testing output and automation of the Mechanical Lab. As Officer-in-Charge of Quality Assurance, he has been instrumental in implementing quality systems to ensure compliance as per IS/ISO/IEC 17025:2017 and other regulatory requirements. He is also an auditor for "Laboratory Quality Management System & Internal Audit as per IS/ISO/IEC 17025:2017" and Assaying and Hallmarking Centres.



Ankit Bhumla

OIC(C) & Scientist-C, Deputy Director

Mr Ankit Bhumla holds a postgraduate degree in Chemistry from the Tata Institute of Fundamental Research (TIFR), Mumbai. Since joining BIS in 2021, he has been posted at ERL, Kolkata, and oversees the Chemical Section as Officer-in-Charge. He has been instrumental in driving transformation within the section through the creation of new test facilities for footwear products. Additionally, he is a certified auditor for IS/ISO/IEC 17025:2017 and AAssaying and Hallmarking Centres.

Partha Chandra

OIC(E) & Scientist-B, Assistant Director

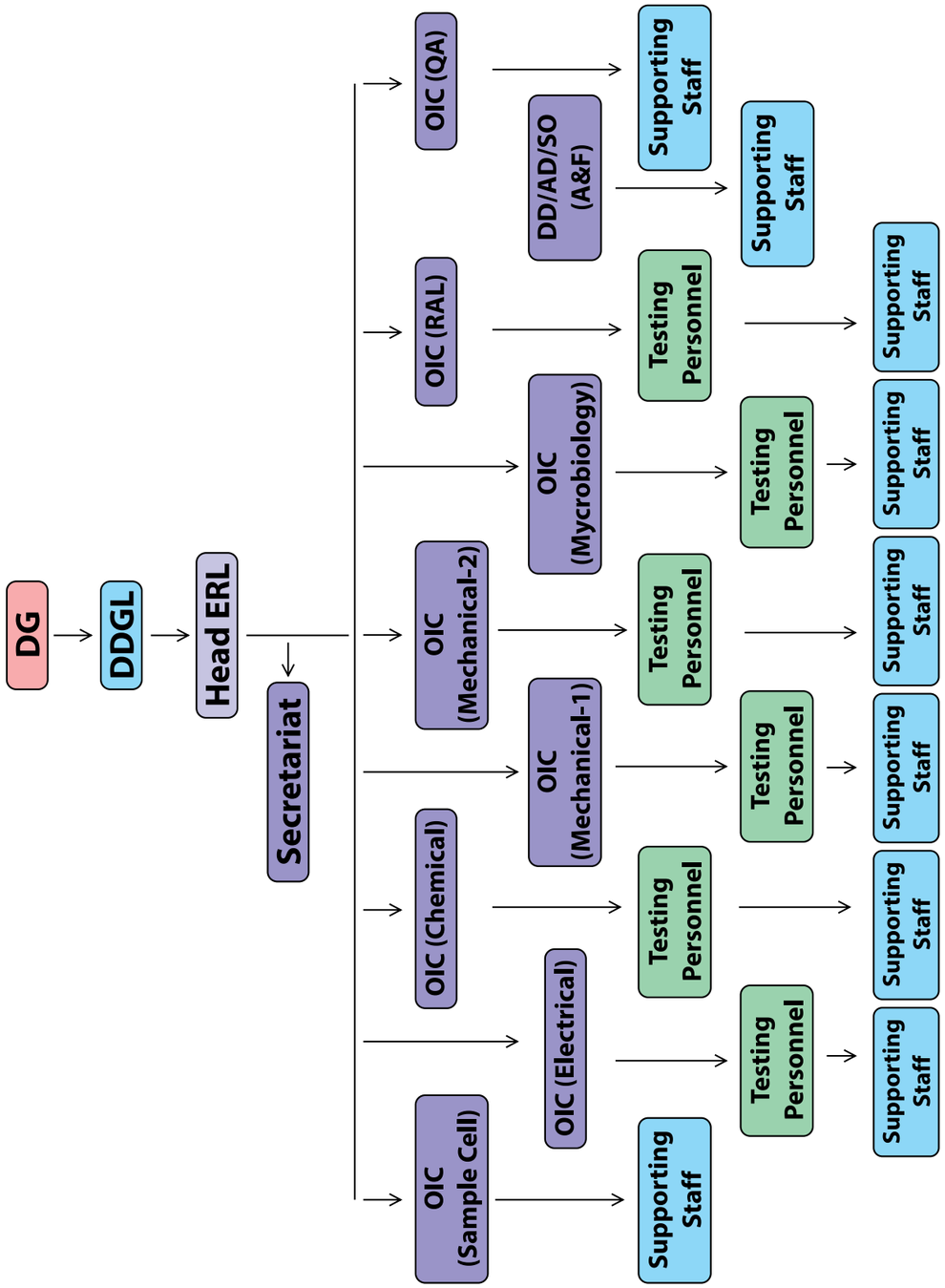
Mr Partha Chandra graduated from Jadavpur University in civil engineering in 2009. He gained experience in several other sectors of Civil Engineering before joining BIS in December 2024. Following the superannuation of Sh. K. S. Rao, Sc-C, is now in charge of the OIC of the Electrical Section.

K. K. Solanki

Assistant Director (A&F)

Mr K. K. Solanki holds an MHRM degree from Annamalai University and a BA (Pass) degree from Delhi University and has over 31 years of dedicated service with BIS. He serves as Assistant Director (Administration & Finance) at Eastern Regional Laboratory (ERL), effective 13 January 2025.

Organizational Structure



ANNUAL REPORT
2024-25
BUREAU OF INDIAN STANDARDS

List of Employees

List of employees as on 31st March 2025

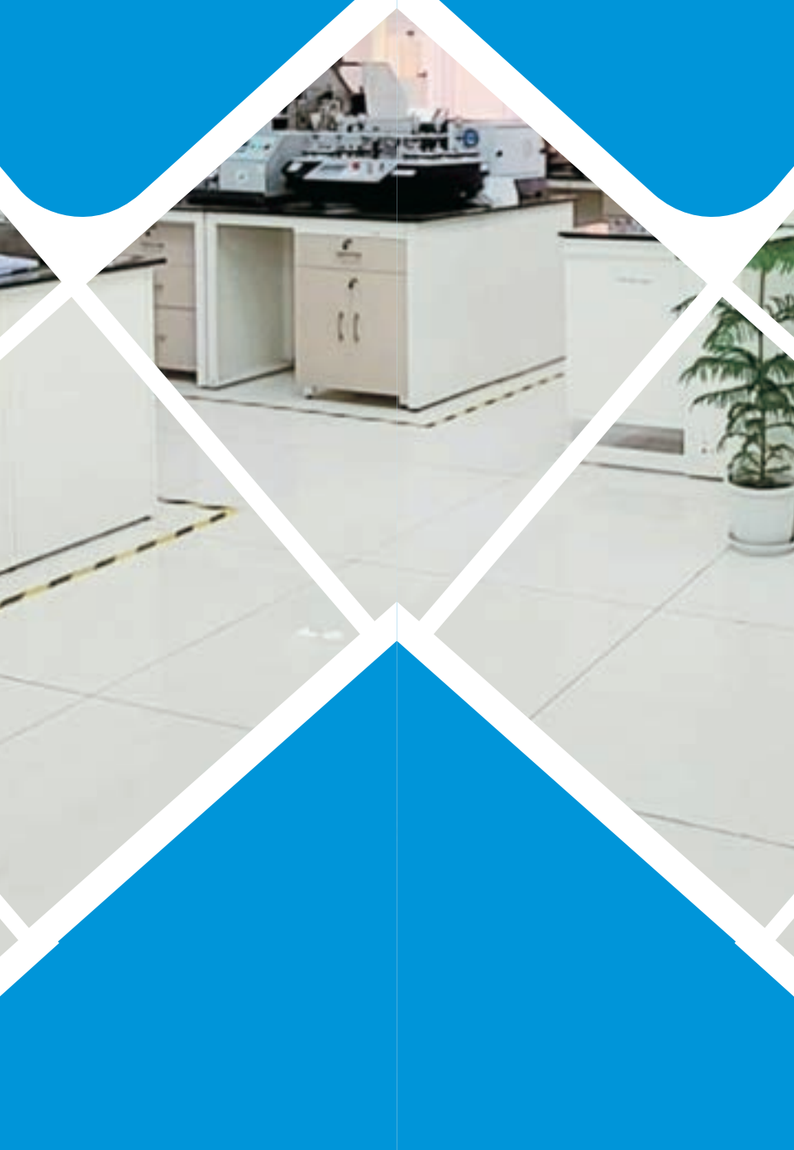
Sl. No.	Name of the Employee	Designation
1	Sh Subhadip Basu	Sc-F & Head
2	Sh Shantanaba Majumder	Sc-D
3	Sh Abhinav Kumar Singh	Sc-C
4	Sh Tarique Sajjad	Sc-C
5	Sh Ankit Bhumla	Sc-C
6	Sh Partha Chandra	Sc-B
7	Sh Krishan Kumar Solanki	AD
8	Sh Jitendra Kumar	SO
9	Smt Clarisa Syiemlieh	LO
10	Sh Deepak Kumar	LO
11	Sh Mukesh Chandra Keshari	LO
12	Sh Avijit Paul	LO
13	Smt Ranita Mukherjee	LO
14	Ms Ankhi Chakraborty	LO
15	Sh Ramesh Naidu Poluparthi	LO
16	Smt Shalinee	LO
17	Sh Gautam Kumar Mehta	LO
18	Sh Bigya Ranjan Pradhan	TA
19	Sh Ayub Alam	TA
20	Sh Binit Vinayak	TA
21	Sh Rupesh Kumar Verma	TA
22	Smt Sonali Goswami	TA
23	Smt Soumilee Nandy	TA
24	Ms Mampee Mukherjee	TA
25	Sh Pritam Ghosh	TA
26	Smt Sweeti kumari	TA
27	Sh Rahul Kumar	TA
28	Sh Anil Ranjan Barik	TA
29	Sh Akash Kar	TA
30	Sh Sadique Eqbal	TA
31	Sh Ujjal Halder	Sr. Tech
32	Sh Subrata Majumder	MTS

List of Employees Transferred/Superannuated/Resigned during the Year

Sl. No.	Name of the Employee	Designation	
1	Sh K. S. Rao	Sc-C	Superannuated
2	Smt Sumita Das	ASO	Superannuated
3	Sh T. K. Kundu	LO	Transferred
4	Sh Nirbhay Ranjan	LO	Transferred
5	Sh Ranjan Das	LO	Transferred
6	Smt Shampa Ghosh	LO	Transferred
7	Sh Biswajit Gope	TA	Transferred
8	Sh Sourabh Patel	Sr. Tech	Transferred
9	Sh Sanjeev Marandi	TA	Resigned
10	Sh Pronoy Biswas	TA	Resigned

Laboratory at a Glance

02



The Laboratory

The Eastern Regional Laboratory (ERL) in Kolkata, is one of the ten state-of-the-art laboratories under the Bureau of Indian Standards (BIS). ERL plays a crucial role in supporting various BIS Conformity Assessment Schemes. Accredited by NABL and FDAS, and equipped with modern instrumentation, ERL is committed to upholding the highest standards of quality, accuracy, and reliability in its testing services.

The laboratory houses five major testing sections, along with a Sample Cell and a Quality Assurance (QA) Section, all functioning in synergy to deliver trusted results and meet BIS's broader objectives of standardization, quality assurance, consumer safety, and public awareness.

1. Chemical Testing Section

This section performs analytical testing on a wide array of products including Metals, Toys, Cement, Food items, Footwear, PVC, and Industrial Chemicals. Equipped with high-precision instruments like ICP-MS, AAS, LC-MS/MS and GC-MS/MS, it ensures accurate detection of trace elements and compliance with quality standards, thus playing a vital role in safeguarding both consumers and industries.

2. Mechanical Testing Section

The Mechanical Section caters to the testing needs of Construction Materials such as Steel, PVC, Cement, Footwear, Toys, and Jute. Using Universal Testing Machines, Impact Testers, and other advanced equipment, this section conducts tests for Tensile Strength, Compression, and Hardness, contributing to the safety and durability of construction and industrial goods.

3. Electrical Testing Section

Focused on Electrical Safety and Performance, this section tests a variety of products including Household Appliances, Toys, Electrical Cables, and Fittings. Through the use of High-Voltage Testers, Insulation Resistance Meters, and other advanced tools, it ensures that electrical products meet stringent national standards for Safety and Reliability.

4. Microbiology Section

With a strong emphasis on safeguarding public health and hygiene the Microbiology Section tests **food, water** and **sanitary products** for microbial contamination. By applying rigorous microbiological protocols, this section ensures that products meet **safety** and **hygiene benchmarks,** supporting both regulatory compliance and consumer well-being.

5. Referral Assaying & Hallmarking Laboratory (RAL)

A specialized facility within ERL, the RAL focuses on testing Gold and other precious Metals. It plays a pivotal role in Assaying, Hallmarking, and Training personnel in precious metal testing — reinforcing trust in BIS's gold certification schemes and contributing to standardization in the jewelry industry.

6. Sample Cell and Quality Assurance Section

The backbone of the lab's operational workflow, this section manages the Coding, Documentation, Quality Testing and Tracking of all samples. It ensures full Traceability, Integrity, and Compliance throughout the testing process, thereby maintaining high standards of quality control and customer satisfaction.

ERL's integrated structure, technical expertise, and commitment to excellence continue to support BIS's vision of ensuring quality products for every Indian citizen. With its growing capabilities and expanding scope, ERL remains a cornerstone in the journey towards self-reliance in testing, innovation, and standardization.

Products tested at ERL

At BIS ERL, a wide array of products are tested as part of the Conformity Assessment Scheme to ensure

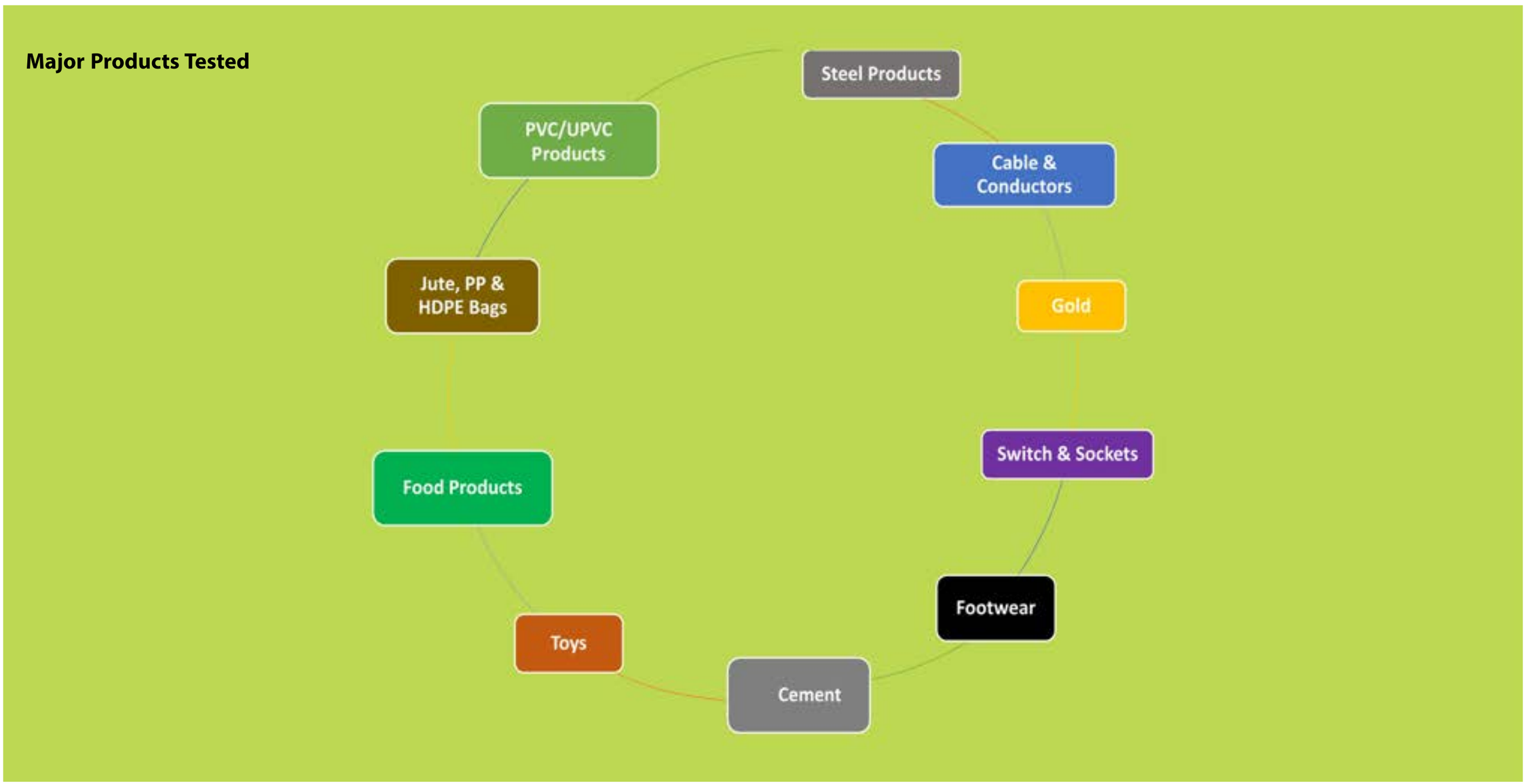
safety, quality, and regulatory compliance. The key categories tested during the year include:

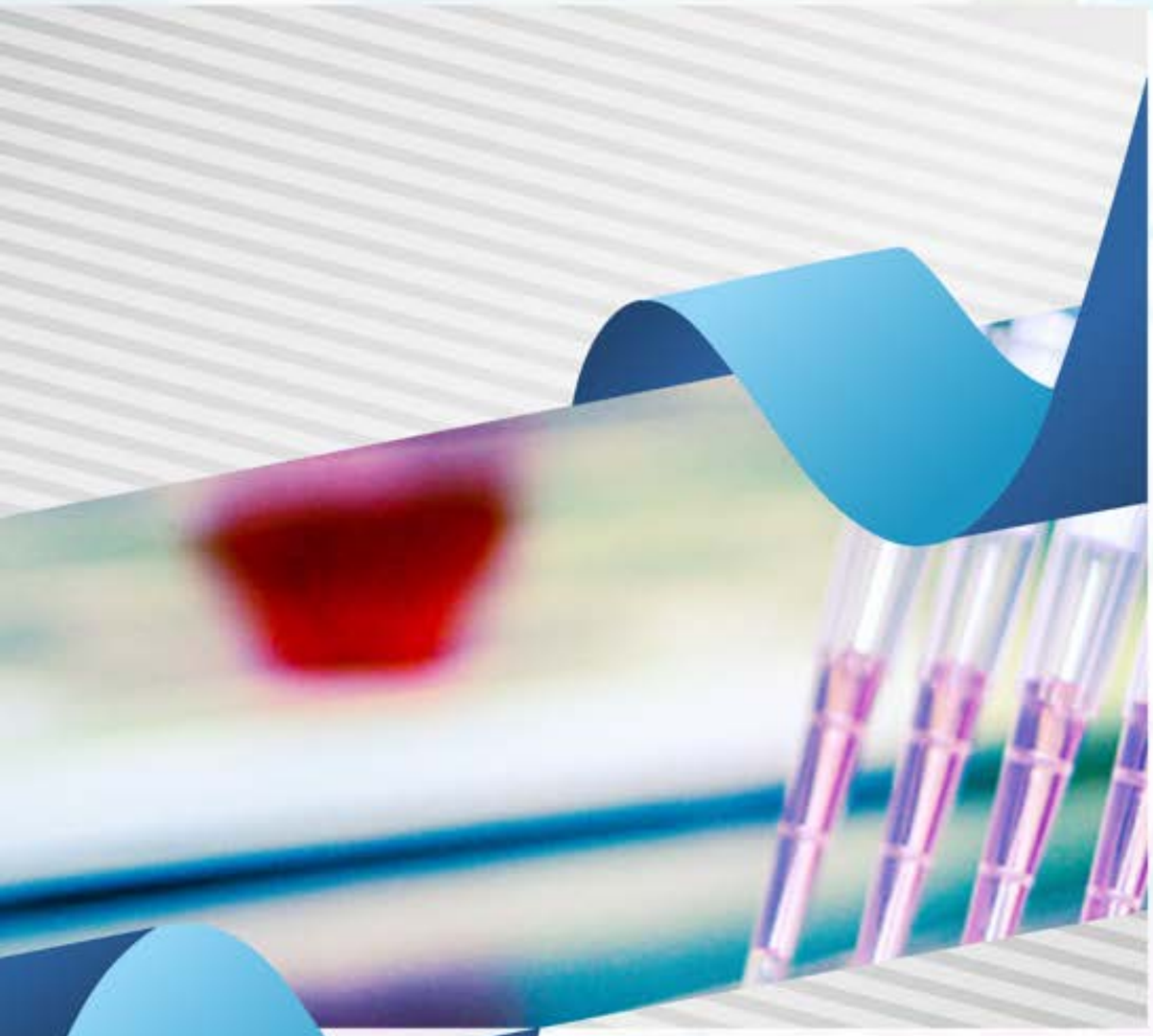
- **Metals:** Various ferrous and non-ferrous metals are tested for chemical composition, mechanical properties, and microstructural analysis to confirm adherence to Indian Standards. Advanced equipment are used to ensure precise and reliable test results.
- **Food Products (Water, Milk Powder):** Packaged Drinking Water and Milk Powder samples are analysed for microbiological safety, nutritional content, and physico-chemical parameters to ensure they meet food safety standards.
- **Footwear:** Testing of footwear includes evaluation of material quality, physical durability, Flex Resistance, and slip properties to assess conformity with quality benchmarks.
- **Cables and Conductors:** Electrical cables and conductors undergo insulation resistance tests, tensile strength checks, and flame retardancy assessments to ensure performance and electrical safety.

BUREAU OF INDIAN STANDARDS
ANNUAL REPORT
2024-25

- **Jute, PP & HDPE Bags:** Jute bags are tested for weight, dimensions, tensile strength, and seam strength to verify suitability for packaging applications as per prescribed standards.
- **PVC Products :** Polyvinyl chloride products are assessed for thermal stability, mechanical strength, chemical resistance, and toxic elements to certify their safety and durability.
- **Toys :** Toys are evaluated for mechanical and physical properties, flammability, and presence of hazardous substances to ensure child safety as per toy safety standards.
- **Gold :** Hallmarked gold samples are tested for purity using advanced methods like XRF and fire assay to maintain the integrity of hallmarking processes.
- **Cement :** Cement samples are tested for fineness, setting time, compressive strength, and soundness to ensure their structural reliability in construction.

Major Products Tested





03

Over the Years

Timeline

1964 Established at Chowringhee Approach to support the region's tea-packaging and steel industry.

1969 In response to rapid growth, the laboratory was shifted to Lower Rowdon Street.

1981 Kankurgachi became the new home for ERL and ERO to cope with the expansion of IS Certification Marks Scheme.

1992 ERL had its own dedicated building (the present Annex building).

2019 Microbiology Section and Referral Assay Lab became functional.

2021 Laboratory commenced functioning from both the Main Building and the Annex Building.

2021 The Advanced Instrumentation Laboratory became operational at Main Building.

2022 Toy Testing Lab was started after implementation of Toy QCOs.

2024 Footwear & Metallography Testing Lab became operational.

Major Milestones

Over the past 60 years, ERL has achieved numerous milestones, including :

- **1964** ERL was set up and started Metal Testing (Physical parameters) in Chowringhee.
- **1966** Chemical Section for Metal Samples started in Chowringhee.
- **1969** As the lab expanded rapidly, it was relocated to Lower Rowdon Street.
- **1969** Started Electrical Testing in Lower Rowdon Street.
- **1972** Started Jute Testing for the first time in Lower Rowdon Street.
- **1981** With growing demand for testing a wider variety of products, both ERL and ERO moved to the present Main building at Kankurgachi and was the only BIS lab for testing of Jute bags.
- **1987-88** Received accreditation as per ISO/IEC Guide 25 from NABL.
- **1992** To accommodate its continued success and the need for additional facilities, ERL was given its own dedicated space, at the present Annex building.
- **2004** Received accreditation as per IS/ISO/IEC 17025 from NABL (for Chemical, Mechanical and Electrical).
- **2018** ERL started testing of Packaged waters as per IS 14543 & IS 13428 (Chemical).
- **2019** Referral Assay Laboratory (RAL) started, and ERL became the third RAL in the country. The Microbiology section started operations.
- **2021** Laboratory started operating from the Main building (the former ERO building) and the Annex building (the ERL building). The Advanced Instrumentation Laboratory, housing equipment like ICP-MS, IC, FTIR, LC-MS/MS, and GC-MS/MS, was made operational in the Main building.
- **2022** Toy Testing Lab was started after implementation of Toy QCOs.
- **2023** Footwear testing was made operational for five new IS after the QCO was issued for footwear.
- **2024** Inauguration of the renovated Mechanical-1 Lab comprising of Footwear Testing Lab and Metallography Lab. All five test sections were covered under the scope of IS 17025 Accreditation (Mechanical, Electrical, RAL, and Micro from NABL and Chemical from FDAS).

04

ERL Journey

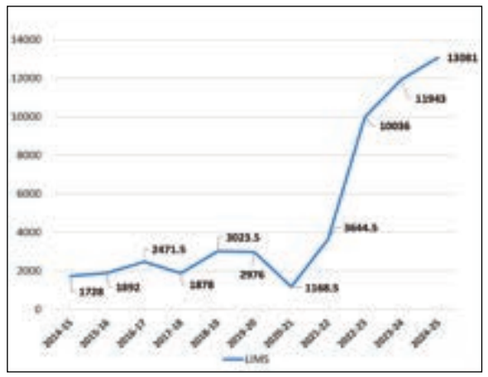
DECADE'S JOURNEY

Over the past decade, Eastern Regional Laboratory (ERL) has undergone a remarkable transformation, underscoring its unwavering commitment to strengthening testing capabilities and service excellence. In 2014–15, ERL issued 1,728 test reports. By 2023–24, this number had skyrocketed to 11,634 — marking a nearly six fold increase. This substantial growth reflects sustained efforts in facility enhancement, process optimization, and strategic support from Headquarters to modernize testing infrastructure. In the year 2025, ERL achieved a new milestone with the number of samples tested reaching 13081, further solidifying its role as a premier testing hub that meets the dynamic demands of industry and regulation. A similar trajectory was observed in the Referral Assay Laboratory, where report generation increased from 410 in 2019–20 to 5,375 in 2024–25, a 13-fold increase, despite, a slight dip in 2023-24.

Record-Breaking Achievements

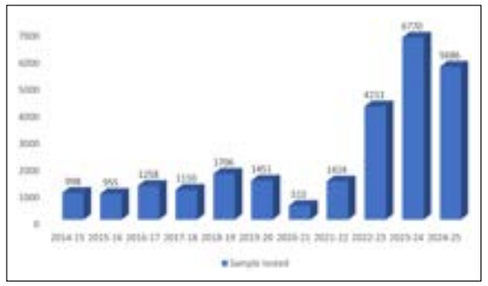
ERL has set unprecedented benchmarks by achieving the highest number of test reports issued in a single month (1439 in January 2025) and in the 2024-25 financial year (13081 reports) across all its operational years, thus demonstrating the impact of focused strategy and operational rigour.

F.Y. : 2024-25



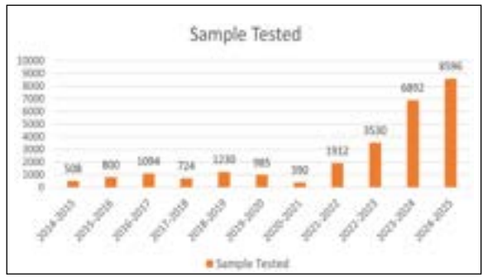
Mechanical Section

The Mechanical Section of ERL continued to serve as a pillar of testing excellence, providing critical testing services across diverse categories, including steel, cement, textile, footwear, toys, plastics, and LPG cylinders. Building on the momentum of the previous years, the section upheld its trajectory of growth through continued modernization, capacity enhancement, and operational efficiency. In the fiscal year 2024-25, it achieved a total output of 5,686 test reports from a modest 955 test reports in 2015-16 (a 5.7-fold increase).



Chemical Section

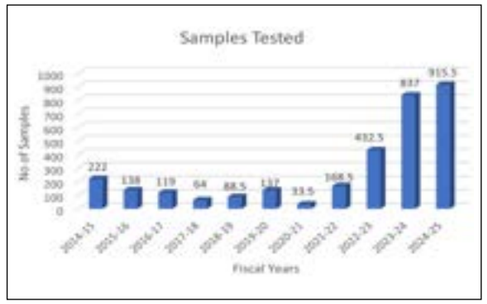
The Chemical Section of ERL has made remarkable strides in its testing capabilities over the past decade, particularly in the areas of testing of Packaged Drinking Water (PDW), Steel, Cement, Plastics, and Toys. In the fiscal year 2024-25, the section achieved a total output of 8,596 tests, a significant increase from just 800 tests (a 15-fold increase) in 2015-16. This impressive growth can be attributed to the transition from conventional testing methods to advanced instrumentation techniques, which have enhanced efficiency and accuracy.



Electrical Section

The Electrical Section of the Bureau of Indian Standards (BIS), ERL, Kolkata, plays a pivotal role in ensuring the quality and safety of electrical products through rigorous testing in accordance with relevant Indian Standards.

In the fiscal year 2024–25, the Electrical Section tested a total of 915.5 samples, marking a 7-fold increase from 2015-16 (138 samples had been tested in 2015-16). This growth reflects the lab's increased testing capacity due to enhanced improved infrastructure.



It could have achieved even higher growth had it not been for a temporarily closing of the cable testing facility due to renovation of Electrical Section.

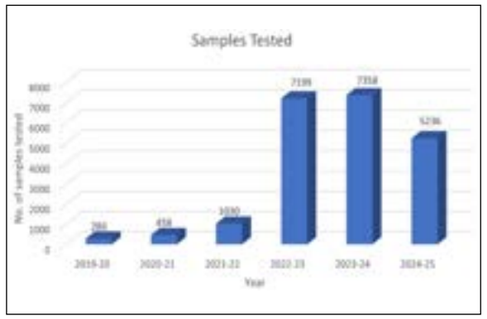
Referral Assay Section

The Referral Assay Laboratory (RAL) at ERL was established in 2019 as part of the Bureau of Indian Standards' (BIS) commitment to strengthening the Hallmarking Scheme initiated by the Government of India for Gold in 2000 in accordance with IS 1417:2016.

Since its inception, the RAL has shown a remarkable performance trajectory, backed by continuous capacity building, skilled human resource, and stringent quality controls. Sample throughput has seen exponential growth — from 286 samples in 2019–20 to 5,236 samples in 2024–25.
Beyond revenue and throughput, the RAL has significantly contributed to the following:

- Enhanced the credibility of the Hallmarking Scheme in the Eastern Region.
- Safeguarded consumer interests by validating gold purity with scientific precision.
- Supported BIS's regulatory role under the Compulsory Hallmarking mandate.

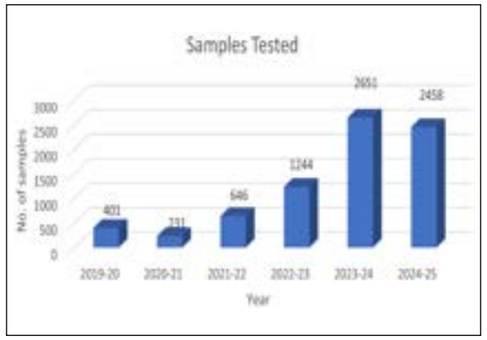
With its robust technical setup and growing stakeholder confidence, the RAL continues to strengthen BIS's mission to ensure Quality Assurance, Fair trade practices, and Consumer protection in the precious metals sector.



Microbiology Section

Established in 2019, the Microbiology Section of the ERL has rapidly evolved into a key pillar in the Eastern Region for testing of Food samples. Initially dedicated to testing microbiological parameters in Packaged Drinking Water as per IS 14543, the section has continually adapted to the growing needs of regulatory surveillance and consumer safety for other products as well.

This strategic expansion has yielded impressive results. The number of samples tested has grown more than 6-fold - from 401 samples in 2019–20 to 2,561 in 2023-24 and 2,458 in 2024–25 (there was a dip in 2024-25 as food products were denotified). There are plans of diversifying into testing of other products in the Micro section. Like Disposable Adult Incontinence diaper (IS 17508), Medical textiles Underpad (IS 17786), Absorbent cotton Gauze (IS 758), etc for which the Micro section is already undertaking a gap analysis and plans to start testing in 2025-26.

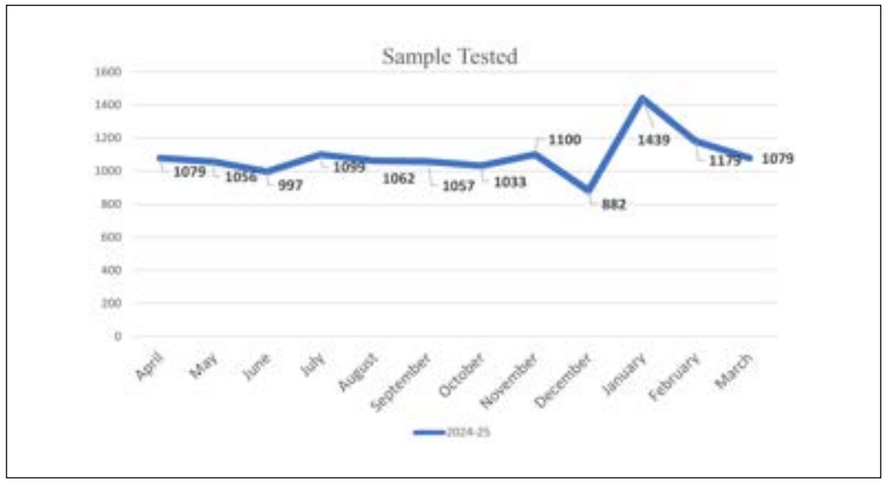


05

This Year

Eastern Regional Laboratory

The financial year 2024–25 has been a defining chapter in the journey of Eastern Regional Laboratory (ERL) of the Bureau of Indian Standards (BIS), reflecting a period of remarkable expansion, institutional strengthening, and strategic transformation. ERL issued an unprecedented 17,939 test reports — its highest ever — demonstrating not only the scale of operations but also the growing confidence of regulators, industry stakeholders, and consumers in its capabilities. This achievement was underpinned by the laboratory's sustained focus on enhancing infrastructure, modernizing testing protocols, and deepening its integration with digital systems. The commissioning of new test facilities, procurement of high-end analytical equipment, and phased implementation of Laboratory Information Management System (LIMS) integration have significantly elevated the laboratory's technical and operational benchmarks.



ERL's core testing divisions — including Mechanical, Chemical, Electrical, Microbiology, and the Referral Assay Laboratory (RAL) — have collectively contributed to this progress through both quantitative and qualitative enhancements. These sections not only met the surging demands arising from expanding Quality Control Orders but also diversified their testing capabilities to include new product categories. Notable developments during the year included the establishment of BIS's first in-house metallurgical testing facility, expansion of microbiological evaluations for hygiene products, and major upgrades to gold purity testing infrastructure in RAL. The laboratory's active participation in inter-laboratory comparisons and proficiency testing programmes reaffirmed its commitment to accuracy, traceability, and international best practices.

Simultaneously, ERL continued to prioritize institutional development and capacity-building. A total of 68 structured exposure visits were organized for academic institutions, contributing to enhanced awareness of standardization and quality infrastructure among future professionals. Training initiatives, stakeholder interactions, and contributions to technical committees further strengthened ERL's role in the national quality ecosystem. Physical infrastructure also underwent significant upgradation, most notably the renovation of the Mechanical Laboratory and the redesign of key workspaces to improve safety, efficiency, and ergonomic comfort. The laboratory also initiated environmentally responsible practices such as waste management of lead cupels and silver refining, reflecting a long-term vision aligned with sustainability.

The accomplishments of ERL during 2024–25 are a result of cohesive leadership, technical excellence, and the unwavering dedication of its personnel. Supported by BIS Headquarters and regional offices, the laboratory has not only exceeded performance expectations but also reinforced its position as a national reference centre in testing, quality assurance, and regulatory compliance. As ERL charts its course forward, it remains strategically poised to support India's expanding quality infrastructure through advanced testing capabilities, automation, and a future-ready operational framework.

Due to increased specialised nature of tests being added in scope of Mechanical Lab it was decided to have two divisions in Mechanical Lab, namely Mechanical-1 & Mechanical-2. The former houses testing facilities for all products except Metals (for Cement, Jute & Plastic Bags, Toys, Footwear, etc) while the latter is for testing of all Metals products (Ferrous & Non-Ferrous both).

Mechanical-1 Section

In the 2024-25 financial year, Mechanical-1 section of the Eastern Regional issued a total of 4800 reports majority of the them being issued in the sectors of Plastic, Jute, Footwear, Toys and Cement products. The highest number of reports (462) were issued in the month of January, 2025. The consistent performance throughout the year reflects the commitment of the section towards achieving the optimum output.

Focus Areas:

1. **Plastic (PE & PVC) products:** Product profile of Plastic Pipes and Fittings consisted of IS 4984 (PE Pipes for water supply), IS 4985 (UPVC Pipes), IS 13592 (UPVC Pipes for SWR systems), IS 12818 (UPVC screen and casing Pipes), IS 14735 (UPVC Injection moulded fittings), IS 2508 (PE films and sheets), IS 14625 (Feeding bottles). Major test parameters included Tensile properties, Dimensions, Melt Flow Index, Vicat Softening temperature.
2. **Jute products:** The Jute samples tested by the section comprises of IS 18161, IS 18162, IS 18163, IS 15138, IS 16186, IS 1943, IS 2566, etc, majority being light weight jute sacking bags.
3. **Footwear:** Consequent upon implementation of Quality Control Orders, the inflow of Footwear samples to the lab has increased substantially. The product profile consists of various Indian standards, majorly: IS 6721 (Sandals and Slippers), IS 15844-Part 1 (Sports Footwear for General purpose), IS 17043-Part 2 (General Shoes), IS 10702 (Hawai Chappal), IS 15298-Part 2,3,4 (Safety Shoes), etc.

Key Developments:

The section has invested around 3.4 crores in procuring new equipment like Whole Shoe Flexing Machine, Lace to Lace Abrasion tester, Colour matching box, Bata Belt flexing machine, Velcro Fatigue tester, Flexing Index tester (Footwear Testing), Compressive deformation tester (Bottle Testing) and Drop Tester (PP Bag) to augment the lab's testing facility.

Way Forward:

In FY 2025-26, the focus will be on the completion of partial test facilities in the fields of Footwear and Plastic products. Procurement of following equipment are already in the pipeline :

Footwear: Slip Resistance Tester, Resistance to Crocking, Water Proofness of complete Shoes, Washability Tester, Bursting Strength Tester, Torsion Tester (Cold Flexing).

Plastic: Automatic Haze meter, Computerized coefficient of Friction Tester, Elmendorf Tear Strength Tester, Dart Impact Resistance Tester, UV Weatherometer, Automatic MFI Tester,

Jute: Digital moisture meter.

Procurement of these equipment will substantially enhance and augment the testing facilities of the lab with an objective to fulfil the commitment towards consistent and reliable testing ecosystem.

Mechanical-2 Section

In the 2024-25 financial year, Mechanical-2 section of the Eastern Regional issued a total of 3602 reports majority of them being issued in the sectors of metals and toys products. The highest number of reports (361) were issued in the month of February, 2025. The consistent performance throughout the year reflects the commitment of the section towards achieving the optimum output.

Focus Areas:

Metals and Allied products: In line with Mandatory Quality Control Orders (QCOs) mechanical testing was undertaken for a wide range of steel and metal products as per IS 1786 (TMT Bars), IS 2062 (Medium and High structural steel), IS 3601 (Steel Tubes for General Engineering purposes), IS 210 (Grey Iron castings), IS 3196-Part 1 (LPG Cylinders), IS 4923 (Hollow Steel sections), etc. Major test parameters included Tensile properties (tensile strength, yield stress, elongation), Metallurgical properties (microstructure, grain size, decarburization, etc.) as per relevant ISs.

Key Developments:

The section has invested around 0.4 crores in Procurement of new equipment like Metallurgical Microscope, Surface Roughness tester, to augment the lab's facilities.

Way Forward:

- **Completion of Comprehensive Steel and Metal Testing Facility:** Plans are in progress to establish the fully operational Mechanical-2 testing infrastructure for steel and metal products through the procurement of essential instruments, including the following:
  1. Salt Spray Cabinet
  2. Ultrasonic Flaw Detector
  3. Torque Strength Tester
  4. Pull-out Test Setup
  5. Fatigue Test Setup
  6. Shear Strength Tester

- **Automation of Existing Manual Test Facility:** Plans are in progress to automate the current manual test setup in the Mechanical-2 section through procurement of essential instruments, including the following:
  1. Automatic Bend-Rebend tester
  2. Universal Dimension Measuring equipment

Chemical

Focus Areas

- **Metals and Steel Products:**

  In line with Mandatory Quality Control Orders (QCOs) chemical testing was undertaken for a wide range of Steel and other Metal products as per IS 2830, IS 2831, IS 1786, IS 2062, IS 3601 and others. Testing includes analysis of chemical composition for elements such as carbon, sulfur, phosphorus, manganese, silicon, and micro-alloying elements, both classical wet methods as per relevant part of IS 228.

- **Cement Testing:**

  Regular testing of various types of Cements was carried out as per IS 269, IS 1489, IS 16415, IS 455 etc (Ordinary Portland Cement, Portland Pozzolana Cement, etc). Chemical parameters such as Loss on Ignition, Insoluble Residue, Magnesia, Alumina, Chloride, etc were carried out as per the referee methods to ensure conformance to relevant Indian Standard.

- **Plastic Pipes and Fittings:**

  Testing was conducted as per IS 4984 (HDPE Pipes), IS 4985 (UPVC Pipes), IS 13592 (SWR Pipes), and IS 14625 (Plastic Feeding Bottle). The Standards required testing of the Products mainly for Carbon Black Content and Carbon Black Dispersion, Ash Content, and Chemical Resistance, Migration of heavy metals.

- **Footwear Products :**

  With the implementation of Footwear QCOs, chemical analysis on footwear involved testing of upto 80 parameters on various parts including Upper materials, Soles, and Adhesives. Testing includes pH, Chromium VI, Azo Dyes, and Nickel release (where applicable), in accordance with standards IS 17011.

- **Toys:**

  Chemical testing of toys was carried out as per IS 9873 (Part 3): 2017, with focus on Heavy Metal migration (Lead, Cadmium, Arsenic, etc.) from toy materials using appropriate extraction and analysis techniques including AAS.

- **Hygiene Products (Sanitary Napkins and Diapers):**

  Chemical tests on Hygiene products were initiated by the section for test parameters like Absorbency, pH, and extractable in accordance with IS 5405, IS 17509, etc.

- **Food Products:** Food samples constituted 25 % of the samples being received by the sections. Estimation of Chemical parameters in Packaged Waters (IS 14543, IS 13428) & in Milk powders (IS 13334-1, IS 1165, etc) were done.

Key Developments

- Commissioning of an Automatic Glassware Washer to enhance reproducibility and reduce cross contamination.
- Installation of a low-noise, oil-free air compressor with integrated nitrogen generation to ensure uninterrupted LC-MS/MS operations and reduce instrument downtime.
- Procurement of specialized footwear sample preparation equipment, including a reciprocating horizontal shaker and tumbling barrel assembly, enabling the lab to support footwear-related QCO testing as a nodal lab.

Looking Ahead

- **Completion of Metal & Plastic Testing Facility:**

  Plans are underway to complete the full-fledged chemical testing infrastructure for steel and metal products through the procurement of key instruments, including:
  - Spark Optical Emission Spectrometer (Spark OES) – for rapid and accurate analysis of alloying and trace elements in ferrous and non-ferrous metals.
  - Oxygen, Hydrogen, and Nitrogen (OHN) Analyser – for precise quantification of gaseous elements critical to material integrity and weldability.
  - Carbon and Sulfur (C-S) Analyser – for accurate determination of carbon and sulfur content, vital for compliance with BIS steel standards.
  - DSC Analyser- For determination of Oxidation Induction Time in Plastic Pipes as per IS 4984.

Electrical

1. Focus Areas

The major focus area included products like Cables, Toys, Conductors, etc.

- **Cables:**

  Cable testing included a large number of IS like IS 694 [Polyvinyl Chloride Insulated Unsheathed and Sheathed Cables)], IS 7098 (Part1 & 2) [Cross linked Polyethylene Insulated PVC Sheathed Cables], IS 14255 [Aerial Bunched Cables], IS 1554(part1 & 2) [PVC Insulated Heavy Duty Electric Cables], IS 14494 [Elastomer Insulated Flexible Cables], etc. Cable testing facility is more than 20 years old and has been the cornerstone for this lab.

- **Conductors:**

  Electrical section is having facility for testing different types of Conductors as per various parts of IS 398 (Part1, Part2, Part 4, Part5) [Al. Conductors For Overhead Transmission Purposes], IS 3975 [Low Carbon Galvanized Steel Wires, Formed Wires And Tapes For Armouring Of Cables], IS12776 [Galvanized Strand For Earthing], IS 548 [EC Grade Al. Rod], etc.

- **Switch, Socket and Plugs:**

  This is a relatively new test facility created in 2023 as all the samples generated by BOs could not be handled by the existing labs of BIS. Testing are conducted for IS 3854 (Switches for Domestic and Similar Purposes), IS 1293 (Plugs and Socket-Outlets). The lab has started with a modest testing capacity of 20-25 Switch, Socket and Plugs in a month, however with steady inflow of samples plans are for enhancement of capacity in the coming financial year.

- **Toys:**

  This is another relatively new test facility created in 2020-21 because of toys being brought under mandatory certification through QCO. Tests are conducted as per IS 15644:2006 (Electric toys).

Key developments :

- Procurement of Digital Micro Ohm Meter, Flexing Test Apparatus (3 terminal), Digital High Voltage (HV) Tester, Temperature Rise Test Equipment, Equipment for Removal of Cover and Cover Plate for Switches, Plugs and Sockets outlets, etc has resulted in increased output.
- During the financial year 2024–25, the Electrical Section at the Eastern Regional Laboratory (ERL) demonstrated consistent performance in sample testing and issuance of test reports. The highest number of reports was recorded in June 2024 (108), followed by July 2024 (103) and October 2024 (101). The number of reports remained relatively stable at around 90 in April, May, November, January, and February. A noticeable decline began after October, with December 2024 dropping to 70 reports and reaching the lowest point in March 2025 with only 45 reports due to onset of renovation work.

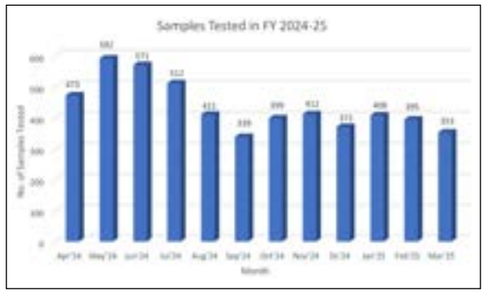
Looking Ahead :

- Plans are underway to complete the full-fledged electrical testing infrastructure for various FR and FRLSH category cables through the procurement of key instruments, including:
- Oxygen index test apparatus and Temperature index test apparatus for various Cables.
- Smoke density test apparatus.
- Making and Breaking test apparatus for switches as per IS 3854:2024 for performance test.
- Torsion test apparatus, wrapping test apparatus and Tensile machine as part of automation process.

Referral Assay Lab

Overview

To enhance consumer protection and ensure gold purity, the Government of India issued a Quality Control Order in June 2021, mandating hallmarking of gold jewellery/artefacts. During 2024–25, the hallmarking section issued 5,236 test reports.



Focus Areas

Gold Testing: Regular testing of gold artefacts received in the laboratory was conducted as per the following Indian Standards:

- IS 1417: Methods for assaying gold in jewellery/ artefacts.
- IS 1418: Determination of fineness of gold using cupellation method.

Key Developments

Infrastructure Upgrades

- **Muffle Furnaces:** Two new Muffle Furnaces were installed and commissioned. These furnaces significantly reduce the time required to reach the operational temperature for cupellation and melting — from 4 hours to that around 90 minutes. This upgrade has streamlined operations and reduced instrument downtime.
- **Hydraulic Press Machine:** Previously, the preparation of gold buttons post-cupellation involved manual hammering using an anvil, which was labour-intensive and time-consuming. The new hydraulic press has automated this process, making it faster, efficient and most importantly increased the safety aspect for the operator to a large extend.
- **Installation of Additional Microbalance:** A high-precision microbalance with LabX software integration was installed. This system provides excellent stability and rapid micro-level results, enabling future automation and enhancing analytical accuracy.

Microbiology

Overview

The Microbiology Section of the Eastern Regional Laboratory (ERL) continued to play a vital role in safeguarding public health and supporting the implementation of Quality Control Orders (QCOs) through microbiological analysis of Drinking water, Food Products, Hygiene Products, and Disinfectants. During 2024–25, the section issued 2458 test reports, reflecting the scale and relevance of the work performed. The highest monthly output was observed in May 2024 with 234 reports, followed closely by November 2024 (232 reports). The activities were closely aligned with updated Indian Standards and focused on strengthening testing reliability and infrastructural capabilities.

Focus Areas

a) **Food:**
Extensive microbiological testing was conducted on Packaged Drinking Water (PDW) and Packaged Natural Mineral Water (PNMW) in accordance with IS 14543:2024 and IS 13428:2024. Microbial safety assessments of Skimmed Milk Powder (IS 13334:2014) and Whole Milk Powder (IS 1165:2022) were performed to verify compliance with hygiene standards. The tests focused on pathogen detection (Escherichia coli, total coliforms, Pseudomonas aeruginosa, Faecal streptococci, Salmonella, Shigella, Staphylococcus aureus, Vibrio cholerae, Vibrio parahaemolyticus, yeast and mould, and sulphite-reducing anaerobes, etc.) and total viable counts to ensure product safety.

b) **Hygiene Products:**
The section started testing of Sanitary Napkins and Disposable Baby Diapers in accordance with IS 5405:2025 and IS 17509:2021. These tests are critical for ensuring consumer safety, particularly in products meant for prolonged skin contact.

c) **Disinfectants:**
Disinfectants were tested as per IS 1061:2017, focusing on microbial efficacy, especially against standard test organisms, to validate claims of disinfection and hygiene.

Key Developments

- **Infrastructure Augmentation:**
Installed a High-Quality Ultrapure Water Purification System capable of generating Type I and Type II water, improving the consistency and sterility of media preparation across all product categories.
- **Extension of Scope:**
The section started testing of Sanitary Napkins and Disposable Baby Diapers in accordance with IS 5405:2025 and IS 17509:2021, particularly relevant for sanitary products involving fibrous matrix analysis which have been brought under mandatory certification under QCOs.

Looking Ahead

- **Extension of Scope:**
Procurement of a Pulp Disintegrator is planned for enabling testing of products as per IS 17753:2021 for an All India First application.
- **Quality Reinforcement:**
Future initiatives include streamlining internal SOPs with ISO/IEC 17025:2017 and enhancing data traceability through digital workflows and inter-laboratory comparison studies.

Quality Assurance

The Quality Assurance Section of the Eastern Regional Laboratory (ERL) continued to reinforce its commitment towards assuring the quality of testing undertaken at ERL through internationally accepted best practices as per IS 17025:2017 through Quality Assurance (QA) program, Inter-Laboratory Comparison (ILC program), Proficiency Testing (PT program), etc. As per the existing Quality Procedure, 3% of all samples tested are to be part of the QA program and hence a total of 360 samples were drawn for the FY 2024-25 which reflects the strategic focus on enhancing compliance and ensuring the validity results.

In addition, ERL successfully participated in 7 Inter-Laboratory Comparisons (ILC) programs organised by other labs and initiated 3 ILC programs. In the ILC programs initiated by ERL, other labs like WRL, CL, NRL, SRL, NTH-Kolkata, DTH-Delhi, etc have participated.

The QA section also participated in 8 Proficiency Testing (PT) programs organised by accredited PT providers as per IS 17034, covering various product categories like TMT, Solid Copper Conductor, Skimmed Milk-Powder and Leather which are within the scope accreditation of ERL. These initiatives strengthened confidence in testing accuracy and reliability while fostering quality assurance across multiple laboratory sections.

Overall, the data underscores ERL's unwavering focus on ensuring the quality and safety of products available to consumers.

Sample-Cell

The Sample Cell at ERL of the BIS plays a crucial role in the systematic management of samples received from branch offices and manufacturer through simplified process. It acts as the central hub for receiving, processing, distributing, and tracking samples submitted for testing across various sections such as Mechanical, Electrical, Chemical,

Microbiology, and the Referral Assay Laboratory (RAL). The Sample Cell handled specialized sample categories, including simplified, counter, FMCD, and offline samples, thus ensuring that each is processed according to its specific protocol.

To maintain impartiality and ensure unbiased testing, the Sample Cell masks the identity of each sample by removing identifiable labels and assigning unique codes. These masked samples are then forwarded to the appropriate testing sections along with relevant technical documentation. It also manages damaged or disputed samples by documenting issues and coordinating with the relevant branch office for resolution. Finally, it ensures the proper storage, return, and disposal of sample remnants in compliance with relevant guidelines. Through these coordinated efforts, the Sample Cell ensures the integrity, traceability, and efficiency of the overall testing process at BIS ERL.

Additionally, the Sample Cell compiles monthly management control reports (MCRs) based on sample data to monitor performance and support audits.

Details of samples masking:

Sr. No.	RAL	Total no of sample masked (excluding RAL)	Mechanical	Chemical	Microbiology	Electrical
1	5,198	12,364	8,763	8,451	2,218	945

No of complete reports issued (excluding RAL) - 12,995
Return of cornets to Branch office - 4,936
Revenue generated through Sale of Scrap - Rs.14,48,138 (including 18% GST and service charges of MSTC)

Administration & Finance

The A&F Section is responsible for managing the administrative and financial aspects in the Laboratory. Administratively, A&F section integrates various Sections namely Chemical, Mechanical, Electrical, Microbiology, Quality Assurance, RAL, Building Maintenance and Sample Cell for centralized operational coordination to provide infrastructural support to all. A&F section also organizes several flagship events like the Foundation Day, Hindi Pakhwada, Swachhata Diwas, Medical and eye check camps, International Women's Day, International Yoga Day, etc with participation from employees. The A&F section ensures discipline in disbursement, aligning with BIS's broader policy of auditable, account certified financial management under CAG oversight. A&F Section is also the central point for RTI queries.

Financially, the lab functions through fund allocations from the BIS Head-quarters, managed by its A&F section, which executes sanctioned budgets for infrastructure, testing equipment, consumables, and staffing within the centrally approved framework. Financially, ERL procures goods and services including equipment maintenance, consumables, via both Government e Marketplace (GeM) and Non-GeM channels. Annual maintenance contracts (AMCs) are managed systematically for laboratory instruments, facilities, and associated services.

ERL has been progressively investing in improving the general infrastructure of the lab. Figure-A clearly depicts a consistent increase in investment over the last 5 years, signifying a proactive approach toward strengthening laboratory facilities. This progressive trend indicates not only the prioritization of infrastructure development but also the commitment to improving efficiency, reliability, and technical capabilities. Such sustained growth reflects strategic planning aimed at supporting future demands and ensuring continual advancement.

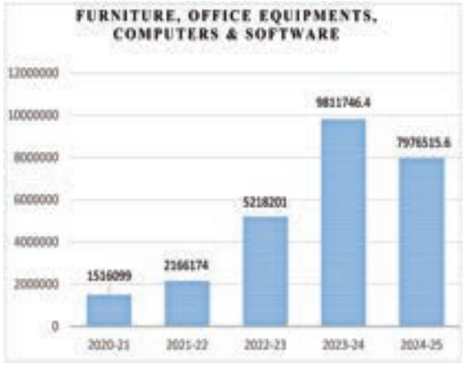


Figure-A (Amount in Rupees)

Since 2019-20, there has been significant stress in improving testing capability through the improvement of infrastructure and modernization-cum-automation of testing facilities. The A&F section has ensured all planned purchases are executed in a timely manner. Figure B depicts the progressive rise in capital expenditure for laboratory equipment, with a marked increase observed between 2021-22 and 2023-24, primarily attributed to equipment automation. The allocation for 2024-25 appears to be more focused on planning and preparatory measures, laying the groundwork for future investments. This forward-looking approach is expected to translate into significant enhancements in the upcoming financial year 2025 -26, reflecting a strategic commitment to modernization and long-term capacity-building.

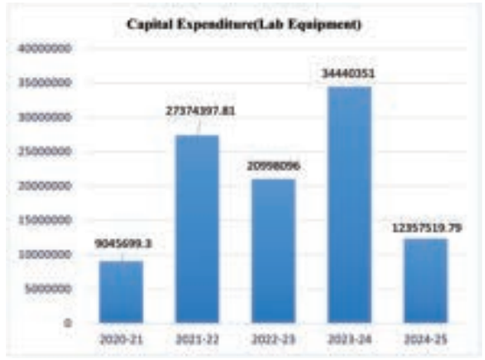


Figure-B (Amount in Rupees)

The data in Figure C reflects a progressive rise in investment towards the purchase of laboratory consumables, along with increased cost for repair and maintenance of equipment. Establishing new test facilities primarily drives another notable reason for the significant surge, which is the use of state-of-the-art equipment and the requirement for extra pure grades of chemicals, etc. The A&F section, in consultation with the testing sections, has been taking care of these aspects in a planned manner. Over the period from 2020-21 to 2024 -25, the expenditure has registered a fivefold increase, which is commensurate with the new parameters added in scope, facilities created for new IS, enhanced use of CRMs (an essential prerequisite for running state-of-the-art equipment), etc., in line with the direction from the Lab Policy and Planning Department.

There has been direction from the Ministry of Finance and the BIS Headquarters to increase procurement through the GeM portal wherever items are available in GeM. The A&F section has been monitoring this aspect, and representatives of the A&F section, being members of various procurement committees, have consistently voiced their concerns for the same. Figure D reflects a steady growth in both GeM and Non-GeM utilization, with a substantial rise observed in GeM purchases (~35%), underscoring a shift toward streamlined and transparent procurement. Simultaneously, the increase in non-GeM purchases highlights the need to procure specialized equipment and consumables unavailable through the GeM platform. This balanced approach indicates a judicious utilization of resources, ensuring efficiency while also addressing unique technical requirements.

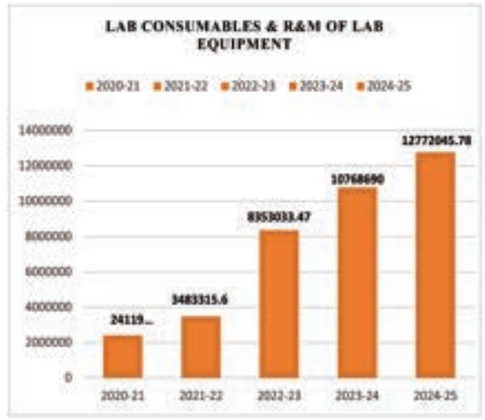


Figure-C (Amount in Rupees)

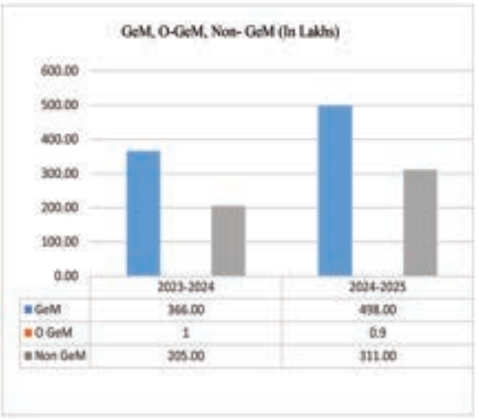


Figure-D (Amount in Rupees)

06

Upgradation of Test Facilities

ERL

In line with its strategic role in supporting the BIS Conformity Assessment Scheme, ERL has been continuously enhancing its testing capabilities to meet the rising demand generated due to newly introduced Quality Control Orders (QCOs), All-India-First (AIF) cases and requests received from various Branch Offices. Being designated as centre of excellence for Metal and Building Materials in 2019 and Nodal Lab for Footwear in 2021, ERL has been striving for creation of Complete test facilities for these sectors. As a result, new test facilities were created, partial test facilities were converted to complete test facilities and new parameters were added to some of the partial test facilities for conversion into complete test facilities in near future.

During 2024–25, the extension of scope involved a wide range of products across various sectors such as Building Materials, Metals, Footwear, and Consumer Products :

- Establishment of 8 new Complete test facilities,
- Upgradation of 10 testing facilities from Partial to Complete, and
- Creation of 12 new Partial test facilities.

These infrastructure additions have significantly bolstered ERL's ability to carry out comprehensive and reliable evaluations, enabling timely and accurate certification in accordance with regulatory mandates.

A. Complete Test facilities created in 2024-25

Sl. No.	IS No.	Product Name	Product Category
Complete Test Facilities Created			
1.	16693: 2018	Microfine Ordinary Portland Cement	Building Material
2.	12600:1989	Portland Cement, Low Heat Specification	Building Material
3.	BS EN 1811:2011	Nickel content in footwear	Footwear
4.	16981:2018	Organotin Compound	Footwear
5.	9294:1979	Cold rolled stainless steel strip for razor blade	Metal
6.	758:2023	Absorbent Cotton Gauze	Textile
7.	16581:2018	High density polyethylene (HDPE) / Polypropylene (PP) woven sacks for packing of solid ammonium nitrate for explosives	Plastic
8.	2508:2024	Polyethylene Films and Sheets	Plastic
Facilities upgraded from Partial to Complete			
1.	10116:2015	Boric Acid	Chemical
2.	2255:1977	MS wire rod for manufacture of machine screws, CHP	Metal
3.	9442:1980	Hot rolled steel plates, sheets and strips for manufacture of agricultural tillage discs	Metal
4.	9476:1980	Cold Rolled Steel Strips for carbon steel Razor Blades	Metal
5.	9962:1981	Steel wire for needles	Metal
6.	4882:1979	Low carbon steel wire for rivets for bearing industry	Metal
7.	4296 (Part 2): 2024	Tools for pressing: Part 2 punches with cylindrical head and straight or reduced shank (First Revision)	Metal
8.	14625: 2015	Plastics Feeding Bottles	Plastic
9.	10702:2023	Hawai Chappal Specification	Footwear
10.	5405:2019	Sanitary Napkins	Textile

B. Partial Test facilities created in 2024-25

Sl. No.	IS No.	Product Name	Product Category
New Partial Test Facilities Created			
1	11169 (Part 1): 2022	Specification for steels for cold heading/ cold extrusion applications: Part 1 wrought carbon and low alloy steels	Metal
2	15927 (Part 3): 2011	Polyethylene Fittings for Use with Polyethylene Pipes for the Supply of Gaseous Fuels - Specification : Part 3 Electro Fusion Fitting	Plastic
3	17349: 2020	Medical Textiles Shoe Cover	Textile
4	9997:2023	Aluminium Alloy Redraw Rods for Electrical Purposes-Specification	Metal
5	736:1986	Specification for wrought aluminium and aluminium alloy plate for general engineering purposes	Metal
6	18809:2024	Wear and abrasion resistant steel sheet and plate	Metal
7	8856:1991	Hexagon weld nuts	Metal
8	1364(Part 3): 2018	Hexagon head bolt, screws and nuts of products grades A&B	Metal
9	12045:1987	Specification for alloys used in electrical resistance metallic heating elements	Metal
10	18800:2023	Stainless steel feeding bottle for infants	Metal
11	17509:2021	Disposable Baby Diaper	Textile
12	17508:2020	Disposable Adult Incontinence Diaper	Textile

The expansion of ERL's infrastructure has established it as a crucial regional hub for testing and certification of products mandated under QCOs, particularly in building materials, metals, and footwear. These newly constructed and upgraded test facilities ensure that manufacturers and stakeholders for these products have access to state-of-the-art, reliable, and timely testing services. Through these advancements, ERL continues to reinforce its mission of supporting quality assurance, regulatory compliance, and consumer protection within the constantly evolving standards ecosystem.

07

Modernization of Infrastructure

In 2024–25, ERL continued to make focused strides in upgrading its physical and technological infrastructure, reinforcing its commitment to excellence in testing services and laboratory management.

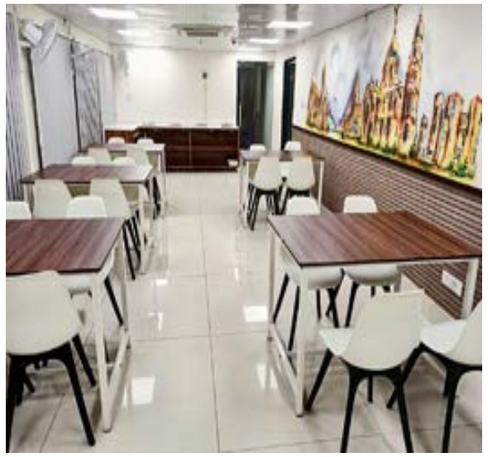
1. Renovation and Upgradation of Physical Infrastructure

As part of the ongoing infrastructure enhancement plan, a major milestone this year was the renovation of the Mechanical Laboratory-1, which houses testing facilities for Metals and Footwear. The renovated lab was inaugurated on 04th June 2024 by Sh. Pramod Kumar Tiwari, Director General, BIS. The occasion was graced by senior officials including Sh. D. Chakrabarti, DDG(E), Sh. S Basu, Head, ERL, Sh. Anindya Chakraborty, Head, KKBO2, Sh. Sabyasachi Dhar, Head, KKBO1, Sh. Sher Singh, Director, NTH, Sh. Bidhan Das, In-charge, IIP-Kolkata.

The newly designed laboratory layout has been strategically planned to enhance workflow efficiency, ensure greater safety, and provide clear segregation between metal and footwear testing operations. The upgraded facility is equipped with advanced instruments, ergonomically designed workstations, and optimized ambient conditions to ensure accuracy and reliability in precision testing.

The renovated canteen now showcases contemporary furniture, enhanced lighting, and a vibrant mural inspired by the city's heritage, together creating a warm and inviting atmosphere for its users.

Wall painting



Canteen

2. Technological Modernization of Metal and Footwear Testing Facilities

ERL, as the Centre of Excellence for Metal testing and Nodal lab for Footwear testing, has focused heavily on modernizing its testing capabilities alongside physical upgrades. Several procedures that were previously done manually have now been automated, improving operational efficiency, ensuring greater repeatability, and maintaining higher data integrity. This shift to automation aligns with global industry best practices. It meets the evolving standards of modern quality, resulting in state-of-the-art laboratories for metal and footwear testing.

Advanced Metal Testing Lab

Advanced Footwear Testing Lab

3. LIMS Integration Initiative

In a major advancement, ERL has commenced the integration of its laboratory instruments with the Laboratory Information Management System (LIMS). The implementation is being carried out in a structured, phased manner to ensure smooth adoption and operational continuity. Instruments with automated data transfer capabilities are being directly linked to LIMS, enabling seamless transmission of test results and significantly reducing manual intervention. For instruments lacking the required connectivity, tailored mechanisms are being developed (through Wi-fi, Bluetooth, etc.) to ensure accurate and timely data entry. As part of Phase-1, 11 instruments have already been integrated with LIMS, marking a decisive step towards greater automation, efficiency, and data integrity. The Phase-2 Integration of equipment are in progress.

The modernization initiatives undertaken this year reflect ERL's forward-looking approach to infrastructure development, seamlessly integrating physical enhancements with digital transformation. These advancements have strengthened testing capabilities while fostering a more efficient, reliable, and future-ready laboratory environment.

08

IMPROVING THE

Improvements Through Changes in Standards

Throughout the year, ERL actively contributed to refining standards by submitting comments to technical departments on various aspects of both published and draft Indian Standards. These comments, addressing technical, procedural, and clarity issues, aimed to enhance the accuracy, relevance, and overall quality of the Indian Standards. A total of 26 comments have been sent to various technical departments regarding numerous aspects of the published and draft Indian Standards.

Period 2024-25

Sl. No.	Date of Comment	IS. No.	Technical Committee	Name of the Official	Present Status
1	15-May-24	IS 3840:2011	CHD 17	Sh. T. Sajjad, Sc-C	Under Process
2	14-May-24	IS 13488:2008	FAD-17	Sh. S. Majumder, Sc-D	Under Process
3	30-May-24	IS 5557 (Part 2): 2018	CHD 19	Sh. A. K. Singh, Sc-C	Under Process
4	11-Jun-24	IS 1165:2022	FAD-19	Ms. A. Chakraborty, LO	Not Approved
5	11-Jun-24	IS 14433:2022	FAD-19	Ms. A. Chakraborty, LO	Not Approved
6	16-Jun-24	IS 18267:2023	FAD-20	Ms. A. Chakraborty, LO	Approved
7	25-Jun-24	IS 14625 : 2015	PCD-21	Sh. A. Bhumla, Sc-C	Approved
8	25-Jun-24	IS 14625 : 2015	PCD-21	Sh. A. Bhumla, Sc-C	Approved
9	25-Jun-24	IS 8249 : 2019	FAD-7	Sh. A. Bhumla, Sc-C	Under Process
10	08-Jul-24	IS 6623: 2004	PGD 37	Sh. A. K. Singh, Sc-C	Under Process

Sl. No.	Date of Comment	IS. No.	Technical Committee	Name of the Official	Present Status
11	11-Sep-24	WC Draft-Doc No. / IS : CHD 25(26344)	CHD-25	Sh. S. Majumder, Sc-D	Under Process
12	11-Sep-24	WC Draft-Doc No. / IS : CHD 5(25544)	CHD-5	Sh. S. Majumder, Sc-D	Under Process
13	13-Sep-24	IS 18573: 2024	MTD 19	Sh. A. K. Singh, Sc-C	Under Process
14	01-Oct-24	IS 5677 : 1986	CHD 17	Sh. R. N. Poluparthi, LO	Under Process
15	18-Oct-24	IS 17349:2020	TXD-36	Ms. A. Chakraborty, LO	Incorporated
16	16-Oct-24	IS 10810 : Part 42 : 1984	ETD- 9	Shri. B. R. Pradhan, TA	Approved
17	13-Nov-24	IS 13422:2024	MHD-12	Ms. R. Shaw, cTP	Under Process
18	13-Nov-24	IS 12235 :Part 19 : 2004	CED 50	Sh. T. Sajjad, Sc-C	Accepted for Amendment
19	13-Jan-25	Sampling guidelines on Pull Out Test (TMT Bars) and Fatigue Test (LPG Cylinders)	CMD-III	Sh. A. K. Singh, Sc-C	Under Process
20	16-Jan-25	IS 6721:2023	CHD-19	Sh. S. Majumder, Sc-D	Under Process
21	16-Jan-25	IS 8268:2020	FAD-07	Sh. S. Majumder, Sc-D	Amendment issued
22	11-Feb-25	IS 5557 Part 2 2018	CHD 19	Sh. A. Bhumla, Sc-C	Under Process

Sl. No.	Date of Comment	IS. No.	Technical Committee	Name of the Official	Present Status
23	12-Mar-25	IS 17043 : Part 2 : 2024	CHD 19	Sh. S. Majumder, Sc-D	Under Process
24	26-Mar-25	IS 5557 (Part-2)- Amd No. 2	CMD-II & CHD 19	Sh. A. Bhumla, Sc-C	Under Process
25	13-Jan-25	Sampling guidelines on Pull Out Test (TMT Bars) and Fatigue Test (LPG Cylinders)	CMD-III	Sh. A. K. Singh, Sc-C	Action Completed
26	18-Mar-25	Sampling guidelines on Innocuousness tests for Footwear samples	CMD-II	Sh. A. Bhumla, Sc-C	Under Process

Assuring the Quality of Testing

IInter Laboratory Comparisons (ILC) and Proficiency Testing (PT) are essential for ensuring the accuracy and reliability of laboratory results. Participating in ILC and PT programmes is one of the most important ways for laboratories to evaluate their performance, helping to identify any discrepancies or inconsistencies in testing methods and result reporting. These assessments provide an objective basis for laboratories to improve their procedures, verify their personnel's competency, and demonstrate the validity of their results to clients and accreditation bodies. ERL has successfully participated in the ILC and PT programme for various product groups in 2024-25.

ERL has taken part in 18 ILC programmes initiated by NTH Kolkata, NRL, WRL, CL, SRL labs, and has initiated 3 programmes itself. Details are as follows:

Sl. No	Nodal Lab	Section	Product Name	IS No/Test Method	Parameter	Performance (Z- Score)
1.	NTH Kolkata	CHEM	HDPE Pipe	IS 4984	CBC	-1.43
2.	NTH Kolkata	CHEM	PVC Pipe	IS 4985:2021	Ash Content	-0.45
3.	NTH Kolkata	Mech-1	PVC Pipe	IS 6307	Density, Vicat Softening	-0.17, -1.00
4.	NTH Kolkata	Mech-1	HDPE Pipe	IS 4984	Melt flow Index, Wall Thickness min & max, Elongation	-0.71, 1.54 & 1.47, 0.33

Sl. No	Nodal Lab	Section	Product Name	IS No/Test Method	Parameter	Performance (Z- Score)
5.	NRL	Chem	Biscuit	IS 1011 : 2002	Moisture (% by mass), Acid Insoluble Ash (% by mass), Acidity of Extracted Fat (as oleic acid) (% by mass)	-1.64 0.22 1.76
6.	WRL	Elec	Al Conductor 398 (2)	IS 398-2	Dia of Aluminium Wire and Dia of Steel Wire	-0.71 -1.69
7.	WRL	Elec	Armour	IS 7098 (Part 2)/ IS : 10810 (Part 42) - 1984	Resistivity of Armour wire as per Cl. 8.4.1	0.21
8.	WRL	Elec	XLPE Insulated Cable	IS 7098 (P-1)	Insulation thickness (red core), Conductor Resistance test IS 8130, Tensile Test of insulation red core before ageing as per table 1 of IS 7098 (P-1)	-1.21 -0.53 -0.29 -0.44
9.	WRL	Elec	PVC (HD) Cable	IS 1554-1	Insulation thickness red core and sheath thickness	-0.59 0.45 0.69
10.	WRL	Elec	Switches	IS 3854:2023	Conductor space as per Cl. 12.2.1	1.07
11.	WRL	Elec	Winding Wires		annealing test as per Cl. 3.1, Conductor resistance test as per Cl. 3.1	1.98 1.98
12.	CL	Mech-2	Hardness Test Piece		HBW	-1.45
13.	CL	Chem	PVC Pipes	IS 4985:2021	PVC pipe-Sulphated Ash content	-0.17
14.	CL	Elec	PVC Insulated Cables	IS 694	Resistance Test	-0.01
15.	SRL	Mech	PVC Pipe	IS 4985	Dimension Dimension (Wall thickness) Test for opacity	0 1.1547 0
16.	SRL	Mech	PVC-U Pipe	IS 12818	Dimension Dimension (Wall thickness) Density	-0.577 -0.458 0

Sl. No	Nodal Lab	Section	Product Name	IS No/Test Method	Parameter	Performance (Z- Score)
17.	SRL	Micro	PDW	IS 14543	Pseudomonas aeruginosa Staphylococcus aureus	Satisfactory Satisfactory
18.	SRL	Elec	Toy	IS 15644	Moisture Resistance Electric strength Resistance to heat and fire	Satisfactory Satisfactory 0
19.	ERL	Elec	Al conductors	IS 398-2	Torsion Test	-0.6
20.	ERL	Chem	Cement	IS 269	Loss on Ignition (LOI), % Calcium Oxide (CaO), % Magnesium Oxide (MgO), % Silicon Dioxide (SiO_2), % Aluminum Oxide (Al_2O_3), % Ferric Oxide (Fe_2O_3), % Chloride, % Insoluble Residue (IR), % Sulphuric Anhydride (SO_3), %	1.5844 61.7826 4.5718 20.3075 5.4500 3.8578 0.0252 0.5961 1.8504
21.	ERL	Elec		IS 7098-2	Eccentricity test	-1.78 Red 1.58 Yellow -1.32 Blue

ERL participated successfully in a number of PT programs organised by various PT providers (accredited as per ISO 17043), the details of which are given below :

Sl. No	PT Provider	Section	Product Name	IS No/Test Method	Parameter	Performance (Z- Score)
1.	GLOBAL PT PROVIDER	Mechanical-2	TMT	IS 1608-1	1. Ultimate Tensile Strength 2. Upper Yield Strength 3. Elongation After Fracture	1. 0.02 2. 0.29 3. 0.10
				IS 1786	4. Mass per meter run 5. Rebend Test	4. 0.00 5. Satisfactory
				S 1599	6. Bend Test	6. Satisfactory
2.	GLOBAL PT PROVIDER	Mechanical-1	Paver Block	IS 15658	1. Compressive Strength, N/mm^2 2. Water Absorption, %	1. 1.09 2. -0.40
3.	CIMEC Infralabs Pvt.Ltd.	Electrical	Solid Copper Conductor for Electric Cable	IS 398-2/ IS 8130	1. Wire Diameter	1. -0.45
				IS 10810-5	2. Resistance Test,	2. 1.09
				IS 10810-1	3. Annealing Test (Elongation), %	3. -0.57

Sl. No	PT Provider	Section	Product Name	IS No/Test Method	Parameter	Performance (Z- Score)
4.	Envirocare Labs	Microbiology	Skimmed Milk Powder	IS 13334-1	1. Salmonella 2. Listeria monocytogenes	1. Satisfactory 2. Satisfactory
5.	QTEX	Mechanical-1	Leather	IS 15298 - 2	1. Tensile Strength 2. Thickness of Leather Material	1. Satisfactory 2. Satisfactory
6.	CIMEC Infralabs Pvt.Ltd.	Electrical	Cable	IS 694	1. Overall diameter, mm 2. Avg. Thickness of Insulation, mm 3. Conductor Resistance, ohm/km 4. Insulation Resistance Constant, (At 27°C Temp.) Mega Ohm.km 5. Volume resistivity (At 27°C Temp.), Ohm-cm 6. Shrinkage Test, % (Type C Insulation) 7. Flammability Test (Unaffected Length, mm) 8. Flammability Test (Burning Period), Sec.	1. 1.0 2. 1.40 3. -2.0 4. -0.73 5. -0.43 6. -0.37 7. 0.34 8. 1.0
7.	GLOBAL PT PROVIDER	Mechanical-1	Cement OPC	IS 269	Fineness Blaine, m2/kg Initial Setting Time, Minutes Final Setting Time, Minutes Compressive Strength, (3 Days), N/mm2 Soundness (Le – Chatelier), mm	-0.59 0.48 0.61 1.08 1.17
8.	MAXPT	Chemical	Steel	IS 228	Carbon (%) Manganese (%) Silicon (% Sulphur (%) Phosphorous (%)	Results awaited

Together, the achievements underscore ERL's dedication to continuous improvement and excellence in both service delivery and operational infrastructure.

09 Advancement in Testing

Mechanical-1

Testing of Feeding Bottles: During the year, significant advancements were made in the development and establishment of key testing facilities, particularly in the area of Polymer testing. A new testing setup was established for evaluating deformation resistance in Plastic and Stainless Steel Feeding Bottles, particularly in products used for infants and young children (IS 14650).

Outcome: The procurement of this equipment has facilitated the completion of test facilities for two Indian Standards, namely IS 14625 and IS 18800, in the Mechanical Section.

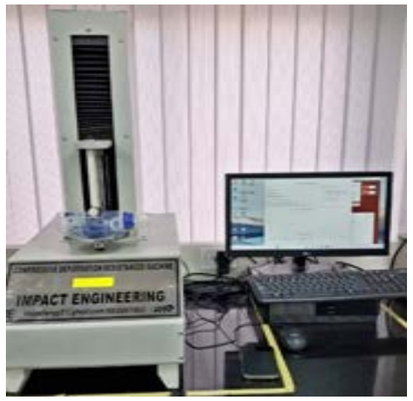


Fig: Compressive Deformation Resistance Tester

Mechanical-2

Metallurgical Testing of Steel: A dedicated facility for Metallurgical testing of steel was created to support material analysis and quality assurance. This included the acquisition of a Metallurgical Microscope, which is critical for High-resolution Microstructural Examination. The Microscope enables detailed analysis of various phases in steel such as Austenite, Martensite, Ferrite, and Pearlite. It also allows for Grain boundary identification and detection of Grain-level defects, which are essential for evaluating material performance under stress and heat treatment.

Outcome: ERL achieved a milestone by becoming the first BIS laboratory to establish metallurgical testing facilities for steels. With increase in these matallurgical requirements becoming mandatory test parameter (earlier the requirements were either optional or were to be conducted in case of agreement between purchaser and manufacturer), the creation of the facility has given an impetus to the Conformity Assessment Scheme of BIS especially for the Steel sector.

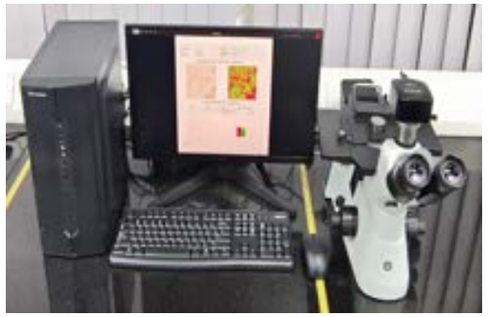


Fig : Metallurgical Microscope

Surface Roughness Tester: The instrument is used for measuring the surface finish or texture of a material. It quantifies surface irregularities — such as peaks and valleys — by traversing a stylus across the surface and recording deviations from a reference line.

Outcome: The procurement of this equipment has enabled the Mechanical Section to complete the test facilities for six Indian Standards, namely IS 9294, IS 4296 (Part 2), IS 277, IS 11513, IS 1993, and IS 2507.

Fig: Surface Roughness Tester

Electrical

As part of its ongoing infrastructure strengthening, modernization efforts and completion of testing facility the Electrical Section procured the following test equipment during the financial year 2024–25 :

Digital Micro Ohm Meter: This is a very fast and high-precision instrument used for resistance measurement of Cable and Conductors and other products.

Outcome: This equipment is very ease of use, higher Accuracy, Resolution, Faster Measurements, Portability, Convenience, Data Storage & Output and Reduced Operator Error. Digital meters provide instant readings without the need for balancing or adjusting, making testing much quicker. Digital micro-ohm meters often have built-in compensation for lead resistance and temperature effects, improving accuracy.

Fig: Digital Micro Ohm Meter

Digital High Voltage (HV) Tester for Switches, Sockets, and Plugs: This equipment is vital for evaluating the Dielectric Strength and Insulation integrity of products such as electrical Switches, Plugs, Sockets, and similar accessories in accordance with relevant Indian Standards.

Outcome: The acquisition of the Digital High Voltage (HV) Tester was essential to fully equip the test facility for performing accurate and reliable testing on switches, sockets, and plugs. This equipment Provides precise voltage, insulation resistance readings, ensuring components meet safety standards, designed with protective features like insulated probes, overload protection, and clear warnings to protect users from high-voltage hazards. This device is having features like quick, Efficient Testing, User-Friendly Interface, Capable of detecting low-level faults and insulation weaknesses.

Fig: Digital High Voltage (HV) Tester

Temperature Rise Test Equipment : This equipment is crucial for evaluating the Thermal behaviour of electrical products (eg Switch, Socket & Plug etc.) under rated operating conditions, as mandated by Indian Standards IS 1293, IS 3854 etc.

Outcome: The acquisition of the Temperature Rise Test Equipment was essential to fully equip the test facility for performing accurate and reliable testing on switches, sockets, and plugs. This equipment is equipped with sensitive temperature sensors (like thermocouples or RTDs) to accurately measure temperature changes, digital displays and data logging systems to record multiple temperature over time for analysis simultaneously.

Fig: Temperature Rise Test Equipment

Flexing Test Apparatus for Moulded Plugs: The Flexing Test is conducted to assess the mechanical durability and strain relief performance of the cord anchoring system in moulded plugs. The objective is to ensure that repeated bending of the flexible cord at the point of entry into the plug does not lead to damage or loss of electrical continuity.

Outcome: This equipment is designed to repeatedly bend or flex the moulded plugs ensuring they withstand repeated bending without damage, allows control over the bending angle, frequency, and speed to match different testing standards. This device can run continuous or programmed flexing cycles without manual intervention, improving test consistency and provides digital controls and displays for easy setup, monitoring, and adjustment of test parameters.

Fig: Flexing Test Apparatus

Test Equipment for Removal of Cover and Cover Plate for Switches, Plugs and Sockets outlets: The removal of cover and cover plate test is a critical mechanical test carried out at the Electrical

Section to assess the mechanical security and design integrity of switches, sockets, and plugs. This test is conducted in accordance with the applicable clauses of IS 1293 (for plugs and socket-outlets) and IS 3854 (for switches for domestic and similar purposes).

Outcome: This equipment is designed for easy handling and comfortable grip to facilitate safe and efficient removal of covers without damaging the device, equipped with adjustable jaws or clamps to fit various sizes and shapes of covers and cover plates, Precision Control and can handle different types of covers which offering versatility.

Fig: Removal & Non Removal

Chemical

During the year, notable progress was achieved in the Chemical Section through commissioning of advanced infrastructure and equipment, enhancing both efficiency and capability in analytical testing across multiple product categories:

Automatic Glassware Washer:

A fully automated glassware washer was installed and commissioned in the test section.

Outcome: This system has substantially reduced manual intervention in cleaning processes ensuring contamination-free and consistent cleaning of laboratory glassware. By maintaining high levels of cleanliness and reproducibility, the washer has contributed to improved analytical accuracy, faster sample turnaround times and overall operational efficiency in routine and high-throughput testing.

Fig: Automatic Glassware Washer

Low-Noise, Oil-Free Air Compressor for LC-MS/MS : To support the operations of the state-of-the-art LC-MS/MS system, a new oil-free, low-noise air compressor with integrated nitrogen generation capability was installed. This advanced system delivers clean, dry, and high-purity air continuously, essential for the sensitive detection and quantification of trace-level contaminants.

Outcome : The upgrade has significantly reduced instrument downtime, minimized risk of sample contamination and improved reliability and long-term performance of the LC-MS/MS instrumentation.

Fig: Low-Noise, Oil-Free Air Compressor

Tumbling Barrel Assembly is essential for assessing Nickel Release under simulated skin contact conditions as per safety standards.

Outcome: With this instrument, test facility of Nickel release on skin-contact footwear products, the instrument complies as per EN 12472:2020 ensuring reliable simulation of wear and abrasion conditions for accurate assessment.

Fig: Tumbling Barrel Assembly

Microbiology

High Quality Water Purification System: A state-of-the-art system capable of generating Type I and Type II grade water was installed, greatly enhancing the quality of media and reagent preparation, thereby minimizing contamination risks.

Outcome: Ultra-pure water is crucial for minimising effect due to the constituents of water being used. It prevents impurities from interfering with experimental results, ensuring reliable data in sensitive application.

Fig: High Quality Water Purification System

Referral Assay Lab

As part of its ongoing infrastructure strengthening and enhancement of testing facility the RAL Section procured the following test equipment during the financial year 2024–25

High-Precision Microbalance with LabX Software Integration: This system provides excellent stability and rapid micro-level results, enabling future automation and enhancing analytical accuracy.

Outcome: Integration with LabX software not only streamlined data handling and ensured traceability but also provides a robust platform for future automation. This advancement has improved overall analytical accuracy and reduced the scope for manual error.

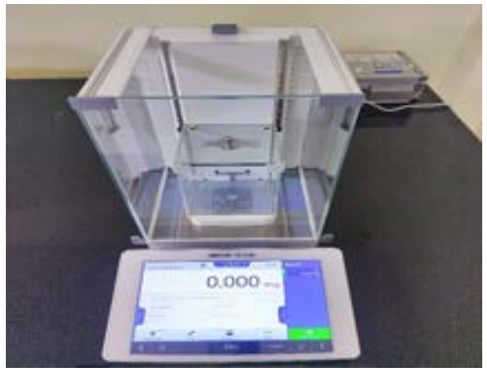


Fig: High-Precision Microbalance

Kanthal Wire-Type Muffle Furnaces: These furnaces significantly reduce the time required to reach the operational temperature for cupellation and melting. This upgrade has streamlined operations and reduced instrument downtime.

Outcome: The attainment time for the desired temperature of 1100 °C has reduced from nearly 3 hours to about 45–50 minutes, resulting in faster test execution. This improvement not only optimized utilization of manpower and equipment but also contributed to substantial energy savings.

Fig: Kanthal Wire-Type Muffle Furnaces

Hand-Operated Hydraulic Press Machine: This equipment has automated the process of preparation of gold buttons post-cupellation making it faster and more efficient.

Outcome: This has made the operation significantly faster, more consistent, and less labor-intensive. This has also enhanced the uniformity and quality of prepared gold buttons.

Fig: Hand-Operated Hydraulic Press Machine

10

Disseminating Knowledge

Exposure Visits by Academic Institutions :

As part of its outreach and awareness initiatives, ERL, in collaboration with the Kolkata Branch Offices, successfully organized 68 exposure visits for students from various academic institutions. These visits aimed to familiarize young minds with the standardization process, testing procedures, and the role of BIS in ensuring quality and safety. Through interactive sessions and guided tours of the laboratory facilities, students gained valuable insights into the practical applications of science and technology in maintaining product standards and consumer protection.

Nahata High School

New Barrackpore Colony Boys High School

DETAILS OF EXPOSURE VISITS FOR ACADEMIC INSTITUTIONS

Sl No	Date	Number of Participants	Name of School/College
1	08.04.2024	25	Ariadaha Kalachand High School
2	09.04.2024	25	Ashokanagar Vidyasagar Bani Bhawan
3	10.04.2024	25	Bhairab Ganguly College
4	19.04.2024	25	Titagarh Krishnath Municipal High School
5	22.04.2024	29	Ashoknagar Banipith Girls High School
6	29.04.2024	22	B.T. Sir Rajendra High School
7	30.04.2024	25	Malangapore KCB Institution
8	02.05.2024	21	Calcutta Girls' College
9	09.05.2024	22	Beltala Girls High School
10	13.05.2024	27	Jodhpur Girls High School
11	15.05.2024	27	Raghumal Arya Vidyalaya Kolkata
12	27.05.2024	25	Sir Nripendra Nath Girls High School, Kolkata
13	11.06.2024	36	Santragachi Kedarnath institution Boys & Girls
14	12.06.2024	30	Salkia Kedernath Babulal Rajgharia Girls High School & Shibpur Hindu Girls High School
15	13.06.2024	26	Udaypur Haradyal Nag Adarsha Vidyalaya
16	14.06.2024	25	Natagarh Swami Vivekananda Seva Samiti Vidyalaya
17	20.06.2024	25	Prafulla Kanan Deshapriya Vidyamandir

Sl No	Date	Number of Participants	Name of School/College
18	22.06.2024	26	Teghoria Sashi Bhusan High School H.S
19	24.06.2024	53	Standards Club Teachers Exposure Visit
20	02.07.2024	30	Vijaygarh Jyotish Ray College
21	03.07.2024	25	Mathurapur Arya Vidyapith (H.S)
22	04.07.2024	43	Bantra Rajlakshmi Balika Vidyalaya, Salkia Sri Vikram Balika Vidyalaya, Banipith Girls HS School
23	05.07.2024	25	Baduria L.M.S High School
24	06.07.2024	25	Khantura Girls High School
25	16.07.2024	25	Madhyamgram Girls High School
26	18.07.2024	27	Jhanjra High School
27	19.07.2024	25	Nawabganj Balika Vidyalaya
28	20.07.2024	25	Raidighi Srifaltala Chandrakanta High school
29	24.07.2024	25	Greater Kolkata College of Engineering and Management Department of Civil Engineering
30	25.07.2024	25	Greater Kolkata College of Engineering and Management Department of Electrical Engineering
31	26.07.2024	25	Greater Kolkata College of Engineering and Management Department of Computer Science and Engineering
32	29.07.2024	26	Dhanyakumari High School
33	12.08.2024	25	Prafullanagar Vidyamandir H.S
34	13.08.2024	25	Dakshin Chatra High School
35	16.08.2024	20	Panpur Makhanlal High School
36	20.08.2024	25	Kamini Kumar Girls High School
37	21.08.2024	26	Bhatpara Amarkrishna Pathsala H.S
38	22.08.2024	28	Institute of Engineering and Management
39	23.08.2024	28	Sodepur High School
40	27.08.2024	30	Santinagar High School
41	29.08.2024	26	Kartickpur Deogarh Vidyalaya
42	04.09.2024	28	Abacus Institute of Engineering & Management
43	05.09.2024	18	Dasnagar Chapala Devi Balika Vidyalaya
44	06.09.2024	32	Joypur & Amta Pitambar High School
45	10.09.2024	28	Deolgram Mankur Bakshi High School & Salkia Hindi School
46	11.09.2024	34	Kanupat Palimangal Harendra Shikhayatan& Kona High School
47	12.09.2024	26	Duttapukur Mahesh Vidyapith
48	19.09.2024	25	Tokipur Rajlakshmi High School
49	23.09.2024	25	Nona Chandanpukur Manmatha Nath Girls School
50	24.09.2024	23	Jadavpur University
51	26.09.2024	26	Malatipur High School
52	27.09.2024	25	Kalyangarh Vidyanchandra Vidyapith

Sl No	Date	Number of Participants	Name of School/College
53	01.10.2024	25	Akra Shaktigarh Rabindra Vidyapith
54	03.10.2024	41	Jhapordaha Duke Institute & Ayana Gajonkol High School
55	08.11.2024	20	Bashirhat HMD Girls High School
56	11.11.2024	26	Gaighata High School
57	13.11.2024	32	IIEST, Shibpur
58	19.11.2024	21	Hooghly Mohsin College
59	21.11.2024	24	Majilpur JM Training School
60	06.12.2024	22	Kendriya Vidyalaya Cossipur
61	09.12.2024	25	Brrackpur Girls High School
62	20.12.2024	28	Kendriya Vidyalaya Brrackpore Army
63	29.01.2025	22	Nahata High School
64	30.01.2025	23	Berachampa Deulia Uchacha Vidyalaya
64	31.01.2025	24	Narain Dass Bangur Memorial Multipupose School
65	06.02.2025	27	Halishahar Ramprasad Vidyapith
66	12.02.2025	23	New Barrackpore Colony boys High School
67	13.02.2025	26	Dum Dum Baiyadyanath Institute for Girls
68	18.02.2025	27	Kendriya Vidyalaya
1829 Students			**68 Schools**

Participant's Feedback : The exposure visit to the Eastern Regional Laboratory (ERL), Kolkata proved to be an enriching experience for the students. It allowed them to move beyond classroom learning and witness how scientific principles are applied in real-world laboratory practices. Students observed modern instruments, advanced testing facilities, and systematic procedures that emphasized the importance of accuracy, safety, and standardization in ensuring product quality.

They particularly valued the interactive sessions with laboratory personal, who explained complex concepts in simple terms and patiently answered their questions. Demonstrations on PDW testing, chemical analysis and material testing enhanced their awareness of the role of laboratories in safeguarding consumer interest and ensuring product quality.

The visit inspired many students to take a greater interest in science and even consider careers in research, testing, or standardization. Overall, students described the program as informative, motivating, and memorable, and expressed gratitude for the hospitality and guidance received.

Dum Dum Baiyadyanath Institute for Girl

Kendriya Vidyalaya No. 2 Ishapore

Kendriya Vidyalaya

Narain Dass Bangur Memorial Multipupose School

Berachampa Deulia Uchacha Vidyalaya

Halishahar Ramprasad Vidyapith

TRAINING PROGRAMME

To strengthen industry-academia linkage and promote awareness of quality standards, ERL organized a series of training programmes and technical sessions throughout the year. These initiatives were aimed at providing participants, which included industry professionals, students, and laboratory personnel, with hands-on experience and practical insights into testing procedures, standardization practices, and laboratory quality systems. By facilitating direct interaction with state-of-the-art laboratory infrastructure and technical experts, ERL played a vital role in enhancing technical competence and fostering a culture of quality and compliance across sectors.

4-Day Training Programme on LQMS & Internal Audit as per IS/ISO/IEC 17025: 2017

Bureau of Indian Standards, ERL organized four days training program during 26th-29th November 2024 on LQMS as per IS/ISO 17025 in coordination with NITS Delhi.

A total of sixteen trainees from all over India participated in the programme. Lead faculty were Sh. S. Basu, Senior Director & Head, Sh. K. C. Santra, Retd Sc-F. Invited lectures were given by Sh. S. Majumder, Sc-D, Sh. A. Chakraborty, Senior Director & Head and Sh. A. K. Singh, Sc-C. Participants were from M/s. TP Northern Odisha Distribution Limited, M/s. Hindustan Colas Pvt. Ltd, M/s. Sai Fertilizers Ltd., M/s. Rungta Mines Ltd, M/s. Central Pollution Control Board, M/s. Valagro Bio Services, etc.

One-Day Training Programme on Mechanical Testing of Metals

On 10th February 2025, a One-Day Training Programme on Mechanical Testing of Metals was conducted at ERL organized by the National Institute of Training for Standardization (NITS). The programme focused on various mechanical testing methods such as tensile, hardness, and impact testing, providing participants with both theoretical knowledge and practical demonstrations. This training aimed to enhance the technical capabilities of professionals and promote a deeper understanding of the role of mechanical testing in ensuring product quality and compliance with relevant standards. Participants from Satyam Iron & Steel Company Pvt. Ltd. Bengal Pipe Industries, Central Institute of Mining & Fuel Research, Government. College of Engineering & Ceramic Technology, Dhulagori Industrial Park, Hexiqon Laboratory Pvt. Ltd., Hariana Iron Works Pvt. Ltd., etc attended the training programme.

One-Day Online Standards Development Training Program for BIS External Experts Designated On ISO/IEC Projects

On 26th March 2025, a One-Day Online Training Programme on Standards Development was conducted for BIS External Experts designated on ISO/IEC projects. The programme was organized by the International Relations Department (IRD), BIS and aimed to familiarize participants with the procedures, principles, and best practices involved in international standardization work under ISO/IEC. The training enhanced the understanding of BIS-nominated experts to effectively contribute to global standards development, thereby strengthening India's representation and technical participation in international forums. Participants from Indian Institute of Legal Meteorology, IIT(ISM) Dhanbad, CSIR-CIMFR Dhanbad, NIT Raipur, SAIL Ranchi, IIM Nagpur, IIT Bhilai, Tata Steel Limited, IOCL Haldia etc attended the training program.

MANAK MANTHAN

Manak Manthan is a key outreach initiative designed to facilitate dialogue on national and international standards or their WC-draft documents,among various stakeholders like industry professionals, manufacturers, and subject matter experts. These programmes at Labs have started in 2023 and are held regularly. It serves as a platform for knowledge sharing, addressing implementation challenges, and refininglaboratory practices. ERL has actively contributed to this initiative successfully by organizing five Manak Manthans during the year and generating much interest amongst the stakeholders. The programs have also generated lot of comments for the Technical Departments as an outcome of discussion of the Standards/WC-drafts.

Manak Manthan on Plastic Feeding Bottles IS 14625: 2015

IS 14625:2015, Indian Standard on "Plastic Feeding Bottles", was the topic of discussion for the Manak Manthan held on 15 April 2024. The event witnessed participation from representatives from the Resin suppliers, plastic manufacturers, and BIS-recognized OSLs for discussion on the standard, including the recent amendments. The keynote address was delivered by Smt. Nishat S. Haque, DDGL. Talks were delivered by Sh. S Basu, Head (ERL) and Sh. S Dhar, Head(KKBO-1), during the inaugural session. The technical session had lectures by Sh Tarique Sajjad, Sc-B and Sh Ankit Bhumla, Sc-B, who elaborated on the various Chemical and Mechanical tests associated with the product. The participants had been given an exposure to the newly created test facilities for the product at ERL. Representatives include quality control personnel from BIS OSL labs, plastic manufacturers, and subject experts.



Manak Manthan on IS 278 and IS 18573

ERL, Kolkata, hosted the Manak Manthan event on 29 June 2024. The event focused on IS 278: 2009 (Galvanized steel barbed wire) and IS 18573: 2024 (Cold-Formed Welded Carbon Steel Square and Rectangular Hollow Sections for Mechanical, General Engineering, and Decorative Purposes). Representatives of various steel industries and recognized labs actively participated in the event to discuss these standards, including recent amendments.

Sh. Subhadip Basu, Senior Director and Head, delivered the inaugural address, highlighting the importance of alignment between the testing methods used by BIS labs and respective industries. Sh. Anindya Chakraborty, Senior Director and Head (KKBO-II), underscored the significance of specialized steel production and related products in the country.

During the event, Sh. Abhinav Kumar Singh, Sc. C, and Sh. Avijit Paul, LO, provided insights into the mechanical and chemical tests associated with the products, followed by laboratory visits for enhanced comprehension. Ms. Ishita Dalal, Sc. D, KKBO-II, elaborated on BIS's Conformity Assessment Scheme through her presentation.

The participants were exposed to the newly created test facilities for the product at ERL. Representatives from SRMB Steels, Jindal (Howrah), SB Steels, BMW Industries Ltd., and RS Concast Limited attended the meetings.


Manak Manthan on IS 15820:2024 Hallmarking Centres

ERL, Kolkata organized the Manak Manthan event on 24th August, 2024, with a focus on IS 15820: 2024, which outlines the general requirement for competence of assaying and hallmarking centres (AHCs). This standard has been revised to align with IS/ISO/IEC 17025:2017, the global benchmark for testing laboratories. The event saw active participation from 25 prominent AHCs representatives, who discussed the updated standard.

Mrs. Nishat S. Haque, Deputy Director General (Laboratory), delivered the keynote address, emphasizing the extensive benefits of implementing IS 15820: 2024 in enhancing the quality, administrative, and technical systems of AHCs.

Sh. Subhadip Basu, Senior Director and Head, delivered the inaugural address and led a session on the transition from IS 15820: 2024 towards IS/ISO 17025, highlighting how the Hallmarking scheme is expected to build greater consumer confidence. As the cornerstone of this scheme, AHCs will be better equipped to significantly enhance the credibility of their testing and assaying processes. Sh. Anindya Chakraborty, Senior Director and Head KKBO-II, briefed participants on the management system requirements outlined in IS 15820: 2024.

The event also featured detailed presentations by Sh. Shantanaba Majumder, Sc. C/Deputy Director and Sh. Abhinav Kumar Singh, Sc. C/Deputy Director, who provided an in-depth understanding of the structural, resource, and process requirements specified in IS 15820: 2024. Additionally, Sh. Manodip Bag, Joint Director, RHMCOE, offered insights on the audit perspective and hallmarking guidelines as per the revised Indian Standard.

Following the technical session, participants visited ERL's referral Assay Laboratory, accredited under IS/ISO 17025: 2017. During the visit, they were briefed on the various documents and records that must be maintained by an IS/ISO 17025 accredited lab, most of which have been incorporated into the revised IS 15820: 2024. Participants recognized ERL's thorough documentation and record-keeping efforts during the RAL visit and provided positive feedback on the programme, noting that it was highly beneficial in understanding the various terms, procedures, records, and documents detailed in the newly revised IS 15820: 2024. The programme had participants from Ganpati Hallmarking Pvt. Ltd., RN Hallmarking Center, Nakoda Hallmarking Centre, JB Hallmarking Centre, Rose Hallmarking Centre, etc.

Manak Manthan on IEC 60317-0-6:2020

As part of our ongoing commitment to fostering quality and standardization in the electrical industry, ERL successfully conducted a Manak Manthan session on IEC 60317-0-6, the international standard for Enamelled Round Copper Wires. The session brought together manufacturers, technical experts, and industry stakeholders to deliberate on the key features, implications, and implementation strategies of the standard.

IEC 60317-0-6 provides essential guidelines for the manufacture of Enamelled Copper Wires, ensuring performance, safety, and consistency across applications. This Manak Manthan served as a platform for meaningful dialogue, encouraging participants to align with international best practices while considering localized needs.

The event was inaugurated with a keynote address that highlighted the standard's significance in streamlining production, enhancing product quality, and promoting environmental sustainability. The address emphasized how the adoption of IEC 60317-0-6 will empower manufacturers to deliver superior-quality products while supporting broader industry goals.

ERL's facilitation of this session reflects its proactive role in promoting standard awareness and capacity building across the sector. The discussions and insights shared during the session have further strengthened industry understanding and readiness for implementing this crucial standard.

This initiative stands as a testament to ERL's dedication to driving excellence through collaboration, innovation, and adherence to quality benchmarks. Representative from Dynamic Engineers Pvt. Ltd., Orient Electric Ltd., Arihant Cables, Shree Bhagwati Industries, Laser Power & Infra, etc. attended the programme.



Manak Manthan on WC Drafts for Revision of Footwear Standards: IS 15844 (P-1), IS 10702, IS 17043 & IS 6721

ERL organized the Manak Manthan program on recent amendments, changes and wide circulation drafts in footwear standards on 10 March 2025. The programme's primary focus was to discuss the recent changes in footwear standards and deliberate upon the wide circulation drafts to get input from the participants. Sh. Subhadip Basu, Head (ERL), highlighted the program's objective. Sh. Anuj Bhatnagar, DDGE, delivered the inaugural address and emphasized the importance of QCOs in shaping the footwear industry. Sh S Dhar, Head (KKBO-1), highlighted the relevance of testing for ensuring quality. Officers from KKBO-1 and 2 also attended the programme.

During the programme, the participants were informed

about the latest changes in conformity assessment schemes, including rebates in marking fees, relaxations and schemes like Cluster-Based Test Facility. The programme was attended by footwear manufacturers of the region, as well as academic and R&D institutes. Sh. Ankit Bhumla, Dy. Director, ERL gave a brief presentation on the latest changes, amendments and WC drafts regarding footwear standards. Additionally, mechanical and chemical lab exposure was held to understand the footwear testing methods better. All the participants shared their perspectives through technical interactions, providing insightful ideas on the subject and scope of further improvement of relevant standards. The participants were exposed to the recent amendments, changes, and wide circulation of the footwear standards at ERL. The meetings had representatives from Bata India Limited, Footwear Design & Development Institute, Ajanta Shoes India Private Limited, Delta Plus India Pvt. Ltd., Govt. College of Engineering & Leather Technology, etc.

REGIONAL LAB CONCLAVE

The Regional Lab Conclave is a strategic platform organized by the Bureau of Indian Standards (BIS) to bring together scientists, technical officers, industry representatives, and other key stakeholders from across its regional laboratories. The conclave serves as a forum for sharing knowledge, discussing emerging trends in testing and calibration, and aligning laboratory practices with global quality standards.

It fosters collaboration and innovation among the BIS laboratories, promotes standardization of procedures, and encourages continuous improvement in testing capabilities. Through expert sessions, panel discussions, and interactive workshops, the conclave aims to strengthen the role of regional laboratories in supporting industry, ensuring consumer safety, and enhancing the national quality infrastructure.

ERL has organized two Regional Lab Conclaves which are summarized below :

I. Lab Conclave on Testing Together: Uniting Regional Stakeholders

ERL successfully organized an insightful event, 'Testing Together: Uniting Regional Stakeholders', aimed at promoting cooperation and knowledge sharing within the industry and academia from the states of West Bengal, Odisha, Chhattisgarh, and Jharkhand. The event, held on April 26, 2024, featured a diverse agenda comprising notable speakers from the R&D Institute and the Industry. The meeting was attended by representatives from National Test House-Kolkata, CIPET-Haldia, Indian Institute of Packaging-Kolkata, Institute for Steel Development and Growth, Techno India College, Haldia Institute of Technology, Budge-Budge Institute of Technology and also representatives of various private testing laboratories of the eastern region.

This was the first event of this sort for the stakeholders of Eastern Region aimed at making them aware of recent Quality Control Orders (QCO) which are already under implementation as well as QCOs which are due for implementation. The gathering was also addressed by Sh Anindya Chakrabarti, Head, KKBO-II and Sh S Dhar, Head KKBO-I who highlighted how the recent QCOs have helped improve the quality eco-system of this country.

Deputy Director General Eastern (DDGE), Shri D Chakraborty, highlighted how the recent streamlining of procedures under the BIS-Conformity Assessment Scheme has bolstered industrial growth in the region. Smt Nishat S. Haque, Deputy

Director General (Laboratory), shared insights into the paradigm shift in BIS policies, transforming from a regulator to a facilitator. She elaborated on BIS's focus on laboratory infrastructure across R&D institutes, government labs, educational institutions, private institutions, and industries, encouraging all stakeholders to seize the opportunity.

The event also featured technical presentations by industry experts, including Dr. Md Mortaza Husain from National Metallurgical Laboratory (NML), Jamshedpur and Shri Rahul Sengupta from Radix Arc Pvt Ltd in the field of Metals and Welding. Both of them focused on how Indian standards have improved over the periods and why we need to bridge the gap between Indian and International Standards.

Highlights of the programme also included presentations on Research & Development (R&D) opportunities for institutions with Memorandums of Understanding (MoU) and the Laboratory Support Scheme. Attendees were also provided an overview of upcoming Quality Control Orders (QCOs), flexibility in SITs and importance of Cluster Based Test Facilities.

Overall, the programme served as a platform for collaboration, discussion, and innovation, bringing together stakeholders from various sectors to explore the latest developments and opportunities in standardization and laboratory activities.

Lab Conclave on Testing Together: Uniting Regional Stakeholders

II. The Lab Conclave - Assuring Steel Quality: Challenges in Testing and Certification – A Roadmap

The Lab Conclave - Assuring Steel Quality: Challenges in Testing and Certification - A Roadmap, held on 14 February 2025, in Jharsuguda, Odisha, was organized by ERL in association with BHBO. Addressing the gathering, Ms Nishat Sultana Haque, DDGL, emphasized the need for strengthening Indian Standards to enhance global competitiveness and to bring along good lab practices at par with what is being followed by global leaders. DDGE, Sh A Bhatnagar emphasized the need to strengthen the conformity assessment scheme to ensure quality material is available to the citizens and they feel proud about the quality of Make in India products.

The event brought together industry leaders (like Jindal Steel, JSW-BSPL, Hindalco), noted experts and academicians from IIT Bhubaneshwar and NIT-Rourkela, who provided inputs on the latest advancements and standardization, and the impact of QCOs on the steel and aluminium sectors. Some of the leading labs in the region, Modern Test Centre, GATIH, Kalyani Labs, etc., also participated, providing inputs on the different requirements for steel exports and those used for domestic sectors.

The conclave featured technical sessions where experts from NIT-Rourkela, IIT Bhubaneshwar, Jindal Steel Works, Bhushan Power Steel Limited, Hindalco, and Jindal Stainless shared insights on evolving testing methodologies, corrosion concerns and an AI-driven approach to Quality Control.

The Lab Conclave - Assuring Steel Quality: Challenges in Testing and Certification – A Roadmap

WORKSHOPS AND CAPSULE COURSE

Workshops and Capsule Courses are focused training initiatives conducted by the Bureau of Indian Standards (BIS) and its regional laboratories to enhance technical knowledge, build capacity, and promote awareness about standards, testing methodologies, and quality assurance practices. These programs are designed to provide participants — ranging from industry professionals and students to laboratory personnel — with practical, hands-on learning and up-to-date insights into specific domains.

The Eastern Regional Laboratory (ERL) regularly organizes such sessions to support skill development

in areas like material testing, calibration techniques, quality control, and the interpretation of Indian and international standards. By fostering technical competency and encouraging standardization, these courses play a key role in strengthening industry readiness and supporting the broader objectives of national quality infrastructure. In 2024-25, ERL has organised 3 such programmes.

1. **Workshop on Estimation on Bisphenol-A in Plastic Feeding Bottles and Di(2-Ethylhexyl) Phthalate (DEHP) in plastic containers**

   ERL organized a one-day workshop on the estimation of Bisphenol A in plastic feeding bottles and Di (2-ethylhexyl) phthalate (DEHP) in plastic containers on 21st June 2024. The primary objective of the workshop was to establish a uniform approach towards method validation in chromatographic instruments. Sh. Subhadip Basu, Head, inaugurated the event and highlighted the program's objective. The event was graced by Prof. (Dr.) Dipankar Chattopadhyay, HOD of Polymer Science and Technology, Calcutta University. He emphasized the need for Indian standards for the development of Indian society. The workshop was attended by lab officers from regional BIS labs and OSLs. Sh. Ankit Bhumla, OIC(C), and his team gave a brief presentation on method validation, verification, and method development of BPA and DEHP compounds using GC-MSMS and LC-MSMS technologies. Representatives from M/s Agilent Technologies Pvt. Ltd., Kolkata, delivered a lecture on key points for method development using LC-MS/MS and GC-MS/MS. Smt S Ghosh, LO, and Sh B Gope, TA, held a lab demonstration for all the participants to better understand the validation studies. The participants also shared their perspectives, providing insightful ideas.

2. **Capsule Course on PDW IS 14543:2024**

   ERL organized a two-day capsule course from 22-23 August 2024 on packaged drinking water in accordance with IS 14543:2024. Participants from various manufacturing industries attended this programme. The event was inaugurated by Shri Subhadip Basu, Senior Director, ERL, who outlined the objectives and importance of the course. Shri S. Dhar, Director of KKBO1, highlighted the aim of the capsule course to familiarize participants with the test methodologies related to the latest edition of the Indian Standard, ensuring improved product quality. During the event, Shri Ankit Bhumla, OIC-Chemical, and Ms Ankhi Chakraborty, LO, provided an overview of the chemical and microbiological test methods as per IS 14543:2024. This was followed by a discussion to enhance understanding and gather feedback to address potential challenges.

   Moreover, laboratory visits and technical demonstrations were conducted to give participants a deeper insight into chemical and microbiological testing procedures, led by Smt S Ghosh, LO, and Smt R Mukherjee, LO. Participants also gained practical experience with various testing methods to build their skills and confidence.

The active participation and enthusiastic gestures of the participants made this event successful. Representatives from the WB Packaged Drinking Water Association also contributed valuable input.

Empowering Quality, The Critical Role of Testing in the Emerging Era of QCOs

Eastern Regional Laboratory (ERL) organized a thought-provoking lecture session on Empowering Quality: The Critical Role of Testing in the Emerging Era of QCOs (Quality Control Orders) on 04th December 2024.

The event witnessed enthusiastic participation from representatives of various industries, private and government laboratories, reflecting the growing significance of testing in India's quality infrastructure.

The session was chaired by Shri Subhadip Basu, Senior Director and Head of the Eastern Regional Laboratory. He emphasized the critical role of laboratories in the nation's economic and infrastructural growth. He highlighted how the introduction of new Quality Control Orders (QCOs) would necessitate laboratories to upgrade their facilities and simultaneously strengthen their quality ecosystem to meet rising demands.

Shri Devi Sharan Tiwari, President of the Federation for Development of Accreditation Services (FDAS), delivered the keynote address, captivating the audience with his deep insights into the history and evolution of measurement standards. His speech covered essential topics such as measurement uncertainty, the introduction of Quality Management Systems in laboratories, and key principles of IS/ISO/IEC 17025:2017, the general requirements for the competence of testing and calibration laboratories.

The programme provided an engaging platform for stakeholders, technical experts, and participants from diverse fields to exchange ideas, discuss challenges, and explore opportunities in the evolving landscape of testing and compliance.

Empowering Quality, The Critical Role of Testing in the Emerging Era of QCOs

11

Internship Programmes

The Bureau of Indian Standards (BIS) runs a structured Internship Program aimed at nurturing young talent and providing them with exposure to the national standardization ecosystem. This program offers students and young professionals an opportunity to gain hands-on experience in areas such as laboratory testing, quality assurance, standard formulation, and technical research. Interns are mentored by experienced scientists and officers, enabling them to contribute meaningfully to ongoing projects while developing their skills in a real-world environment.

During the reporting year, the Eastern Regional Laboratory (ERL) actively participated in this initiative by engaging 26 interns, each bringing a unique set of skills and perspectives to the laboratory. The Interns worked across various departments, including Microbiology (3 interns), Electrical (2 interns), Mechanical (12 interns), Chemical (8 interns), Quality Assurance (1 intern). Their contributions spanned a range of projects and technical tasks, reinforcing ERL's role in fostering learning and professional development among the next generation of scientists and engineers.

SL. NO.	NAME	NAME OF COLLEGE	PROJECT TITLE	SECTION
1.	Ankita Sur	Techno Main Salt Lake	Method development for estimation of Aromatic Amines in Footwear by LC-MS MS.	Chemical
2.	Prakriti Gupta	Techno Main Salt Lake	Comparative study of determination of Nitrite in Packaged drinking water using two different instrumental methods UV Visible Spectrophotometer and Ion exchange chromatography).	Chemical
3.	Soumyadeep Mondal	Techno Main Salt Lake	Unplasticized Polyvinyl Chloride (UPVC) injection moulded fittings for soil and waste discharge system for inside and outside buildings including ventilation and rain water system	Chemical
4.	Debaangana Sarkar	Sister Nivedita University	Method verification of Fluoride in Packaged Drinking Water by Ion Chromatography.	Chemical
5.	Ankita Das	Sister Nivedita University	Measurement of Uncertainty of Titrable Acidity in Skimmed Milk Powder.	Chemical
6.	Rishita Kar	Haldia Institute of Technology	Evaluation and Verification of Test Methods for Nickel Release in Footwear Components as per Indian Standard IS 17011	Chemical
7.	Anusrita Saha	Haldia Institute of Technology	Method Verification for Determination of Phthalates in Toys as per IS 9873 (Part 6):2017	Chemical
8.	Rahit Maity	Haldia Institute of Technology	Method verification of Halogen acid gas evolved during combustion of polymeric material of cables as per IS 10810 part 59	Chemical

Interns of Chemical Section

SL. NO.	NAME	NAME OF COLLEGE	PROJECT TITLE	SECTION
1.	Tahera Bano	Jadavpur University	Homogeneity &stability test for breaking load for jute product	Mechanical
2.	Yash Aryan Singh	IIT Bhubaneshwar	Examining steel Microstructures-linking hardness & microstructural	Mechanical
3.	Arunabh Sinha	IIT Bhubaneshwar	Measurement of Uncertainty in tensile strength of leather material used in footwear	Mechanical
4.	Muskan Choudhary	IIEST (Shibpur)	Estimation of measurement uncertainty in vicat softening temperature for plastic products as per IS 4985:2000	Mechanical
5.	Borra Chandaswi	IIEST (Shibpur)	Examining steel Microstructures-linking hardness & microstructure	Mechanical
6.	Sougata Gangully	Haldia Institute of Technology	Determining Standard Deviation for Compressive Strength Test of Paver block	Mechanical
7.	Sanjukta Ram	Haldia Institute of Technology	Micro structure analysis of Metal and dependence of Hardness and Impact test on microstructure	Mechanical
8.	Muzahid Hussain	Haldia Institute of Technology	Validation of Colour fastness to washing test	Mechanical
9.	Saurav Shukla	NIT, Jamshedpur	Method Verification and Estimation of Measurement Uncertainty in Fineness of Cement.	Mechanical
10.	Awnish Shaswat	Haldia Institute of Technology	1. Method verification and calculation of Measurement uncertainty for Surface Roughness (as per IS 277: 2018) 2. Method verification for Grain Size (as per IS 1875: 1992) and Sulphur Print Test (as per IS 14650: 2023).	Mechanical

SL. NO.	NAME	NAME OF COLLEGE	PROJECT TITLE	SECTION
11.	Sameer Singh	Haldia Institute of Technology	Method Verification and Estimation of Measurement Uncertainty of Haze in Polyethylene Mulch films (IS 17216) including ILC	Mechanical
12.	Saurabh Kumar	Haldia Institute of Technology	Method Verification and Estimation of Measurement Uncertainty of Vicat Softening Point Temperature including ILC	Mechanical


Interns of Mechanical Section

SL. NO.	NAME	NAME OF COLLEGE	PROJECT TITLE	SECTION
1.	Ankit Kumar	Sant Longowal Institute of Engineering and Technology, Punjab	AI conductor steel reinforced used for overhead transmission purposes as per IS 398:P2:1996	Electrical
2.	Ritul Singh	NIT, Patna	Calculation of measurement uncertainty of clearance creepage of toys	Electrical


Interns of Electrical Section

SL. NO.	NAME	NAME OF COLLEGE	PROJECT TITLE	SECTION
1.	Mainak Das	Haldia Institute of Technology	1. Determination of Staphylococcal Coefficient of Standard Phenol as per IS 1061 2. Trial analysis of Psuedoalalert 250 medium as per ISO medium as per ISO 16266 part- 2 3. Trial analysis of Medical textiles-Shoe Cover as per IS 17349: 2020	Microbiology
2.	Anuska Bhattacharya	Sister Nivedita University	Additional biochemical test for B.cereus in SMP and WMP (which can be incorporated in IS 5887 part 6)	Microbiology
3.	Sobiah Arshi	Sister Nivedita University	Detection of E.coli in SMP and WMP using MUG VRBL (to suggest alternative)	Microbiology
4.	Nirmal Chauhan	Banaras Hindu University	Checking the inherent property of homogeneity in PDW Samples for Microbiological testing (a comparative study)	Micro & QA


Interns of Microbiology Section and Quality Assurance Section

12

Photo Gallery

Mechanical Section

Digital Vickers Hardness Tester

Automatic Compressive Deformation Tester

Surface Roughness Tester

Digital Micro Hardness Tester

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ANNUAL REPORT
2024-25

Chemical Section

Atomic Absorption Spectroscopy

Ion Exchange-Chromatography

Gas Chromatography

Wet Lab

Electrical Section

Automatic Cable dimension measurement equipment

Micro Ohm-meter

Insulation Resistance tester

BUREAU OF INDIAN STANDARDS
ANNUAL REPORT
2024-25

Microbiology Section

Laminar Airflow : A smooth, unidirectional flow of air, ensuring a sterile and contaminant-free environment

Media Preparation Room : A sterile, controlled environment dedicated to the accurate formulation and

BOD Incubators : Temperature-controlled chambers designed to provide optimal conditions for the growth

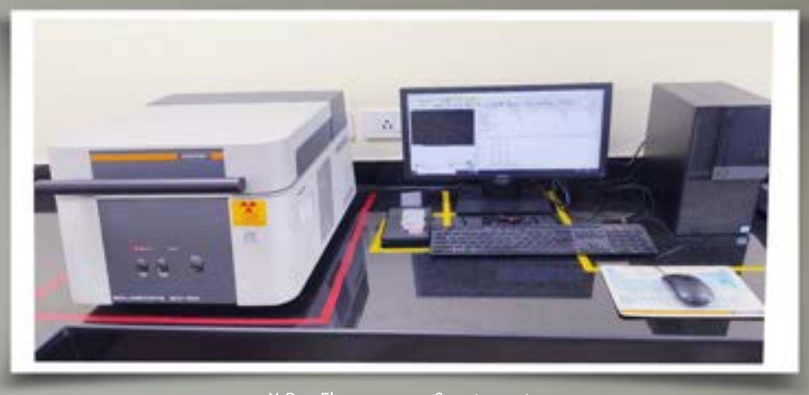
Ultrapure High quality Water Purification System : A specialized unit designed to produce high-grade, contaminant-free water delivering Type I (ultrapure) and Type II (high-purity) water

Referral Assay Lab

Cupellation Process

Weighing in Micro Balance

New Micro-Balance for Capacity Enhancement



X-Ray Fluorescence Spectrometer

Republic Day Celebration

International Yoga Day

Health Camp during Swachhata Pakwada

Distribution of Potted plants

Opening Ceremony of Hindi Pakwada

Celebration of Vishwakarma Puja

LED Van – a publicity initiative by ERL

Hindi Karyashala

Women's Day 2025 Celebrations

Tree Plantation & Safai Abhiyan during Swachata Pakwada






Inauguration of Mechanical-1 Laboratory


भारतीय मानक ब्यूरो
Bureau of Indian Standards
Eastern Regional Laboratory, Kolkata
Bhubaneswar Branch Office

मानकः पथप्रदर्शकः

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

पूर्वी क्षेत्रीय प्रयोगशाला

Eastern Regional Laboratory

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