

SRI LANKA ACCREDITATION BOARD For CONFORMITY ASSESSMENT

SPECIFIC CRITERIA FOR

TESTING LABORATORIES PERFOMING CHEMICAL, BIOLOGICAL, MECHANICAL, ELECTRICAL AND FORENSIC TESTING.

	SRI LANKA ACCREDITATION BOARD FOR CONFORMITY ASSESSMENT					
Title: Specific Criteria for Chemical Testing Laboratories					Doc No : TL –GL (P) - 03	
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AMENDMENT SHEET

Page/ Section	Description of Change	Revision No	Approval

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I	Title: Specific (Criteria for Testing Laboratories	Doc No : TL –GL (P) - 02			
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ABBREVIATIONS

CRM - Certified Reference Materials

QC - Quality Control

RM - Reference Materials

SLAB - Sri Lanka Accreditation Board for Conformity Assessment

LIMS - Laboratory Information Management Systems

NVQ - National Vocational Qualifications Framework

SLQF - Sri Lanka Qualifications Framework

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1. INTRODUCTION

- 1.1. The requirements for accreditation are laid down in the International Standard ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories. These requirements apply to all types of testing, but in certain instances additional guidance is needed to streamline the accreditation process and take account of the specific type of testing and the technologies involved.
- 1.2. This document has been prepared by the Technical Advisory Committee on Testing laboratories and approved by the Council of Sri Lanka Accreditation Board (SLAB). It supplements ISO/ IEC 17025 standard and provides specific guidance on the accreditation of Chemical, Biological, Mechanical, Electrical and Forensic testing laboratories for the use of assessors and applicant and accredited laboratories.
- 1.3. This document covers the application of the ISO/ IEC 17025 for accreditation of Chemical testing laboratories, Biological laboratories, Mechanical laboratories, Electrical laboratories, Forensic laboratories and applicable to products groups as given in Appendix A to E.
- 1.4. This document should be read in conjunction with the ISO/IEC 17025:2017 and Rules and Procedures of SLAB.

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2. SCOPE

Accreditation of Testing laboratories includes Forensic Science, Chemical, Biological, Mechanical and Electrical testing laboratories.

The scope of accreditation of SLAB is applicable to the following disciplines/areas of activities in relevant laboratories.

Tentative list of applicable product groups for Forensic Testing - Annexure - 01. Tentative list of applicable product groups for Mechanical Testing - Annexure - 02 Tentative list of applicable product groups for Biological Testing - Annexure - 03 Tentative list of applicable product groups for Biological Testing - Annexure - 04 Tentative list of applicable product groups for Electrical Testing - Annexure - 05

Accreditation for additional disciplines may be offered in future as per requirement arises.

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3. NORMATIVE REFERENCES

- ISO/IEC 17025 General requirements for the competency of testing and calibration laboratories
- ILAC G8:09/2019- Guideline on Decision rules and statement of Conformity
- ILAC G 17:01/2022– ILAC Guideline in uncertainty of measurement in testing.
- ILAC G 18:12/2021- Guideline for describing of scope of accreditation
- ILAC-G 24:2022 Guidelines for the determination of recalibration intervals of measurement equipment.

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4. TERMS AND DEFINITIONS

4.1. Competence

Competence is the demonstrated ability to apply knowledge and skills and, where relevant, demonstrated personal attributes.

4.2. Court Statement

A Court statement is a written document or any other acceptable format of the results and interpretations of forensic tests/examinations submitted to the court. Such reports may be in a format prescribed in legislation and may also be in electronic format. In addition, a copy of the court statement may be submitted to law enforcement investigators, members of the judiciary and other relevant authorities.

4.3. Equipment

Equipment refers to all measuring instruments, software, measurement standards, reference materials, reference data, reagents, consumables or auxiliary apparatus that require the correct performance of the laboratory activities.

4.4. Non-conforming examination and testing

Non-conforming examination and testing refers to any aspect of the forensic unit's work, including, scene examination, laboratory examination, sampling, testing, results or expert witness testimony that do not conform to the forensic unit's policies, procedures or the agreed requirements of the customer. Examples are using equipment that is out of specification, misidentifying a drug or incorrectly interpreting a blood pattern.

4.5. Reference Material

A reference material is a material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

4.6. Testing

Testing is used in the document when there is an activity including measurements and analytical techniques.

4.25 Decision Rule

Rule that describes how measurements uncertainty is accounted for when stating conformity with a specified requirements.

4,26 Risk (as per ISO 31000:2018)

Effect of uncertainty on objectives

5.0. STANDARD REQUIREMENTS

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5.1. IMPARTIALITY & CONFIDENTIALITY

The requirements of ISO/IEC 17025 clause 4.1 & 4.2 apply.

Laboratory shall have documentations to fulfil these requirements.

5.2. STRUCTURAL REQUIREMENTS

The requirements of ISO/IEC 17025 clause 5 apply.

5.3. RESOURCE REQUIREMENTS

5.3.1 Personnel

The requirements of ISO/IEC 17025 clause 6.2 apply.

The management shall define each role in the laboratory and specify minimum competency requirements for each role.

Personnel work in the laboratory to be competent to perform assigned tasks. Competencies to be proved during the assessment. Records for maintaining competencies shall be available. The evaluation of competence may take a variety of forms, dependent on the task(s) performed e.g. written and / or oral examinations; practical exercises; or direct observation by a qualified person. In many cases, some combination of continuous competency evaluation /monitoring system will be the most appropriate approach.

Records must be sufficiently detailed to show that staff who involve in testing/ any activity have been properly trained, that their subsequent ability to perform assigned task(s) has been fully assessed /training evaluated and that they have been authorized to perform work independently.

For Forensic laboratories, Court Testimony Monitoring

The laboratory must have and follow a documented procedure whereby the testimony of each examiner is monitored regular basis. Areas that must be covered in the evaluation include appearance, poise, performance, effectiveness of presentation. The monitoring procedure must also prescribe the remedial action that is to be taken should the evaluation be less than satisfactory. A record must be kept of each evaluation.

Minimum competency requirements for each field of testing are given in **Appendix A.**

Technical Management

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The officer in charge of a laboratory technical management, must be suitably qualified with a sound knowledge of the principles of the test, be able to provide adequate supervision and competent to handle all technical matters related to the laboratory activities.

Quality management

A person to document, establish, maintain and improve the management system, irrespective of other duties and responsibilities assigned to him/her. Should be competent person with a Science background and having experience in quality management system maintain and direct access to the highest level of the management.

5.3.2 Facilities and Environmental Conditions

The requirements of ISO/IEC 17025 clause 6.3 apply.

One of the key responsibility of the laboratory management is to provide an adequate and safe working environment. Laboratory facilities should reflect due consideration of space, design, security, fire, health and safety (biological safety, laser safety, radiation safety, electrical safety..etc) and waste management (biological, chemical and hazardous etc). Laboratory management is responsible to provide adequate personnel Protective Equipment (PPE) to the staff. Where appropriate, the laboratory should have safety showers and eye wash equipment of suitable locations and in good working condition.

When radioactive and X-ray work are performed, detectors must be used regularly to monitor radiation levels and the wearing of film badges by staff may be necessary.

Staff must be advised of immunization and other appropriate precautionary measures. It is recommended that relevant records be kept.

Applicable government legislations to be fulfilled.

5.3.3 Equipment

The requirements of ISO/IEC 17025 clause 6.4 apply. Calibration intervals to be justifiably defined.

5.3.4 Metrological traceability

The requirements of ISO/IEC 17025 clause 6.5 apply

5.3.5 Externally provided products and services

The requirements of ISO/IEC 17025 clause 6.6 apply All services obtained by the laboratory to be considered.

5.4 PROCESS REQUIREMENTS

5.4.1 Review of Requests, Tenders and Contracts

The requirements of ISO/IEC 17025 clause 7.1 apply

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5.4.2 Selection, Verification and Validation of method

The requirements of ISO/IEC 17025 clause 7.2 apply

The performance characteristics to be determined by the laboratory for every test method perform at the laboratory and suitability of the method for their particular needs and matrixes to be documented. It may include; a) Selectivity & specificity, b) Range, c) Linearity, d) Sensitivity e) Limit of Detection, f) Limit of Quantification, g) Ruggedness, h) Accuracy, i) Precision. etc.

5.4.3 Sampling

The requirements of ISO/IEC 17025 clause 7.3 apply

5.4.4 Handling of test items

The requirements of ISO/IEC 17025 clause 7.4 apply

5.4.5 Technical records

The requirements of ISO/IEC 17025 clause 7.5 apply

The information that is to be included in records shall be documented appropriately and may include, but not be limited to, records of any communication with the customers (verbal or written), contract review, examination and testing requested and agreements with customer, exhibit/sample receipts, descriptions of exhibits /sample including packaging and seals, subpoenas, records of observations and test/examination results, reference to procedures used, diagrams, maps, print-outs, photographs, videos etc.

5.4.6 Evaluation of measurement uncertainty

The requirements of ISO/IEC 17025 clause 7.6 apply

5.4.7 Ensuring the validity of results

The requirements of ISO/IEC 17025 clause 7.7 apply

SLAB Policy for Participation in External Quality Assurance activities (AC-RG(P)-02) is apply.

Quality control procedures must be documented. Where appropriate, quality control data must be recorded in such a way that trends in analysis can be readily evaluated.

5.4.8 Reporting of results

The requirements of ISO/IEC 17025 clause 7.8 apply

5.4.9 Complaints

The requirements of ISO/IEC 17025 clause 7.9 apply.

5.4.10 Non Conforming Work

The requirements of ISO/IEC 17025 clause 7.10 apply.

5.4.11 Control of data and information management

The requirements of ISO/IEC 17025 clause 7.11 apply.

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If the laboratory has implemented LIMS it should be validated and access control. User guides to be available.

5.5 MANAGEMENT SYSTEM REQUIREMENTS.

The requirements of ISO/IEC 17025 clause 8 apply.

If the laboratory follows Option A, Laboratory shall maintain management system as per ISO 9001 requirements. If the laboratory is certified as per ISO 9001 same system can be use. Internal audit of the laboratory to be covered both ISO 9001 requirements and ISO/IEC 17025 requirements.

If the laboratory follows Option B, Laboratory shall maintain management system documentation as per ISO/IEC 17025 clauses.

5.5.1 Management system documentation

The requirements of ISO/IEC 17025 clause 8.2 apply

5.5.2 Control of management system documents

The requirements of ISO/IEC 17025 clause 8.3 apply

The requirements for the accessibility and control of documents apply to permanent facilities and also to all sites or locations where work is performed, e.g. scene of crime.

5.5.3 Control of records

The requirements of ISO/IEC 17025 clause 8.4 apply

The forensic testing shall have documented procedures to create and maintain records relating to each case under investigation.

Retention time of the records to be complied to national information security regulations.

5.5.4 Actions to address risks and opportunities

The requirements of ISO/IEC 17025 clause 8.5 apply

5.5.5 IMPROVEMENT

The requirements of ISO/IEC 17025 clause 8.6 apply.

Laboratory can initiate and implement improvements in conjunction with risk and opportunities identified in clause 8.5.

5.5.6 CORRECTIVE ACTION

The requirements of ISO/IEC 17025 clause 8.7 apply.

5.5.7 INTERNAL AUDITS

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The requirements of ISO/IEC clause 8.8 apply.

The internal audit shall be conduct at least annually to cover all standard requirements. Witnessing of tests/ any activity perform by the laboratory personnel may be witnessed during the internal audit.

Test/activities which are infrequently encountered may require other means by which to confirm competence, e.g. mock incident or other types of simulations, market sample analysis, etc. Other activities which take place for the purpose of confirming competence.

5.5.8 MANAGEMENT REVIEW

The requirements of ISO/IEC 17025 clause 8.9 apply.

Appendix A Minimum competency requirements

Field of	Task	Educational	Training	Experience &
Testing		qualification		Skill
Chemical	Testing staff/	GCE A/L examination	Training on	One year
Testing	Analysts	with Chemistry as a	relevant	experience in the
		subject	technical field	field
		Or		and

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			proven skills **
	Diploma in Laboratory	Training on	Six months
	Technology in	relevant	experience in the
	Chemistry or	technical field	field
	equivalent		and
	qualifications such as		proven skills **
	NVQ level 05 or		
	equivalent		
	Graduates in Science	Training on	Adequate on the
	with Chemistry	relevant	job training
	Or equivalent	technical field	and
	qualifications such as		proven skills **
	NVQ level 06/07 or		
	equivalent		
Authorized	Graduates in Science	Training on	Three years
Signatory	with Chemistry or	relevant	relevant work
	equivalent	technical field	experience
	qualifications such as		
	NVQ level 07 or		
	equivalent		
Providing opinion	Graduates in Science	Training on	Three years
& interpretations/	with Chemistry or	relevant tests &	relevant work
compliances	equivalent	knowledge on	experience and
	qualifications such as	manufacturing of	proven skills
	NVQ level 07 or	relevant	
	equivalent	products,	
		legislative	
		requirements and	
		understanding of	
		the significance	
		of deviations and	
		applicable	
		decision rule	

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Biological	Test perform	G.C.E. Advanced Level	Training on	One year relevant
Testing	(Analysts)	examination with biology as a subject and Diploma/ Certificate in Laboratory Technology in Biology/Microbiology equivalent to NVQ 05	relevant field at least one year	experience related to the microbiology field and proven skill
		Degree in microbiology or Bio science or an equivalent qualifications	Training on relevant test methods to be performed	Three months experience in the field and proven skills and authorized by the laboratory.
	Authorized Signatory for test report on general microbiology	Graduate in Science with Microbiology as one of the subjects or	Training on relevant tests to be authorized	3 years experience in the field.
	(Risk Group 1)	Graduate in Science with Post graduate in related specific product group covering applicable aspects of Microbiology or Graduate in Science with microbiology/ basic microbiology as one of the course units or	Training on relevant tests to be authorized Specific training on microbiology related the tests to be authorized	3 years experience in the field.
	Authorized Signatory for test report on risk group 2 and above	equivalent qualifications Graduate in Science with Microbiology as one of the subjects or Graduate in Biological science with post graduate in Microbiology or product related field	Training on relevant tests to be authorized Specific training on microbiology related the tests to be authorized	3 years experience in the field.
	Providing opinion & interpretations/ compliances	Graduate in Science with Microbiology as one of the subjects Or Graduate in Biological	Training on relevant tests & knowledge on manufacturing of	03 years experience in the field and proven skills

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		science with post graduate in Microbiology or Post graduate in related specific product group covering applicable aspects of Microbiology	relevant products, legislative requirements and understanding of the significance of deviations and applicable decision rule	
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Mechanical and Electrical Testing	Testing staff/ Analysts	GCE A/L with Physics as a subject Or equivalent to NVQ 05	Field specific technical training for six months	One year experience in the field and proven skills **
		Diploma in Laboratory Technology in Physical testing or any other relevant qualification equivalent to National Vocational Qualification (NVQ) level 05	Field specific technical training for six months	Six months experience in the field and proven skills **
		Graduates in Science (with Physics as a subject) or equivalent	Training on relevant technical field for six months	6 months on the job training and proven skills **
	Authorized Signatory	Graduates in Science (with Physics) or BSc Engineering, or equivalent qualifications such as NVQ 06 or 07 level or equivalent	Training on specifically in relevant technical field	Three years relevant work experience
	Providing opinion & interpretations/compliances	Graduates in Science (with Physics) with special training on specifically on the field or BSc Engineering, or equivalent	Training on relevant tests & knowledge on manufacturing of relevant products, legislative	Three years relevant work experience

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		qualifications such as NVQ 06 or 07 level or equivalent	requirements and understanding of the significance of deviations and applicable decision rule	
Forensic Testing	Crime Scene Investigation	Graduates in science or equivalent qualifications related to the field	Training on same task at least 6 months	Three years, experience and proven skill. **
	Digital Forensics (Audio, Video, Biometrics and Computer analysis)	Graduates in computer science or information technology or equivalent qualifications related to the field	Training on same task at least 6 months	One year Experience and proven skill**
	DNA Analysis	Graduates in Biological science or equivalent qualifications related to the field	Training at least 6 months.	01 year in relevant work experience and proven skill **
	Fire investigations, Firearms and Ballistics, Handwriting and Questioned Documents, Forensic miscellaneous, Forensic trace evidence analysis, Explosives, Marks and Impressions	Graduates in science (with Chemistry / Physics as a subject) or equivalent qualifications related to the field	One year training in the relevant field.	Three years relevant work experience with proven skill**
	Forensic medicine and pathology, Histopathology,	Medical graduate with MBBS or equivalent qualification	-	-

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Anthropology, Medical	recognized by Sri Lanka Medical		
Toxicology, Clinical forensic medicine	Council (SLMC).		
Fingerprints	Graduates in science or equivalent qualifications related to the field	Training at least 6 months	Three year experience with proven skill**
Forensic Toxicology, Narcotics and Psychotropic substances	BSc Chemistry (sp) or Graduates in science (with Chemistry as a subject) with MSc in Analytical Chemistry.	Training on relevant field at least 6 months.	Three years experience with proven skill **
Forensic Serology	Graduate in Science (Chemistry/ Biology) (sp) or Graduates in science (with Chemistry/ Biology as a subject) with MSc in relevant field.	Training on relevant field at least 6 months	Three years relevant work experience.
Forensic entomology	Graduate in biological science or equivalent qualification preferably with forensic entomology as a subject from a recognized university / institution approved by the UGC. OT Postgraduate in forensic entomology from a recognized university / institution approved by the UGC.	Training on relevant field at least 6 months	03 year experience in the relevant field 02 years experience in the relevant field
Forensic Psychology	Graduate in Clinical Psychology or	Training on relevant field at	Three years experience in the

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equivalent qualification	least 6 months.	relevant field
preferably with criminal or forensic		
psychology as a		
subject from a		
recognized university /		
institution approved		
by the UGC.		
Or Postgraduate in		
forensic psychology		
from a recognized		
university / institution		
approved by the UGC.		

^{**} Relevant training, training evaluation, test witnessing evidences, competency evaluation to be maintained.

Level of equivalent qualification required will be finally decided by the Accreditation Committee. Other than, Competency evaluation of authorized signatories will be carried out as per the score and competency based on GUIDELINE FOR EVALUATION OF SIGNATORIES FOR LABORATORY ACCREDITATION TL-GL(P) -09. and score of the interview.

Annex 01: Applicable Product group in Forensic Testing

The table below lists only some of the forensic disciplines but does not preclude additional activities being undertaken by a forensic unit. Even if some forensic disciplines may not be mentioned here, they may still be included in the scope of this guidance document.

- 1. Crime Scene Investigation
- 2. Digital Forensics (Audio, Video, Biometrics and Computer analysis)
- 3. DNA Analysis
- 4. Explosives
- 5. Fingerprints
- 6. Marks and Impressions

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- 7. Fire investigations
- 8. Firearms and Ballistics
- 9. Forensic medicine and pathology
 - a. Clinical forensic medicine
 - b. Forensic Histopathology
 - c. Forensic anthropology and Odontology
- 10. Forensic Psychology
- 11. Forensic entomology
- 12. Forensic Toxicology
- 13. Narcotics and Psychotropic substances
- 14. Handwriting and Questioned Documents
- 15. Forensic Serology
- 16. Forensic trace evidence analysis
- 17. Accident investigations
- 18. Forensic miscellaneous

Audio, Video and Computer Analysis

- Speech, audio and video analysis
- Biometrics
- Computers (hardware and software)
- Image enhancement
- Recovery of information from electronic devices and media
- Automated skull reconstruction and aging simulation
- CCTV
- Facial mapping
- Mobile computerized devices (including phone, GPS, PDA)

Controlled/non-controlled Substances

- Botanical material
- Related chemicals and paraphernalia
- Controlled pharmaceutical and drugs

Entomology, Botany, Archaeology, Anthropology, Odontology

Fingerprints

- Fingerprints and finger marks (development and comparison)
- Palm prints (development and comparison)
- Footprints (development and comparison)

Firearms and ballistics

- Bullets and cartridges
- Gunshot residue

- Firearms
- Stun Guns

Hairs, Blood, Body Fluids and Tissues and DNA profiling

- Animal DNA profiling
- DNA profiling
- Parentage testing
- Semen and vaginal secretion analysis
- Body fluid identification
- Mitochondrial DNA profiling
- Blood grouping
- Hair comparison

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Handwriting and Document Examination

- Copiers and copied material
- Handwriting
- Inks and printing materials
- Printers and other printed objects
- Security marks

- Embossing and embossed materials
- Indentations
- Paper
- Rubber stamps
- Typewriters and typewritten material

Marks and Impressions

- Damage examination
- Glove marks
- Shoe marks
- Tyre marks

- Fabric impression
- Non-friction ridge body marks
- Tool marks and impressions

Forensic Medicine

- Cause of death determination
- Pathology

• Examination of injuries

Scene Investigation

- Blood pattern analysis
- Fire investigation
- Scene of crime investigation

- Bullet trajectory
- Photography
- Chemical, Biological, Radioactive, Nuclear

Toxicology

- Alcohol
- Pharmaceutical products

- Drugs
- Poisons

Trace Evidence

- Acids
- Alkalis
- Botanical material (excluding controlled substances)
- Components of technical or household appliances
- Dyes and pigments
- Feeding stuffs and ancillary items
- Fibres and hairs
- Food
- Glass
- Lachrymatory chemicals
- Manufacturers marks (including serial number restoration)
- · Oils and greases
- Soils

- Adhesives
- Arson & fire evidence e.g. Fire debris
- Clothing/garments
- Corrosives
- Cosmetics
- Electrical devices and components
- Explosives and explosion debris
- Fertilizers
- Firearm discharge residues
- Hydrocarbon fuels
- Light filaments
- Lubricants and spermicidal agents
- Metals and alloys
- Paints
- Plastics

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	Pyrotechnic devices
Vehicles and Vehicle Accident Investigation	
• Component failures including light bulbs	 Car immobilizer systems
Electrical failures	 Erased markings
Speed calculations	 Tachograph charts
Trajectory determination	Tyre examination

Annex 02 – Mechanical Testing

Applicable fields of Mechanical testing under SLAB accreditation shall be as follows

- (a) Mechanical Properties of Materials
- (b) Metallographic Test
- (c) Properties of Powder Metallurgical Products
- (d) Building Materials
- (e) Plastic, Rubber and Leather
- (f) Textile Materials
- (g) Soil and Rock

Group - Mechanical Properties of Materials	Group - Properties of Powder Metallurgical
1 Tensile test (% elongation, Y.S., T.S., Modules of	Products
Elasticity, Reduction of area)	1 Density
2 Compression Test	2 Porosity
3 Adhesion Strength Test	3 Flow Rate

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- 4 Bonding Strength
- 5 Shear Test
- 6 Hardness Test; a) Rockwell b) Brinell c) Vickers d) Knoop e) Shore
- 7 Hardenability Test
- 8 Bend Test
- 9 Formability Test
- 10 Drawability Test
- 11 Impact Test a) Izod Impact b) Charpy Impact
- 12 Machinability Test
- 13 Stress-rupture Test
- 14 Creep Test; Stress Relaxation
- 15 Lapping, Wrapping, Coiling Test
- 16 Fatigue Test a) Axial Fatigue b) Flexural Fatigue c) Rotating Bending Fatigue
- 17 Fracture Toughness Test a) Plain Strain
 Fracture Toughness Test b) Crack Opening
 Displacement Test c) Crack Growth Rate Test
 d) Nil Ductility Transition Test e) Drop Weight
 Test
- 18 Spring Test a) In Compression b) In Tension
- Tube Testing a) Building Test b) FlatteningTest c) Crushing Strength Test d) DriftExpansion Test
- 20 Weldability Test (a) Impact Cold Cracking Test
 - b) Y-groove Cracking Test
 - c) Hot Cracking Test
 - d) Circular Patch Test
 - e) Diffusible Hydrogen Measurement by Hg Method & Gas Chromatography
 - f) Thermal Cycle Reheat Cracking Test
 - g) Thermal Hot Ductility Test
 - h) Delta Ferrite Measurement
- 21 Spot/ Projection/ Seam Weld Tests
 - (a) Cross Tension Test
- (b) U-Tension Test
- (c) Peel Off Test
- (d) Tensile Shear Test
- 22 Coated Welding Electrode Testing
- 23 Residual Stress Measurement
 - a) X-ray Diffraction Stress Analyzer
 - b) Hole Drilling Method Torsional Fatigue
- 24 Tests on Fasteners:
 - a) Proof Test
 - b) Thread Slip Measurement
- 25 Corrosion Tests:

- 4 Transverse
- 5. Rupture Test
- 6 Coefficient of Friction (Dynamic)
- 7 Coefficient Friction (Static)
- 8. Fracture Toughness
- 9 Abrasive Wear Resistance
- 10 Radial Crushing Strength of Sintered Bearing
- 11 Compressive Yield Strength
- 12 Strength Test for Sintered Gear
- 13 Sieve Analysis
- 14 Particle Size Distribution
- 15 Compatibility
- 16 Case Depth Measurement

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a). Salt Spray Test b). Cu-accelerated Acetic Acid-Salt Spray Test (CASS) c). Stress Corrosion Cracking Test d). Hydrogen Embrittlement (Stress Durability Test) Wear/ Abrasion Resistance Test 26 **Group - Buildings Materials** Group - Plastics, Rubber and Leather 1. Cement /Cement products **Plastics and Rubber** a) Fineness by wet sieving 1 Density/ Specific Gravity 2 Hardness b) Fineness by dry sieving c) Fineness by air permeability a) Durometer Hardness b) IRHD d) Consistency e) Setting Time (initial, final) c) Rebound Value f) False Setting 3 Indentation Hardness Index g) Soundness by Le Chatelier Test 4 Tensile Testing and elongation at break h) Soundness by Autoclave Test i) Compressive Strength j) Tensile Strength 5 Compression Test k) Compressive & Flexural Strength Using Flexing Test, Crystallinity Test 6 7 Impact Test **Prism Moulds** 1) Drying Content a) Izod Impact b) Charpy Impact m) Air Content c) Falling Weight Impact 8 Accelerated Ageing Test n) Water Retention o) Specific Gravity **Abrasion Test** p) Heat of Hydration Whiteness Index 10 Tear Strength q) Bleeding of Cement Paste Mortars 11 Bond Strength r) Expansion of Portland Cement Mortars 12 Brittle Point Test Exposed to Sulphate 13 Melt Flow Index (MFI) s) Potential Expansion of Portland Cement 14 Melting/ Softening Point Mortars Exposed to Sulphate 15 Flammability Test/ Limited Oxygen Index Test 16 Dimensional Stability (VICAT/ HDT) t) Restrained Expansion of Expansive 17 Coefficient of Friction Cement Mortars u) Length Change of Hardened Hydraulic 18 Water Absorption Test Cement Mortar and Concrete 19 Permeability Test w) Length Change of Hydraulic Cement 20 Migration & Staining Test Mortar Exposed to a Mixed Sodium and 21 Swelling Test Magnesium Sulphate Solution 22 Shear Strength 2. Pozzolana 23 Viscosity Test 24 Rheological Propriety Test a) Density b) Fineness (+45 μ Sieve) c) Fineness by Blaine Air Permeability Low Rate Test Method d) Cement Reactivity 26 UV Resistance and Condensation Test

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- e) Lime Reactivity f) Soundness
- g) Drying Shrinkage h) Air-entrainment of Mortar

3. Gypsum Board Products and Gypsum Lath

- a) Flexural Strength
- b) Humidified Deflection
- c) Core, End and Edge Hardness
- d) End Squareness
- e) Nail Pull Resistance
- f) Nominal Thickness
- g) Recessed or Tapered Edge Depth
- h) Width, Length
- i) Water Resistance Off Core-treated

Gypsum Board

j) Surface Water Resistance of Gypsum Boards with Water-Repellent Face Paper

4. Joint Treatment Materials for Gypsum Board Construction Joint Compound Test

- a) Consistency
- b) Shrinkage
- c) Check Cracking Putrefaction

5. Joint Reinforcing Tape

- a) Tensile Strength
- b) Dimensional Stability
- c) Width, Thickness

6. Bond of Joint Reinforcing Tape to Joint Compound

- a) Bond Test
- b) Edge Cracking

7. Adhesives for Pasting Gypsum Wall Board to Wood Framing

- a) Open Time
- b) Wetting Characteristics
- c) Shear Strength
- d) Tensile Strength
- e) Bridging Characteristics f) Ageing Properties
- g) Freeze Thaw Stability h) Vinyl Covered
- Gypsum Board Compatibility i) Adhesive Staining

8. Aggregates

- a) Grading (Sieve Analysis)
- b) Deleterious Substances Clay Lumps Finer Than

75µ Sieve Coal and Lignite Soft Materials

- c) Organic Impurities in Fine Aggregates
- d) Estimation of Mica
- e) Unit Weight and Voids (Bulk Density)
- f) Soundness of Aggregate
- g) Potential Alkali reactivity of Cement aggregate

- 27 Ozone Resistance Test
 - a)Static Test b) Dynamic Test
- 28 Xenon/ Carbon Arc Resistance Test (Accelerated Weathering Test)
- 29 Resilience Test
- 30 Dynamic Test
 - a) Dynamic Stiffness
 - b) Loss Modulus (Tan-S)
 - c) Material Damping Coefficient
 - d) Dissipation Factor
- 31 Gloss Finish
- 32 Flammable Adhesives
 - a) Open Tack Time
- b) Gel Point
- c) Viscosity
- d) Total Solid
- e) Spreadibility
- f) Bond Strength (Initial / Aged)

PVC pipes& Fittings

Hydrostatic pressure Falling weight Impact test Stress reliving test

Leather

- 1 Measurement of Width, Thickness and Area
- 2 Determination of Apparent Density
- 3 Tensile Test
- 4 Tear Strength
- 5 Double Hole Stitch Tear Strength
 - 26 Tongue Tear Strength
 - 27 Shrinkage Temperature
 - 28 Absorption of Water (Gravimetric Method)
 - 29 Cracking of Grain and Grain Index
 - 30 Two Dimensional Extension
 - 31 Resistance to Compression
 - 32 Compressibility Test
 - 33 Indentation Index
 - 34 Dynamic Water Proofness of Boot and Shoe Sole Leather
 - 35 Flexing Endurance
 - 36 Dynamic Water Proofness Test for Upper Leather

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Combinations (Mortar-Bar Method)

- h) Petrographic Examination
- i) Potential Volume Change of Cement-Aggregate

Combinations

- j) Abrasion Value
- k) Impact Value
- 1) Crushing Value
- m) 10% Fines Value
- n) Compressive Strength of Rock Samples
- o) Surface Moisture, Total Moisture
- p) Specific Gravity and Absorption
- q) Straining Materials in Light Weight Concrete Aggregates
- r) Angularity Number
- s) Flaquiness Index
- t) Elongation Index

- u) Chert
- v) Effect of Organic Impurities in Fine Aggregate of Mortar

9. Bricks

9.1 Building Bricks

- a) Compressive
- b) Water Absorption
- c) Efflorescence
- d) Bond Strength -

dimensional requirements

- e) Bulk Density
- f) wetting expansion
- g) Drying shrinkage

9.2 – Tiles

- a) Clay roofing tile
- Permeability, Water absorption, Load baring,

Transverse strength.

9.2 Fire and Silica Refractory Materials

- a) Cold Crushing Strength
- b) Apparent Porosity
- c) True Density and True Specific Gravity
- d) Sizes and Shapes
- e) Bulk Density

10 Coating Material on Reinforcing Steel

- a) Resistance to Applied Voltage
- b) Chloride Permeability
- c) Adhesion of Coating
- d) Bond Strength to Concrete
- e) Abrasion Resistance
- f) Impact Test
- g) Hardness Test
- 11. Building Lime Field Tests

- 37 Water Vapour Permeability
- 38 Water Proofness of Gloving Leather
- 39 Bond Strength of Laminated Leather
- 40 Thermal Conductivity
- 41 Area Stability on Immersion in Water and Oil
- 42 Spray Test for Estimating Water Repellency of Clothing Leather

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- a) Ball Test b) Impurity Test c) Plasticity Test d) Workability Test e) Visual Examination

 Mechanical Tests for Lime
 a) Fineness
 b) Anhydrated Oxide of Quick Lime c) Volume Yield of Quick Lime d) Compressive and Transverse Strength
- **Building Bricks**
- a) Workabilityb) Soundnessc) Popping and Pittingd) Setting Time
- 12. Admixtures
- a) Water Content
 b) Time of Setting
 c) Compressive Strength
 d) Flexural Strength
 e) Length Change
 f) Ash Content
- g) Relative Durability Factor
- h) Dry Material Content i) Relative Density
- 13. Concrete (Fresh)
- a) Unit Weight, Yield, Air Content
- b) Bleeding c) Water Content
- d) Cement Content

14. Workability

- a) Flow Table b) Slump
- c) Vee Bee Test d) Compacting Factor e) Kelly Ball Test f) K-Slump Test g) Temperature h) Time of Setting

15. Analysis of Hardened Concrete

- a) Water Content of Set Concrete
- b) Compressive Strength c) Flexural Strength
- d) Direct Tensile Test
- e) Indirect Tensile Strength (Split Cylinder Test,

Punch Test, Frame Method)

- f) Static Modulus of Elasticity
- g) Poisson's Ratio
- h) Durability Test (Freezing and Thawing)
- i) Shrinkage and Moisture Movement
- j) Resistance of Concrete to Abrasion and Erosion
- k) Abrasion Resistance of Concrete by Sand Blasting
- 1) Abrasion Resistance of Horizontal Concrete

Surfaces by Revolving Disks by Dressing Wheels

by Ball Bearings

m) Abrasion Resistance of Concrete/ Mortar Surfaces

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by Rotating Cutter Method n) Permeability of Concrete o) Absorption of Concrete p) Creep of Concrete q) Accelerated Testing of Concrete for Compressive Strength r) Time of Setting of Concrete s) Petrographic Examination of Hardened Concrete (for Alkali-Silica Gel Formation) t) Mechanical Properties of Hardened Concrete Under Triaxial Loads u) The Break-off Number of Concrete v) Microscopical Determination of Parameters of the Air-Void System w) Dynamic Modulus of Rigidity x) Dynamic Poisson's Ratio 16. Timber a) Moisture Content Using Moisture Meter b) Moisture Content Using Hot Air Oven Method c) Specific Gravity d) Static Bonding Test e) Compression Test f) Tension Test g) Nail Holding Test h) Screw Holding Test i) Impact Test j) Torsion Test 17. Plyboard a) Resistance to Dry Heat b) Fire Resistance c) Glue Shear Strength d) Adhesion of Piles e) Water Resistance f) Nycological Test g) Fibre Diameter h) Friability i) Recovery After Compression j) Incombustibility k) Moisture Absorption 1) Linear Shrinkage m) Water Vapour Permeance n) Dimension 18. Bitumen a) Softening Point Test b) Flash Point Test c) Penetration Test d) Ductility Test e) Viscosity Test Marshall Stability Test **Group - Textile Materials Group - Textile Materials** 1.Fibers Fabric (Woven) a)Textile Characteristics of Individual a) Tensile Tests b) Abrasion Resistance Test **Textiles Fibres** c) Bursting Strength d) Pile Retention of Cord b) Bundle Strength Fabric e) Piling Resistance Test f) Stretch Properties Test 2.Yarns

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- a) Breaking Strength of Yarn in Skein Form
- b) Tensile Properties
- c) Permanent Deformation of Elastomeric Yarn
- d) Sewing Threads
- e) Shrinkage of Yarn
- f) Coefficient of Friction

Industrial Textiles

- a) Tensile Tests
- b) Drop Test

Tyre Cord Fabric Test

- a) Tensile Tests
- b) Adhesion Test of Tyre Cords to Other Reinforcing Rubber Compounds
- c) Strap Peel Adhesion of Reinforcing Cords or Fabrics to Rubber Compounds
- d) Thermal Shrinkage Test

- h) Stiffness Test
- g) Snagging Resistance Test

Fabrics (Non-Woven)

- a) Stiffness Test
- b) Tearing Strength Test

Zippers and Fasteners

- a) Impact Resistance of Plastic Zips
- b) Operability of Zippers
- c) Peel Strength of Hook and Loop Touch Fasteners
- d) Resistance of Un-snapping of Snap Fasteners
- e) Shear Strength Test
- f) Strength Test of Zippers

Group - Soil and Rock Testing Soil Testing

- a) Specific Gravity
- b) Grain Size Analysis
- c) Atterberg's Limit (LL, PL,SL)
- d) Unit Weight
- e) Moisture Content
- f) Direct Shear Test
- g) Unconfined Compression Test
- h) Triaxial Compression Test Oedometer
- **Consolidation Test**
- i) Permeability Test
- j) Field Moisture Equivalent
- k) Centrifuge Moisture Equivalent
- 1) Linear Shrinkage Test
- m) Compaction Test
- n) Vane Shear Test
- o) Free Shear Test
- p) Free Swell Index of Soil
- q) Swelling Pressure of Soil
- r) California Bearing Ratio (CBR) Test

Soil Testing (Field)

a) Field CBR Test

Group – Other (Acoustic Testing) - Noise & Vibration

- a) Measurement of Noise Reduction of Sound Isolating Enclosures.
- b) Measurement of Insertion Loss Ducts and Mufflers.
- c) Vibration Characteristics of Materials, Components, Assemblies and Structures.
- d) Measurement of Mechanical Vibrations & Performance.
- e) Dynamic Balancing
- f) Mechanical Shock Testing.
- g) Vibration Test on Connection and Relay
- h) Vibration Record on Transmission Line.

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b) Direct Shear Box Test for Soil Containing Gravels c) Standard Penetration Test d) Static Cone Penetration Test e) Modulus of Subgrade Reaction (K-Value) of Soil by Plate Load Test f) Pile Loading Testing g) Field Permeability Test **Rock Testing** a) Uni-axial Compressive Strength Test b) Triaxial Compression Test c) Modulus of Elasticity and Poisson's Ratio of Rock Material in Uniaxial Compression d) Slake Durability Index of Rock e) Tensile Strength by Indirect Test on Rock Specimen f) Dynamic Modulus of Rock Core Specimen g) Point Load Test h) Pullout Test on Anchor Bars and Rock Bolts i) Hardness Testing j) Shear Strength of Rock Joints by Direct Shear Box k) Rock Mass Deformability Using a Flexible Dilatometer 1) Hydraulic Fracture Test m) Flat Jet Test **Group - Performance Test Group - Performance Test** 1 Proof Pressure Test on Pipes and Valves 2 Aluminium Milk Cans 27 Orque Wrench 3 Air Compressor 28 Water Meter 4 Air Blower 29 Rubber Sealing Ring 30 Rubber Welding Hose 5 Test on Bicycle: a) Frame b) Pedal 31 Speedometer Cable 32 Prototype Transmission Tower Testing c) Crank and Chain d) Wheels e) Handle Bar 33 Scaled Down Model Transmission Tower f) Hub g) Spoke h) Tubes **Testing** 34 Industrial Air Cleaner: **6.** Test on Bip Tap and Stop Tap a) Airflow Restriction and Pressure Drop Test 7. Test on Ball Valves b) Initial Efficiency Test **8.** Test on Centrifugal Pumps c) Dust Capacity and Accumulative Efficiency

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- **9.** Test on Commercial Cooking Range & LPG Appliances
- 10. Test on Domestic Pressure Cooker
- 11. Test on Gas Cylinders, Valves & Regulators
- 12. Proof load Tests on Chains
- 13. Compression Test for Bridge Bearings
- **14.** Load Test on Draw Bar Hooks and Laminated Springs
- 15. Load Test on Coil Springs
 - a) 0-1 kg
- b) 0-100 kg
- c) above 100 kg.
- 16. Load Test on Chain Pulley Block
 - a) Below 10 tons
 - b) 10 tons to 20 tons
 - c) Above 20 tons
- 17. Load Test on Hand Operated Winch Load Test on Hydraulic Jacks:
 - a) Proof load upto 100 tons
 - b) Proof load from 100 to 150 tons
 - c) Proof load above 150 tons
- 18. Load Test on Screw Jacks:
- a) Up to 15 tons
- b) Between 15 to 30 tons
- c) Above 30 tons
- 19 Load Test on Steel Wire Ropes:
- a) Up to 1" dia
- b) Between 1" & 1 ½ dia
- c) Above 1 ½ dia
- 20. Proof load Test on Electrically Operated Winch
- 21 Test on Hack Saw Blade
- 22 Test on Hurricane Lanterns
- 23 Test on Hand Sprayers
- 24 Test on Steel Files
- 25 Test on Twist Drill
- 26 Test on Sieves

- d) Pre-cleaner Performance
- 35 Performance of Steel Parts at Sub-Zero
- Temperature
- 36 Performance of Rubber Parts at Sub-Zero Temperature
- 37 Performance of Diesel / Petrol Engine
- 38 Performance of IC Engine at Higher Altitude
- 39 Endurance Test for Starter Motor
- 40 Endurance Test for Jacks
- 41 Performance and Life Test for Oil Seals
- 42 Life Cycle Test for AC Pumps
- 43 Performance Test of Compete Vehicle on Chassis Dynamometer
- 44 Endurance Test for Bonded Rubber Wheels
- 45 Test of Helmets
- 46 Test of Safety Glass
- 47 Test of Surgical Gloves
- 48 Test on Burners

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Annex 03 Applicable Product Group for Chemical Testing

- 1. Adhesives & sealants, Resins, Antibiotics
- 2. Animal feed
- 2. Air, gases & atmosphere
- 3. Biocides
- 4. Building Materials
- 5. Cement and related products
- 6. Clays, Ceramics and related materials
- 7. Coal, Coke & other solid fuels
- 8. Cosmetics & essential oils
- 9. Drugs & Pharmaceuticals
- 10. Explosives & pyrotechnics
- 11. Fertilizers
- 12. Industrial & fine chemicals
- 13. Inks, dyes & pigments
- 14. Leather & Leather Products
- 15. Food & agricultural products
- 16. Metals & alloys
- 17. Oils & lubricants
- 18. Ores & Minerals
- 19. Organic chemicals
- 20. Paints & surface coatings

- 21. Petroleum products
- 22. Plastics & plastic products
- 23. Pollution & effluents
- 24. Pulp & Paper
- 25. PPE
- 26. Residues in water & food Products
- 27. Rubber & rubber products
- 28. Radiation level in consumables
- 29. Solvents
- 30. Sampling
- 31. Soil
- 32. Soaps & detergents
- 33. Pesticides
- 34. Package materials
- 35. Textile & related products
- 36. Water & Waste water

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Annex 04 Applicable Product Group for Biological Testing

1 Food and Agricultural Products

Animal Feeds

Bakery & Confectionery Products

Beverages (Alcoholic / Non-Alcoholic)

Canned & Processed Foods

Cereals, Pulses & Cereal Products

Coffee & Cocoa Products

Edible Colours & Flavours

Edible Oils & Fats

Eggs & Egg Products

Essential Nutrients Including Vitamins

Fish & Sea Foods

Food Additives & Preservatives

Fruit & Fruit Products

Gelatin and Other Gums

Genetically Modified Foods and

agricultural products

Herbs, Spices & Condiments

Honey & Honey Products

Infant Foods

Jams, Juices, Sauces & Concentrates

Meat & Meat Products

Milk & Dairy Products

Margarine

Natural Waxes

Nutritional Supplements

Nuts & Nut Products

Oil Seeds & By-Products

Pet Foods

Poultry & Poultry Products

Starch & Starch Products

Sugar & Sugar Products

Tea

Tobacco & Tobacco Products

Vegetables & Vegetable Products

2 Drugs and Pharmaceuticals

Antibiotics

Ayurvedic Drugs

Biotechnology derived pharmaceuticals

Chemotherapeutic Agents

Drug Intermediates & Raw Materials

Endotoxins

Enzymes

Filterable Solutions & Soluble Preparations

Hormones

Herbal drugs

Immunological Products

Microbial limit tests

Natural Drugs

Non-Filterable Preparations Including

Ointments

Preservative efficacy

Pyrogen tests

Sterility tests

Surgical Dressings

Synthetic Drugs

Vaccines

Veterinary Drugs

Vitamins

Bioassays of Other Products (Other Than

Those Products Mentioned Above)

Tests for Medical devices and Medical

Textile

Specific Pathogens

Sterility

Other Specified Tests

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Other Specified Food Items			
Sensory Evaluation Tests on Foods			
3 Water	4 Pollution and Environment		
Drinking water	Air		
Potable water	Effluents		
Packaged Drinking Water	Solid waste		
Packaged Natural Mineral Water	Sewage		
Water for Swimming Pool and Spas	Soil		
Water for Construction Purpose			
Water Purifiers			
Ground Water/ Surface Water			
Water for Medicinal Purposes			
Distilled /Demineralized Water			
Water for Processed Food Industry			
Water for industrial purpose			
Ice			
Test for Efficacy of Water Filtering Plants			
5 Biocides	6 Cosmetics, Perfumes and Essential Oil		
Algacides	Pathogens		
Bactericides	Microbial Count		
Fungicides	Preservative Efficacy		
Herbicides	Sterility Tests		
Insecticides			
Sporicides			
Vermicides			
Weedicides			
Antiseptics,			
Disinfectants			
7 Industrial Cultures	8 Seed Testing		
Dairy Starter Cultures	Sampling		
Rizhobial Cultures	Moisture		
Yeast and Other Ferments	Purity		
Mushroom Spawn	Germination		
Meat Starter Cultures	Tertazolium		
Other specified cultures	Fluorescence		
•	Other Specified Tests		
9 Plants and Plant Materials for Presence of	10 Molecular Biology		
Disease	(Tests for Various Matrices)		
Identification of Bacterial Pathogens	Genotyping		
Identification of Fungal Pathogens	Promoter/Terminator Screening		

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Identification of Viral Pathogens	Pathogen Detection
Other Specified Tests	Gene Expression
•	Gene Copy Number
	Bacterial Mutagenicity Tests
	Sister Chromatid Exchange Tests
	Transformation Assays In Cell culture
	Other Specified Tests
	•
11 GMO Testing	12 Cell Culture
Detection by DNA	Cytotoxicity
Detection by Protein	Cytogenetics
	Cell permeability test
13 Resistance to Microbial Attack	14 Biological Tests on Other Miscellaneous Test
Textiles and Fabrics	Items
Paints and surface coatings	Adhesives Glues and Sealant
Adhesives, glues and other bonding	Fuels and Oils
Paper and paper pulp	Lubricants
Electrical Components	Packaging Materials
Timber and Allied Material	Paints & Surface Coatings
Other Specified Materials	Pulp & Paper
	Soaps & Detergents
	Textiles & Fabrics
	Wood & Wooden Products
	Toys and Other Children's Products
	Bio-fertilizer
	Soil Conditioners and Organic Fertilizer
15 Factory Hygiene Purposes	16 Toxicology
Surfaces	Acute Toxicity
Air	Subacute Toxicity
Water	Neurobehavioral Toxicity Evaluation
	Promoter screening
	Reproductive Toxicity
	Chronic toxicity
	Generation Study
	Mucous membrane irritation test
	Skin sensitization test
	Hypersensitivity/allergenicity test
	Englishedian tout
	Eye irritation test
	Neurotoxicity

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	Environmental toxicity Mutagenicity Teratogenicity Fish Toxicity Studies Bird Toxicity	
17 Identification of Bacterial and Viral Pathogens in Food Items by: Test Kits ELISA PCR	18 Residue Analysis Antibiotic residue analysis by ELISA or any microbial method	
19 Veterinary Testing Specified tests in biochemistry,	20 Phytosanitary Tests Testing of quarantine pathogens	
haematology, cytopathology, histopathology etc		
21 Medical devices PPE	22 Sampling	

Annex 5 Applicable field in Electric / Electrical

Applicable field in License / Licenseau			
Electrical appliances			
Electrical MCCBs			
RCBs			
Electric meters			
Isolators			
Electrical lighting			
Electrical Switches and sockets			
Electric cables			
Generators and motors			

Annex 06 COMPOSITION OF THE TECHNICAL ADVISORY COMMITTEE

SI	Name	Designation	Status
No			

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01	Dr. S.I.Abegunawardana	Retired Senior Lecturer. University of Kelaniya, Kelaniya	Member
02	Ms.W.A.J.Sajeevika Perera	Principle Research Scientist - Quality Assurance, Industrial Technology Institute	Member
03	Ms.Hasika Thilakaratne	Technical Manager – Bamber & Member Bruce Laboratory (Pvt) Ltd	
04	Mr.E G Somapala	Retired Government Analyst	Member
05	Ms.Dilani Rodrigo	Senior Deputy Director (Acting), Sri Lanka Standard Institution	
06	Dr.H.P.P.S.Somasiri	Principle Research Scientist, Industrial Technology Institute	Member
07	Mr.T S Amarawansa	Former Deputy Director General- Sri Lanka Standard Institution Memb	
08	Mr.Sanath Perera	Assistant Director, Sri Lanka Mem Standard Institution	
09	Ms.Devaki Rodrigo	President/Sri Lanka Association of Testing Laboratories	Member
10	Dr.Amal Vadyasinghe	Senior Lecturer , Faculty of Mem Medicine, University of Peradeniya	
11	Prof. Indira Kithulwatte	Head/Department of Forensic Member Medicine, Faculty of Medicine, University of Kelaniya	
12	Mrs. Vajirapani De Silva	Senior Scientist, Genetech Molecular Diagnostics and School of Gene Technology	Member
13	Mr. R G Perera	Head of Calibration- Lanka Calibration Services (Pvt) Ltd.	Member

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