

# FEDERATION FOR DEVELOPMENT OF ACCREDITATION SERVICES

(MRA Signatory to APAC/ILAC for the scope of Testing & Calibration)



## Information Brochure

### **FEDERATION FOR DEVELOPMENT OF ACCREDITATION SERVICES**

118-119, FF, Sushant Tower, Sector 56,

Gurgaon-122011 (Haryana), India

Tel: 0124 2570004

Mob: +91-9452206485, 8738875300

E Mail: [info@fdasindia.org](mailto:info@fdasindia.org), [fdasindia@hotmail.com](mailto:fdasindia@hotmail.com)

Website: [www.fdasindia.org](http://www.fdasindia.org)

## **FDAS POLICY**

FDAS is committed to provide accreditation services, in a non-discriminatory manner to applicant CABs operating as Test Laboratories, Calibration Laboratories and Medical Laboratories, in a timely manner, irrespective of the size and ownership and to operate its documented management system in compliance with ISO/IEC 17011:2017 and applicable ILAC/APAC norms.

**DEVI SARAN TEWARI**

**Director, FDAS**

## 1.0 Introduction

Federation for Development of Accreditation Services (FDAS), India is a program to grant accreditation to CABs/Laboratories, as a non-government organization and in non-profit mode, registered under section 9(1) of the Haryana Registration and Regulation of Societies Act, Department of Industries & Commerce, Haryana, vide registration number HR/018/2019/03652, on 27<sup>th</sup> March 2019, by The Registrar of Societies, Govt of Haryana, India.

The management system of FDAS is as per ISO/IEC 17011:2017, and is committed to grant Accreditation to Test, Calibration, and Medical laboratories, as per respective international standards like ISO/IEC 17025:2017 / ISO 15189:2022 and ILAC/APAC norms. The commitment of FDAS to abide by the norms from international institutions like ISO, IEC, ILAC, APAC etc., has enabled it to attain Asia Pacific Accreditation Cooperation (APAC) MRA Signatory status which in turn provides global equivalence to its accredited CABs/Laboratories. After its evaluation by APAC, FDAS became APAC MRA (Mutual Recognition Arrangement) signatory/Full Member of APAC on 16<sup>th</sup> June 2023 and became ILAC MRA signatory/Full Member of ILAC on 28<sup>th</sup> Aug 2023 for the scope of testing and calibration.

The need for creating additional accreditation body for India must be seen in conjunction with the need of country which has about six lakh laboratories, consisting of about three lakh testing laboratories and more than three lakhs medical laboratories. Though the laboratory accreditation program was approved by the Govt. of India in 1981, it started granting accreditation in 1989, from Department of Science and Technology, by National Coordination of Testing and Calibration Facilities (NCTCF), the name of accreditation program, which was transformed to NABL in 1992, and to meet international (ISO/IEC) norms.

As on date the number of accredited laboratories is less than nine thousand laboratories, although the best is being done. The country is aspiring to become a five trillion economy and must have matching means to achieve desired goal and therefore needs additional accreditation body.

Keeping this in mind an NGO was formed as a society for laboratory accreditation, which is now APAC/ILAC MRA Signatory and serves the Indian economy to meet its needs.

## 2.0 Mode of Service

FDAS, the NGO registered under the “Registration and Regulation of Societies Act, 2012 of Haryana Government”, aims to serve the community as a charitable organization and as a non-profit making body and by maintaining financial sustainability.

## 3.0 Professional commitment of FDAS:

FDAS is committed to being professional in its approach with laboratories in general and specifically with its accredited CABs/laboratories, by keeping them informed with justification before making a change in its management system that may affect CABs/laboratories functioning, and to incorporate their views to the extent possible. FDAS has the complaints & Appeals redressal system, also when resolved complaints are not to the satisfaction of CABs/laboratories, they are free to make an appeal against the decision of FDAS, which are considered by the Jury, which is not involved in the decision making & is independent to consider such appeals and to pronounce its judgment, which is a binding to the parties concerned. The jury would have more than one expert.

## 4.0 FDAS Policy on grant of accreditation and Impartiality/Confidentiality:

FDAS is open to grant accreditation to all willing laboratories (CABs), irrespective of ownership, size, or affiliations, and from all sectors of the economy and committed to maintaining impartiality in its functioning from the test, calibration, and medical laboratories. As a policy, its management, staff,

committee members, assessors, and experts involved in the process of accreditation are required to pledge to maintain impartiality and confidentiality. FDAS has a website ([www.fdasindia.org](http://www.fdasindia.org)) and it gives the details of scope of accreditation of laboratories along with the certificate. FDAS accreditation is an acknowledgement for the competence of the applicant for the scope of testing/calibration parameters identified by FDAS and is not to certify a product.

## 5.0 Accreditation Requirements:

FDAS grants accreditation to the applicant CABs (test, calibration, and medical laboratories) for the defined scope subject to the demonstration of competence and compliance to the following applicable norms.

**5.1** General requirement for the competence of testing and calibration laboratories ISO/IEC 17025: 2017.

**5.2** Medical laboratories – Requirements for quality and competence, ISO 15189:2022

Besides, accredited laboratories are required to abide by the:

- i. Terms and conditions of FDAS to maintain accreditation (FDAS 131).
- ii. Terms and conditions for use of FDAS symbol & FDAS symbol combined ILAC MRA mark by laboratories (FDAS 132)
- iii. FDAS supplementary criteria applicable for different accreditation schemes.

FDAS has adopted ILAC documents from the P & G series, where available, and can be downloaded from: [www.ilac.org](http://www.ilac.org)

## 6.0 Scope of FDAS (Test laboratory in the following fields)

- 6.1 Biological
- 6.2 Chemical
- 6.3 Electrical
- 6.4 Electronic
- 6.5 Fluid Flow
- 6.6 Mechanical
- 6.7 Non-Destructive (NDT)
- 6.8 Optical and Photometry
- 6.9 Radiological
- 6.10 Thermal

## 7.0 Fields have been divided groups & subgroups.

### 7.1 Biological Testing

Group	Sub-group
Bio-chemical Testing	Blood bank serology Hematology Clinical Immunology Anatomical pathology Clinical biochemistry Bioavailability studies drugs
Bio-efficiency	Pesticide Plant hormones Weedicides

Biological assay	Industrial culture Antibiotics and other drugs Disinfectants Vaccines and sera Miscellaneous micro-biological products Vitamins and enzymes Hormones
Environmental biology	Toxicity to fish Toxicity to birds Toxicity to domestic animals Identification of benthic and macro-organisms Toxicity to Wildlife etc. Biotoxins and microbial toxins
Food and agricultural products	Alcoholic drink & soft drink beverages Animal feeds Bakery & Confectionary Cereals, pulses & cereal products Coffee & cocoa products Milk & dairy products Tea Starch & starchy products Fish & fishery products Ready to eat products/ Proprietary products Calorific value/energy
	Food additives/preservatives& antioxidants Honey & honey products Fruit & vegetable products Infant foods Meat & meat products Whole & ground spices & condiments Spice oil & oleoresins Sugar and sugar products Tobacco & tobacco products Nut and nut products Sensory evaluation filth & extraneous matter in food Oil, fats & related products
Forensic analysis	Analysis of biological fluids & typing Testing of hair, bones, tissues, etc. Botanical examination & testing
Genetic activity	Bacterial & cell cultures Seed purity & germination and freedom from disease Other products
Industrial culture	Yeasts Rhizobial Cultures Dairy starter culture
Inhalation toxicology	Acute toxicity Sub-acute toxicity

Microbiological tests (Bacteria, fungus)	Cosmetics Vitamin & enzymes Raw & processed foods Water & Wastewater Sewage, effluents & industrial Milk and other dairy products Surgical items Pharmaceuticals
Mycotoxins	Mycotoxins in foods & feeds
Pharmacology tests	Bioassay Biological test for identity Pyrogen tests Histamine tests Antigenicity tests
Resistance to fungal and other microbial testing	Textile and fabrics Adhesives, glues, etc. Electric components Paints & surface coatings
Resistance to insects	Textile and fabrics Tinibar Other materials
Shelf life	Canned & processed foods
Specialised instrumental analysis	Fluorescence microscopy Electrophoresis Polarimeter Auto analyser for wet analysis DNA hydrozation Computerised tirotometer for colour evaluation Stereoscopic microscope
Sterility test (for drugs)	Canned products Hospital wares Drugs & cosmetics Area sterility
Toxicology testing	Acute studies oral Sub-acute studies oral Neurotoxicity Reproduced toxicology Dermal studies acute Dermal studies sub-acute Special testing including Carcinogenicity mutagenicity Testogenicity studies etc.
Virus	Foods and feeds ELISA tests

## 7.2 Chemical Testing

Group	Sub-group
Air gases & Atmosphere	Ambient air monitoring. Stack emission monitoring.

	<p>Fugitive emission monitoring.</p> <p>Solid particulate matter:</p> <ul style="list-style-type: none"> <li>-Size distribution</li> <li>-Chemical analysis</li> </ul> <p>Liquid mists, aerosols:</p> <ul style="list-style-type: none"> <li>-Chemical analysis</li> </ul> <p>Gaseous pollutants:</p> <ul style="list-style-type: none"> <li>-Chemical analysis</li> </ul> <p>Industrial gases</p> <p>Gases for medical use &amp; diving</p> <p>Reference gases &amp; mixtures</p> <p>Liquified/compressed gases</p> <p>Fuel gases</p>
Alcohol & allied chemical	<p>Industrial alcohols.</p> <p>Allied chemicals.</p>
Adhesives	<p>Starch based adhesives.</p> <p>Natural gums.</p> <p>Glues.</p>
Building materials	<p>Cement:</p> <p>Cement &amp; other mortars</p> <p>Cement concrete</p> <p>Refractories</p> <p>Refractory cement</p> <p>Sand</p> <p>Clays &amp; soils</p> <p>Pozzolanic materials</p> <p>Fly ash</p> <p>Limestone, lime gypsum</p> <p>Waterproofing/bituminous materials</p> <p>Thermal insulation materials</p> <p>Masonry bricks/blocks etc.</p> <p>Wood testing &amp; identification</p>
Coal, coke & other solid fuel	<p>Coal/coke</p> <p>Coal carbonization products</p> <p>Coal tar/bitumen:</p> <p>Charcoal</p> <p>Other solid fuels</p>
Dye & intermediates	<p>Synthetic dyes</p> <p>Dye intermediates</p> <p>Natural dyes &amp; colouring materials</p>
Disinfectants	<p>Disinfectants &amp; their formulation</p>
Drugs & pharmaceuticals cosmetics	<p>Synthetic drugs</p> <p>Natural drugs (medical plant)</p> <p>Preparations</p> <p>Pharmaceutical preparations</p> <p>Drugs intermediates &amp; raw materials</p> <p>Cosmetics</p> <p>Intermediates and misc.</p> <p>Chemicals for cosmetics</p> <p>Perfumes</p> <p>Essential oils</p>
Explosives and pyrotechnics	<p>Service explosives</p> <p>Industrial explosives</p>

	Pyrotechnics Explosive chemicals & allied materials
Fertilizers	Nitrogen fertilizers Phosphorous fertilisers Fertiliser mixtures Potassium fertilisers Micronutrients Bio-Fertilizers
Food & agricultural products (Chemical/Physical Test)	Alcoholic drinks & beverages Animal feeds Bakery and confectionary products Cereals, pulses & by-products Coffee, cocoa & by-products Milk and dairy products. Tea and tea products Starch and starchy products Fish and fishery products Food additives: Colour, Flavour and Preservatives Honey and honey products Fruits & vegetable products Infant foods Meat and meat products Spices & condiments Sugar and by -products Tobacco and by-products Sensory evaluation-flavour Oil, fats and related products Soft drinks Pan Masala and similar products Chewing Gum and similar products
Forensic analysis	Chemical analysis of trace materials as clues Analysis of poisons/drugs Specialised testing by Physicochemical techniques
Inks	Printing inks Liquid inks and allied products Raw materials-carbon black dyes,etc.
Industrial and fine chemicals	Inorganic chemicals misc. Organic chemicals misc. Electroplating chemicals Solvents misc. Laboratory chemicals Analytical reagents.
Lac & lac products	Lac Lac products
Leather	Leather Chemicals for leather Synthetic leather
Ores & Minerals	Iron ores Copper ores, Zinc ores Other common metal ores Precious metal ores



	<p>Rare metals ores  Radio active metals ores  Bauxite  Limestone &amp; Dolomite  Rock phosphate  Gypsum  Silica sands  Mineral sand  Mineral for refractories  Mineral for insulation materials  Other minerals  Trace element analysis</p>
Metals & alloys	<p>Iron steel &amp; ferro alloys  Copper and its alloys  Aluminium and its alloys  Tin and tin alloys  Zinc and its alloys  Lead &amp; its alloys  Magnesium &amp; its alloys  Nickel,chromiums,cobalt and its alloys  Titanium &amp; its alloys  Tungsten and its alloys  Other metal alloys  Precious metals  Metallic coating and treatment solutions  Corrosion testing  Trace element analysis</p>
Paints & surface coating	<p>Paints and enamels  Vehicles,solvents,thinners  Pigments and extenders  Polishes  Painter's materials (gums,driers,paint removers)  Drying oils  Paint removers  Outdoor weathering tests  Artificial weathering tests  Fresh water immersion tests  Marine under water tests  Humidity tests  Salt spray tests  Underground tests</p>
Paper and pulp	<p>Pulp, paper and products  Paper and board packing materials  Additive&amp; coating materials</p>
Photographic chemicals	<p>Photographic chemicals &amp; materials</p>
Petroleum products	<p>Crude petroleum  Fuels-gaseous, liquid &amp; solid excepting aviation  Aviation fuels  Aviation lubricants  Lubricants general &amp; associated products  Waxes and jellies</p>

	Misc.products,white oil,anti-freeze, Solvents insulation oils, feedstock Bituminous asphalt, tars and allied products Trace analysis of lubricants and other products
Plastics & resins	Resins Plastics -Rheological properties -Thermal analysis -Resistance to chemicals -Air & water vapour permeability -Accelerated weathering tests -Outdoor weathering tests -Flammability tests -Electrical properties tests -Heat insulation tests -Mechanical tests -Optical tests -additives identifications Synthetic resin adhesives
Pesticides	Synthetic pesticides & their formulations Natural pesticides & formulations Pheramones, chitin-inhibitors and allied products Growth hormones & allied products Pesticides residue analysis
Residue/ toxic contaminants	Pesticides residues, Antibiotics, Mycotoxins, Naturally occurring toxic substance, Heavy metals in food/ feed, leather, textile, water etc.
Pollution & environment	Liquid effluents, waste, and sewage Solid wastes Hazardous solid wastes spet analysis of wastewater/solid wastes
Rubber & rubber products	Natural rubber Synthetic rubber Resistance to chemicals Accelerated weathering tests Outdoor weathering tests Swelling in liquids Permeability Flammability Electrical properties Rubber chemicals testing Rubber products testing Rubber based adhesive testing
Soap detergent & toilet goods	Soaps Synthetic detergents Toilet goods Perfumery material, natural and synthetic Wetting and emulsifying agents
Specialized instrumental analysis	Gas chromatography with mass spectrometry LC/MS/MS ICP OES spectrometry /MS Thermo-analytical methods X-ray diffraction

	<p>Atomic absorption spectrometry  HPLC with microprocessor  Specialised GLC with microprocessor  Auto analysers  X-ray fluorescence analysis  UV and visible spectrophotometry  Intra-red spectrophotometry/ FTIR  SEM microanalysis  Electroanalytical methods  BMR spectroscopy  ESR spectroscopy  Raman spectroscopy  Atomic emission spectroscopy  Polarography  HPTLC  Specific ion analysis  Total organic carbon analysis  Carbon, Sulphur analysis in metals  Oxygen, Nitrogen analysis  Karl Fisher Analyzer.  Ion Chromatography</p>
Textiles & Wool	<p>Fibre &amp; Filaments:  -Identification  -Quantitative analysis of mixtures &amp; blends  -Qualitative analysis  Yarns &amp; chords:  -Identification  -Quantitative analysis of mixtures &amp; blends  -Qualitative analysis  -Colour fastness tests (other than artificial light)  -Colour fastness tests in artificial light  -Flammability  Fabrics &amp; Garments:  -Identification of Fibre  -Quantitative analysis of mixtures &amp; blends  -Qualitative analysis  -Colour fastness tests(other than artificial light)  -Colour fastness tests in artificial light  -Water permeability  -Vapour/air permeability  -Flammability  -Electrical resistance  -Colour fastness to washing  -Colour fastness to rubbing/crocking  -Colour fastness to perspiration  Dyes &amp; dyestuff auxiliaries analysis  Textile finishes, resins &amp; coatings  Textile chemical auxiliaries</p>
Water	<p>Water for potable &amp; domestic uses  Water for irrigation  Water for industrial/cooling purposes  Water for steam</p>

	Water for medicinal purposes Water for laboratory use. River water Ground water Waste water
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### 7.3 Electrical Testing

Group	Sub-group
Distribution System	Battery Testing Distribution Equipment Testing Domestic Equipment testing Environmental testing Explosion proof testing Illuminated testing IP cubicle testing Relay testing
High Current	Switching duty test (HV) Switching duty test (LV) Short-time current test Short circuit withstand test Rated make/break test Electrical endurance test Temperature rise test Locked rotor tests on Motors Load loss & No load loss test
High voltage	Corona inception/extinction Front of wave impulse flashover High voltage dc Impulse flashover Impulse withstand Pollution performance Porosity test Power frequency flashover voltage Power frequency sparkover Power frequency voltage withstand Puncture withstand voltage Radio interference voltage Switching impulse voltage Temperature cycle Visible discharge Voltage distribution
Insulation	Ageing tests on insulation Arc resistance Cable testing Capacitor testing Chemical tests on electrical insulation metals Comparative tracking index Dielectric constant Dielectric strength Electrical conductivity Fire resistance testing Heat cycle

	IDE measurement Inductance measurement Insulation resistance Leakage current Load cycle Mechanical tests on electrical insulating materials Overload run test on capacitors. Physical tests on electrical Insulating materials Partial discharge tests Resistance measurement Self-healing test on capacitors Stability test on capacitors Surface resistivity Thermal resistivity Transient over voltage on capacitors Verification of Insulating properties Volume resistance Volume resistivity Wrapping tests on cables
Material Testing	Combustion testing Insulation oil testing Metallurgical testing Refractory material testing Thermal testing of materials
Power system	Analogue simulation Grounding system testing Meter testing
Transmission line testing	Line material testing Tower testing Vibration testing

#### 7.4 Electronic Testing (products)

Discrete Semiconductor Devices  
 Monolithic Integrated Circuits  
 Hybrid Integrated Circuits  
 Electromechanical Components  
 Electromagnetic Components  
 Optoelectronics Components  
 Wires, Cables, Sleeves etc.  
 Piezo Electric Devices  
 Electron Tubes  
 Passive Components  
 Electro Acoustic Devices  
 Magnetic Tapes  
 PCBs  
 Laminates  
 Micromotors  
 Fan Regulator  
 Amplifier  
 Multimeter, Voltmeter, Ammeter  
 LCR Meter  
 Transistor Analyzer

Electronic Counter  
 Oscillators, Pulse & Data Generator  
 Oscilloscope  
 Plotter  
 AF Power Meter  
 Temp. Controlled Soldering Stn.  
 Blank for Future use  
 Power supplies  
 Voltage Stabilizer  
 Isolation Transformer  
 Inverter  
 UPS  
 Process Controllers  
 Dry Battery  
 Wet Battery  
 Personal Computer  
 Disc Drives  
 Keyboard  
 Printers, Plotters  
 Monitor  
 TV Receiver  
 AM/FM Radio Receiver  
 TV Tuner  
 AM/FM Radio Frequency Generator  
 Transceiver  
 Pattern Generator  
 Filters & Attenuators  
 Electronics Calculator (Non – Programmable type)  
 Tape Deck Mechanism  
 Tape Recorder  
 VCR  
 Telephone test set  
 Acoustic equipment  
 Optoelectronics Equipment  
 Others

## 7.5 Fluid Flow Testing

Group	Sub-group
Air Delivery System	Air displacement by fans (ceiling,table,petestral) Air delivery by exhaust fans Air delivery by blowers (centrifugal & positive displacement) rate of flow & static pressure measurement Air delivery by blowers: Integrated quantitative flow measurement Air quantity measurement in compressed air systems Air flow measurement in ducts.
Atmospheric air/Environment	Wind velocity Wind direction
Compressed gases and steam	Flow rate measurement in pipelines Integrated quantity measurement (Volumetric) Mass flow measurement
Corrosive liquids	Volumetric (mass flow metering rates)

	Integrated volume/mass flow
Flue gases/emission	Flow rate and quantitative Measurement of gases in chimneys (circular and rectangular ducts)
Gas-liquid systems	Flow rate measurement (aerosols) Integrated flow measurement Concentration
Gas-solid systems	Flow rate measurement (slurries) Bed movement (fluidized system) Concentration
Liquid gases	Flow rate Mass flow (integrated)
Liquid-solid systems	Flow rate measurements (Slurries) Integrated flow measurement Concentration
Multicomponent system	Flow measurement Integrated flow measurement Individual component measurement
Multiphase system	Flow measurement Integrated flow measurement Individual component measurement
Non-Newtonian fluids	Flow rate Integrated mass flow metering
Petroleum and related products	Flow rate measurement in pipes Mass flow rate in pipes Integrated volumetric flow metering Integrated mass flow metering
Ultra low flow	Leak rate of gases Leak rate of liquids
Volatile liquids	Flow rate measurement in pipes Mass flow rate in pipes Integrated volumetric flow metering Integrated mass flow metering
Water, other liquids (Milk, oil etc.) and effluents	Flow rate measurement in open channels, streams Flow rate measurement in closed channels, sewers Flow rate measurement in pipeline Integrated volumetric flow metering in pipelines Mass flow measurement Flow measurement at different heads from pumps and other similar devices.

## 7.6 Mechanical Testing

Group	Sub-group
Mechanical Properties of Material	Tensile Test Hardness test by Vickers Hardness test by Brinell Hardness test by Rockwell Micro hardness test Izod impact test Charpy impact test

	<p>Bend test  Fatigue test  Lapping/wrapping/colling test  Measurement of surface finish  Shear test  Torsion test  Transverse test  Bulging test for tube  Crushing strength for tube  Cupping Test  Compression Test  Dimension  Rebend Test  Drifted expansion Test  Breaking Load Test</p> <p>Weldability tests:  -Implant cold cracking test  -Y-Groove cracking test  -Verestraint hot-cracking test  -Circular patch test  -Diffusible Hydrogen measurement by Hg Method  -Gas Chromatography for diffusible Hydrogen  -Thermal cycle reheat cracking test  -Thermal hot ductility tests  -Delta ferrite measurement by magnetic method</p> <p>Spot/Projection/seam Weld Tests:  -Cross tension test  -U Tension test  -Peel off test  -Tensile shear test</p> <p>Fracture Toughness tests:  -Crack opening displacement test  -Pellini drop weight test  -Crack growth rate test</p> <p>Residual Stress Measurement:  -X-Ray diffraction automatic Stress analyser  -Hole drilling method using electrical resistance strain gauges</p> <p>Coated welding electrode  Hardness test by Rockwell superficial  Jouminy hardenability test</p>
<p>Properties of Powder  Metallurgical Products</p>	<p>Density  Porosity  Flow Rate  Transverse rupture test  Rockwell hardness  Coefficient of friction Dynamic  Coefficient of friction static</p>



	<p>Fracture toughness  Abrasive wear resistance  Radial crushing strength of sintered bearing  Compressive yield strength  Strength test for sintered gear technology</p>
Plastic & Rubber	<p>Identification of polymer and composition  Density/sp.gravity  Hardness  Identification hardness index  Tensile strength and elongation  Flexing/cutgrowth test  Compression test  Transverse test  Izod impact test  Charpy impact test  Ageing  Abrasion test  Tear strength  Bond strength of bonded material  Low temperature flexing  Stiffness in bend  Heat deformation  Heat softening point  Melt flow index  Melting point of nylon  Inflammability /fire resistance test  Plastic yield of ebonite  Dimensional stability at high temperature  Reversion test of pipes  Coefficient of friction  Hydraulic test of tubes  Water absorption test  Oil absorption test  Swelling in Chemical  Optical test of PVC pipes  Resistance to copper of PVC pipes  Shear strength  Vacuum collapse test for pipes/hoses.</p>
Building Materials	<p>Cement Testing:  -Setting time  -Fineness by specific surface  -Soundness by Le Chatlier  -Soundness by autoclave expansion  -Compressive test  -Drying shrinkage test  -Air content test  -Water retention test  -Sp gravity test  -Covering capacity of thermal insulation cement  -Dry adhesion to steel of insulating cement.</p> <p>Lime testing:  -Residue on slaking</p>

	<ul style="list-style-type: none"> <li>-Workability test</li> <li>-Volume yield test</li> <li>-Popping and filling test</li> </ul> <p>Tiles testing:</p> <ul style="list-style-type: none"> <li>-wet transverse test</li> <li>-Impact test</li> <li>-Crushing strength</li> </ul> <p>Concrete pipe testing:</p> <ul style="list-style-type: none"> <li>-Hydraulic test</li> <li>-Three edge bearing test</li> </ul> <p>PCE for fine clay refractories Modulus of rupture for refractory bricks</p> <p>Mineral wool testing:</p> <ul style="list-style-type: none"> <li>-Density</li> <li>-density under specific load</li> <li>-Shot content</li> <li>-Moisture content</li> <li>-Compaction under vibration</li> <li>-Compaction under jolting</li> </ul> <p>Concrete testing:</p> <ul style="list-style-type: none"> <li>-Compressive strength</li> <li>-Determination of proportion of mortar concrete in a set mix</li> <li>-Bond strength</li> <li>-Deflection and ultimate load</li> <li>-Flakiness index for aggregates for concrete and road</li> </ul> <p>Stone/Aggregate testing:</p> <ul style="list-style-type: none"> <li>Elongation index for aggregate</li> <li>Adhesion of aggregate to tar</li> <li>-Moh's hardness number</li> <li>-Point load strength index</li> <li>-Durability test</li> <li>-Permeability test</li> <li>-Surface softening test</li> <li>-Toughness test</li> <li>-Weathering test</li> </ul> <p>Soundness Seave analysis in aggregates</p> <p>Soil Testing:</p> <ul style="list-style-type: none"> <li>-Liquid limit</li> <li>-Plastic limit</li> <li>-Shrinkage limit</li> <li>-Proctor test</li> <li>-Triaxial shear strength</li> <li>-California bearing capacity</li> <li>-Bearing capacity</li> <li>-North Dakota cone test</li> </ul>
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- Direct Shear Strength
- Consolidation Test
- Unconfined Compression
- Permeability Test
- Determination of Specific Gravity
- Determination of Moisture content
- Vane Shear Test
- Sieve Analysis
- Hydrometer Analysis
- Free Swell Test
- Field Density Test

Timber testing:

- Moisture content using moisture meter
- Moisture content using hot air oven method
- Specific gravity
- static bonding test
- Impact bending test
- Compression test
- Shear test
- Tension test
- Nail holding test
- Screw holding test
- Impact test
- Torsion test
- Determination of specification

Plyboard testing:

- Resistance to dry heat
- Fire resistance
- Glue shear strength
- Adhesion of plies
- Water resistance
- Nycological test
- Fibre diameter
- Friability
- Recovery after compression
- Incombustibility
- Moisture absorption
- Linear shrinkage
- Water vapour permanence
- Dimension

Field Testing of Soil:

- Standard Penetration
  - Dynamic Cone Penetration
  - Static Cone Penetration
  - Plate Load Test
  - Block Vibration Test
  - Electrical Resistivity
  - Field Vane Shear Test
- Determination of Fluxes modules of ceramics

Textile/Fabrics/wool/yarn	Any type of physical/mechanical test 1. Yarn 2. Fabrics, Garments & Other textile material
Metallographic Tests	Macrostructural Analysis Microstructural Analysis Estimation of grain size by Microscope Method Determination of Case Depth by Microscope Method Determination of Case Depth by Hardness Method Determination of Inclusion Rating Determination of Depth of Decarburised Layer Microscopic Measurement of Band Thickness Macrostrain Flow Test
Performance Test	Proof pressure test on pipes Proof pressure test on valves Aluminium milk cans Air compressor Air blower  Test on bicycle: -Frame -Pedal -Crank and chain -Wheels -Handle bar -Hub -Spoke  Test on Burners Test on Bib tap and stop tap Test on Ball valves Test on Centrifugal pumps Test on Commercial cooking range Test on domestic pressure cooker Test on Gas cylinders Proof load tests on chains Compression test for bridge bearings Load test on Draw bar hooks Load test on Laminated springs  Load test on Coil springs  Kg 0-100 Kg Above 100 Kg  Load test on Chain pulley block Below 10 tons 10 tons to 20 tons Above 20 tons Load test on Hand operated winch

	<p>Load test on Hydraulic jacks:  Proof load upto 100 tons  Proof load 100 to 150 tons  Proof load above 150 tons</p> <p>Load test on Screw jacks:  Upto 150 tons  Between 15 &amp; 30 tons  Above 30 tons</p> <p>Load test on Steel wire ropes:  Upto 1" dia  Between 1" &amp; 1 1/2 dia  Above 1 1/2 dia  Proof load test on electrically operated winch  Test on Hack saw blade  Test on Hurricane lanterns  Test on Hand sprayers</p> <p>Internal combustion engine:  0-5 HP  0-10 HP  Above 10 HP  Knock characteristic of fuel  Permanent magnetic chunk  Steel files  Spark plugs  Test on twist drill  Test sieves  Torque wrench  Water meters  Whip test on brake hose  Construction of brake hose  Tensile test for brake /fuel hose  Rubber sealing ring  Conveyor belt  Rubber welding hose  Surgical rubber gloves  V-belts  Cycle tubes  Speedometer cable Bicycle Front fork  Bicycle Rim  Friction &amp; Wear measurements in sliding wear by Pin-on Disc Machine method  Determination of metal /ceramic/polymer material resistance to scratching abrasion(dry sand rubber wheel test)</p> <p>Determination of material loss by air borne solid  Solid particle erosion test by particle impingement at low mass flux rate.</p> <p>Prototype transmission tower testing</p>
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	<p>Scaled down model transmission tower testing  Fatigue Testing of Bellows Chains, grids and weld joints  Proof Testing of components using Strain Gauges</p> <p>Industrial Air cleaner:  -Airflow Restriction and Pressure drop test  -Initial Efficiencies test  -Dust capacity and Accumulative Efficiency  -Precleaner Performance</p> <p>Diesel Fuel Filters:  -Resistance to flow  -Filtration capacity and contaminant Removal characteristics</p> <p>Lubricating oil Filters:  -Resistance to Flow  -Contaminant Removal characteristics</p> <p>Ultimate tensile strength on ACSR conductors  Surface condition test on ACSR conductors  Vibration recording of transmission line  Stress strain test on ACSR conductors  Sag test on ACSR conductors  24 hours mechanical tests on insulator string  Dynamic characteristic test for dampers, spacer dampers and other line hardware</p> <p>Mechanical tests (like movement test, clamp bolt torque tests, Assembly torque test, Tensile and Compression tests and clamp slip test) on spacer/spacer dampers.</p> <p>Long decrement test on Dampers, Spacers  Vibration test on connectors, relays etc.</p>
Simulated Tests	<p>Performance of steel parts at sub-zero temp  Performance of rubber parts at sub-zero temp.  Performance of IC Engine at higher altitude  Endurance test for starter motor  Endurance test for jacks  Performance and life test for oil seals</p>
Creep test	<p>Creep test  Life cycle test for AC pumps  Performance test of complete vehicle on chassis dynamometer  Endurance test for bonded rubber wheels</p>
Coal, coke & other solid fuel	Any type of physical/mechanical test
Leather	Any type of physical/mechanical test
Paints & surface coating	Any type of physical/mechanical test
Paper & pulp	Any type of physical/mechanical test
Petroleum products	Any type of physical/mechanical test

## 7.7 NDT Testing

Group	Sub-group
Eddy current testing	Conductivity variation measurement Detection of surface and sub surface defects Dimensional variations Irregularities in micro structures Variation in chemical composition
Emerging Areas testing (Acoustic & others)	Acoustic emissions Holography Infra-red applications Leakage flux techniques Microwave applications Neutron radiography Relative radiography
Leak test	Argon leak test Detection of leak pressure rise of pressure drop Halogen leak test Helium leak test Radio-isotope tracer leak test Ultrasonic leak test
Magnetic Particle Testing	Detection of sub surface flaws Detection of surface flaws
Penetrant Testing	Detection of surface flaws of materials with visible dye Detection of surface flaws of materials with fluorescent dye
Radiographical Testing	Fluoroscopy Detection of flaws with radio isotopes Detection of flaws with X-ray
Ultrasonic Testing	Corrosion survey Detection of internal flaws Detection of surface and sub surface flaws Thickness measurements

## 7.8 Optical & photometry Testing

Group	Sub-group
Colorimetry	Colour temperature Brightness temperature Chromaticity of light sources Colour of signals or surfaces Colour of pigments or paints Food colours Textile colours
Fibre optics	Fibre (core/clad) diameter and eccentricity Refractive index profile Mode field diameter (spot size) Numerical aperture Cut-off wavelength Bandwidth chromatic dispersion Attenuation Back scatter measurement Birefringence measurement

General tests of Optical instruments	Dimensional measurements Optical aberrations Numerical aperture Shutter speed Wavelength calibration Veiling glare Resolution M.T.F.
Lasers	Laser power Laser energy Angular divergence and beam spot size Output wavelength Coherence (Spatial,temporal and mutual) Polarisation Mode spectrum (including stability and reproducibility) Noise amplitude Noise Phase Modulation
Micrometrology	Dimensional measurements Optical aberrations Numerical aperture Shutter speed Wavelength Veiling glare
Ophthalmic lenses	Power spherical Power cylindrical Power prismatic Axis and centering Spectral transmission Photochromic glass colour building time Photochromic glass fading time
Optical components & systems	Flatness and parallelism Sphericity Prismatic angle Surface quality Aperture Field of view Focal length Optical aberration Resolving power Magnifying power MTF
Optical materials	Refractive index Material dispersion Material strain Scattering & Homogeneity Transmittance Reflectance Bubbles & seeds Birefringence
Photometry	Luminous intensity Intensity distribution from luminaires Illuminance and its distribution



	Luminance and its distribution Luminous output Life tests and performance of lamps
Photosensitive films, plates & detectors	Sensitivity/speed Emulsion thickness Granularity Resolution H & D curve (gamma) Spectral response Quantum efficiency Modulation transfer function Noise effective power
Polarimetry	Optical rotation Rotatory dispersion Absorption coefficient Phase change on reflection Stokes parameters
Radiometry	Radiant intensity Irradiance (total/spectral) Emittance (Spectral/total) Spectral reflectance Spectral transmittance Spectral absorptance
Thin film optics	Reflectance Transmittance Polarisation changes Bandwidth Hardness Scattering

## 7.9 Radiological Testing

Group	Sub-group
Radiation Monitors	Area survey instruments Fixed monitors Personnel monitoring dosimeters Control monitors Environmental radiation monitors Others
Radiation Sources	Diagnostic X-ray machines Medical X-ray scanners like CAT scanners Therapy X-ray machine Industrial X-ray machines Isotopic sources used in industrial gauges Isotopic sources used in medical brachytherapy Cobalt machines Caesium machines Medical accelerators Industrial accelerators Accelerators used in research Diffraction X-ray machines Dental X-ray machines X-ray machines used in consumer product testing

	X-ray machines for baggage checking Neutron generators Beam welding equipment
Radiological Equipment & nucleonic equipment	Medical gamma camera Industrial gamma radiography equipment Radiography camera Thickness gauges Gamma Switches Nucleonic weighing machines Smoke detectors containing sources Nucleonic level gauges Nucleonic moisture and density gauges

### 7.10 Thermal Testing

Group	Sub-group
Ablative properties	Decomposition (pyrolysis temperature) Ablation temperature Heat of pyrolysis Heat of ablation Insulation index Arrhenius kinetic constant
Calorific values	Calorific value of solid fuels Calorific value of liquid fuels Calorific value of gaseous fuels
Combustion properties	Heat of combustion Thermal stability -Time/temp rating Incombustibility Fuel burning properties
Heat flux	Heat flux
Latent heat	Latent heat of melting Latent heat of vapourisation
Radiation properties	Emissivity (Total hemispherical emittance and total normal emittance) Reflectivity. Absorptivity. Solar Absorptivity. Black Body Temperature.
Rate constant	Perseve
Specific heat	Specific heat of metals and alloys. Specific heat of non-metallic solids. Specific heat of liquids. Specific heat of gases and gaseous mixtures.
Thermal Conductivity	Thermal Conductivity of metals and alloys. Thermal Conductivity of composite, ceramics, refractories, plastics, etc. Thermal conductivity of honeycomb materials, foam, granular and fibrous insulations. Thermal conductivity of liquids. Thermal conductivity of gases and gaseous mixtures. Thermal conductivity of colloidal solutions & slurries.
Thermal	Thermal diffusivity of metals and alloys.

diffusivity	Thermal diffusivity of composite ceramics, refractories, plastics, etc. Thermal diffusivity of honeycomb, foam, granular and fibrous insulations. Thermal diffusivity of liquids. Thermal diffusivity of gases and gaseous mixtures. Thermal diffusivity of colloidal solutions and slurries.
Thermo-Mechanical Properties	Bulk modulus for liquids Bulk modulus for gases Coefficient of linear expansions/contractions

## 8.0 Scope of FDAS (Calibration Laboratories in the following fields).

- 8.1 Chemical
- 8.2 Electro-technical
- 8.3 Fluid Flow
- 8.4 Mechanical
- 8.5 Optical & Photometry
- 8.6 Radiological
- 8.7 Thermal
- 8.8 Medical Devices

## 9.0 Fields have been divided into groups.

### 9.1 Groups in Chemical Calibration

- 9.1.1 Calibration of equipment like;
  - pH meter
  - Conductivity meter
  - Total Dissolved Solids (TDS) meter
  - Turbidity meter
  - Dissolved Oxygen
  - Refractive Index
  - Salinity tester
  - Breath alcohol tester
  - Oxygen Reduction Potential (ORP) meter
  - Gas detector/analyzer
  - Stack emission analyzer
  - Flame Photometer
  - Elisa Reader

#### 9.1.2 Others

### 9.2 Groups in Electro-technical Calibration

- 9.2.1 Direct Current: Voltage, Current, Resistance, Resistance ratio and Power
- 9.2.2 Alternate current: Voltage, Current, Power & Energy, Phase angle & power factor, voltage & current ratio, resistance, inductance, capacitance, dissipation factor etc. up to 1 kHz.
- 9.2.3 Magnetic measurement: flux density, field strength etc.,
- 9.2.4 Electrical Equipments: CT, PT, Oscilloscope, CRO, W Bridge
- 9.2.5 Low frequency: Voltage, current, power, ratio and attenuation, resistance, capacitance and inductance, time and frequency, modulation index/distortion and noise audio power, sound pressure level and impedance related parameters including phase angle
- 9.2.6 High frequency
- 9.2.7 Special HF Measurements: EMI/EMC related parameters including field strength and power density etc.
- 9.2.8 Temperature Simulation (all thermocouples)
- 9.2.9 Others

### **9.3 Groups in Fluid Flow Calibration**

- 9.3.1 Flow rate by mass
- 9.3.2 Flow rate by volume
- 9.3.3 Quantity by mass
- 9.3.4 Quantity by volume
- 9.3.5 Velocity at a point for gases only
- 9.3.6 Mean velocity in the closed conduit as well as open channel for water and gases
- 9.3.7 Viscosity of gases and liquids

### **9.4 Groups in Mechanical Calibration**

#### 9.4.1 Dimension

##### Length standards

Wavelength/Optical frequency standard, line standards, measuring tapes, end standards, slip or block gauges, length bars, linear scale.

Instruments and gauges for measuring length

Angle gauges, circular scales, indexing tables, polygons, levels, sine bars, autocollimators, engineers' squares, cylindrical squares, angle plates, bevel protractors, sine centers, combination set, sine table, spirit level, electronic level, inclinometers.

Plug and ring screw gauges, snap gauges, thread diameter and pitch measuring instrument, profile gauges.

Surface plates, straight edges, parallels.

Standards and measuring instruments for surface finish.

Form deviations

Gears, test sieves, M/C tools

#### 9.4.2 Mass & Volume

Weights/Standards of mass

Balance or other weighing devices

Volumetric measures

#### 9.4.3 Density

Hydrometers

Density measuring instruments

Specific gravity

#### 9.4.4 Moisture

Moisture meters

Moisture balance

#### 9.4.5 Force

##### 9.4.5.1 Force

Proving devices

Force measuring devices.

Force Machines

##### 9.4.5.2 Hardness

Hardness testing machines, Brinell

Hardness testing machines, Vickers

Hardness testing machines, Rockwell

Hardness Standards Diamond and Ball Indenters

Microhardness, Knoop Hardness, Durometers

Leeb hardness and Rubber hardness shore A and D

#### 9.4.5.3 Impact

Izod impact testing machines  
Charpy impact testing machines

#### 9.4.5.4 Torque

Torque tester, torque wrench, torque measuring devices, Torque machines, torque generating devices.

#### 9.4.6 Pressure & Vacuum

Pressure  
Differential Pressure  
Vacuum  
Pressure Gauges, Dead weight tester, instruments, Barometer

#### 9.4.7 Ultrasonics & Vibration

Intensity  
Total power  
Vibrational amplitude  
Velocity  
Attenuation

#### 9.4.8 Acoustics

Pressure and power  
Vibration amplitude acceleration  
Attenuation  
Frequency  
Noise  
Velocity  
Others

#### 9.4.9 Speed & Acceleration

### **9.5 Groups in Optical & Photometry calibration**

#### 9.5.1 Photometry

Luminous flux  
Luminous intensity  
Luminance  
Illuminance

#### 9.5.2 Radiometry

Radiance  
Irradiance  
Emittance

#### 9.5.3 Spectro radiometry

Reflectance  
Transmittance  
wavelength

#### 9.5.4 Colorimetry/Chromometry

Color  
Color distribution

Color correlated temperature

9.5.5 Polarimetry

Polarization

9.5.6 Materials, Optical Components and Systems

Refractive index

Radius of curvature

Focal length

Flatness

Laser power

Fiber Optics Attenuation

**9.6 Groups in Radiological calibration**

9.6.1 Activity of Radionuclides

9.6.2 Yield of neutron sources

9.6.3 Thermal neutron flux density

9.6.4 Exposure Dose and Dose equivalent

**9.7 Groups in Thermal calibration**

9.7.1 Temperature

Contact Type

Non-Contact Type (IR/Optical)

9.7.2 Humidity

**9.8 Groups in Medical Devices calibration**

**9.8.1 Discharge Equipment/Devices**

Suction pump

Flow meter with humidifier

Pressure gauge of oxygen cylinder

BP apparatus

Nebulizer

Syringe pump

Infusion pump

Enteral feeding pump

CPAP

BiPAP

Boyles Apparatus

Anesthesia machine

Others

**9.8.2 Patient conditioning/Maintenance**

Incubator

Autoclave

Defibrillator

Ventilator

Electro surgical unit/Diathermy machine/Cautry machine

External pace maker

Electronic tourniquet

Dialysis machine

Heart lung machine

Patient warmer

OT Table  
Radiant warmer  
Irradiance meter  
Phototherapy unit  
Others

**9.8.3 Monitoring unit**

Patient monitors  
Apnea monitors  
Fetal monitor  
Therapeutic stimulator  
Weighing scale  
Hematology analyser  
Others

**9.8.4 Imaging/Plotters**

Trans illuminator light source  
EEG  
Fetal Doppler  
ECG  
X-Ray Diagnostic equipment  
Others

**10.0 Scope of FDAS (Medical Laboratories in the following fields)**

**10.1** Clinical Biochemistry

**10.2** Clinical Pathology

**10.3** Hematology and Immunohematology

**10.4** Microbiology and Serology

**10.5** Histopathology

**10.6** Cytopathology

**10.7** Genetics

**10.8** Nuclear Medicine (in-vitro tests only)

**11.0 Guide to make application for accreditation.**

**11.1** Applicants are advised to submit a hard copy of its application, lab's Management System Manual, and FDAS Check list-1 (FDAS 111/ FDAS112), with soft version of the same.

**11.2** Testing Laboratories operating in more than one field of testing are required to submit a single application by separating the details of the scope field-wise with respective details of Scope, Personnel and Equipment sequentially, for each field.

**11.3** Testing laboratories/CABs involved in product testing are mostly multi-disciplinary laboratories and are required to apply for each field they operate in the same application. As an example.

- Textile & Leather laboratories to apply for Chemical and Physical (Mechanical) testing.
- Metallurgical laboratories to apply for Chemical, Mechanical & NDT testing.
- Plastic laboratories to apply for Chemical, Mechanical, Optical, NDT testing etc.
- Building/Construction material laboratories to apply for Chemical, Mechanical, NDT testing etc.
- Environment, Pollution, Forensic, Environmental testing laboratories to apply for each field in which they operate.

- 11.4** Applicant laboratories are advised to seek accreditation for only those parameters for which resources and competence are available.
- 11.5** Calibration laboratories, when operating in more than one field of calibration, are to apply field wise, by defining scope of calibration.
- 11.6** Medical laboratories to apply for the field(s) they operate and defining scope of test.
- 11.7** Applicants are advised to read the relevant documents available at the website of FDAS, including its policy documents.
- 11.8** Applicant must ensure that accreditation requirements have been addressed prior to the commencement of assessment activities for accreditation of applied scope.

**Note:** Applicant laboratory not providing the required information till three months from the date of FDAS letter, would be treated as closed. However, it can be revived on request by paying half of the application fee, till one year from the date of FDAS letter.

## **12.0 Evaluation of competence**

### **Steps Involved in assessment of the competence of a laboratory.**

- i. On receipt of accreditation application, it is acknowledged.
- ii. As a policy FDAS does not do preliminary visit unless requested.
- iii. First time applicants are subjected to Initial assessment by an assessment team.

Determining laboratory's competence involves assessment by a team lead by Lead assessors and relevant expert assessors. Assessment involves examining documented management system for its compliance to ISO/IEC 17025/ ISO 15189, laboratory records to ensure its implementation, witnessing the tests/calibrations, interviewing the laboratory personnel, examination of laboratory's technical records from applied scope etc.

Where non-conformities are found, laboratory is given time (not more than 3-months) to take the required corrective action, for submission of the documentary evidence on corrective action taken, to the concern member of the assessment team, who take the decision about closer of the non-conformity and inform FDAS. Thereafter FDAS takes the decision for grant of accreditation based on assessment findings.

Initial accreditation is granted for two years, and accredited laboratories/CABs are subjected to onsite surveillance around the middle of the accreditation cycle of two years to verify their continued compliance with FDAS requirements. To ensure continuity in accreditation, CABs/Laboratories are advised to apply for re-assessment two months before the expiry of accreditation. (The accreditation cycle is two years).

Reassessed CABs/laboratories are subjected to desktop surveillance around the middle of the accreditation period of two years.

As per FDAS norms accreditation status would remain valid, till 2 months after the expiry of validity period of accreditation.

### **13.0 PT/ILC requirement:**

The minimum requirements for proficiency testing are given below.

- One PT/ILC activity from each applied field prior to gaining accreditation.
- One PT/ILC activity relating to each group of laboratory's scope of accreditation at least every four years.



## 14.0 FDAS Policy on Legal Entity\*

### The Policy of FDAS on Legal Entity is as follows.

- Establishing Legal Entity for an institution is the means to provide life to an institution which can sue & can be sued in a court of law, by an aggrieved party.
- The mechanism of achieving Legal Entity is available under umbrella of the Central Govt./ State Govts/quasi governments and through Govts, designated agencies like Registrar of companies, Registrar of Societies, and in case of Trusts by Tehsildar.
- The status of Legal Entity to CABs is achieved by getting the permission of governmental authorities for performing defined scope of activities and for laboratories it is defined in terms of scope tests and/or calibrations intended to be performed, besides others.
- Public Limited companies, Private Limited Companies, Corporations, NGOs registered with Society of Registrar and Trusts recognized by appropriate government authorities, come under the category that have acquired legal status.
- Proprietorship firms approved and registered with the appropriate Govt. Dept., for the conduct of defined activities are considered to have acquired legal status.
- Self-proclaimed/declared proprietorship or partnership firms without registration with appropriate authority are not considered of having acquired legal status.
- Laboratories that are part of large organizations, which have a legal identity, inherit the legal status of the parent organization.
- Government laboratories inherent the legal entity and acceptable to FDAS.

Note 1: Opening of bank account or paying taxes has nothing to do with legal entity.

Note-2: Legal entity of a laboratory makes it legally responsible for its laboratory activities and its accreditation status ensures the same to its users globally. This clause of the standard safeguards the interest of the users of the accredited laboratories.

Note-3: Laboratories registered by MSME is the recognition for its category as per MSME rules. MSME recognition does not provide legal status.

### \*Definition of Legal Entity:

The term Legal Entity refers to any organization which is constituted as per the regulations and laws under the Govt. of India. A Legal Entity could be an individual, group of persons, or organization that has legal rights and obligation related to the agreements, contracts, payments, penalties etc.

## 15.0 Useful information to Laboratories:

Accredited laboratories/CABs are entitled to use FDAS symbol subject to compliance of the “Terms and conditions for use of FDAS symbol by laboratories” and FDAS symbol can be obtained from FDAS by the accredited CABs/Laboratories.

### 15.1 Initial Assessment

The term Initial assessment is used for first time applicant.

### 15.2 Reassessment

Already accredited laboratories are required to apply for reassessment.

### 15.3 Validity of accreditation

Accreditation given is valid for a period of two years.

### 15.4 Expansion in scope of accreditation:

15.4.1 When the Application for expansion of the scope of accreditation is from same

field/group, FDAS seeks the evidence on resources and competence, to determine, if the site visit is required. If the documentary evidence found to be enough, the accreditation is possible without organizing lab visit.

**Example: A mass, pressure, temperature calibration lab can expand its range, by procuring required resources.**

15.4.2 Expansion of scope of accreditation from new field/ group would require on site assessment.

15.4.3 All midterm accreditations would be co-terminus, with main accreditation.

## **15.5 Duties & Rights of FDAS**

### **15.5.2 Duties of FDAS:**

- i. Permitting lab's operations from new premises, subject to the compliance of its shifting norms.
- ii. to accept the complaints from laboratories/CABs and public and to communicate the decision in time.
- iii. to accept appeals from laboratories/CABs and communicate the decision in time.
- iv. to take feedback from stakeholders when criteria is intended to be revised.
- v. to give enough time when there is criteria-change for its implementation.
- vi. provide accreditation services without discrimination and maintain impartiality.
- vii. to protect confidentiality
- viii. to maintain MRA with APAC/ ILAC.

### **15.5.3 Rights of FDAS**

- i. Terminate, withdraw, suspend accreditation granted to laboratories/CABs, on violation of terms and conditions.
- ii. Revise the norms of accreditation fee and other related financial aspects from time to time.

## **15.6 FDAS Norms for the reproduction of FDAS symbol & FDAS symbol combined ILAC MRA mark**

It is not mandatory for accredited laboratories to use the FDAS symbol & FDAS symbol combined ILAC MRA mark, but laboratories using must comply to FDAS 132 Terms and conditions for use of FDAS symbol & FDAS symbol combined ILAC MRA mark by laboratories.

## **16.0 Conditions to be met by CABs when shifting of the location of CAB is involved.**

**16.1** The laboratory should inform FDAS well in advance, before shifting the location of CAB with the following information.

- Date(s) of shifting.
- Address of new location with documentary evidence for the right to use the premises.
- With applicable fee.

**16.2** After shifting to new location, Laboratory should.

**16.2.1** Ensure re-calibration is completed where it is likely to be disturbed the traceability of measuring device/equipment in transportation, by getting the calibration of equipment or by verification through CRMs/BNDs\*

**16.2.2** Ensure that environmental conditions are met as per requirement.

**Note:** Documentary evidence should suffice (including Documentary evidence to display right to use the new premises), but in certain cases a visit by FDAS may be required. In view of this, interested CAB should remain in touch with FDAS, so that FDAS can act in time.

**16.3** After completion of shifting, FDAS is to be informed about the date from which it intends to

commence its commercial services for its customers for the approval of FDAS.

FDAS approval involves issue of revised accreditation certificate, scope to indicate change of address.

## **17.0 ISO/IEC 17025:2017 & Interpretation of following clauses:**

### **17.1 Personnel Competence**

#### **clauses 6.2.2:**

“The laboratory shall document the competence requirements for each function influencing the results of laboratory activities, including requirements for education, qualification, training, technical knowledge, skills and experience”.

**Explanation:** Since FDAS is not defining competence norms for laboratory’s personnel, laboratory to define the competence for each level of function in terms of education, qualification, training, technical knowledge, skills, and experience.

FDAS determines adequacy of the competence norms defined by laboratory.

**Note:** FDAS does not approve the authorized signatory to the test or calibration certificates. It is for the laboratories to authorize its personnel to release the test or calibration certificate based on its own competence norms.

### **17.2 Training**

#### **Clause (6.2.5 c) “Training of Personnel”**

FDAS gives due recognition to in-house trainings given by competent laboratory personnel.

### **17.3 Equipment**

#### **clauses 6.4.2:**

When the laboratory uses equipment outside its permanent control, it shall ensure that the requirements for equipment of this document are met.

#### **Applicability of the above clause:**

In those situations, where Lab’s own equipment has gone out of order, in the middle of testing and customer’s need must be met, laboratory can use equipment outside its permanent center, subject to compliance of ISO/IEC 17025: 2017, Example: weighing balance.

### **17.4 Validity of Results:**

#### **Applicability of Clause 7.7.1:**

Laboratories to comply with the requirement of ensuring validity of results from the options that are listed option a) to k), of the clause and it is not necessary to comply to all. i.e., a) to k).

### **18.0 Complaints**

Laboratories & its stakeholders are free to lodge a complaint to FDAS on any of their concerns, FDAS would process the complaint as per its procedure. Procedure for Complaints is available on the website of FDAS. Complainants are advised to address their complaint to the Quality Manager, FDAS.

### **19.0 Appeals**

Laboratories have the right to Appeal against the adverse accreditation decision of FDAS and also its

decision on complaints made to it, and such appeals are handled as per FDAS procedure for handling appeals, which can be seen at FDAS website. Appellants are advised to send their appeals to Quality Manager, FDAS.

## **20.0 Steps Involved in getting Accreditation:**

### **Stage I: Preparing the laboratory for Accreditation:**

Laboratory management to nominate a person to coordinate activities related to accreditation including the following.

- Determines the gaps in the existing documented management system against the requirement of ISO/IEC 17025 or ISO 15189, using applicable checklist - 1, (available at [www.fdasindia.org](http://www.fdasindia.org)) & bridge the gaps if any.
- It is mandatory to have documented management system as per the requirement of ISO/IEC 17025/ISO 15189, which can be documented by the laboratory in its manual (Quality manual or Laboratory manual), procedures, Instructions, log-sheets etc.

### **Stage II: Submission of application to FDAS**

When documented management system complies to the requirement (ISO/IEC 17025 or ISO 15189), submit application for accreditation along with

- Applicable fee
- Checklist – 1(ISO/IEC 17025)- FDAS 111/Checklist-1 (ISO-15189) – FDAS 112
- Management System Manual
- FDAS – 131 (Terms & conditions of FDAS to maintain accreditation)
- FDAS – 132 (Terms and conditions for use of FDAS symbol L& FDAS symbol combined ILAC MRA mark by laboratories)
- FDAS – 138 (Legally enforceable agreement between FDAS and its accredited laboratories)

### **Stage III: Initial Assessment**

First time applicants are subjected to initial assessment, however if applicant request for preliminary visit, FDAS is open to it, to determine the preparedness of the laboratory, through LA, & as non-consultant activity.

- i. On agreed dates initial assessment is organized by Dealing Officer by constituting a team consisting of lead assessor and technical assessor(s).
- ii. Assessment team lead by LA, conducts the assessment which involves examination of documents, work records, witnessing the test/calibration, interviewing of personnel etc. Lab is informed about the corrective action required (CAR) to be taken by the laboratory in agreed time.
- iii. LA sends team's recommendation to the concerned dealing officer, as per the assessment format of FDAS, pending the completion of corrective action required, if any.
- iv. On receipt of the details of the corrective action taken by the laboratory along with documentary evidence, the concerned assessor/LA, would forward to the dealing officer stating that required corrective action (CAR) has been taken and NC(s) is/are being removed/withdrawn.
- v. After examination of the assessment report, and action taken by the lab for corrective action required, dealing officer submits his recommendation for grant of accreditation to

Director.

- vi. Director asks QM to examine the compliance to the procedures involved and based on the report from QM, Director takes appropriate action for grant of accreditation to the applicant laboratory, which in turn is communicated to the laboratory through accreditation certificate with the recommended scope of accreditation.

Note - 1: Assessors are not empowered to change the applied scope of accreditation while on-site except on technical matters.

Note-2 Assessors are empowered to give a time of one month for required corrective action, beyond which the dealing officer is to be contacted.

Note-3: Laboratories are free to appeal against the findings of the assessment.

## 21.0 Financial obligations on the part of CABs

### 21.1 Fee Structure: Testing Laboratories in India

S.No	Testing Laboratory	Fees (Rs)
Application Fee		
1	Biological Lab for up to 2 groups (Refer 7.1 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
2	Chemical Lab for up to 2 groups (Refer 7.2 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
3	Electrical Lab for up to 2 groups (Refer 7.3 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
4	Electronics Lab for up to 2 products (Refer 7.4 in FDAS 100) Additional Products	20000.00 for up to two products 10000.00 per product
5	Fluid Flow Lab for up to 2 groups (Refer 7.5 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
6	Mechanical Lab for up to 2 groups (Refer 7.6 in FDAS 100) Additional groups	20000.00 for up to two groups 10000.00 per group
7	NDT Lab for up to 2 groups (Refer 7.7 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
8	Optical & Photometry Lab for up to 2 groups (Refer 7.8 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
9	Radiological Lab for up to 2 groups (Refer 7.9 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
10	Thermal Lab for up to 2 groups (Refer 7.10 in FDAS 100) Additional Group	20000.00 for up to two groups 10000.00 per group
Annual Accreditation Fee		20,000.00/Field
Surveillance/Desktop Fee		10000.00
Expansion of Scope fee		Application 10,000.00

(in already accredited field)	5000.00 per group
Assessment Charges	a. Actual expenditure incurred by assessment team on account of their travel, boarding and lodging.  b. The honorarium @ Rs.5000.00 per day for Lead Assessor (LA) & Rs.4000.00 per day to each Assessor/ Technical assessor (TA) T.
Any Change in the name and /Premises/Legal identity	5,000.00

**In addition to the above-mentioned fee, GST @18% or as applicable from time to time to be paid.**

### 21.2 Fee Structure: Testing Laboratories in SAARC Countries

S.No	Testing Laboratory	Fees (USD.)
Application Fee		
1	Biological Lab for up to 4 groups (Refer 7.1 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
2	Chemical Lab for up to 4 groups (Refer 7.2 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
3	Electrical Lab for up to 4 groups (Refer 7.3 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
4	Electronics Lab for up to 4 products (Refer 7.4 in FDAS 100)	500.00 for up to four products
	Additional Products	150.00 per product
5	Fluid Flow Lab for up to 4 groups (Refer 7.5 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
6	Mechanical Lab for up to 4 groups (Refer 7.6 in FDAS 100)	500.00 for up to four groups
	Additional groups	150.00 per group
7	NDT Lab for up to 4 groups (Refer 7.7 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
8	Optical & Photometry Lab for up to 4 groups (Refer 7.8 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
9	Radiological Lab for up to 4 groups (Refer 7.9 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
10	Thermal Lab for up to 4 groups (Refer 7.10 in FDAS 100)	500.00 for up to four groups
	Additional Group	150.00 per group
Annual Accreditation Fee.		300.00/Field
Surveillance/Desktop Fee.		200.00
Expansion of Scope fee. (in already accredited field)		Application 125.00 75.00 per group
Assessment Charges:		Actual expenditure incurred by assessment team on account of

	Visa, travel, boarding and lodging and the honorarium @ 100.00 USD/Man day /Assessor to be paid by lab
Any Change in the name and /Premises/Legal identity	70.00

### 21.3 Fee Structure – Testing Laboratories in Other countries.

S.No	Testing Laboratory	Fees (USD)
Application Fee		
1	Biological Lab for up to 4 groups (Refer 7.1 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
2	Chemical Lab for up to 4 groups (Refer 7.2 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
3	Electrical Lab for up to 4 groups (Refer 7.3 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
4	Electronics Lab for up to 4 products (Refer 7.4 in FDAS 100) Additional Products	700.00 for up to four products 200.00 per products
5	Fluid Flow Lab for up to 4 groups (Refer 7.5 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
6	Mechanical Lab for up to 4 groups (Refer 7.6 in FDAS 100) Additional groups	700.00 for up to four groups 200.00 per group
7	NDT Lab for up to 4 groups (Refer 7.7 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
8	Optical & Photometry Lab for up to 4 groups (Refer 7.8 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
9	Radiological Lab for up to 4 groups (Refer 7.9 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
10	Thermal Lab for up to 4 groups (Refer 7.10 in FDAS 100) Additional Group	700.00 for up to four groups 200.00 per group
Annual Accreditation Fee.		500.00/Field
Surveillance/Desktop Fee.		300.00
Expansion of Scope fee. (in already accredited field)		Application 300.00 200.00 per group
Assessment Charges:		Actual expenditure incurred by assessment team on account of visa, travel, boarding, Lodging and the honorarium @ 350.00 USD/Man Day/Assessor to be paid by lab
Any Change in the name and /Premises/Legal identity		100.00

#### 21.4 Fee Structure: Calibration Laboratories in India

S.No	Calibration Laboratory	Fees (Rs.)
Application Fee		
1	Chemical (all parameters)	40000/-
2	Electro-Technical (all parameters)	25000/-
3	Fluid Flow (all parameters)	20000/-
4	Mechanical – for up to 2 groups (Refer 9.4 in FDAS 100)	20000/-
	Additional groups	5000/- per group
5	Optical & Photometry (all parameters)	20000/-
6	Radiological (all parameters)	20000/-
7	Thermal (all parameters)	20000/-
8	Medical Devices – for up to 2 groups	40,000/-
	Additional groups	20,000/- per group
Annual Accreditation Fee		20,000.00/Field
Surveillance/Desktop Fee		10000.00
Expansion of Scope fee		
Addition of new groups (in already accredited field)		10,000.00/up to 2 groups
Enhancement of range in existing accredited groups/field		5000.00/per group
Assessment Charges:		a. Actual expenditure incurred by assessment team on account of their travel, boarding and lodging. b. The honorarium @ Rs.5000.00 per day for Lead Assessor (LA) & Rs.4000.00 per day to each Assessor/ Technical assessor (TA).
Any Change in the name and /Premises/Legal identity		5,000.00

In addition to the above-mentioned fee, GST @18% or as applicable from time to time to be paid.

#### 21.5 Fee Structure: Calibration Laboratories in SAARC Countries

S.No	Calibration Laboratory	Fee (USD.)
Application Fee		
1	Chemical (all parameters)	500.00
2	Electro-Technical (all parameters)	400.00
3	Fluid Flow (all parameters)	300.00
4	Mechanical – for upto 4 groups (Refer 9.4 in FDAS 100)	500.00
	Additional groups	100 per group
5	Optical & Photometry (all parameters)	300.00
6	Radiological (all parameters)	300.00
7	Thermal (all parameters)	300.00
8	Medical Devices – for up to 2 groups	500.00
	Additional groups	250.00 per group
Annual Accreditation Fee.		300.00/Field
Surveillance/Desktop Fee.		150.00
Expansion of Scope fee		
Addition of new groups (in already accredited field)		100.00 up to 2 groups
Enhancement of range in existing accredited groups/field		100.00/per group



**21.6 Fee Structure: Calibration Laboratories in Other countries.**

S.No	Calibration Laboratory	Fee (USD)
Application Fee		
1	Chemical (all parameters)	800.00
2	Electro-Technical (all parameters)	800.00
3	Fluid Flow (all parameters)	800.00
4	Mechanical – for upto 4 groups (Refer 9.4 in FDAS 100) Additional Group	800.00 200.00 per group
5	Optical & Photometry (all parameters)	800.00
6	Radiological (all parameters)	800.00
7	Thermal (all parameters)	800.00
8	Medical Devices – for up to 2 groups Additional groups	800.00 400.00 per group
Annual Accreditation Fee		500.00/Field
Surveillance/Desktop Fee		300.00
Expansion of Scope fee		
Addition of new groups (in already accredited field)		400.00/up to 2 groups
Enhancement of range in existing accredited groups/field		200.00/per group
Assessment Charges		Actual expenditure incurred by assessment team on account of their visa, travel, boarding, Lodging and the honorarium @ 350.00 USD/Man Day/Assessor to be paid by lab
<b>Any Change in the name and /Premises/Legal identity</b>		100.00

**21.7 Fee Structure for Medical Laboratory**

Medical Laboratory	Fee (Rs.)
<b>Application Fee</b>	20,000.00
<b>Expansion of Scope Fee</b>	20,000.00
<b>Annual Accreditation Fees</b>	10,000.00
<b>Surveillance Fees</b>	10,000.00
<b>Assessment Charges</b>	Actual expenditure incurred by assessment team on account of their travel, boarding and lodging. The honorarium @ Rs.5000.00 per day for Lead Assessor (LA) & Rs.4000.00 per day to each Assessor/Technical assessor (TA) + applicable GST.
<b>Any Change in the name and /Premises/Legal identity</b>	5,000.00

Note: 1. Assessment team to be provided single seated air-conditioned room in a hotel/ guest house.

Note: 2. Laboratories are advised to provide return air ticket, local travel and hospitality.

Note: 3. Where direct air connectivity is not available, provide 2<sup>nd</sup> AC return-rail ticket.

Note: 4. Invoice for assessor's honorarium would be raised/sent after completion of assessment.

Note: 5. Accreditation certificate will be issued only after clearance of all dues.

Note: 6 Payments in the form of Crossed Cheque/Demand Draft are to be made in favor of  
**“Federation for Development of Accreditation Services” payable at Gurgaon (OR)**

**NEFT/RTGS to the following A/C**

Name of the A/C	Federation for Development of Accreditation Services
Name of the Bank & Address	Union Bank of India, G/ 6 A, Bestech Square, Sector 56 Gurgaon (Haryana) 122002
A/C No.	579201010050690
Type of A/C	Current
IFSC Code	UBIN057927
MICR Code	110026093

**22.0 Contact Details:**

**Secretariat:** Federation for Development of Accreditation Services (FDAS)  
118-119, First Floor, Sushant Tower, Sector 56  
Gurgaon- 122011, Haryana, India

**Phone** +91-124- 2570004  
**Mob** +91-9452206485, 8738875300  
**E mail:** [info@fdasindia.org](mailto:info@fdasindia.org), [fdasindia@hotmail.com](mailto:fdasindia@hotmail.com)

**PAN No:** AAAAF7420L  
**GST No:** 06AAAAF7420L1ZS  
**Website:** [www.fdasindia.org](http://www.fdasindia.org)

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## FAMILIARIZATION WITH ACCREDITATION PROCESS

