ACCREDITATION SCHEME FOR LABORATORIES

Technical Note PROF-001
Policies on Proficiency Testing

Technical Note PROF-001, 6 January 2026
The SAC Accreditation Programme is managed by Enterprise Singapore

0 Introduction

0.1 This document presents the SAC requirements on participation in proficiency testing (PT) programmes for its accredited laboratories. These policies on PT pertain to the following:

- participation
- selection of PT programmes for use
- performance
- confidentiality
- fees

1 Participation

1.1 Participation in PT programmes is mandatory, as part of the requirements for accreditation.

For applicant laboratories, they shall participate in at least one satisfactory PT programme where such programme is available, and review the results prior to gaining accreditation. This requirement also applies to all applications by branch laboratories, and to existing laboratories applying for extension in scope in a different area.

All accredited laboratories, are required to participate in PT programmes, with minimum participation frequency according to the table below, over the validity of the certificate when available. Laboratories are encouraged to participate in more than one programme.

Field of testing/ calibration	**Minimum participation frequency in PT programmes per area[1]**
Chemical & Biological	1 per area over 2 years
Environmental	1 per area over 2 years
Calibration & Measurement	1 per area over 2 years
Mechanical	1 per area over 2 years
Civil Engineering	1 per area over 4 years
Electrical	1 per area over 4 years; minimum 2 proficiency testing programmes over the validity of the certificate
Non Destructive	1 per area over 4 years
Information Technology	1 per area over 4 years
Medical	1 per analyte or test every year
Medical Imaging[2]	-

[1] Refer to Appendix 1 for classification of areas for respective fields
[2] PT is not relevant for Medical Imaging

1.2 Where no programme is available for the particular field of testing or calibration in the scope of accreditation, the laboratory shall participate in inter-laboratory comparison with at least 1 other laboratory.

1.3 In areas of testing and calibration for which suitable PT or inter-laboratory comparison does not exist or is not practical, the laboratory shall propose and use suitable alternative means by which performance can be assessed and monitored. During each assessment, the Team Leader shall check and review these alternative means as part of the laboratory's planned PT and/or related activities.

1.4 The laboratory shall participate in PT programmes suitable for the testing/calibration areas and range, where possible. In particular, they shall test/calibrate using routine methods that they are accredited for. They must also perform the methods as in accordance with their usual practice so that the PT portrays an accurate snapshot of the quality of their performance. The laboratories shall also have a mechanism to vary the participation of all the staff (where applicable) over a period of time (routinely 4 years) and each staff shall be monitored by a quality assurance activity over this period.

1.5 All laboratories are required to prepare a PT participation plan. The plan shall be regularly reviewed in response to changes in staffing, methodology, instrumentation, scope etc. During the annual assessment, SAC shall review the plan and check for implementation, with evidence of participation and review of performance in each one of them. During each renewal assessment, the laboratory shall provide evidence to the assessment team that it has participated in PT programmes in accordance with the requirements stated in Clause 1.1.

1.6 A laboratory that refuses to participate in mandatory programmes without valid reasons may jeopardise the accreditation status of the laboratory. Such refusal may result in the suspension of the laboratory's accreditation.

2. Selection of PT Programmes for Use

2.1 Each laboratory shall participate in recognised programmes and inform SAC of its participation. The laboratory is responsible to select PT programmes based on their suitability and relevance to their scope of accreditation. The laboratory may select programme(s) from the database of accredited PT providers in the Asia-Pacific region from the Asia Pacific Accreditation Cooperation (APAC) website. The database is not exhaustive and is constantly revised to include new PT providers. ILAC has endorsed the use of European Information System on Proficiency Testing Schemes (EPTIS) database for use by laboratories. This database may be accessed from the EPTIS website.

2.2 A laboratory may propose to participate in a programme outside the prescribed lists and shall ensure that the programme meets its needs. The programme should preferably be offered by an accredited PT provider that has been accredited under ISO/IEC 17043: Conformity Assessment – General Requirements for Proficiency Testing.

2.3 Whenever necessary SAC reserves the right to assign to the laboratory specific programme(s) that is/are relevant. Participation in such programmes is compulsory because the programme is identified and selected for the laboratory based on various reasons as deemed suitable by SAC.

3. Performance

3.1 The laboratory is required to review their performance and keep the results of the PT programmes that it has participated. The criterion for satisfactory performance is typically z-score in the range of $-3.0 < \text{z-score} < 3.0$, or E_n ratio in the range of $-1.0 < E_n \text{ ratio} < 1.0$. Any result outside of either of these ranges is considered an outlier. For interlaboratory comparison, other statistical methods in ISO 13528 can be referred to.

3.2 When results of programmes reveal outliers, the laboratory is required to promptly conduct an investigation to review its technical competence and quality system. The laboratory shall take corrective actions where necessary. The laboratory shall participate in the next available proficiency programme for every outlier that has been noted. This will ensure that corrective actions undertaken are satisfactory.

3.3 SAC will review the PT performance and investigation of outliers during the annual assessments.

3.4 If investigation reveals any potential major problems in the quality or technical system, it is the laboratory's obligation to inform SAC within one month of receiving the results of the findings of its investigation and the corrective actions taken where applicable. SAC shall review the laboratory's response and either:

a) accepts that the problem(s) has/have been resolved

OR

b) takes further action such as:
   i) prescribing laboratory to further participate in PT
   ii) undertaking a partial or full reassessment of the laboratory
   iii) suspending all or part of the laboratory's accreditation

3.5 Suspension by SAC of all or part of the laboratory's accreditation shall only be taken after further and thorough investigation of the laboratory reveals major problems, occurring during a portion of or its entire accreditation period. Poor or inadequate performance in one programme alone usually does not warrant the suspension of the laboratory's accreditation, as long as the laboratory proves that effective corrective actions are taken.

4. Confidentiality

4.1 All information pertaining to laboratory accreditation activities and PT

programmes shall be dealt with confidentially. Only SAC assessors and staff officers involved in the assessment visits and the Council Committee for Laboratory have access to information of laboratories' activities. All parties concerned are fully aware of the confidentiality of information. Their commitment to confidentiality is sealed by the deeds of undertaking that they sign.

4.2 In order to maintain records of an individual laboratory's performance throughout its period of accreditation, SAC may request a copy of the report of the PT programme that the laboratory has participated.

5. Fees

5.1 All PT programmes attract a fee unless otherwise stated. The fees are borne by the participating laboratories.

5.2 Fees for programmes conducted by external organisations vary accordingly. Laboratories shall pay the fees directly to the organisers.

Appendix 1

Classification of Areas for Testing & Calibration Fields

Chemical & Biological	Civil Engineering	Electrical	Calibration & Measurement	Mechanical	Non-Destructive	Medical	Environmental	Information Technology
Food and Beverages (Chemistry)	Soil & Rock	Electrical/ Electronic Components	Pressure	Metal/Metal Products	Ultrasonic (Conventional)	Biochemical Genetics	Water	Cybersecurity
Microbiology	Aggregate	Environmental & Reliability	Force	Safety Products	Ultrasonic (Phased Array)	Clinical Chemistry	Trade Effluent	IT Security
Paints & Coatings	Concrete	EMC / Power Quality / Tele-communication	Mass	Textile	Radiographic (Film)	Cytogenetics	Waste/ Soil	Information Technology
Building Materials	Building Materials	Household Appliances	Dimensional	Rubber/ Polymers	Radiographic (Digital)	Cytology	Air	Gaming Testing
Pharmaceuticals & Health Products	Pile Testing	AV Products	Temperature (Contact Type)	Building Materials	Magnetic Particle	Genomics and Genetics Testing	Microbiological Tests	
Chemicals	Premix/ Bitumen	Medical Equipment/ Lab Equipment	Temperature (Non-Contact Type)	Fire Testing/ Product	Penetrant	Haematology	Noise	
Metals & Alloys	Cement	Power Equipment	Temperature (Humidity)	Industrial Products	Eddy Current	Histopathology	Industrial Hygiene	
Polymeric Materials	Concrete NDT	Protection Equipment	Electrical (Direct Current / Low Frequency)	Pipes & Fittings		Immunopathology	Radioactivity measurement in air, soil and water	
Biology and Biotechnology		Solar	Electrical (Radio Frequency)	Sanitary Ware		Microbiology		
Oils for Industrial Purposes		Wiring & Accessories Lighting/ Cable	Optical	Packaging		Molecular Pathology		
Product Safety (Chemistry)		Electrical Meter				Transfusion Medicine		
Agricultural & Veterinary Sciences								

Note: The above classification of areas will be subjected to periodic review by the respective Technical Committees.