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Development and operation of laboratory proficiency testing

Withholding

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Foreword

This document was drawn up by the ISO Committee on certification, ISO/CERTICO, in response to a request arising from the International laboratory accreditation conference (ILAC 82) held in Tokyo in October 1982. It was approved by the IEC Council in July 1984 and by the ISO Council in August 1984.

Withdrawn



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Development and operation of laboratory proficiency testing

Preamble

Proficiency testing is the use of results generated in interlaboratory test comparisons for the purpose of assessing the technical competence of participating testing laboratories. Other purposes may be served by interlaboratory test comparisons, such as the determination of the precision of test methods described in ISO 5725, *Precision of test methods – Determination of repeatability and reproducibility by inter-laboratory tests*, but these are outside the scope of this Guide.

Bodies assessing the technical competence of testing laboratories, such as accrediting bodies and certification bodies, use the results of proficiency testing in their assessment of technical competence to varying extents in their evaluation procedures depending on their particular policies. The Guide draws the important distinction between assessment of technical competence based solely on proficiency testing and assessment against pre-determined requirements such as those specified in ISO/IEC Guide 25, *General requirements for the technical competence of testing laboratories*, noting the limitations of assessments based on proficiency testing alone.

Attention is drawn to the need to distinguish between bodies assessing the technical competence of testing laboratories, which may organize and/or use proficiency testing among other assessment criteria and bodies which merely organize interlaboratory test comparisons. This Guide is directed towards the former, although factors to be taken into account in the organization of interlaboratory comparisons generally are indicated and a bibliography of some pertinent references is annexed to the Guide.

0 Introduction

0.1 Interlaboratory test comparisons on presumably “identical materials” do not, in general, yield identical results, due to many different factors referred to in ISO 5725.

0.2 The purposes for which interlaboratory test comparisons are undertaken may include

- a) checking overall laboratory testing performance;
- b) checking individual testing performance of laboratory staff;
- c) establishing the effectiveness of a test method;
- d) determining one or more characteristics of a material or product to a particular degree of accuracy.

Proficiency testing is the use of interlaboratory test comparisons for purpose (a) only.

0.3 Most bodies assessing the technical competence of testing laboratories require or expect satisfactory participation in proficiency testing as significant evidence of a testing laboratory’s ability to produce reliable test results except where proficiency testing is inappropriate.

However, it is emphasised that a major distinction exists between :

- a) the evaluation of the competence of a testing laboratory by the assessment of its total operation against pre-determined requirements, and
- b) the examination of the results of a testing laboratory’s participation in proficiency testing which may only be considered as giving information about the technical competence of the testing laboratory at the particular point (or points) in time under the specific conditions of the test (or tests) involved in the proficiency testing.

1 Scope and field of application

The object of this Guide is

- a) to assist in the selection and organization of interlaboratory test comparisons for proficiency testing;
- b) to describe the factors which should be taken into account in proficiency testing;
- c) to describe how bodies assessing the technical competence of testing laboratories may use proficiency testing.

This Guide is intended for use by governmental or non-governmental bodies such as accrediting bodies and certification bodies, assessing the technical competence of testing laboratories. It may also be useful to assist testing laboratories in self-evaluation, but recognizes that proficiency testing is only one of a number of mechanisms which can contribute to the establishment of mutual confidence between different testing laboratories.

The Guide does not give operational details for interlaboratory test comparisons. A bibliography of some pertinent references is annexed to the Guide but is not exhaustive.

2 References

ISO 5725, *Precision of test methods — Determination of repeatability and reproducibility by inter-laboratory tests*.

ISO Guide 2, *General terms and their definitions concerning standardization, certification and testing laboratory accreditation*.

ISO/IEC Guide 25, *General requirements for the technical competence of testing laboratories*.