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# TECHNICAL REPORT

## Guidance on how to conduct round robin tests for household and similar electrical appliances

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## FOREWORD

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IEC TR 62970, which is a Technical Report, has been prepared by IEC technical committee 59: Performance of household and similar electrical appliances.

This Technical Report is based on EN TR 50619:2014.

The text of this Technical Report is based on the following documents:

| Enquiry draft | Report on voting |
|---|---|
| 59/627/DTR | 59/652/RVC |

Full information on the voting for the approval of this Technical Report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

# INTRODUCTION

It is the responsibility of each standardization committee testing household and similar electrical appliances to establish the repeatability and reproducibility of the measurement standards developed.

Results from inter-laboratory comparisons are important for

a) identification of interlaboratory differences;

b) establishment of the effectiveness and comparability of test or measurement methods;

c) validation of uncertainties;

d) evaluation of the performance of laboratories for specific tests or measurements and monitoring laboratories' continuing performance;

e) identification of problems in laboratories and initiation of actions for improvement which, for example, may be related to inadequate test or measurement procedures, effectiveness of staff training and supervision, or calibration of equipment; and

f) education of participating laboratories based on the outcomes of such comparisons.

The need for ongoing confidence in laboratory performance is not only essential for laboratories and their contractors but also for other interested parties, such as regulators, laboratory accreditation bodies and other organizations that specify requirements for laboratories. ISO/IEC 17011 requires accreditation bodies to take account of laboratories' participation and performance in proficiency testing.

In this respect, round robin testing was widely made in the past by IEC TC 59 for the development of measurement procedures for the purpose of EU regulatory measures on Labelling and Ecodesign. Round robin test results have been widely taken into account in the establishment of regulations, in defining tolerance levels for verification of declared values and/or limits.

This document is intended to provide a consistent basis for performing round robin testing. It gives guidance to all interested parties to determine the competence among each other. It provides common ground for reliable statistical data (repeatability and reproducibility levels, etc.) as needed for regulation purposes (like for Labelling and Ecodesign).

# GUIDANCE ON HOW TO CONDUCT ROUND ROBIN TESTS FOR HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

## 1 Scope

This document provides guidance for carrying out round robin tests (RRT) and hence for the determination of levels of repeatability (intra-laboratory variability) and reproducibility (inter-laboratory variability) for household and similar electrical appliances.

This document can also be used to verify the measurement methods, to improve the measurement method, and to qualify laboratories.

It is not applicable for the determination of production variation for a particular product.

General advice on proficiency testing of laboratories is given in ISO/IEC 17043. This document can be used in addition to ISO/IEC 17043.

NOTE The repeatability and reproducibility levels are important factors for the establishment of uncertainty margins of the measurement methods and for the definition of tolerance levels in verification schemes.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17043:2010, *Conformity assessment – General requirements for proficiency testing*

IEC TR 61923, *Household electrical appliances – Method of measuring performance – Assessment of repeatability and reproducibility*