

საქართველოს სტანდარტი

გაზომვის მეთოდების და შედეგების სიზუსტე (სისწორე და პრეციზიულობა)
ნაწილი 4: საბაზისო მეთოდი სისწორის სტანდარტული გაზომვის მეთოდის
განსაზღვრისათვის

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2020 წლის 11 ივნისის № 65 განკარგულებით

3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის საერთაშორისო ორგანიზაციის სტანდარტი ისო 5725-4:2020 „გაზომვის მეთოდების და შედეგების სიზუსტე (სისწორე და პრეციზიულობა) ნაწილი 4: საბაზისო მეთოდი სისწორის სტანდარტული გაზომვის მეთოდის განსაზღვრისათვის”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2020 წლის 11 ივნისი №268-1.3-017513

დაუშვებელია წინამდებარე სტანდარტის სრული ან ნაწილობრივი კვლავწარმოება, ტირაჟირება და გავრცელება სსიპ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს ნებართვის გარეშე

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**Accuracy (trueness and precision) of
measurement methods and results —**

**Part 4:
Basic methods for the determination
of the trueness of a standard
measurement method**

*Exactitude (justesse et fidélité) des résultats et méthodes de mesure —
Partie 4: Méthodes de base pour la détermination de la justesse d'une
méthode de mesure normalisée*





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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) , see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 69, Subcommittee SC 6, *Measurement methods and results*.

This second edition cancels and replaces the first edition (ISO 5725-4:1994), which has been technically revised.

The main changes compared to the previous edition are as follows:

- clearly recognizing the requirements of the accepted reference values used in bias evaluation experiments and introducing the uncertainties of the accepted reference values,
- changing examples with a currently used measurement method.

A list of all parts in the ISO 5725 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

ISO 5725 uses two terms, “trueness” and “precision”, to describe the accuracy of a measurement method. “Trueness” refers to the closeness of agreement between the expectation of a measurement result and a true value. “Precision” refers to the closeness of agreement between independent measurement results obtained under stipulated conditions.

General consideration of these quantities is given in ISO 5725-1 and so is not repeated in this document. ISO 5725-1 should be read in conjunction with all other parts of ISO 5725, including this document, because it gives the underlying definitions and general principles.

The “trueness” of a measurement method is of interest when it is possible to conceive of a true value for the property being measured. Although the true value cannot be known exactly, it can be possible to have an accepted reference value for the property being measured; for example, if suitable reference materials or measurement standards are available, or if the accepted reference value can be established by reference to another measurement method or by preparation of a known sample. The trueness of the measurement method can be investigated by comparing the accepted reference value with the level of the results given by the measurement method. Trueness is normally expressed in terms of bias. Bias can arise, for example, in chemical analysis if the measurement method fails to extract all of an element, or if the presence of one element interferes with the determination of another.

Two measures of trueness are of interest and both are considered in this document.

- a) Bias of the measurement method: where there is a possibility that the measurement method can give rise to a bias, which persists wherever and whenever the measurement is done, then it is of interest to investigate the “bias of the measurement method”. This requires an experiment involving many laboratories.
- b) Laboratory bias: measurements within a single laboratory can reveal the “laboratory bias” (as defined in ISO 5725-1). If it is proposed to undertake an experiment to estimate laboratory bias, then it should be realized that the estimate is valid only at the time of the experiment and at the investigated level(s) for the property. Further regular testing is required to show that the laboratory bias does not vary; the method described in ISO 5725-6 can be used for this.