

	COOMET Recommendation	COOMET R/GM/15:2020
	Rules of Completion of the Form of Calibration Certificates issued by National Metrology Institutes and Designated Institutes within the scope of the CIPM MRA	
<p><i>Approved at the 17th COOMET Committee Meeting (Minsk, Belarus, April 24 – 25, 2007)</i> <i>Updated and amended</i> <i>at the 30th online COOMET Committee Meeting (24 September 2020)</i></p>		

1 FIELD OF APPLICATION

This recommendation lays down the form and rules for filling in calibration certificates issued by those National Metrology Institutes (in the following referred to as NMIs) and Designated Institutes (in the following referred to as DIs) which have signed the “Mutual Recognition Arrangement for National Measurement Standards and for Calibration and Measurement Certificates issued by National Metrology Institutes” (CIPM MRA). These rules must be observed when standards and measuring instruments (in the following referred to as “calibration items”) of customers – also from other countries – are calibrated.

The form of the calibration certificate was drafted in agreement with the requirements of the International Standard ISO/IEC 17025:2017.

The form of the calibration certificate regulated by this document may be used only by those NMIs and DIs

- whose calibration and measuring capabilities (CMC) have been published in the KCDB BIPM database (www.kcdb.bipm.org);
- whose quality management systems (QMS) have been recognised by the quality forum of COOMET with respect to their agreement with the International Standard ISO/IEC 17025:2017;
- which have been authorised to use the CIPM MRA logo (www.bipm.org/en/cipm-mra/logo).

Application of the recommended certificate form ensures the uniformity of the calibration certificates issued by the NMIs/DIs and contributes to their mutual recognition.

2 REQUIREMENTS FOR THE CONTENT CALIBRATION CERTIFICATES

2.1 The calibration certificate is issued on light-colored A4 paper. Watermarks may be used to protect the document.

2.2 The calibration certificate contains inscriptions and explanations in two languages – Russian and English.

2.3 All information in the calibration certificate must be clear and unambiguous. Corrections are not permitted.

2.4 The calibration certificate issued by the NMI/DI contains the following:

- the title “Calibration Certificate”;
- the name and address of the NMI/DI which has carried out the calibration;
- the number of the certificate;
- the date of the calibration;
- the number of pages and an identification on each page of the certificate;
- unambiguous identification of the calibrated item, its description and its condition;
- identification of the customer;

- identification of the calibration procedure, designation, status and identification of the standards used during calibration as well as proof of traceability, additions, deviations or exceptions to the method;
- the calibration results, including the measurement uncertainty in accordance with item 3.4 of this Recommendation, as well as a statement of compliance with the requirements of the standard or manufacturer's specification (on request of the customer);
- date of issue, official position, first name, surname and signature of the person who approved the calibration certificate and of the person who performed the calibration;
- explanations regarding pursuing of the measurement, compliance with the CIPM MRA and restrictions in accordance with sub-clause 7 of clause 3.2 of this Recommendation;
- environmental conditions under which the calibration was performed as well as other factors which have an influence on the calibration results;
- considerations and interpretations (if necessary).

3 REQUIREMENTS FOR FILLING IN THE CALIBRATION CERTIFICATE

3.1 The calibration certificate is drawn up on two or more pages. The forms of the first, second and following pages of the calibration certificate is shown in *Annex*.

Note: The interlinear text in the mentioned forms of Annex only serve for information and may be not included in the completed certificate.

3.2 The first page of the calibration certificate contains the following information:

- complete name, abbreviated designation and logo of the NMI/DI which issued the certificate, as well as logos of CIMP MRA and COOMET and, where appropriate, other logos;
- title of the document “calibration certificate” and certificate number composed of the designation of the state and a consecutive number in accordance with the system for the registration of certificates at the respective NMI/DI;

Example: UA No. 01234, where: UA – Ukraine, 01234 – number of the certificate in accordance with the registration system of certificates at the NSC IM.

- page number and total number of pages of the certificate;
- designation of the calibration item and its identification;

Note: A complete name of the calibration item, its designation and series number (works number) must be indicated. This number must comply with the data given in the operating documents or in the marking of the instrument.

- information about the customer;

Note: The country, the name of the organisation (of the company), the postal address etc. are indicated. The complete name of the organisation must be indicated, without abbreviations and abbreviated designations which may, however, be stated in addition.

- method of calibration;

Note: The description of the calibration procedure and/or its identification with the document on calibration method are indicated. If the calibration procedure is described in a document accessible to the customer, only reference to this document can be made.

- declarations and restrictions (declaration regarding traceability to units of the International System of Units SI; declaration regarding compliance with the CIPM MRA; restriction which indicates that the calibration certificate shall not be reproduced except in full – any publication extracts from the calibration certificate requires written approval of the issuing NMI/DI);

- date of issue, official position, first name, surname and signature of the person who has approved the calibration certificate;

Notes:

1. The person in the NMI/DI who approves the calibration certificate must be authorised in accordance with the distribution of responsibilities within the NMI.

2. The NMI/DI stamp is applied only by wet print to the original of the certificate.

- address of the NMI/DI with the indication of country, postal address, phone, fax, e-mail, website are indicated.

3.3. The second and following pages of the calibration certificate must contain the following:

- the title of the document “calibration certificate”;

- the certificate number;

- the page number and the total number of pages of the certificate;

- designation of the standards with the aid of which the calibration was performed as well as their status, identification and proof of traceability;

Note: Proof of the traceability of the measurement results with indication of all standards (for example: their belonging to an institute or country) used for the dissemination of a unit must be furnished in the calibration certificate if this is required for the interpretation of the calibration results.

- environmental conditions under which the calibration was performed as well as other factors which have an influence on the calibration results.

3.4 Calibration results

In the calibration certificate, the metrological characteristics which have been detected on the basis of the results of the calibration (the systematic deviation (for the indicating measuring instrument) or the actual value reproduced by the measure with indicating the measurement range or the conversion function, possibly in the form of equations, formulas or tables) and expanded uncertainty expressed in absolute or relative units.

The following note must follow, concerning the value indicated for the expanded uncertainty: “The expanded uncertainty is obtained by multiplying the combined standard uncertainty by a coverage factor $k = 2$ corresponding to a confidence probability of 0.95 if the distribution law of the measurand is normal”. Uncertainty estimation was performed in accordance with the “Measurement Uncertainty Expression Guide” (GUM).

Note: The value of the measurement uncertainty for the measurement result provided in the same units as the measurand, or in relative form with respect to the measurand (for example, in percent).

3.5 Additional information

Additional information is provided at the customer’s request or in order to ensure a correct interpretation of the calibration results and includes the following:

- condition of the calibration item;

Note: Brief specification of the components of the calibration item and of its technical characteristics. The condition of the calibration item is described on the basis of the results obtained from its visual check and its testing.

- statements regarding repairs or readjustments;

Note: When a calibration item has been repaired or adjusted, the certificate must contain the information about the adjustment or repair carried out. The calibration results before and after adjustment or repair, if available, shall be reported.

- the calibration certificate shall not contain any recommendation on the calibration interval except where this has been agreed in writing with the customer.

3.6 Official position, first name, surname and signature of the person who has performed the calibration are stated at the end of all information regarding the calibration results and at the end of the additional information (on the last page of the certificate).

Forms for the first and following pages of the calibration certificate

Name of NMI/DI (in Russian)
Name of NMI/DI (in English)

НМИ/НИ
 NMI/DI
 logo

CIPM MRA
 logo

COOMET
 logo

The other
 logo

Сертификат калибровки

Calibration certificate

The other
 logo

Номер сертификата
 Certificate number

Дата калибровки
 Date when calibrated

Страница
 Page

из
 of

Объект калибровки
 Item calibrated

Наименование эталона / средства измерения / идентификация
 Description of the measurement standard / measuring instrument / identification

Заказчик
 Customer

Информация о заказчике, адрес
 Name of the customer, address

Метод калибровки
 Method of calibration

Наименование метода / идентификация, дополнения, отклонения или исключения из метода
 Name of the method / identification, additions, deviations or exceptions to the method

Все измерения имеют прослеживаемость к единицам Международной системы SI, которые воспроизводятся национальными эталонами НМИ/НИ. В сертификате приведены результаты калибровки, согласующиеся с возможностями, опубликованными в базе данных KCDB BIPM. В рамках MRA все участвующие НМИ/НИ взаимно признают действительность своих сертификатов калибровки и измерений в отношении измеренных значений, диапазонов и неопределенностей измерений, указанных в базе данных KCDB BIPM (подробности см. <http://www.bipm.org>). Данный сертификат может быть воспроизведен только полностью. Любая публикация или частичное воспроизведение содержания сертификата возможны с письменного разрешения НМИ/НИ, выдавшего сертификат.

All measurements are traceable to the SI units which are realized by the national measurement standards of NMI/DI. The certificate contains calibration results consistent with the capabilities published in the BIPM KCDB database. Under the MRA, all participating NMIs/DIs recognize the validity of each other's calibration and measurement certificates for the measured quantities, ranges and measurement uncertainties specified in the BIPM KCDB database (for details see <http://www.bipm.org>). This certificate shall not be reproduced, except in full. Any publication extracts from the calibration certificate requires written approval of the issuing NMI/DI.

Утверждающая подпись
 Authorising signature

Ф.И.О. и должность \ Name and position

Дата выдачи
 Date of issue

Адрес НМИ/НИ / Address of NMI/DI / Телефон, факс, e-mail, web- сайт / Phone, fax, e-mail, website

Сертификат калибровки

Calibration certificate

Номер сертификата
Certificate number

Страница _____ из _____
Page _____ of _____

Калибровка выполнена с помощью
Calibration is performed using

Наименование эталонов и их статус / идентификация / доказательство прослеживаемости
Name of the measurement standards and their status / identification / evidence of traceability

Условия калибровки
Calibration conditions

Условия окружающей среды и другие влияющие факторы
Environmental conditions and other influence parameters

Результаты калибровки, включая неопределенность
Calibration results including uncertainty

Расширенная неопределенность получена путем умножения стандартной неопределенности на коэффициент охвата $k = 2$, соответствующего уровню доверия приблизительно равному 95 % при допущении нормального распределения. Оценивание неопределенности проведено в соответствии с «Руководством по выражению неопределенности измерений» (GUM).

The expanded uncertainty is obtained by multiplying the combined standard uncertainty by a coverage factor $k = 2$ corresponding to a confidence interval of approximately 95 % assuming a normal distribution. The evaluation of uncertainty is conducted according to the "Guide to the expression of uncertainty in measurement" (GUM).

Дополнительная информация
Additional information

состояние объекта калибровки / регулировка и/или ремонт объекта калибровки до его калибровки /
рекомендуемый межкалибровочный интервал по требованию заказчика
condition of the calibration item / adjustment and/or repair of the calibration item before being calibrated /
recommended calibration interval, if requested by the customer

Подпись лица, выполнившего калибровку
Signature of the person who has performed calibration

Ф.И.О. и должность / Name and position