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Pursuant to article 8 paragraph 2 of the Law on Metrology (Official Gazette of Montenegro 79/08), the Ministry of Economy hereby issues the

RULEBOOK

ON TECHNICAL AND METROLOGICAL CONDITIONS AND THE PROCEDURE OF AUTHORIZATION OF PERSONS FOR PREPARATION OF MASS MEASURING INSTRUMENTS FOR VERIFICATION

(Official Gazette of Montenegro 65/09 of 25 September 2009, 09/13 of 12 February 2013)

I. BASIC PROVISIONS

Article 1

This rulebook prescribes technical and metrological conditions, necessary expert staff, and the procedure of authorization of a company, i.e. other legal person to perform the activity of preparing mass measuring instruments for verification.

Article 2

Preparation of mass measuring instruments for verification includes visual examination of the mass measuring instruments, instrument reparation, preparation of standards for the mass measuring instrument testing, mass measuring instrument testing, i.e. checking of the metrological characteristics of the mass measuring instrument.

A written report shall be made on performed activities referred to in paragraph 1 of this article.

Article 3

For the purpose of this rulebook, the following is meant by mass measuring instruments:

- 1) Weight sets of E2, F1, F2, M1, M2 and M3 accuracy class of nominal mass ranging from 1 mg to 50 kg;
- 2) Non-automatic weighing instruments, accuracy class I, II, III and IIII;
- 3) Semi-automatic and automatic weighing instruments;
- 4) Weighing instrument;
- 5) Load cells.

Article 4

An authorized company, i.e. other legal person authorized to perform the activity of preparing mass measuring instruments for verification can remove the national hallmark from the meter, during the reparation. After the reparation, verification of the mass measuring instrument shall be performed.

Article 5

Verification of the mass measuring instruments shall be performed at the workplace of the authorized person referred to in the article 4 of this rulebook, i.e. at the place where the mass measuring instrument is located, if the instrument is attached to its installation site by construction, or if it is an instrument which, due to its construction sensitivity, could be damaged or broken during transport.

II. TECHNICAL AND METROLOGICAL CONDITIONS AND NECESSARY EXPERT STAFF

Article 6

The company, i.e. other legal person may get authorization to perform the activity of preparing mass measuring instruments for verification, if it owns:

- 1) Mass measuring instrument testing equipment;
- 2) Premises for receipt, reparation, and testing of mass measuring instruments;
- 3) Required expert staff.

Article 7

For testing weight sets of E2, F1, F2, M1, M2 and M3 accuracy class, in order to prepare them for verification, the company, i.e. other legal person, must have the following secondary and working standard weights:

- 1) At least E1 accuracy class, for testing and verification of weights of E2 accuracy class;
- 2) At least E2 accuracy class, for testing and verification of weights of F1 accuracy class;

- 3) At least F1 accuracy class, for testing and verification of weights of F2 accuracy class;
- 4) At least F2 accuracy class, for testing and verification of weights of M1 accuracy class;
- 5) At least M1 accuracy class, for testing and verification of weights of M2 and M3 accuracy class.

Article 8

For testing weights referred to in the article 7 of this rulebook, in order to prepare them for verification, the company, i.e. other legal person, must have checkweighers, which fulfill the following requirements:

- 1) Stability of the weighing instrument when measuring the same mass again under unchanged conditions must be within one third (1/3) of the smallest scale interval;
- 2) Smallest scale interval must not be larger than one third of the permissible error for the weight, which is being tested.

Article 9

For testing non-automatic weighing instruments of I, II, III, and IIII accuracy class, in order to prepare them for verification, the company, i.e. other legal person, must have the following weight sets of corresponding mass value:

- 1) E1 accuracy class – for weighing instruments whose scale interval “d” is $d < 0,01$ mg;
- 2) At least E2 accuracy class - for weighing instruments whose scale interval “d” is $0,01 \text{ mg} < d < 1 \text{ mg}$;
- 3) At least F1 accuracy class - for weighing instruments whose scale interval “d” is $1 \text{ mg} < d < 0,1 \text{ g}$;
- 4) At least F2 accuracy class - for weighing instruments whose scale interval “d” is $0,1 \text{ g} < d < 1 \text{ g}$;
- 5) At least M1 accuracy class - for weighing instruments whose scale interval “d” is $1 \text{ g} < d$.

Individual weights of M1 accuracy class or weight sets of M1 accuracy class must be verified, i.e. must have a valid hallmark.

Weight sets of E2, F1, and F2 accuracy class, which are used for testing of mass measuring instruments, in order to prepare them for verification, must be placed in corresponding boxes with marks of accuracy class and have adequate calibration certificate.

Article 10

For testing the weighing instruments, in order to prepare them for verification, the company, i.e. other legal person, must have the following measuring equipment:

- 1) Weighing instrument testing devices;
- 2) Weights for testing corresponding mass values of at least F1 accuracy class.

Article 11

For testing electromechanical load cells, designed to be installed in mass measuring instruments, in order to prepare them for verification, the company, i.e. other legal person, must have the following measuring equipment:

- 1) A device with climate chamber;
- 2) Digital compensator.

Article 12

For testing electronic indicating devices, in order to prepare them for verification, the company, i.e. other legal person must have the following measuring equipment:

- 1) Climate chamber, where the electronic indicating device can be placed, and where the temperature can be adjusted throughout the declared temperature range of that indicating device;
- 2) Calibrator with the known error curve or with the error, which must be less than 0.3 than the permissible error for the electronic indicating device.

Article 13

As supplementary measuring equipment for testing mass measuring instruments referred to in the article 3 of this rulebook, in order to prepare them for verification, the company, i.e. other legal person, must have:

- 1) test stand for weighing instruments;
- 2) stands for mounting measuring equipment;
- 3) stabilized power supply sources, which must ensure power supply of the measuring equipment and mass measuring instruments, if electrical energy is necessary for their functioning;
- 4) leveling device of accuracy class II for setting an instrument to its reference (horizontal) position;
- 5) magnifying glass with at least ten (10) times magnification, for reading of test results;
- 6) control mirror with stand, for simultaneous reading of test results on the opposite side of the mass measuring instrument;

- 7) Nonius calipers with length scale, whose smallest scale interval must not be larger than 1/10 mm, metal ruler of 0,5 m divided into lines of 1mm and a steel measuring tape 2 m long divided into lines of 1 mm, to control the mass measuring instrument dimensions;
- 8) Thermometers divided into lines of 0,1 °C, to measure temperature in climate chambers;
- 9) Thermometer divided into lines of 0,5 °C, to measure temperature in the working space for testing weights of E2 accuracy class and non-automatic weighing instruments of accuracy class I, whose testing scale interval is less than 0.1 mg;
- 10) Thermometer divided into lines of 1 °C, to measure temperature in the working space for testing and verification of mass measuring instruments, except for testing and verification of mass measuring instruments referred to in the item 9 of this article.

Article 14

Equipment referred to in articles 7, 8, 9, 10, 11, and 12 of this rulebook, as well as the equipment referred to in the article 13 items 8, 9, and 10 of this rulebook, must have a valid hallmark and certificate on verification, i.e. calibration certificate.

Article 15

For testing mass measuring instruments, the company, i.e. other legal person, must provide weights of corresponding accuracy class:

- 1) For weighing instruments of Max < 2 000 kg in full amount of maximum measuring range,
- 2) For weighing instruments of Max > 2 000 kg per prescribed instructions.

Article 16

Premises for mass measuring instrument testing must be separated from the premises for receipt and reparation of mass measuring instruments.

Article 17

Premises for mass measuring instrument testing must:

- 1) Be clean, dry and spacious enough to accommodate the necessary equipment and for undisturbed mass measuring instrument testing;
- 2) Be protected from direct sunlight;
- 3) Have adequate space and tables or stands to accommodate mass measuring instruments which are being tested, as well for mass measuring instruments which were verified;
- 4) Have day light and adequate electric lighting;
- 5) Have adequate grounding system;
- 6) Be separated from the rest of the workplace when testing non-automatic weighing instruments of accuracy class III and IIII, and weights of M1, M2 and M3 accuracy class;
- 7) Be built as a separate room with entrance with an anteroom or a double entrance door, if there are air conditioning devices in the room;
- 8) Be equipped with heating sources for equal heating of the work space, i.e. air conditioning devices, as needed;
- 9) Have heating sources of the working room which must be at least 1.50 m away from the equipment, i.e. from the place where the mass measuring instrument testing takes place.

Article 18

In the testing room there must be:

- 1) A control thermometer for measuring workspace air temperature installed;
- 2) A horizontal concrete slab of at least 2 m x 2 m dimensions installed for testing of mass measuring instrument of Max > 50 kg.

Only equipment used for testing can be accommodated in the premises for mass measuring instrument testing. The premises for mass measuring instrument testing must be protected from quake and vibration sources, which could affect the measuring accuracy.

Article 19

During testing and verification of mass measuring instruments, the air temperature in the workspace must have the following values:

- 1) from 20 °C to 21 °C – for weights of accuracy class E2 and non-automatic weighing instruments of accuracy class I, whose test scale interval is less than 0,1 mg;

- 2) from 20 °C to 25 °C – for weights of accuracy class F1 and F2, non-automatic weighing instruments of accuracy class I, II, except for weighing instruments referred to in the item 1 of this article, and for electromechanical weighing instruments and measuring transducers;
- 3) from 18 °C to 27 °C – for weights of accuracy class M1, M2, and M3, non-automatic weighing instruments of accuracy class III and IIII, and weighing instruments.

Article 20

The control thermometer for measuring workspace air temperature must be installed on the wall of the premises for mass measuring instrument testing, in a way that it is 15 to 20 cm away from the wall, and 1.50 to 1.70 m high from the floor of the room.

Article 21

The person authorized to perform the activity of preparing mass measuring instruments for verification must have at least two (2) permanent employees, with at least high school qualification of technical education, and at least three (3) years of work experience in testing, manufacturing, or servicing of mass measuring instruments.

III. AUTHORIZATION PROCEDURE

Article 22

Authorization of a company, i.e. other legal person to perform the activity of preparing mass measuring instruments for verification, is done upon application.

The authorization application referred to in paragraph 1 of this article contains:

- 1) Applicant information (name, registered office, contact, TIN, principal business code, etc.).

The application referred to in the paragraph 1 of this article shall be supported with:

- 1) Technical documentation for the equipment;
- 2) Evidence of fulfillment of conditions which refer to the workplace;
- 3) Evidence on employed expert staff pursuant to conditions referred to in the article 21 of this rulebook.

Article 23

The report referred to in the article 2 paragraph 2 of this rulebook contains the following information:

- 1) On the applicant (name, surname, and ID number or passport number);
- 2) On site and date of mass measuring instrument testing;
- 3) On mass measuring instrument (type, model and serial number);
- 4) Metrological and other technical information for verification;
- 5) Mass measuring instrument testing results;
- 6) On removed hallmarks;
- 7) On the person who performed the mass measuring instrument testing (name, surname, and signature).

The person authorized to perform the activities of preparing mass measuring instruments for verification submits testing reports to the Bureau of Metrology every three months and takes part in comparative tests, organized by the Bureau.

The authorized person referred to in the paragraph 2 of this article keeps the testing reports in printed or electronic form, for at least three (3) years from the date of termination of the certificate period.

IV. FINAL PROVISION

Article 24

This Rulebook shall enter into force on the eighth day following that of its publication in the Official Gazette of Montenegro.

No 0704-610/3

Podgorica, 16 September 2009

Ministry of Economy
Minister,
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