ČESKÝ METROLOGICKÝ INSTITUT

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PUBLIC DECREE

As the authority with substantive and territorial jurisdiction in the matter of laying down metrological and technical requirements for specified measuring instruments and stipulating test methods for type approval and verification of specified measuring instruments pursuant to § 14(1) of Act No 505/1990, on metrology, as amended (hereinafter the 'Metrology Act'), and in accordance with the provisions of § 172 et seq. of Act No 500/2004, the Administrative Code (hereinafter the 'AC'), the Czech Metrology Institute (hereinafter the 'CMI') commenced ex officio proceedings on 1 July 2024 pursuant to § 46 AC, and, based on supporting documents, issues the following:

I.

DRAFT MEASURE OF A GENERAL NATURE

number: 0111-OOP-C102-26

laying down the metrological and technical requirements for specified measuring instruments, including test methods for type approval, verification and checking of specified measuring instruments:

'material measures of length'

1 Basic definitions

For the purposes of this Measure of a General Nature, the terms and definitions pursuant to VIM and VIML[1] and the following shall apply:

1.1
material measure of length

a measuring instrument with permanent and indelible scale gradations, the separation of which is given in statutory units of length

2 Metrological requirements

The metrological requirements laid down in special legislation[2] apply to measuring instruments, in particular:

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[1] TNI 01 0115 International Vocabulary of Metrology – Basic and General Concepts and Associated Terms (VIM)
and International Vocabulary of Terms in Legal Metrology (VIML) are part of the technical harmonisation compendium 'Terminology in the Area of Metrology', which is publicly accessible at www.unmz.cz.

[2] Government Regulation No 120/2016 stipulating technical requirements for measuring instruments (hereinafter the 'Government Regulation'), and implementing Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on measuring instruments (MID)

2.1 Maximum permissible errors (MPE)

The MPE, positive or negative, expressed in millimetres, for the distance between two non-consecutive scale marks is as follows:

$$(a + b \cdot L) \quad (1)$$

where: .....*L* is the numerical value of the given length, rounded up to the nearest whole metre,

a, *b* ..... are given in Table 1 for each accuracy class.

Table 1

Accuracy class	*a* (mm)	*b* (mm)
I	0,1	0,1
II	0,3	0,2
III	0,6	0,4
D – special class for submersible tape measures[1]. Up to and including 30 m[2]. [1] Applies to tape measure/dip weight combinations. [2] If the nominal length is greater than 30 m, an additional MPE increment of 0.75 mm is allowed for each 30 m of length.	1,5	zero
S – special class for tape measures used for measuring tanks (by girding) For every 30 m of length, if the tape measure is supported (held) on a flat surface.	1,5	zero

Submersible tape measures may also be manufactured in accuracy class 'I' or 'II', in which case the MPE is ±0.6 mm for each length between two scale marks, one on the dip weight and the other on the tape measure, if a value of less than 0.6 mm is calculated in accordance with Formula (1).

If the end interval is restricted by a flat surface, the maximum permissible error is increased by the value given in Table 2 for any distance starting at that start point.

Table 2

Value for individual accuracy classes (mm)				
I	**II**	**III**	**D**	**S**
0,1	0,2	0,3	zero	zero

The MPE for the length between two consecutive scale marks and the maximum permissible difference between the lengths of two consecutive scale divisions are given in Table 3.

In the case of folding gauges, the joints must be such that, apart from the errors specified in Table 3, they do not cause any further errors greater than 0.3 mm for accuracy class 'II' and 0.5 mm for accuracy class 'III'.

Table 3

Division length *i*	**Maximum permissible errors or difference for accuracy classes** (mm)		
	I	**II**	**III**
$i \leq 1$ mm	0,1	0,2	0,3
1 mm $< i \leq 1$ cm	0,2	0,4	0,6

The same metrological requirements that were applicable when placing measuring instruments on the market will be applied during their subsequent verification.

3 Technical requirements

The technical requirements laid down in special legislation[2] apply to measuring instruments.

During subsequent verification, measuring instruments are subject to technical requirements applicable at the time they were put into circulation.

4 Measuring instrument markings

The requirements laid down in special legislation[2] apply to the marking of measuring instruments.

During subsequent verification, marking of measuring instruments is subject to technical requirements applicable at the time they were put into circulation.

5 Measuring instrument type approval

Measuring instruments are placed on the market with a conformity assessment in accordance with special legislation[2]. The provisions on type-approval under § 24b of Act No 505/1990 on metrology do not apply.

6 Initial verification

Measuring instruments are placed on the market with a conformity assessment in accordance with special legislation[2]. The provision on initial verification under § 24b of Act No 505/1990 on metrology does not apply.

7 Subsequent verification

During verification, the following actions and tests are performed:

a) a visual inspection;

b) functional test (where relevant from the point of view of the design of the measuring instrument);

c) accuracy test.

7.1 Visual inspection

During a visual inspection, the following is checked:

- that the measuring instrument submitted for verification conforms to the approved type;
- that the measuring instrument is not mechanically damaged;

- that the measuring instrument has the appropriate markings.

Material measures of length that have not passed visual inspection are excluded from further testing.

7.2 Functional test

The functional test verifies whether connections perform their function in such a way as to ensure the accuracy of the measuring instrument within the limits of MPE (see Article 2.1).

7.3 Accuracy test

7.3.1 Reference conditions

Unless otherwise specified by the manufacturer and unless otherwise appropriately marked on the material measure of length, the reference temperature is 20°C.

7.3.2 Other conditions

Measures (e.g. tape measures; separate measuring tapes) with a length of five metres or more must comply with the requirement for maximum permissible errors if a tensioning force of 50 N or other force value specified by the manufacturer and appropriately marked on the measuring tape is applied. In the case of rigid or semi-rigid gauges (e.g. retractable tape measures), no tensioning force is applied.

7.3.3 Accuracy test

The accuracy of the scale, i.e. the distance between two non-adjacent marks, one of which is always zero, is tested at a minimum of four different locations randomly spaced over the entire measuring length, including the nominal length.

In the case of gauges with a free start of the scale (e.g. retractable tape measures), a test of the start of the scale, i.e. the measurement of the distance between ‘zero’ and ‘0.1 m’, or the first marked line of the scale, is also carried out. For retractable tape measures, this test is carried out both for measurement of outer and inner dimensions.

In the case of length measures for goods sold by length, a test of accuracy is performed only for the nominal length, i.e. the distance between the beginning and the end of the scale.

For double-sided measures, both scales are tested.

The determined errors of the tested measuring instrument must not exceed the applicable maximum permissible error (MPE) values specified in Article 2.1.

8 Checking of the measuring instrument

When checking measuring instruments pursuant to § 11a of the Metrology Act at the request of a person who may be affected by incorrect measurement, the procedure under Chapter 7 is followed, except for the last sentence of Article 7.1.

The test is carried out on the disputed length, if known, and proceeds as described in Chapter 7. If the disputed length is not known, the procedure laid down in Chapter 7 is followed. The maximum permissible error is twice the maximum permissible error specified in Article 2.1.

An accuracy test is always carried out if the integrity of the instrument and its metrological characteristics are ensured and where technically feasible.

9 Notified standards

For the purposes of specifying the metrological and technical requirements for measuring instruments and specifying the testing methods for their type approval and verification arising from this General Measure, the CMI shall notify Czech technical standards, other technical standards or technical documents of international or foreign organisations, or other technical documents containing more detailed technical requirements (hereinafter 'notified standards'). The CMI shall publish a list of these notified standards associated with the relevant measure, together with the general measure, in a manner accessible to the public (at www.cmi.cz).

Compliance with notified standards or parts thereof is considered, to the extent and under the conditions stipulated by a general measure, to be compliance with the requirements stipulated by this measure to which these standards or parts thereof apply.

Compliance with a notified standard is one of the ways to demonstrate compliance. These requirements may also be met by using another technical solution guaranteeing an equivalent or higher level of protection of legitimate interests.

II.

G R O U N D S

Pursuant to § 14(1)(j) of the Metrology Act, the CMI has issued this Measure of a General Nature toward the implementation of § 6(2), § 9(1) and (9), and § 11a(3) of the Metrology Act, laying down metrological and technical requirements for specified measuring instruments and tests for type approval and verification of specified measuring instruments – 'material measures of length'.

Decree No 345/2002 laying down measuring instruments for mandatory verification and measuring instruments subject to type approval, as amended, classifies the given measuring instruments under item 1.1.1 in the Annex 'Type list of specified measuring instruments' as measuring instruments subject to type approval and verification.

This legislation (Measure of a General Nature) was notified in accordance with Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on information society services.

III.

I N S T R U C T I O N S

In accordance with § 172(1) AC, in conjunction with § 39(1) AC, the CMI has stipulated a time limit for comments of 30 days from the date of posting the draft on the official notice board. Comments submitted after this deadline will not be considered.

Stakeholders are hereby invited to comment on this draft Measure of a General Nature. With regard to the provisions of § 172(4) AC, the comments shall be submitted in writing.

In accordance with § 174(l) AC in conjunction with § 37(l) AC, it must be clear who is making the comments, which measure of a general nature they concern, how it contradicts legislation or how the measure of a general nature is inaccurate, and they must be signed by the person making them.

The supporting documents for this draft measure of a general nature may be consulted at the Czech Metrological Institute, Department of Legal Metrology, Okružní 31, 638 00 Brno, upon appointment by telephone.

This draft Measure of a General Nature will be posted for a period of 15 days.

Director General of the Czech Metrology Institute