1. ------IND- 2014 0030 CZ- EN- ------ 20140129 --- --- PROJET

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| Executive summary for EC *(not part of this legal regulation)*  Area measuring instruments for leather in the Czech Republic are placed on the market and put into use in accordance with Directive 2004/22/EC (Measuring Instruments Directive MID). After being put into use, they are subject to national metrological control - verification (within set deadlines). The subject of this notified regulation is only the verification of measuring instruments already in use. The regulation does not concern placement on the market or putting into use (except in the cases referred to in Article 23 of the MID).  Area measuring instruments for materials other than leather are not subject to metrological control after being put into use in the Czech Republic.  Requirements applicable to these measuring instruments in use are fully compatible with the MID and are furthermore based on the International Organization of Legal Metrology (OIML) R 136-1 recommendations.  Some parameters specified here are properties of a measuring instrument as new and are only set out here because maintaining them in use is subject to a visual or other control within the framework of verification.  *(End of executive summary).* |

The Czech Metrology Institute (hereinafter "CMI"), as the authority with material and territorial jurisdiction in the laying down of metrological and technical requirements for the measuring instrument in question and the laying down of test methods for type approval and for verification of the measuring instrument in question in accordance with Section 14(1) of Act No 505/1990 on metrology, as amended (hereinafter the "Metrology Act" ), and in accordance with Section 172 et seq. of Act No 500/2004, the Code of Administrative Procedure, as amended (hereinafter the "CAP"), initiated ex officio on 22. 11. 2013 an administrative procedure pursuant to Section 46 of the CAP, and on the basis of documentation hereby issues this:

I

GENERAL MEASURE

Number: 0111-OOP-C037-13

Ref. No.: 0313/008/13/Pos.,

laying down the metrological and technical requirements for the measuring instruments in question, including test methods for verification of the measuring instruments in question:

"Area measuring instruments for leather"

This general measure lays down the metrological and technical requirements for area measuring instruments for leather which apply in the course of their verification following placement on the market or putting into use. These requirements are in accordance with the requirements of Government Regulation No 464/2005 laying down technical requirements for measuring instruments[[1]](#footnote-1)1 ), as amended (hereinafter the "Government Regulation on Measuring Instruments").

Metrological requirements which were decisive for their placement into circulation apply to area measuring instruments for leather, in the course of verification, whose type was approved pursuant to the Metrology Act, in the version effective up until 30 October 2006, which was before the implementation into Czech legislation of Directive 2004/22 /EC of the European Parliament and of the Council, as amended.

1 Basic concepts

For the purposes of this general measure, the terms and definitions pursuant to VIM and VIML[[2]](#footnote-2)2 ) apply, as well as the following terms and definitions.

1.1  
area measuring instrument for leather  
an instrument for measuring the area of leather irregular in shape, working on the principle of dividing a measured area into strips of equal width whose lengths are measured and from these the size of the area is evaluated

1.2  
Contact area measuring instrument for leather  
an instrument where the length of individual strips is measured by rolling measuring wheels

1.3  
Non-contact area measuring instrument for leather  
an instrument where the length of individual strips is measured using contactless sensors

1.4  
measuring instrument errors  
the difference between data from a counter (evaluation unit) and the actual size of a measured area; if data from the measuring instrument is greater than the actual size of the area, the error is positive, otherwise the error is negative.

A relative error *Δ*a is the difference between the mean surface area value of ten measurements (*Ā*) and the actual area of a measuring sheet (*A*s).



A relative error of individual measurements *Δi*is the difference between the measured values of the *i*-th measurement (*Ai*)and the mean surface area value of ten measurements (*Ā*).



2 Metrological requirements

Metrological requirements are based on the requirements of the Government Regulation on Measuring Instruments using the relevant requirements of the OIML R 136-1 recommendations[[3]](#footnote-3)3).

Metrological requirements which were decisive for their placement into circulation apply to measuring instruments, in the course of verification, whose type was approved pursuant to the Metrology Act.

2.1 Established operating conditions

Established operating conditions are determined by the manufacturer and indicated in the measuring instrument's descriptive marking. If the manufacturer does not determine these conditions, requirements for the maximum permissible error must be met in an ambient temperature range of at least –5 C to +40 C.

Tests must be carried out at a steady ambient temperature, usually at room temperature. The difference between extreme ambient temperature values during a test must not exceed 1/5 of the ambient temperature range without being greater than 5 C, and the rate of a temperature change must not exceed 5 C per hour.

2.2 Maximum permissible error

The maximum permissible error during subsequent verification is ±1 %, but must not be less than ±0,01 m2.

When an additional display unit is used (for example, at the rear of an instrument), the difference between both displays must not be greater than ±0,2 dm2.

3 Technical requirements

Technical requirements are based on the requirements of the Government Regulation on Measuring Instruments using the relevant requirements of the OIML R 136-13) recommendations.

Technical requirements which were decisive for their placement into circulation apply to measuring instruments, in the course of verification, whose type was approved pursuant to the Metrology Act.

3.1 Contact measuring instruments

A contact area measuring instrument for leather is a measuring instrument in which the measured area is divided into a specific number of strips equal in width, whose length is measured by rolling measuring wheels, automatically calculated according to Simpson's rule and transmitted to the counter dial. The sum of the measured lengths is in linear proportion to the entire surface area and values on the dial give the area size directly in dm2.

The recommended number of feed roller rotations is 60 ± 2 revolutions per minute.

Deviation from the zero setting must be no more than 0.4 times the minimum permissible error in accordance with Article 2.2.

3.1 Non-contact measuring instruments

A non-contact area measuring instrument for leather is a measuring instrument in which the area being measured is fictively divided into a specific number of strips of equal width given by the number of non-contact elements of the sensing sequence. Strips are divided into sections of equal length with equipment working in synchrony with the speed of the measuring instrument's feeding equipment. Elementary surfaces created in this way are electronically calculated and the area being measured is evaluated in appropriate units of measurement (dm2) using an evaluation device. Values may be transferred to a printing device, electronic totalising device, etc.

The measuring instrument must ensure that the feeding equipment feeds the material being measured in places of measurement without slippage at a feed rate of up to 0.5 m/s.

The printing device must ensure a legible print-out of the size of the measured area.

The measuring instrument may have an additional display unit. Values on the evaluation and display unit must be clearly legible with a minimum digit height of 15 mm. An electric totalising device may be attached to the evaluation unit.

The measuring instrument may be equipped with a device for connecting to a computer, a measured material counter (the counter must be capable of being set to zero), a device for the uniform guidance of the leather by the measuring instrument, an auxiliary device for automatically marking a measured area directly on the leather (this must not affect the measuring instrument’s accuracy) and it must have a device for zero-setting all computer circuitry before beginning measurement.

The measuring instruments may have an auxiliary device for controlling another subsidiary instrument or device, such as a stacking device, sorting equipment, packaging equipment, etc.

3.3 Measuring instrument safety and anti-fraud protection.

The instrument must be secured against fraudulent use. Components that the user may not take apart or adjust must be safeguarded against such activities.

4 Marking measuring instruments

4.1 Markings on measuring instruments

The measuring instrument must have a label with the following information:

1. the measuring instrument's name,
2. the name or brand-name of the manufacturer,
3. the measuring range and unit of measurement,
4. the serial number and year of manufacture,
5. the working ambient temperature range,
6. the maximum and the minimum measurable area,
7. the type approval mark.

If the use of an instrument requires a special measure, the necessary instructions must be clearly and visibly set out in the close proximity of the indication device.

A label bearing compulsory marking must be sealed or it must be impossible to remove without being destroyed.

4.2 Placement of official mark

The placement of marks is determined by the certificate of type approval or other document or by the configuration applied within the assessment of conformity for placement on the market and putting into use.

The placement of official marks must be such that, after their placement, the measuring instrument cannot be adjusted and components cannot be accessed for which this is forbidden. The marks must be configured so that they cannot be removed without being damaged or destroyed.

5 Approval of measuring instrument type

Area measuring instruments for leather are placed on the market and put into use with a conformity assessment in accordance with the Government Regulation on Measuring Instruments and are therefore not subject to type approval.

6 Initial verification

These measuring instruments are placed on the market and put into use with a conformity assessment in accordance with the Government Regulation on Measuring Instruments

Initial verification applies only to measuring instruments which have a valid certificate on type approval at a given time while using a transitional provision in accordance with Section 9 of the Government Regulation on Measuring Instruments, and to the approval of measuring instruments following repair.

During initial verification, a procedure identical to subsequent verification is applied in accordance with Chapter 7.

7 Subsequent verification

7.1 General

7.1.1 Overview of tests performed

For subsequent verification, i.e. each verification of a measuring instrument carried out after the previous verification and during verification in accordance with Section 11(4) of the Metrology Act, the following activities and tests are performed:

* visual inspection,
* functional test of measuring instrument,
* accuracy test.

7.1.2 Test equipment

The following equipment is used for testing:

1. a set of 10 dm2 to 300 dm2 surface area measuring sheets (flexible or rigid), rectangular or circular in shape,
2. a steel measuring tape at least 5 m long with 1 mm subdivisions along its length,
3. a stopwatch with 0.6 second measurement uncertainty.

7.2 Visual inspection

During a visual inspection of an area measuring instrument for leather the following is assessed:

* whether the measuring instrument being verified conforms to the approved type or to the configuration of the measuring instrument for which conformity has been declared for being placed on the market,
* whether the measuring instrument displays obvious signs of damage or contamination,
* whether the completeness and legibility of prescribed signs and markings correspond to the requirements of Chapter 4.

If the measuring instrument does not comply with the requirements of the visual inspection, testing is stopped.

7.3 Testing contact area measuring instruments for leather

7.3.1 Testing the function of contact instruments

This test determines whether the actual number of feed roller revolutions corresponds to Article 3.1.

The action of the measuring instrument while idle is checked to ensure that all measuring wheels turn smoothly and continuously upon contact with the feed roller and that the worm wheels are at a standstill.

A check is performed of whether the steel tapes are evenly tensioned and whether they are crossed or deformed.

After inserting a measuring sheet between the feed and measuring roller, an observation is made as to whether all measuring units currently active rotate relative to the length measured by rolling measuring wheels along a measuring sheet. When using a circular measuring sheet, the worm wheel stop pins must create a regular arc. When using a rectangular measuring sheet which must be placed in the measuring instrument by one of its sides, worm wheel pins create a straight line. This method of inspecting the function of a measuring instrument is performed in the entire range of the working roller (along its entire width). If a pin has become positioned above or below the coupling rod of the other pins, the measuring instrument accuracy test is discontinued until the defect is removed.

After each control test, the indicator must return to the zero position by turning off (treading down on) the measuring mechanism.

7.3.2 Testing the accuracy of contact instruments

When using rectangular shaped measuring sheets, the sheet must always be placed in the measuring instrument by one of its corners and not by its side, approximately at a 45º angle to the measuring instrument conveyer's axis.

An accuracy test is performed at the lower and the upper measuring range limit of the surface area and at further points (at least at five points) divided across the measuring instrument's measuring range. With a measuring instrument range of 30 dm² to 300 dm², the test is performed at 30 dm², 50 dm², 70 dm², 90 dm², 200 dm² and 300 dm².

After the measuring instrument passes through a measuring sheet, the measured value is ascertained. After turning off the measuring mechanism, when the scale indicator is at zero (a deviation from the zero setting may be no more than 0.4 times the minimum permissible error), the same measuring sheet is re-installed in the measuring instrument at a different point of the feed roller and the measured value of the measuring instrument is re-read. Each tested surface area value is measured ten times.

The mean data value (i.e., the arithmetic average) of a measuring instrument (*Ā*) recorded by measuring the measuring sheet and calculated from ten repeated measurements of the same area, performed alternately on the entire working width of the measuring instrument, may differ from the correct value (*As*) in a range of 1/20 of the upper limit to the upper limit of the surface area by no more than the maximum permissible error according to Article 2.2, i.e., by ±1 %. The values of individual measurements (*Ai*) may differ from the mean value (*Ā*) by no more than ±2 % of a measured area.

If measuring sheets for given values are not available, a set of measuring sheets is used for measuring larger areas (for example, 2 sheets), whose total area corresponds approximately to the value of the scale which is to be tested. Zero-setting counters is only performed after both measuring sheets have passed through the measuring instrument. It is also possible to insert a measuring sheet gradually, as many times in a row, without releasing the measuring mechanism, until the multiple of the area of the measuring sheet corresponds to the controlled area's value.

7.4 Testing non-contact area measuring instruments for leather

7.4.1 Testing the function of non-contact instruments

When testing function, the measuring instrument is left to run idle for around 20 minutes in order to put the electronics through working conditions.

A check is performed of the accuracy of the function of sensors by the gradual shading of the contact-less elements with opaque material and by observing the data on the evaluation unit, as well as the activity of the feeding device while checking its speed, which is ascertained according to the ratio:

*v* = *l*/*t* (m/s)

where

*l*  is the length of the feed roller section, measured with measuring tape,

*t* is timemeasured by a stopwatch during which the section length *l* passes, for example, a mark on the wire of the feeding device.

Printing and stamping equipment is discarded in a suitable manner and, with a measuring sheet of a nominal value, equal to the lower limit of the measuring range of the surface area, 10 measurements are performed by gradually placing measuring sheets along the entire width of the conveyer.

The measurement results must comply with Article 2.2. At the same time, a function check of the printing device is performed by comparing the printed data (from the printer, number of leather pieces, totalising device) with the evaluating unit, which must be identical.

The accuracy of zero-setting the data of a previous measurement is checked before starting the next measurement, when the evaluating unit must be automatically reset to zero, or re-setting may occur after the end of the next measurement (in accordance with the measuring instrument's construction). The test is performed with two measuring sheets with different surface areas which are measured after each other in the necessary chronological sequence. If the measuring instrument is equipped with a zero-setting button, its function is checked.

7.4.2 Testing the accuracy of non-contact instruments

When using rectangular shaped measuring sheets, the sheet must always be placed in the measuring instrument by one of its corners and not by its side, approximately at a 45º angle to the measuring instrument conveyer's axis.

The accuracy of a measuring instrument is ascertained at the lower limit of the measuring range of a surface area, with a surface area size of 30 dm2, 50 dm2, 100 dm2, 150 dm2, 200 dm2, 300 dm2 and at the upper limit of the measuring range (no more than 500 dm2).

Rectangular shaped measuring sheets must always be placed sideways on the conveyer so that they enter the sensor by one of its corners, with a minimum distance of 5 cm from the edge of the feeding device. When using more than one measuring sheet (to create the necessary surface area), there must be no gap in the direction of movement of the feeding device and it must be made level with the feeding device. Each prescribed surface area size is measured ten times and the measuring sheets are placed on the same area of the feeding device after each measurement.

The mean data value (i.e., the arithmetic average) of a measuring instrument (*Ā*) recorded by measuring the measuring sheet and calculated from ten repeated measurements of the same area, performed alternately on the entire working width of the measuring instrument, may differ from the correct value (*As*) in a range of 1/20 of the upper limit to the upper limit of the surface area by no more than the maximum permissible error according to Article 2.2, i.e., by ±1 %. The values of individual measurements (*Ai*) may differ from the mean value (*Ā*) by no more than ±2 % of a measured area.

8 Notified standards

For the purposes of specifying the metrological and technical requirements for measuring instruments and for the purposes of specifying the test methods during approval of their type and verification, resulting from this general measure, the CMI will notify Czech technical standards, further technical standards or technical documents of international or foreign organisations, or other technical documents containing more detailed technical requirements (hereinafter "notified standards"). A list of these notified standards corresponding to the appropriate measure shall be notified by CMI together with the general measure in a publicly accessible manner (on the website [www.cmi.cz](http://www.cmi.cz/)).

Compliance with the notified standards or compliance with parts thereof, in the scope and under the conditions laid down by this general measure, is considered compliance with the requirements laid down by this measure, to which those standards or parts thereof relate.

II

JUSTIFICATION

For the implementation of Section 24c of the Metrology Act, the CMI hereby issues this general measure laying down metrological and technical requirements for the measuring instruments in question and test methods for the verification of these measuring instruments.

Decree No 345/2002 laying down measuring instruments for compulsory verification and measuring instruments subject to type approval, as amended, ranks area measuring instruments for leather as measuring instruments subject to verification in the annex List of Measuring Instruments under 1.2.1.

Therefore, the CMI, for the implementation of Section 24c of the Metrology Act, for this particular type of measuring instrument "area measuring instruments for leather", issues this general measure laying down metrological and technical requirements for area measuring instruments for leather and test methods for the verification of these measuring instruments.

This regulation (General Measure) was notified in accordance with Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 on the procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services, as amended.

III

Instructions

A legal remedy under Section 173(2) of the CAP may not be lodged against a general measure.

In accordance with Section 172(5) of the CAP, neither an appeal nor a complaint may be lodged against a decision on objections.

Accordance of the general measure with legislation may be subject to a review process in accordance with Sections 94 to 96 of the CAP. A party may submit a motion to initiate a review process to the administrative authority which has issued this general measure. If the administrative authority does not find reasons to initiate a review process, it shall communicate this fact together with its reasons to the applicant within thirty days. In accordance with Section 174(2) of the CAP, a resolution on the initiation of a review process may be issued within three years of the effective date of a general measure.

IV

**Effectiveness**

This general measure shall enter into effect on the fifteenth day following the date of its publication (Section 24d of the Metrology Act).

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RNDr. Paul Klenovský

Director General

1. 1 ) This Government Regulation implements Directive 2004/22 /EC of the European Parliament and of the Council of 31 March 2004 on measuring instruments, as amended, into Czech legislation. [↑](#footnote-ref-1)
2. 2 ) International Vocabulary of Metrology - Basic and General Concepts and Associated Terms (VIM) and the International Vocabulary of Terms in Legal Metrology (VIML) form part of the technical harmonisation volume "Terminology in the Field of Metrology "publicly accessible at www.unmz.cz [↑](#footnote-ref-2)
3. 3) OIML R 136-1 "Instruments for measuring the areas of leathers" - *publicly accessible at* www.oiml.org [↑](#footnote-ref-3)