



Czech Metrology Institute

Okružní 31, 638 00

Brno

1. -----IND- 2011 0590 CZ- EN- ----- 20111128 --- --- PROJET

The Czech Metrology Institute (CMI), as the competent local body for stipulating metrological and technical requirements for a specified measuring device and for the stipulation of test methods for type approval and for verification of a specified measuring device pursuant to Section 14(1) of Act No. 505/1990 Coll., on Metrology, as amended, and pursuant to provisions of Section 172 et seq. of Act No. 500/2004 Coll., the Administrative Code, as amended (hereinafter the "AC"), has on 30 September 2011 commenced ex officio proceedings pursuant to Section 46 of the AC, and based on supporting documents issues this:

I.

MEASURE OF A GENERAL NATURE

number: 0111-OOP-C021-11

reference no. 0313/021/11/Pos.,

publication date: 30 September 2011

stipulating metrological and technical requirements for specified measuring devices, including test methods for type approval and verification of specified measuring devices:

"road motor vehicle tyre pressure gauges, except for pressure gauges used exclusively for the measurement of tyre pressure by motor vehicle users"

1 Basic definitions

For the purposes of this measure of a general nature, terminology and definitions contained in VIM¹⁾ and the following apply:

1.1 road motor vehicle tyre pressure gauge (hereinafter "tyre pressure gauge"): a measuring device that indicates the pressure differential between the gas in a tyre and the surrounding atmosphere, including all parts located between the tyre and the indicator.

¹⁾ International Vocabulary of Metrology - Basic and General Concepts and Associated Terms (VIM).

1.1.1 type A tyre pressure gauge – fixed device: a device that has fixed measurement elements and a reader: it is generally connected to a compressed air or nitrogen source, and is equipped with a regulator located either near the indicator or the end of the hose; it allows tyre pressure to be increased, checked and adjusted.

1.1.2 type B tyre pressure gauge – portable device (with pressure vessel): a device that connects a regulator, measuring elements, an indicator and a storage tank of limited pressure; it allows tyre pressure to be checked and adjusted.

1.1.3 type C tyre pressure gauge – handheld device (with hose connection): a device connected a compressed air or nitrogen source, interconnecting a regulator, measuring elements and an indicator near the end of the hose; it allows tyre pressure to be increased, checked and adjusted.

1.1.4 type D tyre pressure gauge – handheld gauge: a device intended exclusively for checking tyre pressure.

2 Metrological requirements

Metrological requirements specified by this regulation are based on requirements of relevant European standards. Gauges put into circulation pursuant to a special regulation²⁾ are subject to requirements specified by this special regulation. During verification, gauges are governed by metrological requirements that applied to their being put into circulation.

2.1. Service conditions

The gauge must be capable measuring tyre pressure over an ambient temperature range of $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

The gauge must measure tyre pressure within the limits of the maximum permissible error according to Table 1 over a reference temperature range of $15\text{ }^{\circ}\text{C}$ to $25\text{ }^{\circ}\text{C}$.

2.2 Measurement range

The measurement range must correspond to the use of tyre pressure gauges specified for a given of road vehicle.

2.3 Maximum permissible error

Table 1 lists maximum permissible errors (MPE) for a reference temperature range of $15\text{ }^{\circ}\text{C}$ to $25\text{ }^{\circ}\text{C}$

Table 1 – Maximum permissible errors

Values in bars

Measured pressure p_m	Maximum permissible errors
$p_m \leq 4$	0.08
$4 < p_m \leq 10$	0.16
$p_m > 10$	0,25

²⁾ Decree No. 337/2000 Coll., establishing requirements for road vehicle tyre pressure gauges marked with the EEC symbol, as amended.

This decree implements Council Directive 86/217/EEC of 26 May 1986 on the approximation of the laws of the Member States relating to tyre pressure gauges for motor vehicles into Czech legislation.

2.4 Changes to maximum permissible error due to temperature

Table 2 gives the maximum permissible error in a pressure gauge reading at a temperature outside the reference temperature range, but between $-10\text{ }^{\circ}\text{C}$ and $+40\text{ }^{\circ}\text{C}$.

Table 2 – Maximum permissible error changes due to temperature

Measured pressure p_m , in bars	Maximum permissible error change
$p_m \leq 4$	0.1 % of 4 bar per $^{\circ}\text{C}$
$4 < p_m \leq 10$	0.05 % of 10 bar per $^{\circ}\text{C}$
$p_m > 10$	0.05 % of the upper limit of the measurement range per $^{\circ}\text{C}$

For service temperature limits of $-20\text{ }^{\circ}\text{C}$ and $+60\text{ }^{\circ}\text{C}$, the value of the maximum permissible error change is 50% higher than the values listed in Table 2.

2.5 Hysteresis error

Within the reference temperature range, hysteresis error must not exceed the absolute value of the maximum permissible error according to Table 1. The temperature must remain constant during the test.

For a given pressure, the value measured during a pressure increase must not exceed the value measured during a pressure decrease.

2.6 Return of the gauge indicator to a predefined mark

For mechanical tyre pressure gauges, at atmospheric pressure, the pressure indicator must stop at the zero mark or at a predefined mark that is clearly different from the scale markings, within limits of the maximum permissible error. The pressure gauge may have an indicator stop that is at least twice the distance of the maximum permissible error below zero or a predefined mark.

For electronic type pressure gauges, at atmospheric pressure the gauge's indicator must display zero pressure, or zero pressure within the limits of maximum permissible error.

3 Technical requirements

Technical requirements specified by this regulation are based on requirements of relevant European standards. Gauges put into circulation pursuant to a special regulation²⁾ are subject to requirements specified by this special regulation. During verification, gauges are governed by technical requirements that applied to their being put into circulation.

3.1 In general

The design of a tyre pressure gauge must ensure that the gauge maintains its metrological properties for a period appropriate to its use.

Tyre pressure gauges are measuring instruments that are part of fixed (type A) or mobile (type B and C) devices for increasing road vehicle tyre pressure or that are used separately (type D).

For purposes of this regulation, the following tyre pressure gauge classification is used:

- type A: a fixed device (designed to be non-portable);
- type B: a portable device (with a pressure vessel);
- type C: a handheld device (with a hose connection);
- type D: a handheld gauge.

According to the type of pressure sensor used and the type of indicator used, for purposes of this regulation we separate tyre pressure gauges into mechanical and electronic ones.

3.2 Pressure sensor

Pressure sensors in mechanical tyre pressure gauges may for example be a flexible (Bourdon) tube, box or membrane. The elastic deformation of these flexible elements is mechanically transmitted to the indicator.

Electronic tyre pressure gauges may use pressure sensors or pressure transducers that transfer information on pressure to an electrical output signal that is further processed and changed to a digital indication.

3.3 Indicator

The indicator must enable the value of the measured pressure to be read directly and precisely within the measurement range.

3.3.1 Analogue indicators

An analogue scale must have divisions of 0.1 bar. The length of a division mark must not be less than 1.25 mm. The scale arc usually covers an angle of 270° .

The width of that part of the pointer that covers the scale markings must not be greater than the width of the scale markings, and must cover approximately half of the length of the shortest scale marking.

The maximum distance between the pointer and the surface of the scale of a circular gauge face must not exceed 2 mm or $0.02L + 1$ mm, where L is the distance between the indicator's axis of rotation and its end.

The numbering on the scale must express the value of the measured pressure directly, without the use of a coefficient.

The pointer's movement must not be impeded on both sides of the zero mark or opposite a predefined mark with a pointer stop within a distance corresponding to double the maximum permissible error listed in Table 1.

3.3.2 Digital indicators

Electronic tyre pressure gauges must have a display. The height and width of numerals must be sufficient to make the data on the display clear and unambiguous.

Digital indicators must have a resolution of less than 0.05 bar.

3.4 Additional design requirements

3.4.1 Maximum supply gas pressure

For type A or C gauges that are connected directly to the pressure source, or for type B gauges equipped with a pressure medium tank, gas pressure must not be allowed to exceed 125% of the largest value on the pressure gauge scale.

A pressure gauge must be capable of withstanding overpressure of up to 125% of the largest value on the scale for a short time without any changes to its metrological properties.

If the supply pressure exceeds 125% of the largest value on the scale, the pressure gauge must be protected by an effective protective device (a safety valve, pressure regulator or relief valve).

3.4.2 Installation position

The installation or service position of the gauge must be either uniquely determined by the service position of the device, or must be clearly indicated on the gauge with a drawing.

Changes to the nominal position in a plane angle of $\pm 10^\circ$ for type A and B gauges must not cause changes in indication of the measured quantity that are greater than 50% of the maximum permissible error.

3.4.3 Power source

Electronic tyre pressure gauges may be powered by mains power or by replaceable batteries.

3.5 Software

For electronic tyre pressure gauges, the software used by the device must be identifiable (except for cases where the only function involved is display of the measured value). The software must be secured against accidental or intentional influence or damage, and must correspond to the WELMEC 7.2 Guide.³⁾

3.6 Resistance to external influences

3.6.1 Physical durability

The design and construction of tyre pressure gauges and materials used must guarantee sufficient rigidity, stability and resistance to physical impacts.

3.6.2 Weather resistance

A gauge must resist extreme storage temperatures of -40°C to $+70^\circ\text{C}$ without damage or deterioration of metrological properties.

Tyre pressure gauges must not be sensitive to relative humidity of the ambient air.

3.6.3 Protection from water penetration and foreign matter (shielding level)

A tyre pressure gauge must provide sufficient protection from touching dangerous parts, protection from ingress of solid foreign matter, and protection from ingress of water that corresponds to the use specified by the manufacturer.

The minimum level of protection for tyre pressure gauges intended for outdoor use is IP 44.

3.6.4 Electromagnetic compatibility (EMC)

Electronic tyre pressure gauges must not be affected by electrical or electromagnetic interference, or must react to them in a defined manner (e.g. by reporting an error, blocking measurement, etc.). They also must not radiate any undesirable electromagnetic fields.

4 Markings

4.1 In general

All lettering and symbols must be easy to see, legible and permanent under normal working conditions, and must not obscure the data displayed by the meter.

4.2 Markings

A tyre pressure gauge must be labelled:

a) on the dial or display (or outside the display, but near the indication of the measured value), with:

- the measured value: P_e ;
- the unit of the measured value: bar;

³⁾ WELMEC 7.2 Software Guide; *publicly available at* www.welmec.org

- if needed, indication of the device's working position;
- b) on the dial, on the information label or on the device itself, with:
- information that identifies the manufacturer;
 - information that identifies the device;
 - a type approval mark.

4.3 Official markings

A suitable location must be provided for an official marking or markings.

For devices whose design includes adjustment or calibration elements, unauthorized access to these must be prevented in an effective manner.

5 Type approval

5.1 In general

The type approval process for tyre pressure gauges includes the following tests:

- an external inspection;
- functional tests:
 - an accuracy test;
 - determining hysteresis error;
 - a test of error change due to service temperature;
 - a stability test;
- a test of the gauge's resistance to physical influences:
 - a drop test;
 - an installation position influence test;
- an environmental resistance test;
 - a test of resistance to extreme temperatures;
 - a dry heat test;
 - a salt mist test;
 - a test of resistance to ingress of water and foreign matter;
- a power voltage influence test;
- an electromagnetic compatibility (EMC) test:
 - resistance to interference caused by power lines, induced by high-frequency fields;
 - resistance to a radiated high-frequency electromagnetic field;
 - resistance to electrostatic discharge;
 - resistance to rapid transient electrical phenomena/impulse groups;
 - resistance to electrical surges;
 - resistance to short AC voltage dips, short interruptions, and slow voltage changes.

EEC type approval is performed pursuant to special legislation.⁴⁾ Test scope is specified by special legislation.²⁾

5.2 External inspection

The following is checked during an external inspection of a tyre pressure gauge to ensure that:

- prescribed technical documentation is complete;
- metrological and technical characteristics specified by the manufacturer in documentation meet this regulation's technical and metrological requirements listed in Sections 2 and 3;
- the tyre pressure gauge is complete and its condition corresponds to prescribed technical documentation;
- the software version of the tyre pressure gauge is the same as specified by the manufacturer.

5.3 Type approval test conditions

5.3.1 Test equipment requirements

The following tools must be used for a test of metrological properties:

- a pressure reference based on an arbitrary physical principle with a measurement range corresponding to the measurement range of the gauges under test, and with an expanded uncertainty of measurement (for $k = 2$) less than or equal to $\frac{1}{4}$ of the maximum permissible error of the gauge under test specified in Section 2.3;
- a thermometer for measuring the temperature during the test, with a measurement range of at least $(-20$ to $+60)$ °C, and whose indicator has a resolution of at least 0.2 °C.

Measuring instruments used as part of test tools must have valid metrological traceability.

5.3.2 Test conditions

During an accuracy test, ambient temperature must be in the reference temperature range of 15 °C to 25 °C. During the test, ambient temperature must not change by more than 5 °C.

When determining hysteresis error, the ambient temperature must be held constant within the reference temperature range of 15 °C to 25 °C.

For other tests, the ambient temperature must meet individual type approval test requirements.

During measurement, vibrations and jolts must not cause the pointer to oscillate more than 1/10 of the maximum permissible error specified in Section 2.3.

The pressure in the gauge must be generated by a non-corrosive gaseous pressure medium. Dry, clean air or nitrogen is recommended.

The working position of the gauge under test must correspond to the position specified by the tyre pressure gauge's manufacturer (and/or pressure gauge manufacturer), or to the position described in the pressure gauge type approval certificate.

During tests, the difference between the pressure connection level of the gauge under test and the reference pressure connection level of the pressure reference must not cause an error greater than 1/10 of the maximum permissible error specified in Section 2.3.

The tightness of the "reference – gauge under test" system must be such that the pressure drop during reading data on the reference and the gauge under test does not cause an error greater than 1/10 of the maximum permissible error specified in Section 2.3.

⁴⁾ Decree No. 332/2000 Coll., establishing some procedures for type approval and verification of specified measuring instruments bearing the EEC mark, as amended.

5.4 Functional tests

5.4.1 Accuracy test

An accuracy test is performed at least at five evenly spaced points within the measurement range of the tyre pressure gauge under test (including the upper and lower limits of the measurement range).

Prior to the test itself, the gauge is loaded smoothly three times up to the upper limit of its measurement range.

If the tyre pressure gauge under test is designed as a deformation pressure gauge, the pressure value must be read after a light tap on the gauge's casing. The reading of values on the gauge's scale must be interpolated between $\frac{1}{4}$ to $\frac{1}{10}$ of the distance between two scale markings.

Each point must be tested during rising and during declining pressure (except for gauges that are not intended for measuring declining pressures). After the rising pressure test and prior to the declining pressure test, the gauge is allowed to remain at the upper limit of its measurement range for 20 minutes, under a pressure corresponding to the upper limit of its measurement range.

At each pressure test point, the current ambient pressure is recorded.

Gauge errors at individual points must not exceed the maximum permissible errors listed in Table 1.

5.4.2 Determining hysteresis errors

This test is performed only on gauges designed for regular measurement of declining pressures.

Hysteresis error is determined by comparing pressure values obtained during rising and during declining pressure, at least at five evenly spaced points within the pressure measurement range (including the upper and lower limits of the measurement range).

Prior to pressure decline, the tyre pressure gauge must be kept at a pressure equal to the upper limit of its measurement range.

Hysteresis error must not exceed the absolute value of the maximum permissible error listed in Table 1.

5.4.3 Test for error change due to service temperature

This test consists of determining reading changes for a given pressure at a temperature of $-10\text{ }^{\circ}\text{C}$ and $+40\text{ }^{\circ}\text{C}$ as related to readings in the reference temperature range. Changes caused by temperature changes must not exceed values listed in Table 2.

The same test must be performed at temperatures of $-20\text{ }^{\circ}\text{C}$ and $+60\text{ }^{\circ}\text{C}$. Pressure value changes caused by temperature changes must not exceed values listed in Table 2 by more than 50%.

5.4.4 Stability test

During a stability test, a tyre pressure gauge is subjected to:

- a) pressure that exceeds the upper limit of the measurement range by 25% for 15 minutes;
- b) a thousand pulses consisting of pressure changes from 0 to (90 to 95) % of the upper limit of the measurement range;
- c) ten thousand pressure cycles changing slowly from approximately 20% to approximately 75% of the upper limit of the measurement range, with a frequency not greater than 60 cycles per minute.

After the tests in points a), b) and c) are performed, tyre pressure gauges are left idle for one hour, and then must be tested under conditions specified in sections 2.3, 2.5 and 2.6.

5.5 Test of resistance to physical influences

5.5.1 Drop test

During a drop test, the gauge under test is dropped from a height specified below onto a concrete test surface.

For type B tyre pressure gauges, ten drop tests are performed from a height of 250 mm above the test surface, for type C gauges ten drop tests are performed from a height of 500 mm, and for type A and D gauges, no drop test is required.

Immediately after the drop test, the gauge is checked for changes in appearance. No changes in indication may occur after the test. One hour after the test was completed, the gauge must meet requirements listed in sections 2.3, 2.5 and 2.6 when tested within the reference temperature range.

5.5.2 Installation position influence test

An installation position influence test is performed for type A and B gauges by reading the pressure in the prescribed installation position and when the gauge is tilted by $\pm 10^\circ$.

Pressure indication changes must not be greater than 50% of the maximum permissible error listed in Table 1.

5.6 Environmental resistance tests

5.6.1 Testing resistance to extreme temperatures

The complete tyre pressure gauge, not under any pressure, must be placed in an environmental chamber for at least 24 hours at both limit temperatures of -40°C and $+70^\circ\text{C}$.

The gauge is checked for changes in appearance immediately after the completion of the test. The gauge must not change its appearance: its material and surface must not have cracks, blisters or colour changes.

One hour after the test was completed, the gauge must meet requirements listed in sections 2.3, 2.5 and 2.6 when tested within the reference temperature range.

5.6.2 Wet heat test

A cyclical wet heat test (12 h + 12 h cycle) is performed in two cycles with a lower temperature limit of 55°C . During the test, the gauge's air inlet must be closed.

The gauge is checked for changes in appearance immediately after the test.

After one hour, the gauge must meet requirements listed in sections 2.3 and 2.6 when tested within the reference temperature range.

5.6.3 Salt mist test

A salt mist test is performed for 48 hours. During the test, the gauge's air inlet must be closed.

The gauge is checked for changes in appearance immediately after the test.

After one hour, the gauge must meet requirements listed in sections 2.3 and 2.6 when tested within the reference temperature range.

5.6.4 Test of resistance to ingress of water and foreign matter (shielding level)

The gauge is tested whether it meets the manufacturer's specified shielding level pursuant to Section 3.6.3.

5.7 Power voltage influence test

The influence of power voltage is tested for electronic tyre pressure gauges for a given pressure under reference conditions, with power voltage consecutively set at:

- a) $U_{\max} = 1.1 U_N$ and $U_{\min} = 0.85 U_N$ for electronic tyre pressure gauges powered by mains power that have one nominal power voltage of U_N .
- b) $U_{\max} = 1.1 U_{N2}$ and $U_{\min} = 0.85 U_{N1}$ for electronic tyre pressure gauges powered by mains power that have a nominal voltage range of between U_{N1} and U_{N2} .
- c) $U_{\max} = U_{\text{bat.max}}$ and $U_{\min} = U_{\text{bat.min}}$ for battery-powered electronic tyre pressure gauges, where $U_{\text{bat.min}}$ is the battery's lowest service voltage as specified by the gauge's supplier for an ambient temperature of 20 °C, and $U_{\text{bat.max}}$ is the voltage of a new battery at zero load.

Battery-powered electronic tyre pressure gauges must indicate low battery voltage if the voltage is outside the nominal range specified by the manufacturer.

During testing, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8 Electromagnetic compatibility (EMC)

EMC tests are performed on electronic tyre pressure gauges.

5.8.1 Resistance to interference caused by power lines, induced by high-frequency fields

Resistance to interference caused by power lines, induced by high-frequency fields is tested with the gauge switched on, between a frequency range of 150 kHz to 80 MHz at an open-circuit test voltage amplitude of 3 V. Interference is applied to signal lines longer than 3 m, all power inputs and outputs, and all functional ground connections.

The above open-circuit test voltage amplitude is given for measurement without modulation. The test voltage is a 1 kHz sinus wave with an amplitude modulation index of 80%. The frequency step of the test field wobble is at most 1%; the delay time for each frequency must not be shorter than the time for testing the gauge under test and/or for any reaction of the gauge under test to interference; in no event may it be shorter than 0.5 seconds, however.

During testing, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8.2 Resistance to a radiated high-frequency electromagnetic field

Resistance to a radiated high-frequency electromagnetic field is tested with the gauge switched on, in the following frequency bands:

- 80 MHz to 800 MHz, test field intensity amplitude 3 V/m;
- 800 MHz to 960 MHz, test field intensity amplitude 10 V/m;
- 960 MHz to 1 400 MHz, test field intensity amplitude 3 V/m;
- 1 400 MHz to 2 000 MHz, test field intensity amplitude 10 V/m;
- 2 000 MHz to 2 700 MHz, test field intensity amplitude 1 V/m.

The above test field intensity amplitude is given for measurement without modulation. The test field is a 1 kHz sinus wave with an amplitude modulation index of 80%. The frequency step of the test field wobble is at most 1%; the delay time for each frequency must not be shorter than the time for testing the gauge under test and/or for any reaction of the gauge under test to interference; in no event may it be shorter than 0.5 seconds, however. The test field is applied to all sides of the tyre pressure gauge's shielding.

During testing, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8.3 Resistance to electrostatic discharge

Resistance to electrostatic discharge is tested with the gauge switched on, preferably with a contact discharge of 6 kV or with an 8 kV air discharge if a contact discharge cannot be used. Discharges are applied to the gauge's cover or to coupling plates near the tyre pressure gauge.

During this test, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8.4 Resistance to rapid transient electrical phenomena/impulse groups

Resistance to rapid transient electrical phenomena/impulse groups is tested with the gauge switched on at a test voltage of:

- ± 2 kV on AC or DC power terminals;
- ± 1 kV on signal and control terminals for connection of lines over 3 m long.

The repeating impulse frequency is 5 kHz, the impulse group periodicity is 300 ms, the total test time for each input and one impulse polarity is at least 1 minute.

During this test, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8.5 Resistance to electrical surges

Resistance to surges is tested with the gauge switched on, with a surge of $t_r/t_h = 1,2/50$ (8/20) μs at the following voltages:

- ± 1 kV asymmetrical or 0.5 kV symmetrical to signal and control lines longer than 30 m
- ± 2 kV asymmetrical and ± 1 kV symmetrical to AC or DC power lines.

During this test, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

5.8.6 Resistance to short AC voltage dips, short interruptions, and slow voltage changes

Resistance to short voltage dips, short interruptions and slow voltage variations on AC power lines carrying less than 16 A on are tested with the gauge switched on by applying a voltage reduction of:

- 0 % of the nominal voltage for 0.5 of a period;
- 0 % of the nominal voltage for 1 period;
- 70 % of the nominal voltage for 25 periods.

Each of the above is applied ten times with a period of 10 s.

During this test, the gauge must exhibit normal functionality within the limits of the maximum permissible error listed in Table 1.

6 Initial verification

Initial verification applies only to gauges that have a valid type approval certificate at the time, and to gauges that have undergone repair.

The procedure for initial verification is identical to subsequent verification pursuant to Section 7.

Initial EEC verification pursuant to a special regulation⁴⁾ applies to tyre pressure gauges that have undergone EEC type approval and that have the EEC type approval mark, prior to their being placed into circulation.

7 Subsequent verification

The following tests are performed during subsequent verification of road vehicle tyre pressure gauges.

- a visual inspection;
- functional tests:
 - an accuracy test;
 - determining hysteresis errors.

7.1 Visual inspection

The following is checked during a visual inspection:

- that the gauge submitted for verification is the same as the approved type;
- that the gauge is not physically damaged, that there are no loose parts, and that there are no signs of corrosion
- markings, labels and their method of application match information and requirements listed in the gauge's type approval certificate.

If the gauge does not pass the visual inspection, no further tests are performed.

7.2 Test conditions during verification

7.2.1 Test equipment

Equipment described in Section 5.3.1 must be used to test metrological properties.

7.2.2 Test conditions

For verification tests, conditions pursuant to Section 5.3.2 apply, and the following.

During the accuracy test and determining hysteresis error, the ambient temperature range is extended, from $-10\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$.

The working position of the gauge under test must correspond to the position specified by the manufacturer, or the position listed in the tyre pressure gauge type approval certificate.

7.3 Functional tests

7.3.1 Accuracy test

The accuracy test is performed using the method in Section 5.4.1.

Gauge errors at individual points must not exceed:

- the maximum permissible error listed in Table 1 at a true measurement temperature within the reference temperature range of $15\text{ }^{\circ}\text{C}$ to $25\text{ }^{\circ}\text{C}$, or
- the maximum permissible error listed in Table 1 corrected by maximum permissible errors caused by temperature according to Table 2 within ambient temperature ranges of $-10\text{ }^{\circ}\text{C}$ to $15\text{ }^{\circ}\text{C}$ and $+25\text{ }^{\circ}\text{C}$ to $40\text{ }^{\circ}\text{C}$.

7.3.2 Determining hysteresis error

Hysteresis error is determined using the method in Section 5.4.2.

The difference between the data indicated by the gauge under test at the same pressure test point while the pressure is being increased and decreased (hysteresis error ΔH) must not exceed the gauge's maximum permissible error specified in Section 2.3.

8 Notified standards

To specify metrological and technical requirements for measuring devices and to specify verification test methods stemming from this measure of a general nature, the CMI notifies Czech technical standards, other technical standards or technical documents of international or foreign organizations or other technical documents containing detailed technical requirements (hereinafter “notified standards”). The CMI shall publish a list of these notified standards, with their assignment to relevant measures, along with the measure of a general nature, in a manner available to the public (on the website www.cmi.cz).

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

II.

JUSTIFICATION

The CMI issues, towards the implementation of Section 24c of Act No. 505/1990 Coll., on metrology, as amended, this measure of a general nature, stipulating metrological and technical requirements for specified measuring devices and test methods for verification of these specified measuring devices.

In Decree No. 345/2002 Coll., specifying measuring devices for mandatory verification and measuring devices subject to type approval, as amended, the annex “List of Specified Measuring Device Types” classifies road motor vehicle tyre pressure gauges, except for pressure gauges used exclusively for the measurement of tyre pressure by motor vehicle users under item 2.3.3 as measuring devices subject to type approval and verification.

The CMI thus issues, towards the implementation of Section 24c of Act No. 505/1990 Coll., on metrology, as amended, for the measuring device type specified as “road motor vehicle tyre pressure gauges, except for pressure gauges used exclusively for the measurement of tyre pressure by motor vehicle users”, this measure of a general nature, stipulating metrological and technical requirements for road motor vehicle tyre pressure gauges, except for pressure gauges used exclusively for the measurement of tyre pressure by motor vehicle users and test methods for type approval and verification of these specified measuring devices.

This regulation (Measure of a General Nature) has been notified in accordance with Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations, as amended by Directive 98/48/EC.

III.

INSTRUCTIONS

A measure of a general nature cannot be appealed (Section 173(2) of Act No. 500/2004 Coll., the Administrative Code, as amended {hereinafter the “Administrative Code”}).

Pursuant to Section 172(5) of the Administrative code, a decision on objections cannot be appealed.

Conformance of a measure of a general nature with legislation can be judged in review proceedings pursuant to Section 94 to 96 of the Administrative Code. A participant may ask the administrative body that issued this measure of a general nature to perform a review. If the administrative body does not see any reason to commence review proceedings, it shall inform the submitter of this fact within thirty days, giving reasons. Pursuant to Section 174(2) of the Administrative Code, a ruling on the commencement of

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review proceedings can be issued within three years of the effective date of the measure of a general nature.

IV.
EFFECTIVE DATE

This measure of a general nature takes effect on the fifteenth day following the day of its publication (Section 24d of Act No. 505/1990 Coll., on metrology, as amended).

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RN Dr Pavel Klenovský
Director General