



**EA MLA Signatory**  
**Český institut pro akreditaci, o.p.s.**  
(Czech Accreditation Institute)  
**Hájkova 2747/22, Žižkov, 130 00 Praha 3**

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products and on changes and amendments to some Acts, as amended

# CERTIFICATE OF ACCREDITATION

No. 452/2025

**Centrum dopravního výzkumu, v.v.i.**  
**with registered office Líšeňská 33a, 636 00 Brno**  
**Company Registration No. 44994575**

for the Testing Laboratory No. 1506  
Transport Research Centre Laboratory (LCDV)

## Scope of accreditation:

Testing of concrete and asphalt road layers, testing of aggregates and soils, measurement of road irregularity, noise measurement and modelling, measurement of outdoor air quality, determination of indicators in a solid matrix, testing of traffic signs, and determination of impurities in hydrogen fuel to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2018

In its activities performed within the scope and for the period of validity of this Certificate, the abovementioned Accredited Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Accredited Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited conformity assessment body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 444/2024 of 30/08/2024, and/or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **04/09/2030**

Prague: 04/09/2025



Signed in the Czech original:  
Jan Velíšek on 04/09/2025

**Jan Velíšek**  
Director of the Department  
of Testing and Calibration Laboratories  
Czech Accreditation Institute

This translation of the Czech original has been issued by: Eliška Frycová



**Appendix is an integral part of  
Certificate of Accreditation No. 452/2025 of 04/09/2025**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

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Líšeňská 33a, 636 00 Brno

*The laboratory is qualified to carry out standalone sampling.*

*Detailed information on activities within the scope of accreditation (determined analytes / source literature) is given in the section „Specification of the scope of accreditation“*

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure / method name                                     | Test procedure / method identification <sup>2</sup> | Tested subject     | Degrees of freedom <sup>3</sup> |
|-----------------------------|--|---|--------------------|---------------------------------|
| 1*                          | Determination of soil density                                    | ČSN 72 1010, Method A and D-1                       | Base courses       | -                               |
| 2                           | Laboratory determination of soil compactibility - Proctor test   | ČSN EN 13286-2                                      | Soils              | -                               |
| 3                           | Determination of the California Bearing Ration (CBR)             | ČSN EN 13286-47                                     | Soils              | -                               |
| 4                           | Determination of relative density of non-cohesive soils          | ČSN 72 1018   | Non-cohesive soils | -                               |
| 5                           | Determination of water content of a soil                         | ČSN EN ISO 17892-1                                  | Soils              | -                               |
| 6                           | Determination of density of fine-grained soil by direct method   | ČSN EN ISO 17892-2, cl. 4.1                         | Soils              | -                               |
| 7                           | Determination of apparent density of solid particles in soils    | ČSN EN ISO 17892-3                                  | Soils              | -                               |
| 8                           | Determination of particle size distribution of soils             | ČSN EN ISO 17892-4, except cl. 4.4, 5.4 and 6.3     | Soils              | -                               |
| 9                           | Determination of the water content                               | ČSN EN 1097-5                                       | Aggregates         | -                               |
| 10                          | Determination of Atterberg limits                                | ČSN EN ISO 17892-12                                 | Soils              | -                               |
| 11*                         | Static loading test  | ČSN 72 1006, annex A, B, D                          | Base courses       | -                               |
| 12                          | Determination of particle size distribution - dry sieving method | ČSN EN 933-1, except cl. 7.1                        | Aggregates         | -                               |
| 13*                         | Determination of consistency - Slump test                        | ČSN EN 12350-2                                      | Fresh concrete     | -                               |
| 14*                         | Determination of consistency - Flow table test                   | ČSN EN 12350-5                                      | Fresh concrete     | -                               |
| 15*                         | Determination of bulk density                                    | ČSN EN 12350-6                                      | Fresh concrete     | -                               |
| 16*                         | Determination of air content                                     | ČSN EN 12350-7, except chapter 5                    | Fresh concrete     | -                               |
| 17                          | Determination of compressive strength                            | ČSN EN 12390-3                                      | Hardened concrete  | -                               |
| 18                          | Determination of flexural strength                               | ČSN EN 12390-5                                      | Hardened concrete  | -                               |
| 19                          | Determination of the indirect tensile                            | ČSN EN 12390-6                                      | Hardened concrete  | -                               |

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| Ordinal number <sup>1</sup> | Test procedure / method name  | Test procedure / method identification <sup>2</sup>              | Tested subject   | Degrees of freedom <sup>3</sup> |
|-----------------------------|---|--|--|---------------------------------|
| 20                          | Determination of bulk density   | ČSN EN 12390-7, except cl. 6.4, 6.5 and 6.7                      | Hardened concrete                                      | -                               |
| 21                          | Determination of depth penetration of water under pressure                | ČSN EN 12390-8   | Hardened concrete                                      | -                               |
| 22                          | Determination of surface resistance to water and chemical de-icing agents | ČSN 73 1326, method A, C   | Hardened concrete                                      | -                               |
| 23                          | Determination of concrete frost resistance                                | ČSN 73 1322  | Hardened concrete                                      | -                               |
| 24                          | Determination of static modulus of elasticity                             | ČSN ISO 1920-10  | Hardened concrete                                      | -                               |
| 25*                         | Testing of concrete strength by rebound tester                            | ČSN 73 1373, except annex A, B                                   | Hardened concrete                                      | -                               |
| 26*                         | Testing of concrete hardness by rebound tester                            | ČSN EN 12504-2   | Hardened concrete                                      | -                               |
| 27                          | Determination of air void characteristics                                 | ČSN EN 480-11  | Hardened concrete                                      | -                               |
| 28                          | Determination of water absorption   | ČSN 73 1316:1989   | Hardened concrete                                      | -                               |
| 29*                         | Determination of layer adhesion and tensile strength of surface layers    | ČSN 73 6242, Annex B   | Concrete structures                                    | -                               |
| 30*                         | Determination of water-tightness of surface finish                        | ČSN 73 2578  | Building structures                                    | -                               |
| 31                          | Determination of compressive strength                                     | ČSN EN 13286-41  | Hydraulically bound mixtures                           | -                               |
| 32                          | Determination of the indirect tensile strength using axial pressure       | ČSN EN 13286-42;<br>ČSN 736147                                   | Hydraulically bound mixtures                           | -                               |
| 33*                         | Measurements of surface irregularity                                      | ČSN 73 6175, chapter 8   | Roads  | -                               |
| 34*                         | Impact loading test of pavement and base courses                          | ČSN 73 6192, except cl. 3.1.1 and 3.1.2                          | Roads and base courses                                 | -                               |
| 35*                         | Measurement and modelling of noise  | ČSN ISO 1996-1;<br>ČSN ISO 1996-2;<br>ISO 9613-1;<br>ISO 9613-2; | Non-working environment – traffic and industrial noise | -                               |

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| Ordinal number <sup>1</sup> | Test procedure / method name  | Test procedure / method identification <sup>2</sup>   | Tested subject                         | Degrees of freedom <sup>3</sup> |
|-----------------------------|---|---|--|---------------------------------|
| 36*                         | Noise measurement by close proximity method (CPX)   | SOP – H 01<br>(Methodology 104/2014-710-VV/1;<br>Methodology 122/2017-710-VV/1;<br>ISO 11819-2;<br>ISO/TS 11819-3;<br>ISO/TS 13471-1;<br>TKP 7) | Non-working environment – road surface | -                               |
| 37*                         | Determination of PM <sub>10</sub> concentration by gravimetric method   | SOP – CH 04, part A<br>(ČSN EN 12341)   | Ambient air, air quality               | -                               |
| 38*                         | Determination of PM <sub>2.5</sub> concentration by gravimetric method  | SOP – CH 04, part B<br>(ČSN EN 12341)   | Ambient air, air quality               | -                               |
| 39*                         | Determination of PM <sub>10</sub> and PM <sub>2.5</sub> concentrations by automatic analyser by nephelometer  | SOP – CH 15, part A   | Ambient air, air quality               | -                               |
| 40*                         | Determination of sulphur dioxide concentrations by UV fluorescence  | SOP – CH 15, part B<br>(ČSN EN 14212)   | Ambient air, air quality               | -                               |
| 41*                         | Determination of nitrogen oxides (NO, NO <sub>2</sub> a NO <sub>x</sub> ) concentrations by chemiluminescence | SOP – CH 15, part C<br>(ČSN EN 14211)   | Ambient air, air quality               | -                               |
| 42*                         | Determination of ozone (O <sub>3</sub> ) concentrations by UV photometry                                      | SOP – CH 15, part D<br>(ČSN EN 14625)   | Ambient air, air quality               | -                               |
| 43*                         | Determination of carbon monoxide by nondispersive infrared spectrometry                                       | SOP – CH 15, part E<br>(ČSN EN 14626)   | Ambient air, air quality               | -                               |
| 44                          | Determination of benzo(a)pyrene concentrations by GC-MS   | SOP – CH 14, part A<br>(ČSN EN 15549)   | Ambient air, air quality               | -                               |
| 45                          | Determination of Pb, Cd, As and Ni in PM <sub>10</sub> aerosol particles fraction by ICP-MS                   | SOP – CH 18, part A<br>(ČSN EN 14902)   | Ambient air, air quality               | -                               |
| 46*                         | Measurement of temperature, relative humidity, pressure, wind velocity and direction                          | SOP – CH 15, part F   | Ambient air                            | -                               |

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| Ordinal number <sup>1</sup> | Test procedure / method name  | Test procedure / method identification <sup>2</sup>   | Tested subject   | Degrees of freedom <sup>3</sup> |
|-----------------------------|---|---|--|---------------------------------|
| 47*                         | Determination of retroreflection coefficient  | SOP – DZ 01<br>(ČSN EN 12899-1,<br>cl. 4.1.1.4;<br>ČSN EN 12899-3,<br>cl. 7.3.2.3;<br>ČSN EN 17353, cl. 7.3;<br>ČSN EN ISO 20471, cl. 7.3)                      | Retro-reflective films,<br>vertical traffic signs,<br>transport equipment,<br>high-visibility clothing,<br>high-visibility<br>accessories                              | -                               |
| 48*                         | Determination of trichromatic coordinates and brightness factor   | SOP – DZ 02<br>(ČSN EN 1436 Annex C; ČSN EN 12899-1,<br>cl. 4.1.1.3;<br>ČSN EN 12899-3,<br>cl. 7.3.2.1;<br>ČSN EN 17353, cl. 7.2;<br>ČSN EN ISO 20471, cl. 7.2) | Retro-reflective films,<br>vertical traffic signs,<br>horizontal traffic signs,<br>transport equipment,<br>high-visibility clothing,<br>high-visibility<br>accessories | -                               |
| 49*                         | Determination of the specific intensity coefficient   | SOP – DZ 03<br>(ČSN EN 1436 Annex B;<br>TP 70, cl. 6.1)   | Horizontal traffic signs,<br>transport equipment   | -                               |
| 50*                         | Determination of the brightness coefficient in diffuse lighting   | SOP – DZ 04<br>(ČSN EN 1436 Annex A;<br>TP 70, cl. 6.2)   | Horizontal traffic signs,<br>transport equipment   | -                               |
| 51*                         | Determination of the position of dowels and tie bars  | SOP – G 1<br>(Methodology TRC-GPR01-2016;<br>ČSN 73 6123-1;<br>TP-233)  | Joints of concrete pavements   | -                               |
| 52*                         | Determination of thicknesses of pavements   | SOP – G 2<br>(Methodology TRC-GPR02-2017;<br>TP-233)  | Pavements of roads   | -                               |
| 53                          | Determination of chlorides by spectrophotometry by reagent test   | SOP – CH 19<br>(ČSN 757422)   | Road run-off water,<br>aqueous extract of<br>materials, surface water  | -                               |
| 54                          | Determination of pH potentiometrically  | SOP – CH 20<br>(ČSN ISO 10523)  | Road run-off water,<br>aqueous extract, surface<br>water   | -                               |
| 55                          | Determination of polycyclic aromatic hydrocarbons by gas chromatography (GC-MS) and their sum by calculation from measured values | SOP – CH 14, part B<br>(ČSN EN 17503)   | Solid matrix   | -                               |

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| Ordinal number <sup>1</sup> | Test procedure / method name   | Test procedure / method identification <sup>2</sup> | Tested subject                                     | Degrees of freedom <sup>3</sup> |
|-----------------------------|--|---|--|---------------------------------|
| 56                          | Determination of polycyclic aromatic hydrocarbons by gas chromatography (GC-MS) and their sum by calculation from measured values                      | SOP – CH 14, part C (ČSN EN 17503)                  | Asphalt mixtures                                   | -                               |
| 57                          | Determination of water content and particle size distribution  | ČSN EN 12697-28, cl. 5.5; ČSN EN 1097-5             | Asphalt mixtures                                   | -                               |
| 58                          | Determination of dissolved organic carbon (DOC) by optical-thermal analysis with flame ionization detection  | SOP – CH 05 (ČSN EN 1484)                           | Road run-off water, aqueous extract, surface water | -                               |
| 59                          | Determination of fluoride spectrophotometrically with the reagent test   | SOP – CH 06 (ČSN ISO 17381)                         | Road run-off water, aqueous extract, surface water | -                               |
| 60                          | Determination of sulphate spectrophotometrically by the reagent test   | SOP – CH 07 (ČSN ISO 17381)                         | Road run-off water, aqueous extract, surface water | -                               |
| 61                          | Determination of elements by ICP-MS method   | SOP – CH 18, part B (ČSN EN ISO 17294-2)            | Road run-off water, aqueous extract, surface water | -                               |
| 62                          | Determination of dried dissolved solids by gravimetry  | SOP – CH 08 (ČSN 757346)                            | Road run-off water, aqueous extract, surface water | -                               |
| 63                          | Determination of sulphate by ICP-MS method   | SOP – CH 18, part D (ČSN EN ISO 17294-2)            | Concretes, concrete structures                     | -                               |
| 64                          | Determination of He in hydrogen by gas chromatography (GC-TCD)   | SOP- CH 26 (ČSN ISO 14687; ČSN ISO 21087)           | Hydrogen fuel                                      | -                               |
| 65                          | Determination of elements by ICP-MS method   | SOP – CH 18, part C (ČSN EN ISO 17294-2)            | Solid matrix                                       | -                               |
| 66                          | Determination of CO, CO <sub>2</sub> , C <sub>x</sub> H <sub>y</sub> , CH <sub>4</sub> in hydrogen by gas chromatography (GC-FID)                      | SOP – CH 27 (ČSN ISO 14687; ČSN ISO 21087)          | Hydrogen fuel                                      |                                 |
| 67                          | Determination of sulphur compounds, halogenated compounds individually and/or their sum, and formaldehyde in hydrogen by gas chromatography (GC MS TD) | SOP – CH 28 (ČSN ISO 14687; ČSN ISO 21087)          | Hydrogen fuel                                      |                                 |

<sup>1</sup> asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises

<sup>2</sup> if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest valid edition of the specified procedure is used (including any changes)

<sup>3</sup> the laboratory does not apply a flexible approach to the scope of accreditation

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**Specification of the scope of accreditation:**

| Ordinal test number | Detailed information on activities within the scope of accreditation (determined analytes)   |
|---------------------|--|
| 53                  | Chloride ions  |
| 55                  | Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene, Dibenzo[a,h]anthracene, Benzo[ghi]perylene  |
| 56                  | Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene, Dibenzo[a,h]anthracene, Benzo[ghi]perylene  |
| 61, 65              | Al, As, Ba, Be, Ca, Cd, Co, Cr <sub>total</sub> , Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sr, V, Zn   |
| 67                  | Halogenated - CH <sub>3</sub> Cl, CH <sub>2</sub> CHCl, CH <sub>2</sub> Cl <sub>2</sub> , ClHCCHCl, CHCl <sub>3</sub> , Cl <sub>2</sub> HCCCl <sub>2</sub> , CH <sub>3</sub> CHClCH <sub>2</sub> Cl, Cl <sub>2</sub> HCCH <sub>2</sub> Cl, C <sub>2</sub> Cl <sub>4</sub> , o-PhCl <sub>2</sub><br>Sulphur (gaseous) - H <sub>2</sub> S, COS, CH <sub>3</sub> SH, CH <sub>3</sub> CH <sub>2</sub> SH, CH <sub>3</sub> SCH <sub>3</sub> |

**Specification of the scope of accreditation:**

| Ordinal test number | Detailed information on activities within the scope of accreditation (source literature)   |
|---------------------|--|
| 35                  | MoH CR Bulletin, 2023, Part 14 – Methodological guide for the measurement and evaluation of noise in non-working environment;<br>Standards for noise modelling using SoundPLAN software:<br>- Road noise: NMPB Routes 1996<br>NMPB Routes 2008<br>RLS 90<br>- Railway noise: Schall 03 |
| 36                  | Methodology 104/2014-710-VV/1 - Methodology for the measurement and evaluation of roads in terms of noise pollution, certified by the Ministry of Transport, Department of Space Activities and ITS on December 15, 2014, under ref. no. 104/2014-710-VV/1                             |
| 39, 46              | Recordum Messtechnik manual  |
| 53, 59, 60          | Manual to the Spectroquant® Prove spectrophotometer  |
| 64                  | NPL REPORT AS 64   |

**Sampling:**

| Ordinal number | Sampling procedure name  | Sampling procedure identification <sup>1</sup> | Subject of sampling      |
|----------------|--|--|--------------------------|
| 1              | Taking of cored specimens  | ČSN EN 12504-1                                 | Hardened concrete        |
| 2              | Sampling for determination of PM <sub>10</sub> mass concentration of suspended particulate matter  | SOP – CH 01, part A (ČSN EN 12341)             | Ambient air, air quality |
| 3              | Sampling for determination of PM <sub>2.5</sub> mass concentration of suspended particulate matter | SOP – CH 01, part B (ČSN EN 12341)             | Ambient air, air quality |

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| Ordinal number | Sampling procedure name   | Sampling procedure identification <sup>1</sup> | Subject of sampling      |
|----------------|---|--|--------------------------|
| 4              | Sampling for determination of benzo(a)pyrene concentrations by GC-MS                                    | SOP – CH 01<br>(ČSN EN 15549)                  | Ambient air, air quality |
| 5              | Sampling for determination of Pb, Cd, As and Ni in PM <sub>10</sub> aerosol particles fraction by CP-MS | SOP – CH 01<br>(ČSN EN 14902)                  | Ambient air, air quality |
| 6              | Asphalt mixture sampling  | ČSN EN 12697-27, cl. 4.7                       | Asphalt mixtures         |

<sup>1</sup> if the document identifying the sampling procedure is dated, only these specific procedures are used. If the document identifying the sampling procedure is not dated, the latest valid edition of the specified procedure is used (including any changes)

**Explanations and abbreviations:**

Common noise Assessment Methods in Europe (CNOSSOS-EU)

|          |   |
|----------|---|
| CIE      | - International Committee on Illumination   |
| CPX      | - Close Proximity Method  |
| GC-MS    | - Gas Chromatography Mass Spectrometry  |
| ICP-MS   | - Inductively coupled plasma mass spectrometry  |
| PM       | - Particulate matter  |
| MoT      | - Ministry of transport of the Czech Republic   |
| Mo CR    | - Ministry of health of the Czech Republic  |
| UV       | - Detection in the ultraviolet spectrum   |
| SOP - DZ | - Standard Operating Procedure - Traffic signs (Internal test procedure) based on valid legislative documents, technical literature or firm manuals                                 |
| SOP - G  | - Standard operation procedure - Georadar (Internal test procedure) based on valid legislative documents, technical literature or firm manuals                                      |
| SOP - CH | - Standard operation procedure - Chemistry (Internal test procedure/sampling procedure prepared by LCDV) based on valid legislative documents, technical literature or firm manuals |
| SOP - H  | - Standard operation procedure - Noise (Internal test procedure prepared by LCDV)   |
| TKP      | - Road Construction Quality Specifications  |
| TP       | - Technical specification   |

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*"This document is an appendix to the certificate of accreditation. In case of any discrepancies between the English and Czech versions, the Czech version shall prevail, both for the certificate appendix and the certificate itself. "*