



**EA MLA Signatory**  
**Český institut pro akreditaci, o.p.s.**  
**Olšanská 54/3, 130 00 Praha 3**

issues

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

# CERTIFICATE OF ACCREDITATION

**No. 541/2022**

**Výzkumný ústav pro hnědé uhlí a.s.**  
**with registered office tř. Budovatelů 2830/3, 434 01 Most, Company Registration No. 44569181**

to the Testing Laboratory No. **1078**  
Testing Laboratory

Scope of accreditation:

Chemical analyses of solid fuels, water, waste, rocks, combustion and desulfurization products and products made of them, building materials, measurement of immissions and noise, diagnostics of machinery, sampling of gaseous, liquid and solid substances 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**

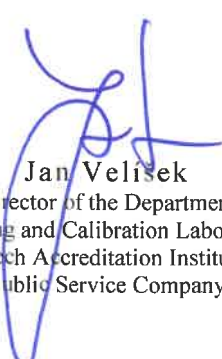
In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations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

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 643/2021 of 9. 12. 2021, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **10. 11. 2027**

Prague: 10. 11. 2022



  
**Jan Velisek**  
Director of the Department  
of Testing and Calibration Laboratories  
Czech Accreditation Institute  
Public Service Company

**The Appendix is an integral part of  
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**Výzkumný ústav pro hnědé uhlí a.s.**  
Testing Laboratory  
tř. Budovatelů 2830/3, 434 01 Most

**Testing laboratory locations:**

1. **Laboratory for Fuels, Waste and Water** tř. Budovatelů 2830/3, 434 01 Most
2. **Immission and Emission Measurement Laboratory** tř. Budovatelů 2830/3, 434 01 Most
3. **Rock Testing Laboratory** tř. Budovatelů 2830/3, 434 01 Most
4. **Technical Diagnostics Laboratory** tř. Budovatelů 2830/3, 434 01 Most

*The laboratory has a flexible scope of accreditation permitted as detailed in the Annex.*

*Updated list of activities provided within the flexible scope of accreditation is available at the Laboratory from the Quality Manager.*

*The Laboratory is qualified to carry out independent sampling.*

**1. Laboratory for Fuels, Waste and Water**

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure/method name  | Test procedure/method identification <sup>2</sup>                            | Tested object  |
|-----------------------------|---|--|--|
| 1                           | Chemical and physical analysis of water and aqueous extracts waste and building materials |  |  |
| 1.1                         | Determination of pH by potentiometry  | IMP 046/LACH<br>(ČSN ISO 10523)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.2                         | Determination of total, dissolved and suspended solids and DIS by gravimetry              | IMP 044/LACH<br>(ČSN 75 7346,<br>ČSN 75 7347,<br>ČSN 75 7358,<br>ČSN EN 872) | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.3                         | Determination of electrical conductivity  | IMP 047/LACH<br>(ČSN EN 27888)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.4                         | Determination of dissolved oxygen by membrane electrode                                   | IMP 049/LACH<br>(ČSN EN ISO 5814)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.5                         | Determination of the inhibitory effect on the light emission of <i>Vibrio fischeri</i>    | IMP 007/LPOV<br>(ČSN EN ISO 11348-2)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.6                         | Determination of selected elements by ICP-OES method <sup>14</sup>                        | IMP-005/LPOV<br>(ČSN EN ISO 11885)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.7                         | Determination of anions by ion chromatography <sup>4</sup>                                | IMP 055/LACH<br>(ČSN EN ISO 10304-1,<br>ČSN EN ISO 10304-3)                  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.8                         | Determination of the chemical oxygen demand – COD <sub>Cr</sub> (titration method)        | IMP 048/LACH<br>(ČSN ISO 6060)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |



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| Ordinal number <sup>1</sup> | Test procedure/method name  | Test procedure/method identification <sup>2</sup>   | Tested object  |
|-----------------------------|---|---|--|
| 1.9                         | Determination of total cyanide by spectrophotometry                                 | IMP 097/LPOV<br>(ČSN 75 7415)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.10                        | Determination of biochemical oxygen demand by dilution method                       | IMP 050/LPOV<br>(ČSN EN ISO 5815-1,<br>ČSN EN 1899-2)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.11                        | Determination of ammonium by spectrophotometry                                      | IMP 051/LACH<br>(ČSN ISO 7150-1)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.12                        | Determination of metals by flame AAS <sup>5</sup>                                   | IMP 002-1/LACH<br>(ČSN ISO 8288,<br>ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN ISO 7980,<br>ČSN EN ISO 12020,<br>ČSN ISO 9964-1,<br>ČSN ISO 9964-2,<br>ČSN 75 7400,<br>TNV 757408) | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.13                        | Determination of metals by AAS – hydride method <sup>6</sup>                        | IMP 002-3//LACH<br>(ČSN EN ISO 11969:1997,<br>ČSN P ISO/TS 17379-2,<br>ČSN ISO 17378-2)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.14                        | Determination of metals by AAS – electrothermal method <sup>7</sup>                 | IMP 002-2/LACH<br>(ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN EN ISO 12020,<br>ČSN 75 7400,<br>TNV 757408,<br>ČSN EN ISO 15586)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.15                        | Determination of mercury by AMA analyzer  | IMP 004/LACH, chap. 5.1<br>(ČSN 75 7440,<br>manual to the AMA 254 analyzer)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.16                        | Determination of hydrocarbons C <sub>10</sub> to C <sub>40</sub> by GC - FID method | IMP 095/LPOV, chap. 6.2.1<br>(ČSN EN ISO 9377-2)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.17                        | Determination of AOX by coulometry  | IMP 064/LPOV<br>(ČSN EN ISO 9562)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.18                        | Determination of EOX by coulometry  | IMP 092/LPOV – part 1.B<br>(Mitsubishi TOX 300 manual)  | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |
| 1.19                        | Determination of humic substances by spectrophotometry                              | IMP 093/LPOV<br>(ČSN 75 7536)   | Mine, waste, surface, well water and aqueous extracts <sup>3</sup> |



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Testing Laboratory  
tř. Budovatelů 2830/3, 434 01 Most

| Ordinal number <sup>1</sup> | Test procedure/method name   | Test procedure/method identification <sup>2</sup>  | Tested object                                |
|-----------------------------|--|--|--|
| <b>2</b>                    | <b>Analysis of solid fuels</b>   |  |  |
| 2.1                         | Determination of water content by gravimetry   | IMP 073/LPOV<br>(ČSN 44 1377,<br>ČSN P CEN/TS 15414-1<br>ČSN EN ISO 18134-1)                                     | Solid fuels <sup>9</sup>                     |
| 2.2                         | Determination of ash content by gravimetry   | IMP 068/LPOV<br>(ČSN ISO 1171,<br>ČSN EN ISO 21656,<br>ČSN EN ISO 18122)   | Solid fuels <sup>9</sup>                     |
| 2.3                         | Determination of total sulphur content by ESCHKA method  | IMP 069/LPOV<br>(ČSN 44 1379)  | Solid fuels <sup>9</sup>                     |
| 2.4                         | Determination of gross calorific value by calorimetry and calculation of net calorific value from the measured values  | IMP 072/LPOV<br>(ČSN ISO 1928,<br>ČSN EN ISO 21654,<br>ČSN EN ISO 18125,<br>ČSN DIN 51900-1,<br>ČSN DIN 51900-3) | Solid fuels <sup>9</sup><br>and liquid fuels |
| 2.5                         | Determination of hydrogen, nitrogen, sulphur and carbon by combustion method with TCD detection                        | IMP 096/LPOV<br>(ČSN ISO 29541,<br>ČSN EN 15407,<br>ČSN EN ISO 16948)  | Solid fuels <sup>9</sup>                     |
| 2.6                         | Determination of the content of water, volatile combustible matter and ash by thermogravimetric method by TGA analyzer | IMP 099/LPOV<br>(ČSN 44 1377,<br>ČSN ISO 1171,<br>ČSN ISO 562)   | Solid fuels <sup>9</sup>                     |
| 2.7                         | Determination of volatile combustible matter by gravimetry   | IMP 080/LPOV<br>(ČSN ISO 562<br>ČSN EN ISO 22167,<br>ČSN EN ISO 18123)   | Solid fuels <sup>9</sup>                     |
| 2.8                         | Determination of sulphur forms by gravimetric method   | IMP 079/LPOV<br>(ČSN ISO 157)  | Solid fuels <sup>9</sup>                     |
| 2.9                         | Determination of ash fusibility in oxidation atmosphere  | IMP 078/LPOV<br>(ČSN ISO 540,<br>ČSN P CEN/TS 15404:2007,<br>ČSN EN ISO 21404)                                   | Solid fuels <sup>9</sup>                     |
| 2.10                        | Analysis of solid fuel ash <sup>10</sup> by gravimetry   | IMP 077/LPOV – 5.2.1, 5.2.7<br>(ČSN 44 1359)   | Solid fuels <sup>9</sup>                     |
| 2.11                        | Analysis of solid fuel ash <sup>11</sup> by titration  | IMP 077/LPOV – 5.2.2,<br>5.2.3, 5.2.5, 5.2.6<br>(ČSN 44 1358)  | Solid fuels <sup>9</sup>                     |





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| Ordinal number <sup>1</sup> | Test procedure/method name   | Test procedure/method identification <sup>2</sup>  | Tested object            |
|-----------------------------|--|--|--------------------------|
| 2.12                        | Analysis of solid fuel ash <sup>12</sup> by spectrophotometry                      | IMP 077/LPOV – 5.2.4, 5.2.10<br>(ČSN 44 1358)  | Solid fuels <sup>9</sup> |
| 2.13                        | Analysis of solid fuel ash <sup>13</sup> by flame AAS                              | IMP 077/LPOV – 5.2.8, 5.2.9<br>(ČSN 44 1358)   | Solid fuels <sup>9</sup> |
| 2.14                        | Determination of the content of humic acids by titration                           | IMP 086/LPOV<br>(ČSN ISO 5073)   | Solid fuels <sup>9</sup> |
| 2.15                        | Determination of the product yield of low temperature carbonization by gravimetry  | IMP 083/LPOV<br>(ČSN ISO 647)  | Solid fuels <sup>9</sup> |
| 2.16                        | Gravimetric determination of extract of brown coal and lignite by organic solvents | IMP 076/LPOV<br>(ČSN ISO 975)  | Brown coal, lignite      |
| 2.17                        | Determination of chlorine by coulometric titration                                 | IMP 088/LPOV – part B<br>(ČSN EN 14077,<br>ČSN ISO 18806,<br>ČSN EN 15408,<br>ČSN EN ISO 16994)  | Solid fuels <sup>9</sup> |
| 2.18                        | Determination of fluorine content by ISE   | IMP 089<br>(ČSN 44 1382:1993)  | Solid fuels <sup>9</sup> |
| 2.19                        | Determination of trace elements by flame AAS <sup>5</sup>                          | IMP 003-1/LACH, chap. 7.2.1, 7.2.3<br>(ČSN ISO 8288,<br>ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN ISO 7980,<br>ČSN EN ISO 12020,<br>ČSN ISO 9964-1,<br>ČSN ISO 9964-2,<br>ČSN 75 7400,<br>ČSN EN 15410,<br>ČSN EN ISO 16967) | Solid fuels <sup>9</sup> |
| 2.20                        | Determination of trace elements by AAS – hydride method <sup>6</sup>               | IMP 003-3/LACH, chap. 7.2.1, 7.2.3<br>(ČSN EN ISO 11969:1997,<br>ČSN P ISO/TS 17379-2,<br>ČSN EN 15411,<br>ČSN EN ISO 16968)   | Solid fuels <sup>9</sup> |
| 2.21                        | Determination of trace elements by AAS – electrothermal method <sup>7</sup>        | IMP 003-2/LACH, chap. 7.2.1, 7.2.3<br>(ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN EN ISO 12020,   | Solid fuels <sup>9</sup> |

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|-----------------------------|--|---|----------------------------------|
|                             |  | ČSN 757400,<br>ČSN EN 15410,<br>ČSN EN 15411,<br>ČSN EN ISO 16967,<br>ČSN EN ISO 16968)   |                                  |
| 2.22                        | Determination of mercury by AMA analyzer   | IMP 004/LACH, chap. 5.2<br>(AMA analyzer manual,<br>ČSN 75 7440)  | Solid fuels <sup>9</sup>         |
| 2.23                        | Determination of selected elements by ICP-OES method <sup>15</sup>                                     | IMP 006/LPOV, chap. 6.1.1,<br>6.1.3, 6.1.4, 6.2.1<br>(ČSN EN ISO 11885)   | Solid fuels <sup>9</sup>         |
| <b>3</b>                    | <b>Chemical analysis of rocks</b>  |   |                                  |
| 3.1                         | Determination of chlorine by coulometric titration   | IMP 088/LPOV – part B<br>(ČSN EN 14077,<br>ČSN ISO 18806)   | Rocks                            |
| 3.2                         | Determination of trace elements by flame AAS <sup>5</sup>  | IMP 003-1/LACH, chap. 7.2.5<br>(ČSN ISO 8288,<br>ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN ISO 7980,<br>ČSN EN ISO 12020,<br>ČSN ISO 9964-1,<br>ČSN ISO 9964-2,<br>ČSN 75 7400,<br>TNV 757408,<br>ČSN EN 16174) | Rocks                            |
| 3.3                         | Determination of aromatic hydrocarbons – benzene, toluene, xylenes, ethylbenzene by GC – FID method    | IMP 013/LACH<br>(ČSN EN ISO 15680,<br>ČSN EN ISO 15009)   | Rocks                            |
| 3.4                         | Determination of fluorine by ISE   | IMP 089/LPOV<br>(ČSN 44 1382:1993)  | Rocks                            |
| 3.5                         | Determination of PCB congeners by GC – ECD method <sup>8</sup>   | IMP 040/LACH<br>(ČSN EN 61619,<br>ČSN EN 17322)   | Rocks, waste, insulation liquids |
| 3.6                         | Determination of chlorinated hydrocarbons trichloroethylene and tetrachloroethylene by GC - ECD method | IMP 058/LACH<br>(ČSN 75 7550:1991,<br>ČSN EN ISO 10301)   | Rocks, sediments, sludge, waste  |



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|-----------------------------|---|---|--|
| 3.7                         | Determination of water by gravimetry  | IMP 056/LACH<br>(ČSN EN 12880)  | Rocks, waste                                     |
| 3.8                         | Determination of free CaO by titration  | IMP 063/LPOV<br>(ČSN 72 2080, cl. 9.18)   | Rocks, ash, granulates                           |
| 3.9                         | Determination of hydrocarbons C <sub>10</sub> to C <sub>40</sub> by GC - FID method                 | IMP 095/LPOV, chap. 6.2.2<br>(ČSN EN 14039)   | Rocks and sludge                                 |
| 3.10                        | Determination of trace elements by AAS – hydride method <sup>6</sup>                                | IMP 003-3/LACH, chap. 7.2.5<br>(ČSN EN ISO 11969:1997, ČSN P ISO/TS 17379-2, ČSN ISO 17378-2)                             | Rocks  |
| 3.11                        | Determination of trace elements by AAS – electrothermal method <sup>7</sup>                         | IMP 003-2/LACH, chap. 7.2.5<br>(ČSN EN 1233, ČSN EN ISO 5961, ČSN EN ISO 12020, ČSN 75 7400, TNV 75 7408, ČSN ISO 15586)  | Rocks  |
| 3.12                        | Determination of mercury by AMA analyzer  | IMP 004/LACH, chap. 5.2<br>(ČSN 75 7440, AMA 254 analyzer manual,   | Rocks  |
| 3.13                        | Determination of selected elements by ICP-OES method <sup>16</sup>                                  | IMP 006/LPOV, chap. 6.3<br>(ČSN EN ISO 11885)   | Rocks  |
| <b>4</b>                    | <b>Waste</b>  |   |  |
| 4.1                         | Determination of hydrocarbons C <sub>10</sub> to C <sub>40</sub> by GC - FID method                 | IMP 095, chap. 6.2.2<br>(ČSN EN 14039)  | Sludge, sediments, waste and combustion products |
| 4.2                         | Determination of aromatic hydrocarbons – benzene, toluene, xylenes, ethylbenzene by GC – FID method | IMP 013/LACH<br>(ČSN EN ISO 15680, ČSN ISO 15009)   | Sludge, sediments, waste and combustion products |
| 4.3                         | Determination of mercury by AMA analyzer  | IMP 004/LACH<br>(AMA analyzer manual, ČSN 75 7440)  | Sludge, sediments, waste and combustion products |
| 4.4                         | Determination of metals by flame AAS <sup>5</sup>   | IMP 003-1/LACH, chap. 7.2.1, 7.2.6, 7.2.5<br>(ČSN ISO 8288, ČSN EN 1233, ČSN EN ISO 5961, ČSN ISO 7980, ČSN EN ISO 12020, | Sludge, sediments, waste and combustion products |

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|-----------------------------|---|---|--|
|                             |   | ČSN ISO 9964-1,<br>ČSN ISO 9964-2,<br>ČSN 75 7400)  |  |
| 4.5                         | Determination of chlorine by coulometry                                     | IMP 088/LPOV – part B<br>(ČSN EN 14077,<br>ČSN ISO 18806)   | Sludge, sediments, waste and combustion products |
| 4.6                         | Determination of trace elements by AAS – hydride method <sup>6</sup>        | IMP 003-3/LACH,<br>chap. 7.2.1, 7.2.6, 7.2.5<br>(ČSN EN ISO 11969:1997,<br>ČSN P ISO/TS 17379-2)  | Sludge, sediments, waste and combustion products |
| 4.7                         | Determination of fluorine by ISE  | IMP 089/LPOV<br>(ČSN 44 1382:1993)  | Sludge, sediments, waste and combustion products |
| 4.8                         | Determination of trace elements by AAS – electrothermal method <sup>7</sup> | IMP 003-2/LACH,<br>chap. 7.2.1, 7.2.6, 7.2.5<br>(ČSN EN 1233,<br>ČSN EN ISO 5961,<br>ČSN EN ISO 12020,<br>ČSN 75 7400,<br>ČSN EN ISO 15586) | Sludge, sediments, waste and combustion products |
| 4.9                         | Determination of EOX by coulometry  | IMP 092/LPOV – Part 1.A<br>(Mitsubishi TOX 300 manual)  | Sludge, sediments, waste and combustion products |
| 4.10                        | Determination of selected elements by ICP-OES method <sup>17</sup>          | IMP 006/LPOV, chap. 6.1.1,<br>6.1.4, 6.3<br>(ČSN EN ISO 11885)  | Sludge, sediments, waste and combustion products |

<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 edition of the specified procedure is used (including any changes)

<sup>3</sup> Aqueous extract according to the Regulation No. 294/2005 Coll. and Regulation no. 273/2021 Coll.

<sup>4</sup> F<sup>-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, PO<sub>4</sub><sup>3-</sup>

<sup>5</sup> metals Ba, V, Ni, Cr, Pb, Cd, Zn, Ag, Cu, Al, Fe, Mn, Co, Ca, Mg, Na, K, Sr, Li

<sup>6</sup> metals As, Sb, Se

<sup>7</sup> metals Ba, Be, V, Ni, Cr, Pb, Cd, Ag, Al, Co, Tl, Sn, Mo, Te

<sup>8</sup> congeners: PCB 28, PCB 52, PCB 101, PCB 118, PCB 152, PCB 138, PCB 180

<sup>9</sup> solid fuels: coke, black coal, brown coal, lignite, alternative fuels, biofuels

<sup>10</sup> Determination: SiO<sub>2</sub>, SO<sub>3</sub>

<sup>11</sup> Determination: Fe<sub>2</sub>O<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, CaO, MgO

<sup>12</sup> Determination: TiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>

<sup>13</sup> Determination: MnO, Na<sub>2</sub>O, K<sub>2</sub>O





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- <sup>14</sup> Determination: Al, Ag, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Tl, V, Zn
- <sup>15</sup> Determination: Al, Ag, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Te, Tl, Ti, V, Zn
- <sup>16</sup> Determination: As, Ba, Be, Cd, Co, Cr, Cu, Mo, Ni, Pb, Sb, V, Zn
- <sup>17</sup> Determination: Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sn, Ti, V, Zn

**Annex:**

Flexible scope of accreditation

| Ordinal numbers of tests                      |
|---|
| 1.1 - 1.19, 2.1 - 2.23, 3.1 - 3.3, 4.1 - 4.10 |

The Laboratory is allowed to modify the test methods listed in the Annex within the specified scope of accreditation provided the measuring principle is observed. The flexible approach to the scope of accreditation cannot be applied to the tests not included in the Annex.

**Sampling:**

| Ordinal number | Sampling procedure name                             | Sampling procedure identification <sup>1</sup>   | Sampled object                       |
|----------------|---|--|--------------------------------------|
| 1              | Sampling of water by manual surface sampling        | IMP 106.1/ZAL - part A<br>(ČSN ISO 5667-4,<br>ČSN EN ISO 5667-6)   | Surface water                        |
| 2              | Sampling of waste and mine water by manual sampling | IMP 106.1/ZAL - part B<br>(ČSN ISO 5667-10)  | Waste and mine water                 |
| 3              | Sampling of water by manual underground sampling    | IMP 106.1/ZAL - part C<br>(ČSN ISO 5667-11)  | Ground water                         |
| 4              | Sampling of liquids and pasty materials             | IMP 106.1/ZAL - part D<br>(MoE Guideline for waste sampling; 04/2008; 101 pages)   | Liquids and pasty materials          |
| 5              | Sampling of solid and bulk materials, aggregates    | IMP 106.3/ZAL<br>(ČSN 72 1008:1980,<br>ČSN 01 5111,<br>ČSN 72 1152,<br>ČSN EN 932-1,<br>MoE Guideline for waste sampling; 04/2008) | Solid and bulk materials, aggregates |
| 6              | Sampling of solid fuels                             | IMP 106.2/ZAL, procedure A<br>ČSN 44 1304,<br>ČSN ISO 5069-1:1997,<br>ČSN ISO 13909-3,<br>ČSN EN ISO 21645,<br>ČSN EN ISO 18135)   | Solid fuels <sup>2</sup>             |

<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 edition of the specified procedure is used (including any changes)

<sup>2</sup> solid fuels: coke, black coal, brown coal, lignite, alternative fuels, biofuels



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**2. Immission and Emission Measurement Laboratory**

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure/method name   | Test procedure/method identification <sup>2</sup>   | Tested object                     |
|-----------------------------|--|---|-----------------------------------|
| 1-4                         | Reserved   |   |                                   |
| <b>5</b>                    | <b>Air</b>   |   |                                   |
| 5.1*                        | Determination of the concentration of airborne dust (aerosol particles) in air by gravimetry   | IMP 108/LIEM (ČSN EN ISO 13137)   | Outdoor and indoor air            |
| 5.2*                        | Gravimetric determination of dustfall using sedimentation  | IMP 109/LIEM (Government Regulation No. 350/2002 Coll., Annex No. 6, Part C)  | Outdoor, indoor and workplace air |
| 5.3*                        | Determination of total and respirable dust in air by gravimetry  | IMP 107/LIEM, chap. 1 (ČSN EN 481, ČSN EN 689+AC, ČSN EN ISO 13137, ČSN ISO 7708, Government Regulation No. 361/2007 Coll.) | Workplace and non-workplace air   |
| 5.4*                        | Continuous measurement of the concentration of airborne dust (aerosol particles) PM <sub>10</sub> and PM <sub>2.5</sub> by radiometric, hybrid (radiometry and nephelometry) and nephelometric methods | IMP 104/LIEM (ČSN EN 12341, ČSN EN 16450, Horiba manual, Thermo Electron Corp. manual, FIDAS manual)                        | Outdoor and indoor air            |
| 5.5*                        | Continuous measurement of the concentration of airborne dust (aerosol particles) PM <sub>10</sub> and PM <sub>2.5</sub> by optoelectronic method   | IMP 104.4/LIEM (ČSN EN 12341, ČSN EN 16450, Manual to FIDAS analyzer)   | Outdoor and indoor air            |

<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 edition of the specified procedure is used (including any changes)



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**Annex:**

Flexible scope of accreditation

| Ordinal numbers of tests |
|--------------------------|
| 5.1 - 5.5                |

The Laboratory is allowed to modify the test methods listed in the Annex within the specified scope of accreditation provided the measuring principle is observed. The flexible approach to the scope of accreditation cannot be applied to the tests not included in the Annex.

**Sampling:**

| Ordinal number | Sampling procedure name                           | Sampling procedure identification <sup>1</sup>   | Sampled object                  |
|----------------|---|--|---------------------------------|
| 1 to 6         | Reserved  |  |                                 |
| 7              | Sampling of total and respirable fraction of dust | IMP 106.4/LIEM<br>(ČSN EN 481,<br>ČSN EN 689+AC,<br>ČSN EN ISO 13137,<br>ČSN ISO 7708,<br>GR No. 361/2007 Coll.) | Workplace and non-workplace air |
| 8              | Sampling of airborne dust by manual sampling      | IMP 108/LIEM<br>(ČSN EN ISO 13137)   | Outdoor and indoor air          |
| 9              | Sampling of dustfall                              | IMP 109/LIEM<br>(GR No. 350/2002 Coll., Annex No. 6, part C)   | Outdoor, indoor and working air |

<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 edition of the specified procedure is used (including any changes).



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**3. Rock Testing Laboratory**

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure/method name  | Test procedure/method identification <sup>2</sup>   | Tested object   |
|-----------------------------|---|---|---|
| 1 - 5                       | Reserved  |   |   |
| <b>6</b>                    | <b>Soils and building materials</b>   |   |   |
| 6.1                         | Determination of grain size   | IMP 1/LTH<br>(ČSN EN ISO 17892-4,<br>ČSN EN 933-1,<br>ČSN ISO 2591-1,<br>ČSN 44 1340,<br>ČSN ISO 1953,<br>ČSN EN ISO 17827-2,<br>ČSN 72 2080, cl. 11.3,<br>ČSN 72 2071, cl. 11.3) | Soils, granulates,<br>desulfurization products,<br>aggregates,<br>granular materials,<br>solid fuels,<br>black coal,<br>solid biofuels,<br>fluid ash, ash |
| 6.2*                        | Inspection of the compaction of soils and backfills                           | ČSN 72 1006, direct methods, indirect test methods A, B, D  | Soils, ash, granulates  |
| 6.3*                        | Determination of mass per unit volume   | IMP 3/LTH<br>(ČSN EN ISO 17892-2,<br>ČSN 72 1010, cl. A, C, D1,<br>ČSN EN 12390-7:2009)   | Soils, ash, granulates  |
| 6.4                         | Determination of apparent density (specific gravity) of solid particles       | IMP 4/LTH<br>(ČSN EN ISO 17892-3,<br>ČSN EN 1097-7,<br>ČSN 72 2080, cl. 11.5,<br>ČSN 72 2071, cl. 11.5)   | Soils, granulates,<br>aggregates,<br>fluid ash,<br>ash  |
| 6.5                         | Laboratory determination of moisture and water by drying method by gravimetry | IMP 5/LTH<br>(ČSN EN ISO 17892-1,<br>ČSN EN ISO 18134-1,<br>ČSN P CEN/TS 15414-1,<br>ČSN EN 1097-5,<br>ČSN 72 2080, cl. 11.4,<br>ČSN 72 2071, cl. 11.4)                           | Soils, ash, granulates<br>solid fuels,<br>aggregates,<br>fluid ash,<br>ash  |
| 6.6                         | Determination of Atteberg limits  | ČSN CEN ISO/TS 17892-12:2005  | Soils   |
| 6.7                         | Laboratory determination of compactibility                                    | ČSN EN 13286-2  | Soils, ash, granulates  |
| 6.8                         | Laboratory determination of uniaxial compressive strength                     | IMP 8/LTH<br>(ČSN CEN ISO/TS 17892-7:2005,<br>ČSN EN 1926)  | Soils, ash, granulates<br>aggregates  |



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| Ordinal number <sup>1</sup> | Test procedure/method name   | Test procedure/method identification <sup>2</sup>   | Tested object   |
|-----------------------------|--|---|---|
| 6.9                         | Determination of mineralogical composition by X-ray diffractometry | IMP 9/LTH<br>(Siemens D5000 manual)   | Materials in powder form  |
| 6.10                        | Determination of shear strength parameters by torsion shear tester | ČSN CEN ISO/TS 17892-10:2005  | Soils materials, ash, granulates  |
| 6.11                        | Determination of durability by sodium sulphate                     | ČSN 72 1176, p. III.A   | Backfilling materials, aggregates, granulates, artificial aggregates, bound mixtures              |
| 6.12                        | Determination of permeability                                      | ČSN CEN ISO/TS 17892-11:2005  | Soils, ash, granulates  |
| 6.13                        | Determination of the bearing ratio CBR and IBI                     | ČSN EN 13286-47   | Soils, ash, granulates  |
| 6.14                        | Determination of fluidity by flow table test                       | ČSN EN 12350-5  | Building mixtures, backfilling materials  |
| 6.15                        | Determination of frost resistance                                  | ČSN 73 6124-1 Annex A   | Backfilling materials, aggregates, granulates, artificial aggregates, bound mixtures              |
| 6.16                        | Determination of water absorption                                  | ČSN EN 1097-6   | Backfilling materials, aggregates, granulates   |
| 6.17                        | Determination of compressive strength of test specimens            | ČSN EN 12390-3<br>ČSN EN 13286-41   | Backfilling materials<br>building mixtures  |
| 6.18                        | Determination of bulk density                                      | ČSN EN 1097-3<br>ČSN EN ISO 17828<br>ČSN P CEN/TS 15401<br>ČSN 72 2080 cl. 11.2<br>ČSN 72 2071 cl. 11.2 | Backfilling materials, aggregates, granulates, artificial aggregates, solid fuels, fluid ash, ash |

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

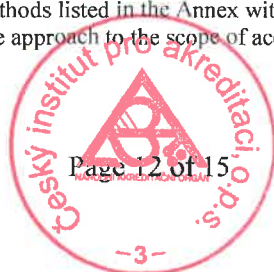
<sup>2</sup> if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

Annex:

Flexible scope of accreditation

| Ordinal numbers of tests |
|--------------------------|
| 6.1 - 6.18               |

The Laboratory is allowed to modify the test methods listed in the Annex within the specified scope of accreditation provided the measuring principle is observed. The flexible approach to the scope of accreditation cannot be applied to the tests not included in the Annex.





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**Sampling:**

| Ordinal number | Sampling procedure name                          | Sampling procedure identification <sup>1</sup>   | Sampled object                       |
|----------------|--|--|--------------------------------------|
| 1 to 4         | Reserved   |  |                                      |
| 5              | Sampling of solid and bulk materials, aggregates | IMP 106.3/ZAL<br>(ČSN 72 1008:1980,<br>ČSN 01 5111,<br>ČSN 72 1152,<br>ČSN EN 932-1,<br>MoE Guideline for waste sampling; 04/2008) | Solid and bulk materials, aggregates |
| 6              | Sampling of solid fuels                          | IMP 106.2/ZAL, procedure B<br>(ČSN 44 1308)  | Solid fuels <sup>2</sup>             |

<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 edition of the specified procedure is used (including any changes).

<sup>2</sup> solid fuels: coke, black coal, brown coal, lignite, alternative fuels, biofuels

**4. Technical Diagnostics Laboratory**

**Tests:**

| Ordinal number <sup>1</sup> | Test procedure/method name                     | Test procedure/method identification <sup>2</sup>   | Tested object   |
|-----------------------------|--|---|---|
| 1 - 6                       | Reserved                                       |   |   |
| 7                           | <b>Noise</b>                                   |   |   |
| 7.1*                        | Measurement of noise                           | ČSN EN ISO 9612   | Working environment                                     |
| 7.2*                        | Measurement of noise                           | ČSN ISO 1996-1<br>ČSN ISO 1996-2  | Non-working environment                                 |
| 7.3*                        | Measurement of sound power of noise sources    | ČSN EN ISO 3744<br>ČSN EN ISO 3746<br>ČSN EN ISO 11201<br>ČSN EN ISO 11202<br>ČSN EN ISO 11204<br>Government Regulation No. 9/2002 Coll., Annex 3, excl. cl. 11 | Machines and equipment                                  |
| 8                           | <b>Machinery</b>                               |   |   |
| 8.1*                        | Measurement of the balancing of giant machines | IMP 001/LTD   | Mining and stowing giant machines, bucket wheel loaders |



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| Ordinal number <sup>1</sup> | Test procedure/method name                        | Test procedure/method identification <sup>2</sup> | Tested object   |
|-----------------------------|---|---|---|
| 8.2*                        | Measurement of safety equipment of giant machines | IMP 002/LTD                                       | Mining and stowing giant machines, bucket wheel loaders, DPD equipment, mining equipment of floating machines |

<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 edition of the specified procedure is used (including any changes)

**Annex:**

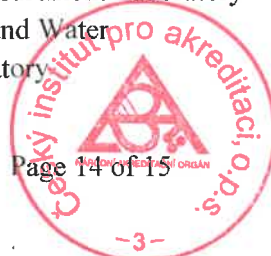
Flexible scope of accreditation

| Ordinal numbers of tests |
|--------------------------|
| 7.1 - 7.3                |

The Laboratory is allowed to modify the test methods listed in the Annex within the specified scope of accreditation provided the measuring principle is observed. The flexible approach to the scope of accreditation cannot be applied to the tests not included in the Annex.

**Abbreviations used:**

|         |  |
|---------|--|
| AAS     | – Atomic Absorption Spectrometry                           |
| AMA     | – Advanced Mercury Analyser                                |
| AOX     | – Adsorbable Organically Bound Halogens                    |
| CBR     | – California Bearing Ratio                                 |
| DPD     | – Long-Distance Belt Transport                             |
| ECD     | – Electron Capture Detector (Ni <sup>63</sup> )            |
| EOX     | – Extractable Organically Bound Halogens                   |
| FID     | – Flame Ionization Detector                                |
| GC      | – Gas Chromatography                                       |
| COD     | – Chemical Oxygen Demand                                   |
| IBI     | – Linear swelling index                                    |
| IC      | – Ion Chromatography                                       |
| ICP/OES | – Inductively Coupled Plasma Optical Emission Spectrometry |
| IMP     | – Internal guideline                                       |
| ISE     | – Ion Selective Electrode                                  |
| LACH    | – Analytical Chemistry Laboratory                          |
| LIEM    | – Immission and Emission Measurement Laboratory            |
| LPOV    | – Laboratory for Fuels, Waste and Water                    |
| LTD     | – Technical Diagnostics Laboratory                         |



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LTH – Rock Testing Laboratory  
MoE – Ministry of Environment  
GR – Government Regulation  
PCB – Polychlorinated biphenyls  
DIS – Dissolved Inorganic Salts  
X-ray – X-ray  
TCD – Thermal Conductivity Detector  
UV – Ultraviolet  
ZAL – Analytical Testing Laboratory

