

**The Appendix is an integral part of  
Certificate of Accreditation No. 54/2023 of 06/02/2023**

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

**Zkušebna kamene a kameniva, s.r.o.**

Testing Laboratory

Husova 2274, 508 01 Hořice

**Testing laboratory locations:**

- |    |                             |                                  |
|----|-----------------------------|----------------------------------|
| 1. | <b>TL Hořice</b>            | Husova 2274, 508 01 Hořice       |
| 2. | <b>TL Branch Bílá Lhota</b> | Bílá Lhota 34, 783 26 Bílá Lhota |

*The Laboratory has a flexible scope of accreditation permitted as detailed in the Annex. Updated list of activities provided within the granted flexible scope of accreditation is available in the laboratory from the Laboratory Manager and Assistant Laboratory Manager. The Laboratory provides expert opinions and interprets test results. The Laboratory is qualified to carry out independent sampling.*

**Tests:**

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
1 <sup>1</sup>	Determination of resistance to wear (micro-Deval)	ČSN EN 1097-1	Aggregates
2 <sup>1</sup>	Determination of resistance to wear (micro-Deval)	ČSN EN 13450, Annex E	Railway ballast
3 <sup>1,2</sup>	Determination of resistance to fragmentation by Los Angeles test method	ČSN EN 1097-2, chap. 5	Aggregates
4 <sup>1,2</sup>	Determination of Los Angeles index	ČSN EN 13450, Annex C	Railway ballast
5 <sup>1</sup>	Determination of resistance to fragmentation by impact fragmentation test method	ČSN EN 1097-2, chap. 6	Aggregates
6 <sup>1</sup>	Determination of impact fragmentation	ČSN EN 13450, Annex D	Railway ballast
7 <sup>1,2</sup>	Determination of loose bulk density and voids	ČSN EN 1097-3	Aggregates
8 <sup>1,2</sup>	Determination of the water content by drying in a ventilated oven	ČSN EN 1097-5	Aggregates
9 <sup>1,2</sup>	Determination of particle density and water absorption	ČSN EN 1097-6	Aggregates
10 <sup>1</sup>	Determination of the particle density of filler - Pycnometer method	ČSN EN 1097-7	Aggregates
11 <sup>1</sup>	Determination of polished stone value	ČSN EN 1097-8	Aggregates

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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
12 <sup>1,2</sup>	Determination of resistance to freezing and thawing	ČSN EN 1367-1	Aggregates
13 <sup>1,2</sup>	Determination of resistance to freezing and thawing	ČSN EN 13450, Annex F	Railway ballast
14 <sup>1</sup>	Determination of thermal and weathering properties – Magnesium sulphate test	ČSN EN 1367-2	Aggregates
15 <sup>1</sup>	Determination of resistance by magnesium sulphate test	ČSN EN 13450, Annex G	Railway ballast
16 <sup>1</sup>	Determination of thermal and weathering properties – Boiling test for Sonnenbrand basalt	ČSN EN 1367-3	Aggregates
17 <sup>1,2</sup>	Determination of lightweight pollutants	ČSN EN 1744-1+A1, chap. 14.2	Aggregates
18 <sup>1,2</sup>	Determination of content of humus particles	ČSN EN 1744-1+A1, chap. 15.1	Aggregates
19 <sup>1</sup>	Determination of simplified petrographic description	ČSN EN 932-3	Aggregates
20 <sup>1,2</sup>	Determination of particle size distribution – Sieving analysis	ČSN EN 933-1	Aggregates
21 <sup>1,2</sup>	Determination of particle shape - Flakiness index	ČSN EN 933-3	Aggregates
22 <sup>1,2</sup>	Determination of particle shape - Shape index	ČSN EN 933-4	Aggregates
23 <sup>1,2</sup>	Determination of percentage of crushed surfaces	ČSN EN 933-5	Aggregates
24 <sup>1</sup>	Determination of flow coefficient	ČSN EN 933-6, chap. 8	Aggregates
25 <sup>1</sup>	Determination of shell content - percentage of shells	ČSN EN 933-7	Aggregates
26 <sup>1,2</sup>	Sand equivalent test	ČSN EN 933-8+A1	Aggregates
27 <sup>1,2</sup>	Methylene blue test	ČSN EN 933-9	Aggregates

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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
28 <sup>1</sup>	Test of grading of fillers (air-jet sieving)	ČSN EN 933-10	Aggregates
29 <sup>1,2</sup>	Determination of dense aggregate durability by accelerated test with sodium sulphate	ČSN 72 1176, chap. II. A	Aggregates
30 <sup>1,2</sup>	Determination of various aggregate particles	ČSN 72 1180	Aggregates
31 <sup>1</sup>	Determination of alkali expansivity of natural carbonate rocks for building purposes	ČSN 72 1160	Aggregates, rocks
32 <sup>1</sup>	Dilatometric test of cement mortar expansion	ČSN 72 1179, chap. B; TP 137, Annex 2	Aggregates
33 <sup>1,2</sup>	Test of loss by drying	ČSN 72 1187	Aggregates
34 <sup>1</sup>	Determination of alkaline expansion	TP 137, Annex 1	Aggregates
35 <sup>1,2</sup>	Determination of angularity of particles	OTP SŽ No. 38992/2020-SŽ-GŘ-013 (3), Annex E	Railway ballast
36 <sup>1</sup>	Determination of water absorption coefficient by capillarity	ČSN EN 1925	Stone
37 <sup>1</sup>	Determination of compressive strength	ČSN EN 1926	Stone
38 <sup>1</sup>	Determination of real density and apparent density and of total and open porosity	ČSN EN 1936	Stone
39 <sup>1</sup>	Determination of density and water absorption	ČSN EN 14617-1	Artificial stone
40 <sup>1</sup>	Determination of resistance to frost	ČSN EN 12371	Stone
41 <sup>1</sup>	Determination of flexural strength under concentrated load	ČSN EN 12372	Stone
42 <sup>1</sup>	Determination of flexural strength	ČSN EN 14617-2	Artificial stone

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Husova 2274, 508 01 Hořice

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
43	Reserved		
44 <sup>1</sup>	Petrographic examination	ČSN EN 12407	Stone
45 <sup>1</sup>	Determination of water absorption at atmospheric pressure	ČSN EN 13755	Stone
46 <sup>1</sup>	Determination of the breaking load at dowel hole	ČSN EN 13364	Stone
47 <sup>1</sup>	Determination of resistance to ageing by thermal shock	ČSN EN 14066	Stone
48 <sup>1</sup>	Determination of abrasion resistance	ČSN EN 14157	Stone
49 <sup>1</sup>	Determination of resistance to ageing by SO <sub>2</sub> action in the presence of humidity	ČSN EN 13919	Stone
50* <sup>1</sup>	Determination of geometric characteristics on units	ČSN EN 13373	Stone
51 <sup>1</sup>	Determination of the dynamic elastic modulus of elasticity (by measuring the fundamental resonance frequency)	ČSN EN 14146, chap. 5.2 and 7.2.2	Stone
52 <sup>1</sup>	Determination of the slip resistance by means of pendulum tester	ČSN EN 14231	Stone
53 <sup>1</sup>	Petrographic examination	ČSN 72 1153	stone, aggregates
54 <sup>1</sup>	Determination of weather resistance	ČSN 72 1159	Stone
55 <sup>1</sup>	Determination of resistance to water and chemical de-icing agents	ČSN 73 1326, chap. III. A	Stone, hardened concrete
56 <sup>1</sup>	Determination of water absorption due to capillary action and the initial rate of water absorption	ČSN EN 772-11	Hardened concrete, stone, masonry units, concrete masonry units
57 <sup>1</sup>	Determination of compressive strength of test specimens	ČSN EN 12390-3	Hardened concrete

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Husova 2274, 508 01 Hořice

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
58 <sup>1</sup>	Determination of flexural strength of test specimens	ČSN EN 12390-5	Hardened concrete
59 <sup>1</sup>	Determination of mass per unit volume	ČSN EN 12390-7	Hardened concrete
60 <sup>1</sup>	Determination of alkali expansivity of carbonate rocks	STN 72 1160	Aggregates, stone
61 <sup>1</sup>	Determination of resistance to thermal shock	ČSN EN 1367-5	Aggregates
62 <sup>1</sup>	Determination of particle size distribution of coarse grains	ČSN EN 13383-2, chap. 5	stone, aggregates
63* <sup>1</sup>	Determination of mass distribution of lightweight and heavyweight grains	ČSN EN 13383-2, chap. 6	stone, aggregates
64* <sup>1</sup>	Determination of ratio of aggregates for water constructional works with length/thickness ratio above 3	ČSN EN 13383-2, chap. 7	stone, aggregates
65 <sup>1</sup>	Determination of density and water absorption	ČSN EN 13383-2, chap. 8	stone, aggregates
66 <sup>1</sup>	Determination of resistance to freezing and thawing	ČSN EN 13383-2, chap. 9	stone, aggregates
67 <sup>1</sup>	Determination of resistance to salt crystallization	ČSN EN 12370	Stone
68 <sup>1</sup>	Determination of static modulus of elasticity	ČSN EN 14580	Stone
69 <sup>1</sup>	Determination of compressive strength	ČSN EN 772-1+A1	Masonry units
70 <sup>1</sup>	Determination of dry density	ČSN EN 772-13	Masonry elements, materials for masonry elements
71 <sup>1</sup>	Determination of resistance to frost	ČSN EN 14617-5	Artificial stone
72 <sup>1</sup>	Determination of liquid limit by cone method	ČSN EN ISO 17892-12, chap. 5.3	Soils, aggregates
73 <sup>1,2</sup>	Determination of plastic limit	ČSN EN ISO 17892-12, chap. 5.5	Soils, aggregates

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Husova 2274, 508 01 Hořice

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
74 <sup>1</sup>	Determination of laboratory reference density and water content – Proctor test	ČSN EN 13286-2	Soils, aggregates
75 <sup>1</sup>	Determination of dimensions	ČSN EN 772-16	Masonry units
76 <sup>1</sup>	Determination of flatness	ČSN EN 772-20	Masonry units
77 <sup>1</sup>	Determination of rupture energy	ČSN EN 14158	Stone
78 <sup>1</sup>	Determination of expansion of steel-furnace slag	ČSN EN 1744-1+A1, chap. 19.3	Artificial stone
79 <sup>1</sup>	Determination of resistance to freezing and thawing in the presence of salt (NaCl)	ČSN EN 1367-6	Aggregates
80 <sup>1</sup>	Determination of the resistance to wear by abrasion from studded tyres - Nordic test	ČSN EN 1097-9	Aggregates
81 <sup>1</sup>	Classification test for the constituents of coarse recycled aggregate	ČSN EN 933-11	Aggregates
82 <sup>1</sup>	Delta ring and ball test	ČSN EN 13179-1	Filler aggregates used in bituminous mixtures
83 <sup>1</sup>	Determination of density, apparent density and of total and open porosity	ČSN EN 772-4	Natural stone masonry units
84 <sup>1</sup>	Determination of sensitivity to changes in appearance produced by thermal cycles	ČSN EN 16140	Stone
85 <sup>1</sup>	Determination of bitumen number	ČSN EN 13179-2	Filler aggregates used in bituminous mixtures
86 <sup>1</sup>	Determination of drying shrinkage	ČSN EN 1367-4	Aggregates
87 <sup>1</sup>	Determination of California bearing ratio, immediate bearing index and linear swelling	ČSN EN 13286-47	Soils, aggregates

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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
88 <sup>1</sup>	Determination of the signs of disaggregation of "Sonnenbrand" and steel-furnace slag	ČSN EN 13383-2, chap. 10	Aggregates, steel-furnace slag
89 <sup>1,2</sup>	Determination of water solubility of filler	ČSN EN 1744-1+A1, chap. 16.2	Aggregates
90 <sup>1</sup>	Determination of silicate disintegration of air-cooled blast-furnace slag	ČSN EN 1744-1+A1, chap. 19.1	Blast-furnace slag
91 <sup>1</sup>	Determination of iron disintegration of air-cooled blast-furnace slag	ČSN EN 1744-1+A1, chap. 19.2	Blast-furnace slag
92 <sup>1</sup>	Determination of alkali expansivity – Dilatometric test	STN 72 1179, chap. 7	Aggregates
93 <sup>1</sup>	Determination of the influence of recycled aggregate extract on the initial setting time of cement	ČSN EN 1744-6	Aggregates
94 <sup>1</sup>	Determination of loss of ignition of Municipal Incinerator Bottom Ash Aggregate (MIBA Aggregate)	ČSN EN 1744-7	Aggregates
95 <sup>1</sup>	Sorting test to determine metal content of Municipal Incinerator Bottom Ash Aggregate (MIBA Aggregate)	ČSN EN 1744-8	Aggregates
96 <sup>1</sup>	Determination of disintegration of blast-furnace slag aggregates - autoclave test	TP 138, Annex A	Aggregates
97	Reserved		
98	Reserved		
99 <sup>1</sup>	Test methods for slate and carbonate slate	ČSN EN 12326-2, chap. 5 - 12, 14 - 16	Slate

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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
100 <sup>1</sup>	Determination of sound speed propagation	ČSN EN 14579	Stone
101 <sup>1</sup>	Determination of linear thermal expansion coefficient	ČSN EN 14581, Method A	Stone
102 <sup>1</sup>	Determination of abrasion resistance	ČSN EN 14617-4	Artificial stone
103 <sup>1</sup>	Determination of dimensional stability	ČSN EN 14617-12	Artificial stone
104 <sup>1</sup>	Determination of dimensions, geometric characteristics and surface quality of modular tiles	ČSN EN 14617-16	Artificial stone
105 <sup>1</sup>	Determination of the affinity between aggregate and bitumen	ČSN EN 12697-11, chap. 5	Aggregates
106	Reserved		
107 <sup>1</sup>	Determination of adhesion of bituminous binder to aggregate	ČSN 73 6161	Aggregates
108	Reserved		
109 <sup>1</sup>	Determination of resistance to freezing and thawing	ČSN EN 1367-7	Lightweight aggregates
110 <sup>1</sup>	Determination of resistance to disintegration	ČSN EN 1367-8	Lightweight aggregates
111 <sup>1</sup>	Determination of compressibility and compressive strength	ČSN EN 1097-11	Lightweight aggregates
112 <sup>1</sup>	Determination of the voids of dry compacted filler	ČSN EN 1097-4	Aggregates
113 <sup>1</sup>	Verification of the presence of reactive iron sulphide particles	ČSN EN 1744-1+A1, chap. 14.1	Aggregates
114 <sup>1</sup>	Determination of fulvic acid content	ČSN EN 1744-1+A1, chap. 15.2	Aggregates



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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
115 <sup>1</sup>	Determination of solubility of aggregates in water, except filler	ČSN EN 1744-1+A1, chap. 16.1	Aggregates
116 <sup>1</sup>	Determination of working index	Test procedure No. 07 (Manual: Technologie úpravy kameniva, authors: Ing. Hynek Čep and Ing. Renáta Špírková, Prague, May 1997)	Aggregates
117 <sup>1</sup>	Determination of relative density of non-cohesive soils	ČSN 72 1018	Soils, aggregates
118 <sup>1</sup>	Determination of permeability	ČSN EN ISO 17892-11	Soils, aggregates
119 <sup>1</sup>	Determination of abrasiveness	Test Procedure No. 08 (ON 72 1184, March 1991)	Aggregates
120 <sup>1</sup>	Corrosion resistance test	DIN 52008, chap. 4.4.9.2.2	Stone
121 <sup>1</sup>	Determination of slip resistance of pedestrian surfaces – Evaluation methods	ČSN P EN 16165	Stone
122 <sup>1</sup>	Determination of water suction height	ČSN EN 1097-10	Aggregates
123 <sup>2</sup>	Determination of water-soluble chloride salts by Volhard method	ČSN EN 1744-1+A1, chap. 7	Aggregates
124 <sup>1,2</sup>	Determination of water-soluble chloride salts by potentiometry	ČSN EN 1744-1+A1, chap. 8	Aggregates
125 <sup>2</sup>	Determination of water-soluble sulphate	ČSN EN 1744-1+A1, chap. 10	Aggregates
126 <sup>1,2</sup>	Determination of total sulphur content	ČSN EN 1744-1+A1, chap. 11	Aggregates
127 <sup>1,2</sup>	Determination of acid-soluble sulphate	ČSN EN 1744-1+A1, chap. 12	Aggregates

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Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
128 <sup>2</sup>	Determination of calcium monoxide and magnesium oxide by complexometric method (titration)	TS 20 (ČSN 72 1216)	Aggregates
129 <sup>2</sup>	Determination of alkali-aggregate reaction by chemical test	ČSN 72 1179, chap. A	Aggregates
130 <sup>2</sup>	Determination of alkali-aggregate reaction by chemical test	STN 72 1179, chap. 6	Aggregates
131 <sup>2</sup>	Determination of loss by ignition	ČSN EN 1744-1+A1, chap. 17	Aggregates

<sup>1</sup> asterisk at the ordinal number identifies the tests, which the Laboratory is qualified to carry out outside the permanent laboratory premises; superscript at the test ordinal number identifies the number of the location (1, 2) carrying out the test (the locations are identified on the first page of the document).

<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
1 - 42, 44 - 96, 99 - 105, 107, 109 - 115, 117, 118, 120 - 127, 129 - 131

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 <sup>1</sup>	Sampling procedure name	Sampling procedure identification <sup>2</sup>	Sampled object
1 <sup>1,2</sup>	Aggregate sampling Reduction of laboratory samples	ČSN EN 932-1 ČSN EN 932-2	Aggregates
2 <sup>1,2</sup>	Stone sampling	ČSN 72 1152	Natural building stone
3 <sup>1</sup>	Sampling for alkali- aggregate reaction	TP 137, chap. 6.3	Aggregates
4 <sup>1,2</sup>	Sampling of aggregates for water constructional works	ČSN EN 13383-2, chap. 4	stone, aggregates
5 <sup>1</sup>	Sampling - Rough blocks	ČSN EN 1467, Annex A	Stone
6 <sup>1</sup>	Sampling - Rough slabs	ČSN EN 1468, Annex A	Stone
7 <sup>1</sup>	Sampling - Slabs for cladding	ČSN EN 1469 ed. 2, chap. 5.2	Stone
8 <sup>1</sup>	Sampling - Thin slabs	ČSN EN 12057 ed. 2, chap. 5.2	Stone
9 <sup>1</sup>	Sampling - Slabs for floors and stairs	ČSN EN 12058 ed. 2, chap. 5.2	Stone
10 <sup>1</sup>	Sampling - Dimensional stone work	ČSN EN 12059+A1, Annex A	Stone
11 <sup>1</sup>	Sampling - Manufactured stone masonry units	ČSN EN 771-5+A1, Annex A	Stone
12 <sup>1</sup>	Sampling - Natural stone masonry units	ČSN EN 771- 6+A1, Annex A	Stone

<sup>1</sup> Superscript at the sampling ordinal number identifies the number of the location (1, 2) carrying out the sampling (the locations are identified on the first page of the document).

<sup>2</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).

**Explanatory notes:**

ISO/TS - ISO Technical Specifications

OTP SŽ - General Specifications of Správa železnic, state organization

TP - Technical conditions of the Czech Ministry of Transport and Communications

DAfStb - Richtlinie - Guideline of the German Committee for Reinforced Concrete

DIN - German technical standard