

**Appendix is an integral part of
Certificate of Accreditation No. 652/2021 of 15/12/2021**

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

**Ministerstvo vnitra zastoupené generálním ředitelstvím Hasičského záchranného
sboru ČR - Technickým ústavem požární ochrany
TÚPO Testing Laboratory
Písková 42, 143 01 Praha 4 - Modřany**

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 Laboratory Manager and on the website www.tupo.cz.

The laboratory is qualified to provide expert opinions and to interpret the test result.

The laboratory is qualified to carry out individual sampling.

Tests:

Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
1	Pressure tests		
1.1	Pressure test	ČSN 80 8715, p. 3.2, 3.3, 3.4	Fire-fighting hoses
1.2 - 1.6	Reserved		
1.7	Measurement of pressure, pressure test	ČSN EN 1028-2+A1, Annex B, G	Fire-fighting pumps
1.8	Reserved		
1.9	Resistance to internal pressure, test of strength	ČSN EN 671-1 ed. 2, Annex F.7, F.8 ČSN EN 671-2 ed. 2, Annex F	Hose systems
1.10 - 1.13	Reserved		
1.14	Pressure test, resistance to penetration	ČSN EN 13731, p. 6.8	Lifting bags
1.15	Pressure test	ČSN EN ISO 1402, p. 8.1, 8.2, 8.3	Rubber and plastics hoses and hose assemblies
1.16	Pressure test	ČSN EN 15182-2, p. 4.4, 4.5 ČSN EN 15182-3, p. 4.4, 4.5 ČSN EN 15182-4, p. 4.4, 4.5 ČSN EN 17407, p. 8.5 ČSN 38 9427, Annex A ČSN 38 9441, Annex A ČSN 38 9403, p. 6.3	Fire-fighting branchpipes, valves and hydrants
2	Determination of dimensions and weight		
2.1	Determination of dimensions	ČSN 80 8715, p. 3.1 ČSN 80 8711, p. 3.2, tab. 1	Fire-fighting hoses
2.2*	Determination of diameter of rotation and length dimensions	TÚPO Guideline No. 48-16	Fire-fighting vehicles
2.3 - 2.6	Reserved		

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
2.7	Determination of dimensions and weight	ČSN EN ISO 4671	Rubber and plastic hoses
2.8	Determination of dimensions and weight	TÚPO Guideline No. 3-1/92 (ČSN 38 9427, ČSN 38 9441, ČSN EN 17407, p. 8.3)	Fire-fighting branchpipes and valves
2.9	Determination of dimensions	ČSN EN 671-1 ed. 2, p. 5.2.1, 5.3.3, 5.4.3, 5.7 ČSN EN 671-2 ed. 2, p. 5.2.1, 5.4.1, 5.4.3, 5.6	Hose systems
2.10	Determination of dimension and weight	ČSN EN 1147, p. 5 to 8	Portable ladders for fire service
2.11	Determination of the geometric dimension	TÚPO Guideline No. 07-15 (ČSN 30 0552)	Fire-fighting vehicles
2.12	Determination of dimensions	TÚPO Guideline No. 01-14 (ČSN 30 0552)	Fire-fighting vehicles
2.13	Weight determination	TÚPO Guideline No. 02-14	Fire-fighting vehicles
3	Flow measurement		
3.1	Flow measurement	ČSN EN 1028-2+A1, Annex C	Fire-fighting pumps
3.2	Reserved		
3.3	Flow measurement	TÚPO Guideline No. 4-2/92 (DIN 14365)	Fire-fighting branchpipes
3.4	Flow measurement	ČSN EN 671-1 ed. 2, Annex E.4.1 ČSN EN 671-2 ed. 2, Annex E.4.1	Hose systems
4	Hydraulic loss test	ČSN 80 8715, p. 3.8	Fire-fighting hoses
5	Determination of elongation		
5.1	Determination of elongation	ČSN 80 8715, p. 3.5 ČSN 80 8711, p. 3.8	Fire-fighting hoses
5.2	Determination of deformation at highest testing pressure	ČSN EN 694, p. 6.1.1	Semi-rigid hoses for fixed systems
5.3	Reserved		
5.4	Determination of deformation at normal testing pressure	ČSN EN 14540, p. 6.1.1	Non-percolating layflat hoses for fixed systems
5.5	Determination of deformation at highest working pressure	ČSN EN 1947, p. 6.1.1	Semi-rigid delivery hoses and hose assemblies for pumps and vehicles

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
6	Determination of abrasion resistance		
6.1	Determination of abrasion resistance	ČSN 80 8715, p. 3.9	Fire-fighting hoses
6.2	Reserved		
6.3	Determination of abrasion resistance	ČSN EN 15889, Annex E, F	Semi-rigid delivery hoses and hose assemblies for pumps and vehicles
7	Determination of flame resistance	ČSN 80 8715, p. 3.11	Fire-fighting hoses
8	Determination of thermal resistance		
8.1	Resistance to contact heat	ČSN EN 15889, Annex H	Fire-fighting hoses
8.2	Reserved		
8.3	Determination of flexibility at low temperature	ČSN EN 15889, Annex G.1	Fire-fighting hoses
9	Dry suction test	ČSN EN 1028-2+A1, Annex D	Fire-fighting pumps
10	Performance test		
10.1	Test of permanent running	ČSN EN 1028-2+A1, Annex F	Fire-fighting pumps
10.2	Reserved		
10.3	Functional test	ČSN EN 13731, p. 6.2	Lifting bags
11	Functional test of the control element of fire-fighting branchpipes and valves		
11.1	Functional test of the control element at heat, frost and test of flush	ČSN EN 15182-1, p. 6.4, 6.5	Fire-fighting branchpipes
11.2	Measurement of control moment	ČSN EN 671-1 ed. 2, Annex E.2 ČSN EN 671-2 ed. 2, Annex E.2	Hose systems
12	Determination of range and spray angle		
12.1	Determination of range and spray angle	ČSN EN 671-1 ed. 2, Annex E.3, E.4.2 ČSN EN 671-2 ed. 2, Annex E.3, E.4.2	Hose systems, fire-fighting branchpipes
12.2-12.3	Reserved		
12.4	Determination of range and spray angle	ČSN EN 15182-2, p. 4.2.4, 4.3.2, 4.3.3 ČSN EN 15182-3, p. 4.2.4, 4.3.2, 4.3.3 ČSN EN 15182-4, p. 4.2.4, 4.3.2, 4.3.3	Fire-fighting branchpipes

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
13	Test of structural properties of ladders for fire service		
13.1	Test of bend	ČSN EN 1147, Annex A, B	Portable ladders for fire service
13.2	Twist test of rugs	ČSN EN 1147, Annex C	Portable ladders for fire service
13.3	Test of supports	ČSN EN 1147, Annex D	Portable ladders for fire service
13.4	Test of strength	ČSN EN 1147, Annex E, F	Portable ladders for fire service
13.5	Test of latch	ČSN EN 1147, Annex G	Portable ladders for fire service
13.6	Strength test of bars	ČSN EN 1147, Annex H, I, J, K	Portable ladders for fire service
13.7	Strength test of bottom endings of uprights	ČSN EN 1147, Annex L	Portable ladders for fire service
14-17	Reserved		
18	Performance test		
18.1*	Performance test	ČSN EN 3-7+A1, p. 15, Annex I, L	Portable fire extinguishers
18.2	Reserved		
18.3*	Performance test	ČSN EN 1866-1, p. 8	Mobile fire extinguishers
18.4*	Performance test	ČSN EN 1568-1 ed. 2, p. 11, Annex H ČSN EN 1568-2 ed. 2, p. 11, Annex H ČSN EN 1568-3 ed. 2, p. 11, Annex H ČSN EN 1568-4 ed. 2, p. 11, Annex H	Fire extinguishants, foam concentrates
19	Determination of qualitative parameters of foam		
19.1	Determination of foam, decomposition time of foam and thermal conditioning	ČSN EN 1568-1 ed. 2, p. 10, Annex G, E ČSN EN 1568-2 ed. 2, p. 10, Annex G, E ČSN EN 1568-3 ed. 2, p. 10, Annex G, E ČSN EN 1568-4 ed. 2, p. 10, Annex G, E	Fire extinguishants, foam concentrates

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
19.2	Determination of amount of sediment	ČSN EN 1568-1 ed. 2, p. 4, Annex C ČSN EN 1568-2 ed. 2, p. 4, Annex C ČSN EN 1568-3 ed. 2, p. 4, Annex C ČSN EN 1568-4 ed. 2, p. 4, Annex C	Fire extinguishants, foam concentrates
19.3	Determination of pH	TÚPO Guideline No. 04-05 (ČSN EN 1568-1 ed. 2, p. 7, Annex B; ČSN EN 1568-2 ed. 2, p. 7, Annex B; ČSN EN 1568-3 ed. 2, p. 7, Annex B; ČSN EN 1568-4 ed. 2, p. 7, Annex B; ČSN 68 1151)	Fire extinguishants, foam concentrates
20-21	Reserved		
22	Loading tests and movement time		
22.1*	Static overload test and dynamic load test	ČSN EN 1777, p. 6.1.3, 6.1.4, 6.1.6.1	Hydraulic platforms for fire-fighting services
22.2*	Determination of static and dynamic stability	ČSN EN 14043, p. 5.1.2.2, 5.1.3.2	Aerial ladders for fire-fighting services
22.3*	Determination of working time	ČSN EN 14043, Annex B	Aerial ladders for fire-fighting services
23	Test of mechanical resistance		
23.1	Impact resistance test	ČSN EN 671-1 ed. 2, Annex E.1 ČSN EN 671-2 ed. 2, Annex E.1	Hose systems, hose reels
23.2	Rotary test	ČSN EN 671-1 ed. 2, Annex F.2	Hose reels
23.3	Swing test	ČSN EN 671-1 ed. 2, Annex F.3	Hose reels
23.4	Unreeling force	ČSN EN 671-1 ed. 2, Annex F.4	Hose reels
23.5	Dynamic braking	ČSN EN 671-1 ed. 2, Annex F.5	Hose reels
23.6	Impact and load resistance test	ČSN EN 671-1 ed. 2, Annex F.6	Hose reels
23.7	Impact resistance test	ČSN EN 15182-1, p. 6.6	Fire-fighting branchpipes
24	Corrosion resistance test	ČSN EN 671-1 ed. 2, Annex D ČSN EN 671-2 ed. 2, Annex D	Hose systems, hose reels

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
25	Determination of density		
25.1	Determination of pour density	ČSN EN 615, p.5, Annex A	Extinguishants, powders
25.2	Determination of density	TÚPO Guideline No. 8-2/97	Extinguishants, foam concentrates
26	Screen analysis	ČSN EN 615, p. 6, Annex B	Extinguishants, powders
27	Test of resistance to sintering and agglomeration	ČSN EN 615, p. 10, Annex C	Extinguishants, powders
28	Water repellence test	ČSN EN 615, p. 11, Annex D	Extinguishants, powders
29	Determination of moisture content	ČSN EN 615, p. 12, Annex E	Extinguishants, powders
30	Determination of adhesion between components	ČSN EN ISO 8033	Fire-fighting hoses, rubber and plastic hoses
31	Determination of unpackability	ČSN 80 8715, p. 3.7	Fire-fighting hoses
32	Flexibility test	ČSN EN 15889, Annex Q	Non-percolating layflat hoses for fixed systems
33	Accelerated ageing test		
33.1	Accelerated ageing test	ČSN 80 8715, p. 3.13	Fire-fighting hoses
33.2	Accelerated ageing test	ČSN EN 15889, Annex D.2	Fire-fighting semi-rigid hoses
33.3-33.4	Reserved		
33.5	Accelerated ageing test	ČSN EN 15889, Annex D.1	Non-percolating layflat hoses for fixed systems
33.6	Determination of loss of softeners	TÚPO Guideline No. 05-05 (ČSN EN ISO 176)	Fire-fighting hoses
34-37	Reserved		
38*	Determination of dynamic driving parameters	TÚPO Guideline No.03-14 (ČSN 30 0556)	Fire-fighting vehicles
39	Determination of optical density by a single - chamber test	ČSN EN ISO 5659-2	Solid substances
40	Determination of the lethal toxic potency of fire effluents - method with smoke chamber physical fire model with FTIR gas cell	TÚPO Guideline No. 01-09, Procedure B (ČSN EN ISO 5659-2, ČSN EN 45545-2, ČSN EN 17084, DIN 5510-2)	Solid materials or products

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
41	Chemical analysis of flammable liquid accelerants by GC-MS method - solid phase microextraction (SPME)	TÚPO Guideline No. 02-13, Procedure A (ASTM E-1388)	Fire scene samples
42	Chemical analysis of flammable liquid accelerants by GC-MS method - direct spraying	TÚPO Guideline No. 02-13, Procedure B (ASTM E-1388)	Fire scene samples
43	Determination of the auto ignition temperature of gases and vapours of flammable liquids	ČSN EN ISO/IEC 80079-20-1, p. 7	Flammable liquids
44	Qualitative chemical analysis of solids and liquids by FTIR	TÚPO Guideline No. 04-09	Solids, liquids
45	Determination of flash and fire points by Cleveland open cup method	ČSN EN ISO 2592	Flammable liquids
46	Determination of spontaneous ignition behaviour of liquid and pasty substances - Mackey test	TÚPO Guideline No. 06-09	Liquid and pasty substances
47	Reserved		
48	Determination of gas extinguishing agent chemical composition by a gas chromatography	TÚPO Guideline No. 32-14	Gas extinguishing agent
49	Determination of gas extinguishing agent purity by a gas chromatography	TÚPO Guideline No. 33-14	Gas extinguishing agent
50	Determination of gas extinguishing agent nonvolatile residue by a gas chromatography	TÚPO Guideline No. 34-14	Gas extinguishing agent
51	Determination of combustibility of solid materials	TÚPO Guideline No. 08-09 (ČSN 64 0149)	Solid flammable materials
52	Determination of flash point of flammable liquids by Rapid Equilibrium Closed Cup method	ČSN EN ISO 3679	Flammable liquids

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
53	Reserved		
54	Determination of the spontaneous ignition behaviour of dust accumulations	ČSN EN 15188	Dust and granular material
55	Chemical analysis of solids and liquids by Raman spectroscopy	TÚPO Guideline No. 12-10	Solid substances/materials and liquids
56-57	Reserved		
58	Determination of solid substances and materials behavior during heating by a high pressure differential scanning calorimetry	TÚPO Guideline No. 35-14	Solid substances
59-60	Reserved		
61	Qualitative chemical analysis of solids and liquids by X-ray fluorescence spectroscopy	TÚPO Guideline No. 24-18, Procedure A	Solids, liquids
62	Quantitative chemical analysis of aluminium alloys for portable ladders for fire service use by X-ray fluorescence spectroscopy	TÚPO Guideline No. 24-18, Procedure B	Aluminium alloys
63	Reserved		
64	Alkalimetric determination of acidity of gaseous extinguishing agents	TÚPO Guideline No. 38-15	Gaseous substances
65	Gravimetric determination of sediment in gaseous extinguishing agents	TÚPO Guideline No. 39-15	Gaseous substances
66-67	Reserved		
68	Determination of burning behaviour by oxygen index - Ambient-temperature test	ČSN EN ISO 4589-2	Solids
69	Determination of burning behaviour by oxygen index - Elevated-temperature test	ČSN EN ISO 4589-3	Solids
70-72	Reserved		
73	Determination of density of liquids up to 3 g/cm ³	TÚPO Guideline No. 31-13 (ASTM D 4052)	Liquids

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Order number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
74	Determination of water in gaseous extinguishing agents	TÚPO Guideline No. 40-15	Gaseous substances
75	Determination of surface tension and spreading coefficient		
75.1	Determination of surface tension	ČSN EN 1568-1 ed. 2 ISO 304	Extinguishing agent, foam concentrates and foam solutions - medium foam for surface application to water immiscible liquids
75.2	Determination of surface tension	ČSN EN 1568-2 ed. 2 ISO 304	Extinguishing agent, foam concentrates and foam solutions - light foam for surface application to water immiscible liquids
75.3	Determination of surface tension	ČSN EN 1568-3 ed. 2 ISO 304	Extinguishing agent, foam concentrates and foam solutions - heavy foam for surface application to water immiscible liquids
75.4	Determination of surface tension	ČSN EN 1568-4 ed. 2 ISO 304	Extinguishing agent, foam concentrates and foam solutions - heavy foam for surface application to water miscible liquids

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

² 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 (except 1.2 to 1.6, 1.8, 1.10 to 1.13), 2 (except 2.3 to 2.6), 3 (except 3.2), 4, 5 (except 5.3), 6 (except 6.2), 7, 8 (except 8.2), 9, 10 (except 10.2), 11, 12 (except 12.2, 12.3), 13, 18 (except 18.2), 19, 22 to 33 (except 33.3, 33.4), 38 to 46, 48 to 52, 54 to 55, 58, 61 to 62, 64, 65, 68, 69, 73 to 75

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 scope of accreditation cannot be applied to tests not included in the annex.

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Sampling:

Ordinal number	Sampling procedure name	Sampling procedure identification ¹	Sampled object
1	Targeted representative sampling at a fire scene for determination of causal connection with fire	TÚPO Guideline No. 11-08	Fire scene samples

¹ 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)

Explanations:

ASTM - American Society For Testing And Materials (US Technical Standard)

DIN - Deutsche Industrie Norm (German Technical Standard)

TÚPO - Technical Institute of Fire Protection