



PAVUS, a.s.
Notified Body No. 1391
Prosecká 412/74, 190 00 Praha 9 - Prosek
Authorization No. ÚNMZ/SPR/106/4000/18-7 from 20th November 2018

CERTIFICATE OF CONSTANCY OF PERFORMANCE

No. 1391-CPR-2019/0020

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Containers Valve Assembly and their Actuator, Type FRS-H1 Model 10

Technical parameters of the product:
are stated in the Annex No. 1 of this Certificate of constancy of performance.

Intended use of the product in buildings:

Components for use in gas extinguishing systems installed in buildings and field areas as a part of a complete operating system.

placed on the market under the name or trade mark of

**FIRESI, s.r.o.,
Lidická kolonie 1108/47, 58601 Jihlava, Czech Republic**

and produced in the manufacturing plant:

**FIRESI, s.r.o.,
Lidická kolonie 1108/47, 58601 Jihlava, Czech Republic**

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard:

EN 12094 – 4:2004

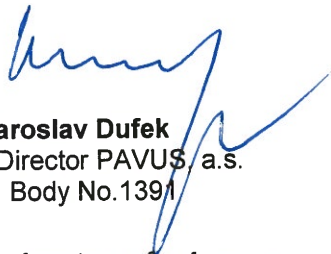
under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product

This certificate cancels and replaces Certificate No. 1391-CPR-2017/20, which was first issued on February 3, 2017. This certificate will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

In Prague 8th February 2019




Ing. Jaroslav Dufek
Managing Director PAVUS, a.s.
Notified Body No. 1391

Technical parameters of the products*)

Type of container valve assemblies	FRS-H1 model 10
Extinguishing Agent	HFC 236fa, HFC227ea, FK-5-1-12
Maximum working pressure of the valve (MPa)	1,6
Working pressure of the container (MPa)	1,0 (at 20 °C)
Nominal diameter	DN 13
Free cross-sectional area - Diameter (mm)	154
Ambient temperature	-20 °C ÷ + 50 °C
Volume of the smallest container (l)	1
Minimum / maximum fill ratio (HFC 236fa, HFC-227ea, FK-5-1-12)	1,0

Assessing of product performances

Essential characteristics	Requirement clauses EN 12094-4	Findings	Conformity Assessment
Operational reliability	4.2 General design requirements	Fulfill requirements of standard.	Conforms
	4.3 Connection threads	Fulfill requirements of standard.	Conforms
	4.4 Function and ambient temperature	Correct function of container valves and the operating times were always less than 2 s.	Conforms
	4.5 Resistance to internal pressure	During and after tests there were no permanent deformation, there were no bubbles during tests.	Conforms
	4.6 Strength	On the actuators nor valves were found no deformation nor bursting.	Conforms
	4.7 Leakage	The loss of content from the valve assembly and the containers not exceed 0,5 % of the actual net charge mass of the specified smallest appropriate containers and the loss of pressure from smallest container filled with minimum and m FK-5-1-12 maximum fill ratio not exceed 0,5 % for agents HFC 236fa, HFC-227ea, FK-5-1-12,	Conforms
	4.8 Operational reliability	There were no deterioration of performance.	Conforms
	4.12 Vibration resistance	Valve assemblies were not operate nor damaged during tests. Driptubes were not fracture, become loose nor detach during the test.	Conforms
	4.14 Operating force	Effective forces of the actuators were more than two times bigger than forces necessary to open the valves within the required operating times under the most severe conditions	Conforms
	4.15 Functional reliability	There were no deterioration of performance when a component incorporating electric and pneumatic powered actuators were tested.	Conforms
	4.16 Manual powered actuators	There are no manually powered actuators.	NPD
Distribution of extinguishing media	4.2.3 Free cross-sectional area	FRS-H1 model 10: 154 mm ²	Conforms
	4.2.4 Smallest container, the related minimum and maximum fill ratio	FRS-H1 model 10: Vmin=1 l; fill ratio for HFC 236fa: max. 1,0; fill ratio for HFC-227ea: max. 1,0, fill ratio for FK-5-1-12 max. 1,0	Conforms
	4.9 Flow characteristics 4.9.1	Free cross-sectional area of the minimum flow ways were within ± 10 % of the value specified by the manufacturer.	Conforms
	4.13 Driptube 4.13.2	The highest point of the inlet of the driptube is not more than two times the internal diameter of the driptube above the base of the container.	Conforms
Distribution of extinguishing media	4.10 Corrosion	Valve assemblies operated satisfactorily after being subjected to the corrosion test.	Conforms
	4.11 Stress corrosion	No cracks were found afters stress corrosion tests.	Conforms

*) Detailed technical parametres and conditions of final classification according to EN 12094 – 4:2004 are stated in the Assessment report of performance of the construction product No. P-1391-CPR-2019/0020 of 8th February 2019.



Ing. Jaroslav Dufek
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