

Fire suppression system for engine compartment

Issued to

Lehavot Production and Protection (1995) Ltd

12125 Lehavot Habashan, Israel

Manufacturing plant

same as above

Product and product name

Fire suppression system, BUS Shield

Classification

Test scenario rating	Level of openness	Class A fire
A	4	A

Technical data/Performance

See appendix to this certificate.

Certificate

The product described in this certificate fulfils the requirements in RISE Certification rules regarding Fire suppression systems in engine compartments of buses, coaches and other heavy vehicles, SPCR 183 issue 2020-04-06. The certification is based on the manufacturer's technical file and type tests performed in accordance with standards specified in the appendix to this certificate.

Marking

Marking shall show SPCR 183, RISE logo, manufacturer's logo, the number of this certificate, the name of the product, the name of the manufacturer and RISE p-symbol. See last page in this certificate for details.

Validity

This certificate is valid until no longer than 2023-07-09.

Miscellaneous

The manufacturer's in-house inspection is under surveillance by RISE in accordance with section 4 and 5 of SPCR 183. Other terms and conditions are set out in section 6 of SPCR 183.

Martin Tillander

Certificate SC0195-18 | issue 3 | 2021-12-08

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Page 1 (4)

Product information

Technical data of the tested suppression system BUS Shield (8kg)

Table 1 shows technical data of the suppression system tested for 4 m³ engine compartment volumes. The system may be scaled to fit the size of a specific engine compartment according to the scaling rules in SP Method 4912.

Table 1, technical data of the tested fire suppression system

Suppression agent name	Dry chemical based
Suppression agent name	ABC 94
Suppression agent mass/volume	8 kg
Suppression agent container volume	VPS 8 ABC Agent cylinder 8 kg
Suppression agent container / art number	(P/N) 40711020
Suppression agent container pressure	30 bar
Proppellant gas	Nitrogen
Suppression agent delivery hose	Flexible hose ½" (PTFE Coated stainless steel mesh) SAE 100R 14A
Suppression agent delivery pipes	Stainless steel pipes. Inner diameter 9 mm (approx. ¾")
Type of nozzles	6 pcs. "PTZ-60" 1 pcs. "3 Grooves"
Number of nozzles	7
Distance to the most remote nozzle	7.1 m
Total length of agent delivery system	10.9 m
Number of connections	6 pcs. Straight fittings 6 pcs. Tee fittings 24 pcs. Elbow fittings
Minimum operating temperature	-40°C
Thermal cycling resistance	ISO 16750-3:2007
Mechanical stress resistance (vibration and shock)	ISO 16750-3:2007 (Test VII)
Corrosion resistance	ISO 21207, test method B (3 cycles)

Product performance

Performance rating according to SP Method 4912

Table 2, Fire scenario

Rating	Description	Ventilation (m ³ /s)	Result
A +	Low fire load	3	
	High fire load	3	
	Hidden fire	3	
A	Hidden fire	1.5	Pass
B	Hidden fire	0	Pass
C	Low fire load	3	
	High fire load	3	
D	Low fire load	0	Pass
E	High fire load	0	Pass
	High fire load	1,5	Pass
	Low fire load	1.5	Pass
	Re-ignition >45s	0	Pass (73 s)

Table 3, level of openness:

Level	Criteria
1	Fire tests passed with open mockup
2	Fire tests passed without mockup floor and ceiling
3	Fire tests passed without mockup floor
4	Fire tests passed with all sides closed on mockup

Table 4, class A fire:

Description	Ventilation (m ³ /s)	Remarks
Class A fire	0.5	Extinguished within 60 s after activation of the suppression system. No re-ignition.
Pass		

Product performance – Tested fire scenarios to SP Method 4912

Conditions

Electrical equipment included in the system shall have a classification of at least IP65, and tested in accordance with IEC 60529:1989/A1:2009/COR3:2009.

A risk assessment in accordance with SPCR 183 section 3.2 shall be made prior to equipment being placed into service. The risk assessment shall be made by personnel having documented experience for the task.

It is the responsibility of the suppression system manufacturer to assure compliance of its suppression system components with legal requirements and vehicle manufacturer requirements.

The marking of the product shall be legible and durable and be designed as below, size 40x60 mm. It shall be applied in conjunction to the engine compartment.

Marking plate:

