

Fire suppression systems intended for use in engine compartments with combustion engines

Issued to

Ardent Limited

Unit 3, Becklands Close, Roecliff, North Yorkshire, YO51 9 NR, United Kingdom

Manufacturing place

DAB Fire Engineering, Unit 11, Becklands Close, Roecliff, North Yorkshire, YO51 9NR, United Kingdom

Product and product name

Fire suppression system, Ardent DualGuard.

Classification

Test scenario rating	Level of openness	Class A fire
A+	1	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 intended for use in engine compartments with combustion engines, SPCR 199:2021. 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 199, RISE logo, manufacturer's logo, the number of this certificate, the name of the product, its serial number, the name of the manufacturer and RISE P-symbol. See last page in this certificate for details.

Validity

This certificate is valid until not longer than 2026-09-19. The validity can be verified on RISE website.

Miscellaneous

The manufacturer's in-house inspection is under surveillance by RISE in accordance with section 4 and 5 of SPCR 199:2021. Other terms and conditions are set out in section 6 of SPCR 199:2021.

Martin Tillander

Product information

Technical data of the tested suppression system Ardent DualGuard

Table 1a and 1b shows technical data of the combined 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: November 2019.

Table 1a, technical data of the tested fire suppression system

Suppression agent type	Dry Chemical
Suppression agent name	ABC FAVORIT X 90
Suppression agent mass/volume	9 kg
Suppression agent container volume	10.2 l
Suppression agent container/ art number	CS112-I
Suppression agent container pressure	25 bar (at +20 °C)
Propellant gas	Nitrogen
Suppression agent delivery hose (Primary supply)	3/4" hose
Suppression agent delivery hose (Secondary supply)	1/2" hose
Type of nozzles	5 x High Dispersion Nozzle (HDN) 1 x Venturi Nozzle
Number of nozzles	6
Distance to the most remote nozzle	12.7 m
Total length of agent delivery system	37.3 m
Number of connections	22 x Straight couplings 3 x T-couplings 16 x 90° elbow 1 x Distribution Tee
Minimum operation temperature	-17 °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)

Table 1b, technical data of the tested fire suppression system

Suppression agent type	Wet chemical
Suppression agent name	AFFF 12%
Suppression agent mass/volume	7.1 kg
Suppression agent container volume	10.2 l
Suppression agent container/ art number	CS114-I
Suppression agent container pressure	15.5 bar (at +20 °C)
Propellant gas	Nitrogen
Suppression agent delivery hose	1/2" hose
Type of nozzles	Full cone nozzle 45°, 90° and 120°
Number of nozzles	3
Distance to the most remote nozzle	24 m
Total length of agent delivery system	24 m
Number of connections	30 x Straight couplings 2 x T-couplings 1 x 90° elbow
Minimum operation temperature	-17 °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	Pass
	High fire load	3	Pass
	Hidden fire	3	Pass
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 >300 s	0	Pass (No re-ignition)

Table 3, level of openness:

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

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		

Conditions

Electrical equipment in the system that is installed in the engine compartment shall be protected against ingress of solid foreign objects and water shall have a classification of at least IP65 and tested in accordance with ISO 20653:2013.

A risk assessment in accordance with SPCR 199:2021 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:

