

Fire suppression system for engine compartment of heavy vehicles

Issued to**Reacton Fire Suppression Ltd**

14 Baynes Place, Waterhouse Business Park, Chelmsford, Essex, CM1 2QX, United Kingdom

manufacturing site
same as above

Product and product name

Fire suppression system, Reacton CTX Indirect Powder and Reacton Wet Chemical System

Classification

	Test scenario rating	Level of openness	Class A fire
Reacton 4+4 kg (8kg Dual Agent)	A+	4	A
Reacton 6+6 kg (12kg Dual Agent)	A+	4	A
Reacton 9+6 kg (15kg Dual Agent)	A+	1	A

Technical data/Performance

See the following pages of 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 this certificate.

Marking

Marking shall show SPCR 199, RISE logo and P-symbol, manufacturer's name and/or logo, the number of this certificate, the name of the product, classification and its serial number. See last page in this certificate for details.

Validity

This certificate is valid until no longer than 2030-01-17. The validity of this certificate can be verified at RISE homepage.

Miscellaneous

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



Martin Tillander

Certificate C001017 | issue 2 | 2024-11-27

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Product information**Technical data of the tested suppression system**

Table 1a-f 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 1a, technical data of the tested fire suppression system – Reacton Dry chemical system 4 kg

Fire suppression system name	Reacton CTX Indirect Powder
Suppression agent name	Furex ABC 770
Suppression agent	Dry powder
Suppression agent volume/mass	5.4 l / 4 kg
Suppression agent container / art number	RE-CTXCE-054-040-ABC
Suppression agent container pressure	25 bar (at + 20°C)
Propellant gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	12 m
Number of nozzles	4 pcs
Type of nozzles	4 x RE7145
Distance to the most remote nozzle	6 m
Fittings, amount of each type	90° elbow 2 pcs Straight coupling 2 pcs Tee coupling 2 pcs
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 for 3 cycles

Table 1b, technical data of the tested fire suppression system – Reacton Wet agent system 4 kg

Fire suppression system name	Reacton Wet Chemical System
Suppression agent name	Freefor 6% / Freezol 35% / Water
Suppression agent	Wet agent
Suppression agent volume/mass	5.4 l / 4 kg
Suppression agent container / art number	RE-CTXCE-054-040-FFF
Suppression agent container pressure	25 bar (at + 20°C)
ProPELLANT gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	9.25 m
Number of nozzles	2 pcs
Type of nozzles	2 x RE7099
Distance to the most remote nozzle	9.25 m
Fittings, amount of each type	90° elbow 2 pcs Straight coupling 2 pcs Tee coupling 1 pcs
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 for 3 cycles

Table 1c, technical data of the tested fire suppression system – Reacton Dry chemical system 6 kg

Fire suppression system name	Reacton CTX Indirect Powder
Suppression agent name	Furex ABC 770
Suppression agent	Dry chemical
Suppression agent volume/mass	7.5 l / 6 kg
Suppression agent container / art number	RE-CTXCE-075-060-ABC
Suppression agent container pressure	25 bar (at + 20°C)
ProPELLANT gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	20 m
Number of nozzles	6 pcs
Type of nozzles	5 x RE7145 1 x RE7154
Distance to the most remote nozzle	6 m
Fittings, amount of each type	90° elbow 3 pcs Straight coupling 6 pcs Tee coupling 3 pcs
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 for 3 cycles

Table 1d, technical data of the tested fire suppression system – Reacton Wet agent system 6 kg

Fire suppression system name	Reacton Wet Chemical System
Suppression agent name	Freefor 6% / Freezol 35% / Water
Suppression agent	Wet agent
Suppression agent volume/mass	7.5 l / 6 kg
Suppression agent container / art number	RE-CTXCE-075-060-FFF
Suppression agent container pressure	25 bar (at + 20°C)
ProPELLANT gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	9.25 m
Number of nozzles	2 pcs
Type of nozzles	2 x RE7099
Distance to the most remote nozzle	9.25 m
Fittings, amount of each type	90° elbow 2 pcs Straight coupling 2 pcs Tee coupling 1 pcs
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 for 3 cycles

Table 1e, technical data of the tested fire suppression system – Reacton Dry chemical system 9 kg

Fire suppression system name	Reacton CTX Indirect Powder
Suppression agent name	Furex ABC 770
Suppression agent	Dry chemical
Suppression agent volume/mass	12 l / 9 kg
Suppression agent container / art number	RE-CTXCE-120-090-ABC
Suppression agent container pressure	25 bar (at + 20°C)
ProPELLANT gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	22 m
Number of nozzles	6 pcs
Type of nozzles	5 x RE7145 1 x RE7154
Distance to the most remote nozzle	8 m
Fittings, amount of each type	90° elbow 3 pcs Straight coupling 8 pcs Tee coupling 3 pcs
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 for 3 cycles

Table 1f, technical data of the tested fire suppression system – Reacton Wet agent system 6 kg

Fire suppression system name	Reacton Wet Chemical System
Suppression agent name	Freefor 6% / Freezol 35% / Water
Suppression agent	Wet agent
Suppression agent volume/mass	7.5 l / 6 kg
Suppression agent container / art number	RE-CTXCE-075-060-FFF
Suppression agent container pressure	25 bar (at + 20°C)
ProPELLANT gas	Nitrogen
Suppression agent delivery hose	3/8"
Suppression agent delivery pipes	Double braided synthetic rubber.
Total length of agent delivery system	10 m
Number of nozzles	2 pcs
Type of nozzles	2 x RE7099
Distance to the most remote nozzle	8 m
Fittings, amount of each type	Straight coupling 3 pcs Tee coupling 1 pcs
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 for 3 cycles

Product performance

Performance rating according to SP Method 4912

Table 2, Fire scenario

- Dry chemical and wet agent system, 4+4 kg (8kg Dual Agent)
- Dry chemical and wet agent system, 6+6 kg (12 kg Dual Agent)
- Dry chemical and wet agent system, 9+6 kg (15kg Dual Agent)

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

- Dry chemical and wet agent system, 4+4 kg (8kg Dual Agent)
- Dry chemical and wet agent system, 6+6 kg (12kg Dual Agent)

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

- Dry chemical and wet agent system, 9+6 kg (15 kg Dual Agent)

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

- Dry chemical and wet agent system, 4+4 kg (8kg Dual Agent)
- Dry chemical and wet agent system, 6+6 kg (12kg Dual Agent)
- Dry chemical and wet agent system, 9+6 kg (15 kg Dual Agent)

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 included in the system shall have a classification of at least IP65, and be tested in accordance with ISO 20653:2013.

A risk assessment in accordance with SPCR 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:

