



CERTIFICATE

SC0476-15

Fire suppression system for engine compartment

Holder/Issued to/Manufacturer

Kidde Aerospace and Defense, 4200 Airport Drive NW, Bldg. B, Wilson, NC 27896-9643, USA

Product and product name

Fire suppression system: Kidde Standard

Type

Extinguishing agent: Purple K

Technical data/Performance/Classification

See appendix to this certificate

Certificate

The product described above fulfils the requirements in SP's Certification rules regarding Fire suppression systems in engine compartments of buses and coaches, SPCR 183. 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 the number of this certificate, the name of the product, its serial number, the name of the manufacturer and SP's p-symbol. See appendix.

Validity

This certificate is valid until not longer than 20th June 2021.

Miscellaneous

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

SP Technical Research Institute of Sweden Certification

Lennart Månsson
Certification Manager

Lennart Aronsson
Certification Officer



Certificate no SC0476-15, issue 1, 20th June 2016

SP Technical Research Institute of Sweden

Box 857, SE-501 15 Borås, Sweden
Phone: +46 10-516 50 00
E-mail: info@sp.se
www.sp.se

This certificate may not be reproduced other than in full, except with the prior written approval by SP. The certificate, including appendix consists of 4 pages, where this is page 1

CERTIFICATE

Appendix

Product information

Technical data of the tested suppression system

Table 1 shows technical data of the suppression system tested for 4 m³ engine compartment volume. The system may be scaled to fit the size of a specific engine compartment according to the scaling rules in SPCR 183.

Table 1. Technical data of the tested fire suppression systems

Manufacturer	Kidde
Fire suppression system name	Kidde Standard
Extinguishing agent name	Purple K
Extinguishing agent type	Dry Chemical
Extinguishing agent mass	10.0 kg
Extinguishing agent container volume	11.5 l
Container article number	408876-1133
Propellant gas	Nitrogen
Extinguishing agent container pressure	24 bar
Nozzle denotation	Part no. 474946 – Nozzle Dry Chemical
Number of nozzles	4
Distance to the most remote nozzle, ABC nozzles	8 m*
Nozzle mounting locations in the test apparatus (Coordinates in accordance with SP 4912 in metres.)	[0.535; 0.185; 1.035] [1.79; 0.66; 0.83] [2.25; 1.315; 0.77] [0.61; 1.20; 0.83]

* 4 m (¾ inch ID) main line + 4 x 4 m (½ inch ID) branch lines to each of the nozzles

CERTIFICATE

Appendix

Performance - Tested fire scenarios according to SP Method 4912

A summary of the results can be found in Table 2. The test numbers refer to SP Method 4912. More information about the tests is shown in the test report.

Table 2 Results

Test	Air flow	Test scenario category	Results
1	0 m ³ /s	High fire load test	Pass
2	0 m ³ /s	Low fire load test	Pass*
3	0 m ³ /s	Hidden fire test	Pass
4	0.5 m ³ /s	Class A-fire test	-
5	1.5 m ³ /s	High fire load test	Pass
5	1.5 m ³ /s	Minimum perating temp. test T _{min} = -29°C	Pass
6	1.5 m ³ /s	Low fire load test	Pass*
7	1.5 m ³ /s	Hidden fire test	Pass
8	3 m ³ /s	High fire load test	-
9	3 m ³ /s	Low fire load test	-
10	3 m ³ /s	Hidden fire test	-
11	0 m ³ /s	Hot surface re-ignition	1min 11 s

* Passed with an amount of agent divided by 1.2 compared to the ordinary amount of agent.

Component tests

In addition to fire tests components in the fire suppression system need to be verified and tested through international standards as specified below.

Table 3.

Property	Standard	Result
Mechanical stress resistance (vibration and shock)	ISO 16750-3:2007 (Test VII)	Pass
Corrosion resistance	ISO 21207, test method B (3 cycles)	Pass

Certificate no SC0476-15, issue 1, 20th June 2016




SP Technical Research Institute of Sweden

Box 857, SE-501 15 Borås, Sweden
 Phone: +46 10-516 50 00
 E-mail: info@sp.se
 www.sp.se

This certificate may not be reproduced other than in full, except with the prior written approval by SP. The certificate, including appendix consists of 4 pages, where this is page 3

CERTIFICATE

Appendix

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 placed adjacent to the engine compartment and be designed as below. The size of the sign shall be 40 x 60 mm.

