



# DECLARATION



Number K90416 /04

Replaces K90416 /03

Issued January 25<sup>th</sup>, 2018

Valid until November 19<sup>th</sup>, 2018

Declaration of Conformity,

based on the test requirements of ISO15779, regarding

## FirePro

## Non-Pressurized Condensed Aerosol Generators and Components

### STATEMENT BY KIWA

With this declaration, Kiwa declares that legitimate confidence exists that the products supplied by

### FirePro Systems Ltd.

comply with the technical specifications as laid down in this product declaration and marked with the Kiwa<sup>®</sup>-mark in the manner as indicated in this product declaration.

Luc Leroy  
Kiwa

This declaration consists of 8 pages.  
Publication of the declaration is allowed.

#### Note:

Publication of only this front page or parts of the declaration is considered as "not valid".

#### Kiwa Nederland B.V.

Dwarsweg 10  
5301 KT Zaltbommel  
The Netherlands

Tel. +31 88 9985100

[www.kiwafss.nl](http://www.kiwafss.nl)

#### Company

FirePro Systems Ltd  
Tonia Court No. 2, 6th Floor  
Koumandarias & Spyrou  
Araouzou Street 6  
3076 LIMASSOL  
Postbox 54080  
3720 LIMASSOL  
Cyprus

Telephone +357 25379999

Email [mail@firepro.com](mailto:mail@firepro.com)

Internet [www.firepro.com](http://www.firepro.com)

**FirePro Non-Pressurized Condensed Aerosol Generators and Components**

**Declaration**

This product declaration is based on the test requirements of ISO15779.

**Generator specifications**

The products mentioned below belong to this product declaration.

Type	Housing Stainless steel	Activation Type		Number of outlets
		Bulb Thermal Activator	Electrical	
FP20 SE	Cylinder	No	Yes	2
FP20 T	Cylinder	No	Yes	1
FP20 TH	Cylinder	Yes	No	1
FP40 S	Cylinder	No	Yes	2
FP40 T	Cylinder	Yes	Yes	1
FP80 S	Cylinder	No	Yes	2
FP80 T	Cylinder	Yes	Yes	1
FP100 S	Cylinder	Yes	Yes	1
FP200 S	Cylinder	Yes	Yes	1
FP500 S	Cylinder	Yes	Yes	1
Type	Housing Red Coated Steel	Activation Type		Number of outlets
		Bulb Thermal Activator	Electrical	
FP1200	Box	No	Yes	1
FP1200 T	Box	Yes	Yes	1
FP2000	Box	No	Yes	1
FP2000 T	Box	Yes	Yes	1
FP3000	Box	No	Yes	1
FP3000 T	Box	Yes	Yes	1
FP4200 T	Box	Yes	Yes	1
FP5700	Box	No	Yes	1
FP5700 T	Box	Yes	Yes	1
Type	Housing Stainless Steel	Activation Type		Number of outlets
		Bulb Thermal Activator	Electrical	
FP1200 S	Box	No	Yes	1
FP1200 TS	Box	Yes	Yes	1
FP2000 S	Box	No	Yes	1
FP2000 TS	Box	Yes	Yes	1
FP3000 S	Box	No	Yes	1
FP3000 TS	Box	Yes	Yes	1
FP4200 TS	Box	Yes	Yes	1
FP5700 S	Box	No	Yes	1
FP5700 TS	Box	Yes	Yes	1

Non-pressurized generator.

## FirePro Non-Pressurized Condensed Aerosol Generators and Components

---

### Application and use

Total flooding fire-extinguishing systems are used primarily for protection against hazards that are in enclosures or equipment that, in itself, includes an enclosure to contain the extinguishant. Condensed aerosol generators can be used as a part of fire fighting systems in buildings, plants or other structures. It covers total flooding systems primarily related to buildings, plant and other specific applications, utilizing electrically non-conducting condensed aerosol fire extinguishants.

The following are typical of such hazards, but the list is not exhaustive:

- a) Electrical and electronic hazards;
- b) Telecommunications facilities;
- c) Flammable and combustible liquids and gases;

Where aerosol generators are used in a potentially explosive application, the suitability of the generator to the atmosphere for the determined life shall be assessed.

The fire extinguishing components shall be suitable for extinguishing fires of the following classes:

- Class A according EN2
- Class B according EN2

### Conditions for application

- The numbers and types of the extinguishing components have to be determined in conformity with the guidelines and calculation methods of the supplier.
- Distribution is to be done by supplier or companies authorised by the supplier.
- Before usage an instruction is to be given by a trainer or instructor for this product authorized by the supplier.
- The installation and maintenance of the fire extinguishing components have to take place according to the specifications of the supplier/manufacturer, ISO15779 and/or evaluation guideline BRL-K23003.

### Point of interest during use or limitation of use

The condensed aerosol extinguishing components should not be used on fires involving the following unless relevant testing by accredited testing laboratories has been carried out to the satisfaction of the Authority:

- Temperatures for use of aerosol extinguishing agents shall be within the supplier's listed limits.
- Local applications <sup>1)</sup> of condensed aerosol extinguishing systems are not covered by this product declaration.
  - Local applications require a pre-engineered and pre-designed system which has been tested and approved for a specific application by an authority such as Kiwa or by an accredited testing laboratory.

<sup>1)</sup> a local application is used for the extinguishment of surface fires in flammable liquids, gasses, and shallow solids, where the enclosure does not conform to the requirements for total flooding.

The above list may not be exhaustive.

### Manual

At delivery the product should be accompanied by an operation manual in the English language, known and authorized by Kiwa.

Following minimum items shall be described:

- Type of aerosol generators;
- Design application density;
- Description of occupancies and hazards to be protected against;
- Specification of aerosol generators;
- Equipment schedule or list of materials for each piece of equipment or device, showing device name; supplier, model or part number and description;
- System calculation;
- Enclosure pressurization and venting calculations;
- Description of fire detection, actuation and control systems.
- Requirements for inspection, maintenance and testing of an aerosol fire-extinguishing system and for the training of inspection and maintenance personnel.

For specific details regarding the owner's manual, see ISO 15779

**FirePro Non-Pressurized Condensed Aerosol Generators and Components**

---

**Marking**

The products should be marked with the Kiwa<sup>®</sup>-mark.

Place of the mark	Required specifications	Method of marking
<ul style="list-style-type: none"> <li>• On the generator</li> </ul>	<ul style="list-style-type: none"> <li>• Name of the product and supplier</li> <li>• Supplier's type designation</li> <li>• Production date and serial number</li> <li>• Mass of aerosol-forming compound</li> <li>• Temperature range</li> <li>• Storage humidity range</li> <li>• Service life</li> <li>• Distances as specified in table 5</li> <li>• Reference to the application instructions</li> <li>• Certification mark</li> <li>• Fire Class A according EN2</li> <li>• Fire Class B according EN2</li> </ul>	<ul style="list-style-type: none"> <li>• Non-erasable and non-detachable;</li> <li>• Non-flammable;</li> <li>• Permanent an legible</li> </ul>

**Recommendations for Customers**

Check at the time of delivery whether:

- The supplier has delivered in accordance with the agreement;
- The mark and the marking method are correct;
- The products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:

- FirePro Systems Ltd
- and, if necessary,
- Kiwa Nederland B.V.

Consult the suppliers processing guidelines for the proper storage and transport methods.

**FirePro Non-Pressurized Condensed Aerosol Generators and Components**

Cross reference ISO 15779, Condensed aerosol fire extinguishing systems - Requirements and test methods for components and system design, installation and maintenance - General requirements (ISO 15779:2011,IDT), December 2011

Chapter	Description	Demand <sup>1)</sup>	Result	Remarks and reference to relevant chapter, table(s) and tests
Annex C	(normative) Test methods			
C2	Conditions	A	Pass	
C3	Samples	A	Pass	
C4	Compliance	A	Pass	
C5	Extinguishing application density determination			See D5
C6	Discharge time test			See C16
C7	Temperature and humidity operation range tests	A	Pass	EN 60068-2-30, Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle) variant 1
C8	Accelerated ageing test	A	Pass	15 Years Aging test Kiwa
C9	Corrosion test	A	Pass	
C10	Stress corrosion test	A	Pass	Materials used in the construction are not susceptible to ammonia stress corrosion.
C11	Vibration test	A	Pass	Acceleration amplitude for components which are designed to be attached to machinery according NEN-EN-IEC 60068-2-6
C12	Impact test	A	Pass	Covered by Drop test, see C.13
C13	Drop test	A	Pass	
C14	Casing and aerosol flow temperatures test C14.1 Casing temperatures test C14.2 Aerosol flow temperature test	A		See C.16.3 See C.16.2
C15	Ignition performance test	A	Pass	Bulb Thermal Activator and Heat Detection Cable Activator not tested
C16	Function test	A	Pass	
C16.1	Discharge time	A	Pass	See table 4
C16.2	Aerosol flow temperatures	A	Pass	See table 5
C16.3	Casing temperature test	A	Pass	

FirePro Non-Pressurized Condensed Aerosol Generators and Components

Chapter	Description	Demand <sup>1)</sup>	Result	Remarks and reference to relevant chapter, table(s) and tests
C16.4	Effective mass of extinguishant	A	Pass	See Table 2
C16.5	Test procedure	A	Pass	
C16.6	Requirements	A	Pass	
C17	Fire exposure	A	Pass	
Annex D	(normative) Extinguishing application density/coverage test procedure			
D5	Aerosol generator distribution verification tests			
D5.1	Minimum height/maximum coverage test	A	Pass	The following types were tested, all: <ul style="list-style-type: none"> <li>• FP20</li> <li>• FP40</li> <li>• FP80</li> <li>• FP100</li> <li>• FP200</li> <li>• FP1200</li> </ul> See Table 3
D5.2	Maximum height test	A	Pass	The following types were tested, all: <ul style="list-style-type: none"> <li>• FP20</li> <li>• FP40</li> <li>• FP80</li> <li>• FP100</li> <li>• FP200</li> <li>• FP1200</li> <li>• FP2000</li> <li>• FP3000</li> <li>• FP4200</li> <li>• FP5700</li> </ul> See Table 3
D6	Extinguishing application density tests			
D6.1	Wood crib test	A	Pass	See Table 1
D6.2	n-Heptane pan test	A	Pass	See Table 1
D6.3	Polymeric sheet fire test D6.3.2.2 Polymethyl methacrylate (PMMA); D6.3.2.2 Polypropylene, D6.3.2.2 Acrylonitrile-butadiene-styrene polymer (ABS)	A	Pass	See Table 1
D6.4	Class A compatible wood crib test	A	Pass	See Table 1
D7	Test of the determination of the maximum leakage area/volume ratio	A	Pass	See Table 1A

<sup>1)</sup> A = Applicable

N/A = Not Applicable

Not tested

FirePro Non-Pressurized Condensed Aerosol Generators and Components

Product specifications

Table 1

Listing		According ISO 15779	Pre burn time	Soak period	Test room	Density
EN2	Material / fuel		in seconds	in seconds	in m <sup>3</sup>	in grams / m <sup>3</sup>
A	Wood crib	D.6.1	120	600	105.4	102
A	Class A compatible wood crib test	D.6.4	120	600	105.4	74
A	Poly methyl methacrylate	D.6.3	210	600	100	55.2
A	Polypropylene	D.6.3	210	600	100	55.2
A	ABS	D.6.3	210	600	100	62
B	Heptane (830 Kilowatt)	D.6.2	30	30	100	52

Table 1A

Listing		According ISO 15779	Leakage to volume ratio	Hold Time	Test room	Density
EN2	Test		in %	in minutes	in m <sup>3</sup>	in grams / m <sup>3</sup>
--	Hold Time	D.7	0.17	10	105.4	75

Table 2

Type	Housing Type	Efficiency in %	Type	Housing Type	Efficiency in %
FP1200 T/S/TS	Box	63	FP20 SE	Cylinder	60
FP2000 T/S/TS	Box	60	FP20 T/TH	Cylinder	70
FP3000 T/S/TS	Box	61	FP40 S	Cylinder	61
FP4200 T/TS	Box	60	FP40 T	Cylinder	62
FP5700 T/S/TS	Box	59	FP80 S	Cylinder	59
			FP80 T	Cylinder	60
			FP100 S	Cylinder	61
			FP200 S	Cylinder	59
			FP500 S	Cylinder	66

FP20 SE, FP40 S and FP80 S are current models (Double outlet – upper and bottom part)  
 FP20 T/TH, FP40 T and FP80 T are new models (Single outlet – bottom part)

FirePro Non-Pressurized Condensed Aerosol Generators and Components

Table 3

Type	Housing Type	Agent distribution according ISO15779			
		Minimum height in m	Maximum area coverage in m	Maximum height in m	Maximum area coverage in m
FP1200 T/S/TS	Box	0.45	5.66 * 5.66	3.5	2.02 * 2.02
FP2000 T/S/TS	Box			3.5	3.16 * 2.09
FP3000 T/S/TS	Box			4.0	3.16 * 2.79
FP4200 T/TS	Box			5.0	3.16 * 3.16
FP5700 T/S/TS	Box			8.0	3.16 * 2.56
FP20 SE/T/TH	Cylinder	0.45	1.00 * 0.55	1.0	0.50 * 0.50
FP40 S/T	Cylinder	0.45	1.00 * 1.08	1.0	0.70 * 0.70
FP80 S/T	Cylinder	0.45	1.00 * 2.12	2.0	0.70 * 0.70
FP100 S	Cylinder	0.45	1.63 * 1.63	1.0	1.10 * 1.10
FP200 S	Cylinder	0.45	2.30 * 2.30	2.0	1.09 * 1.09
FP500 S	Cylinder	0.50	3.00 * 4.01	3.0	1.84 * 1.10

Table 4

Type	Housing Type	Discharge time In Sec	Type	Housing Type	Discharge time In Sec
FP1200 T/S/TS	Box	15 - 20	FP20 SE/T/TH	Cylinder	3 - 6
FP2000 T/S/TS	Box	15 - 20	FP40 S/T	Cylinder	4 - 8
FP3000 T/S/TS	Box	15 - 20	FP80 S/T	Cylinder	4 - 8
FP4200 T/TS	Box	15 - 20	FP100 S	Cylinder	5 - 10
FP5700 T/S/TS	Box	15 - 20	FP200 S	Cylinder	5 - 10
			FP500 S	Cylinder	5 - 10

Table 5

Type	Housing Type	Distance in m		
		75°C	200°C	400°C
FP1200 T/S/TS	Box	1.5	n/a	n/a
FP2000 T/S/TS	Box	1.5	n/a	n/a
FP3000 T/S/TS	Box	2.0	0.6	n/a
FP4200 T/TS	Box	2.5	0.6	n/a
FP5700 T/S/TS	Box	2.0	0.6	n/a
FP20 SE	Cylinder	0.1	n/a	n/a
FP20 T/TH	Cylinder	0.1	n/a	n/a
FP40 S	Cylinder	0.1	n/a	n/a
FP40 T	Cylinder	0.15	n/a	n/a
FP80 S	Cylinder	0.1	n/a	n/a
FP80 T	Cylinder	0.1	n/a	n/a
FP100 S	Cylinder	0.3	n/a	n/a
FP200 S	Cylinder	0.4	0.1	n/a
FP500 S	Cylinder	1.0	0.3	n/a