

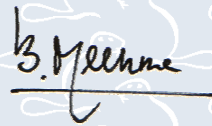
Number	K21477/11	Replaces	K21477/10
Issued	2011-08-01	Dated	2001-11-01
Valid until	2016-08-01		

Product certificate
**FirePro fixed fire extinguishing components
based on dry condensed aerosol**

Based on pre-certification tests as well as periodic inspections by Kiwa, the products referred to in this certificate and marked with the Kiwa-mark as indicated under 'Marking', supplied by

FirePro Systems Ltd.

may, on delivery, be relied upon to comply with the Kiwa evaluation guideline BRL-K23001; 2004-11-30 "Fixed fire extinguishing components based on dry condensed aerosol".



Bouke Meekma
Director Kiwa N.V.

This certificate is issued in accordance with the Kiwa-Regulations for Product Certification.

This certificate consists of 5 pages.
Publication of the certificate is allowed.

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PRODUCT SPECIFICATION

FirePro fixed fire extinguishing components;

Type	Housing Red coated steel	Activation	Type	Housing Stainless steel	Activation
FP1200	Box	Electrical / Thermocord	FP20ES	Cylinder	Electrical
FP2000	Box	Electrical / Thermocord	FP20S	Cylinder	Thermocord
FP3000	Box	Electrical / Thermocord	FP40S	Cylinder	Electrical / Thermocord
FP5700	Box	Electrical / Thermocord	FP80S	Cylinder	Electrical / Thermocord
			FP100S	Cylinder	Electrical / Thermocord
			FP200S	Cylinder	Electrical / Thermocord
			FP500S	Cylinder	Electrical / Thermocord

APPLICATION AND USE

Conditions for application

1. The numbers and of types of the extinguishing components have to be determined in conformity with the guidelines and calculation methods of the supplier.
2. An operation manual is to be included in the language of the country of delivery, known and authorised by Kiwa.
3. Distribution is to be done by supplier or companies authorised by the supplier.
4. Before usage an instruction is to be given by a trainer or instructor for this product authorized by the supplier.
5. The installation and maintenance of the fire extinguishing components have to take place according to the specifications of the supplier and evaluation guideline BRL-K23003

Field of application

The fixed fire extinguishing components based on dry condensed aerosols are intended for application as part of an extinguishing installation. As precondition herewith should be set that the extinguishing components are connected to and activated by an effective fire detection installation. At this, fast detection and fast reaction are essential. It is a fire extinguishing component existing of a packing filled with a dry condensed solid extinguishing compound, which will be ejected as dry condensed aerosol after activation and which has the function to extinguish fires.

Point of interest during use

Condensed aerosol extinguishing components are not allowed to be used for fires with below mentioned materials, unless tests of accredited testing laboratories demonstrate its function.

- Deep seated fires in Class A materials (EN2)
- Certain chemicals or mixtures of chemicals material, such as cellulose nitrate and gunpowder, that are capable of rapid oxidation in the absence of air
- Reactive metals such as lithium, sodium, potassium, magnesium, titanium, zirconium, uranium and plutonium.
- Metal hydrides
- Chemicals capable of undergoing auto thermal decomposition, such as certain organic peroxides and hydrazine
- Fire Class D (EN2)
- The outlet opening of the extinguishing components should not be installed in the neighbourhood of objects being sensitive for high temperatures.

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Manual

At delivery the product should be accompanied by an operation manual in the language of the country delivered. Following minimum items has to be described:

- Preparations to be made before application;
- How to carry out application and under which circumstances;
- Field of application, extinguishing performance, ejecting length with temperature degradation index, surface temperature at extinguishing;
- How to handle the resources;
- What kind of quality control should be carried out during application;
- Chemic resistance of the extinguishing component;
- During processing and use the extinguishing compounds have to be safe for humans and environment. For the user this is proved with a safety information sheet for chemical products according to NEN-ISO 11014-1 (see also EU-guideline 91/155/EEG).

MARKING

The products are marked with the Kiwa-mark according to the evaluation guideline BRLK23001.



Place of the mark:

The marking and identification must be on the housing and / or packing should be clearly and good readable.

Compulsory specifications:

- Name, address and telephone number of supplier,
- Type designation supplier,
- Kiwa certification mark according to BRL-K23001,
- Year of production, month and charge number,
- Fire class according to EN2.

Method of marking:

- Non-erasable;
- On the housing affixed indelibly.

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RECOMMENDATIONS FOR CUSTOMERS:

1. Check at the time of delivery whether:
 - 1.1 the producer has delivery in accordance with the agreement;
 - 1.2 the mark and the marking method are correct;
 - 1.3 the products show no visible defects as a result of transport etc.
 2. If you should reject a product on the basis of the above, please contact:
 - 2.1 FirePro Systems Ltd or AF-X Fire Solutions
and, if necessary,
 - 2.2 Kiwa N.V.
 3. Consult the producer's processing guidelines for the proper storage and transport methods.
 4. Check whether this certificate is still valid by consulting www.kiwa.nl
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Declaration of performance requirements

- For a sufficient extinguishing performance the dry condensed aerosol is to apply effectively with a minimum of 55.2 gram dry condensed aerosol per m³ room for fire class A according to EN2 determined in accordance with BRL23001 till 100.8 m³ with a fire duration and fire magnitude described in BRL-K23001.
- For a sufficient extinguishing performance the dry condensed aerosol is to apply effectively with a minimum of 52 gram dry condensed aerosol per m³ room for fire class B according to EN2 determined in accordance with BRL23001 till 100.8 m³ with 830 KiloWatt and till 1.250 m³ with 6 MegaWatt and a fire duration described in BRL-K23001.
- For a sufficient extinguishing performance the dry condensed aerosol is to apply effectively with a minimum of 30 gram dry condensed aerosol per m³ room for fire class C according to EN2 determined in accordance with BRL23001 till 100.8 m³ with 30 KiloWatt and a fire duration described in BRL-K23001.
- For a sufficient extinguishing performance the dry condensed aerosol is to apply effectively with a minimum of 76 gram dry condensed aerosol per m³ room for fire class F according to EN2 determined in accordance with BRL23001 till 80.2 m³ with a fire duration and a fire magnitude described in BRL-K23001.
- The activation temperature of the solid extinguishing compound is between 250°C and 350°C determined according to BRL-K23001.
- The ignition temperature of the thermocord is between 150°C and 180°C determined according to BRL-K23001.
- The extinguishing compound is solid at a temperature between -50°C and 250°C determined according to BRL-K23001.
- The extinguishing components have a discharge through an outlet meant for the purpose and a homogeneous diffusion within the protected room determined according to BRL-K23001.
- The suspension system of the fire extinguishing components should stand 5 times its own weight determined according to BRL-K23001.
- The thermal aging of the solid extinguishing compound and the electrical activator is determined according to BRL-K23001.
- After activation, the solid extinguishing compound has a minimum effective ejecting with a tolerance of 5% according to below mentioned values;

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Declaration of efficiency of the different type of generators with ceramic cooling;

Type	Efficiency	Type	Efficiency
FP1200	65%	FP20S / FP20ES	60%
FP2000	61%	FP40S	63%
FP3000	62%	FP80S	60%
FP5700	61%	FP100S	63%
		FP200S	61%
		FP500S	63%

Attest or listing of the product

Fire Class	Listing	Preburn time	Soak period	Test room	Minimal density
EN2	Material / fuel	in seconds	in seconds	in m3	In grams
A	Polymethylmethacrylate	210	600	100	55.2
A	Polypropylene	210	600	100	55.2
A	Particleboard ISO17064 / EN312	360	600	100	55.2
A	MDF ISO17064 / EN316	360	600	100	55.2
A	Plywood ISO17064 / EN14755	360	600	100	55.2
B	Heptane - 830 kiloWatt	30	600	100	52
B	Heptane - 6 MegaWatt	30	600	1250	52
C	Propane - 30 kiloWatt	120	600	100	30
F	Solid deep-frying fat	30	1800	80	76
Additional listing					
B	Nedalco alcohol Fortoir min. 96%	30	600	80	52
B	Petrol Euro95	30	600	80	52