

## TRANSLATION

Authorised person 204 according to ÚNMZ Decision No 05/2017  
Branch 0800 - Fire safety in buildings

# PROTOCOL

on the result of product certification

pursuant to Section 5a of Government Regulation No. 163/2002 Coll., as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll.

No. 080- 025249

Product name:

**FIRE-KILL Low Pressure Water Mist System™**

Producer:

**VID Fire-Kill**

Address: Svalbardvej 13  
DK-5700 Svendborg, Denmark  
manufacturing plant: VID Fire-Kill  
Address: Svalbardvej 13  
DK-5700 Svendborg, Denmark

contract: Z0802 20053

Number of pages of the protocol including the title page: 7 Number of pages of annexes: 3

Person responsible for the accuracy of this protocol:

Authorised person's stamp 204

Prague, 21 April

2023 Ing. Hana Kafková  
lead assessor

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Banking connection (Bank): KB Praha 1 Czech Republic, Account No.: 1501-931/0100, ID No.: 000 15679, VAT No.: CZ00015679

## General data

### Manufacturer data

VID Fire-Kill  
Svalbardvej 13  
DK-5700 Svendborg, Denmark

### Product data

#### Product name:

The FIREKILL™ system for protection of most of the test procedures for the different types of spaces listed in EN 14972 for automatic and open nozzles is unique because it requires very low pressures and water flows. The FireKill™ low pressure water mist system operates at pressures ranging from 2 to 16 bar and produces a consistent spray with droplets smaller than 300 µm (Dv90<300).

The system designed for occupant protection uses the Model OH automatic low-pressure fine water spray nozzles, which are patented automatic, semi-concealed fine water spray nozzles.

Designed for industrial applications, the system uses open nozzles tested for various applications.

Both types of nozzles produce a homogeneous fine water spray that absorbs heat, reduces radiant heat and causes oxygen loss in the vicinity of the fire, which in turn controls and suppresses the fire. This homogeneous spray consists of a high concentration of very small droplets. Due to the small mass of the droplets, the nozzle produces a large coverage, which further minimizes water expenditure and hydrates nearby combustibles.

Other components of the system are wet alarm valves type WAC and flood/prevention valve stations type C. Special Model F filters protect the system from clogging with a high-capacity 1000µm filter mesh. Fully automatic pumping sets meet the stringent requirements of EN14972-1.

The system can be incorporated with pipes, valves and fittings approved for use in sprinkler systems when built with DIOM's approved materials, making the FireKill Low Pressure Water Mist System similar in design and installation to traditional sprinkler and water spray systems.

A list of applications is attached.

The list of components is given in the Annex.

The design of the subject fire extinguishing system, its installation, maintenance, inspection and operation shall be carried out in accordance with:

- the manufacturer's instructions in the documentation provided to the operator
- design guidelines
- decree. No. 246/2001 Coll., on fire prevention
- EN 14972-1 Fixed firefighting systems - Fogging systems. Part 1: Design, installation, inspection and maintenance
- DIOM requirements and restrictions

Classification of the product according to Annex 2 of NV-163 as amended by Government Decree No. 312/2005 Coll. and Government Decree No. 215/2016 Coll.: Table 10, Order No. 3

**List of documents submitted by the applicant for product certification**

- documents in the scope of § 5, paragraph 1, letter b,c,d
- Based on the applicant's declaration, there is no reason to investigate the effects of building products as-built to determine whether health and environmental requirements are met
- Technical description of the system
- Table of individual applications
- DIOMs of individual applications
- Table of components
- Sample design
- Overview of design systems - Idat Winsprink, FireCad, AutoSPRINK RVT, MagiCAD Sprinkler, "THE" Sprinkler Program 2001, SprincAD, Canute and Lifecad
- Instructions for use (included with Diom)
- Confirmation of DFL - Danish Fire Laboratories ApS on the validity of the test protocols dated 7.2.2022
- Test reports and certificates for individual applications including components:
  - Certificate No. PR448914 dated 30.5.2019 - FM (OH-DC1 & OH-DC2)
  - Certificate No. 3053358 dated 14.10.2015 - FM (OH-VSO & OH - OS)
  - Certificate No. N1422229 dated 4.2.2021 - DFL (OH-DR1)
  - Certificate No. N141AS73 dated 5.9.2016 - DFL (OH-UPR)
  - Certificate No. N14202GR dated 18.6.2020 - DFL (OH-SW2)
  - Certificate No. N141D1RJ dated 6.6.2017 - DFL (OH-PX2)
  - Certificate No. 3040609 dated 9.9.2011 - FM (K6)
  - Certificate No. PR452981 dated 29.3.2021 - FM (LAK-7)
  - Certificate No. PR455685 dated 31.5.2022 - FM (BM1, B1)
  - Certificate No. N141VUE4 dated 16.10.2019 - DFL (BM1, B1)
  - Certificate No. N1422YD5 dated 15.12.2020 - DFL (CT-ODC1)
  - Test report No. PR448914 dated 30.5.2019 - FM
  - Test report No. 3053358 dated 14.10.2015 - FM
  - Test report No. 160627-176 dated 27.12.2016 - DFL
  - Test report No. 210612-254-1 - DFL
  - Test report No. 210310-272a dated 30.9.2021 - DFL
  - Test report No. 160704-177 of 17.2.2017 - DFL
  - Test report No. 201207-266 dated 8.12.2020 - DFL
  - Test report No 190514-233 of 26.6.2019 - DFL
  - Test report No. 160214-166 of 13.7.2016 - DFL
  - Test report No 190514-234 of 26.6.2019 - DFL
  - Test report No. 211214-293 dated 11.2.2022 - DFL
  - Test report No. 200612-254-2 dated 12.6.2020 - DFL
  - Test report No. 200612-254-1 dated 12.6.2020 - DFL
  - Test report No. 160812-181A dated 8.5.2017 - DFL
  - Test report No. 210809-282 dated 12.1.2022 - DFL
  - Test report No. 180226-215A dated 12.7.2018 - DFL
  - Test report No. 3040609 dated 4.8.2015 - FM
  - Test report No. 3061155 dated 19.12.2017 - FM
  - Test report No 151120-162 of 27.1.2016 - DFL
  - Test report No. PR452981 dated 29.3.2021 - FM
  - Test report No. 090109-02 of 15.4.2011 - DFL
  - Test report No 151120-162 of 27.1.2016 - DFL

- Test report No. PR455685 dated 31.5.2022 - FM
- Test report No. 090401-36 of 7.4.2009 - DFL
- Test Report No. 2018-Efectis-R002191[Rev.2] dated 9/2020 - Efectis
- Test report No 180911-221 of 22.7.2019 - DFL
- Test report No 111004-7 of 28.10.2011 - DFL
- Test report No. 120323-67 of 2.8.2012 - DFL
- Test report No. PR448914 dated 30.5.2019 - FM
- Test report No. 200608-262 dated 26.8.2020 - DFL
- Test report No. 210608-277 dated 26.10.2021 - DFL
- Test report No. 70215-009 of 15.2.2007 - DFL
- Test report No 081211-27 of 17.12.2008 - DFL
- Test report No. 100106-41 of 25.1.2010 - DFL
- Manufacturer's certificate according to ISO 9001:2015 No. DK012581 dated 23.5.2020 valid until 23.5.2023 - issued by Bureau Veritas Certification Denmark

#### **List of other documents used for product certification**

- 1) EN 14972-1 Fixed firefighting systems - Fogging systems. Part 1: Design, installation, inspection and maintenance)
- 2) FM 5560: Water Mist Systems
- 3) TN 10.03.13 Water fogging equipment

#### **Technical specifications, technical regulations related to product certification**

Building Technical Certificate No. 080-025248, prepared by AO 204, issued 14.4.2023, valid until 14.4.2026.

#### **Information on previous product certification**

The product in question has not been certified.

#### **Result of the examination of the documents submitted by the applicant**

The documents were submitted within the scope set out in Section 5a, paragraph 2, letter a) of NV-163 as amended by Government Decree No. 312/2005 Coll. and Government Decree No. 215/2016 Coll.

#### **Product assessment**

##### **1.1. Technical requirements**

See STO No. 080-0245248 dated 14.4.2023:

- Nominal activation conditions/response sensitivity
- functional compatibility of specified components
- design and installation
- water supply including additives for extinguishing agents
- electricity supply for operation
- transmission of alarm signals
- pipe dimensions
- extinguishing efficiency
- Compressive strength of pipes and fittings

##### **1.2. Inventory of test and assessment reports:**

1. Test report No. PR448914 dated 30.5.2019 - FM

2. Test report No. 3053358 dated 14.10.2015 - FM
3. Test report No. 160627-176 dated 27.12.2016 - DFL
4. Test report No. 210612-254-1 - DFL
5. Test report No. 210310-272a dated 30.9.2021 - DFL
6. Test report No. 160704-177 of 17.2.2017 - DFL
7. Test report No. 201207-266 of 8.12.2020 - DFL
8. Test report No 190514-233 of 26.6.2019 - DFL
9. Test report No. 160214-166 of 13.7.2016 - DFL
10. Test report No 190514-234 of 26.6.2019 - DFL
11. Test report No. 211214-293 dated 11.2.2022 - DFL
12. Test report No. 200612-254-2 dated 12.6.2020 - DFL
13. Test report No. 200612-254-1 dated 12.6.2020 - DFL
14. Test report No. 160812-181A dated 8.5.2017 - DFL
15. Test report No. 210809-282 dated 12.1.2022 - DFL
16. Test report No. 180226-215A dated 12.7.2018 - DFL
17. Test report No. 3040609 dated 4.8.2015 - FM
18. Test report No. 3061155 dated 19.12.2017 - FM
19. Test report No 151120-162 of 27.1.2016 - DFL
20. Test report No. PR452981 dated 29.3.2021 - FM
21. Test report No. 090109-02 of 15.4.2011 - DFL
22. Test report No 151120-162 of 27.1.2016 - DFL
23. Test report No. PR455685 dated 31.5.2022 - FM
24. Test report No. 090401-36 of 7.4.2009 - DFL
25. Test Report No. 2018-Efectis-R002191[Rev.2] dated 9/2020 - Efectis
26. Test report No. 180911-221 of 22.7.2019 - DFL
27. Test report No 111004-7 of 28.10.2011 - DFL
28. Test report No. 120323-67 of 2.8.2012 - DFL
29. Test report No. PR448914 dated 30.5.2019 - FM
30. Test report No. 200608-262 of 26.8.2020 - DFL
31. Test report No. 210608-277 dated 26.10.2021 - DFL
32. Test report No. 70215-009 of 15.2.2007 - DFL
33. Test report No 081211-27 of 17.12.2008 - DFL
34. Test report No. 100106-41 of 25.1.2010 - DFL

### 1.3. Evaluation of test results and product assessment

Č.	Observed characteristic:	Test protocol:	Test procedure:	Result of the test/assessment:	Required / Declared level:	Evaluation
1	Nominal activation conditions/response sensitivity	Document No 1-34 in Article 3.2 Diom	Assessment according to EN 14972-1, clauses 4.8.5, 4.11	Requirements met	Assessment according to EN 14972-1, clauses 4.8.5, 4.11	suits
2	functional compatibility of specified components	Document No 1-34 in Article 3.2 Diom	EN 14972-1, Article 6	Requirements met	EN 14972-1, Article 6	suits
3	design and installation	Document No 1-34 in Article 3.2 Diom	EN 14972-1, Art. 4, 5	Requirements met	EN 14972-1, Art. 4, 5	suits

4	water supply including additives for extinguishing agents	Document No 1-34 in Article 3.2 Diom	EN 14972-1, Art. 4.13.6, 5.11	Requirements met	EN 14972-1, Art. 4.13.6, 5.11	suits
5	electricity supply for operation	Document No 1-34 in Article 3.2 Diom	EN 14972-1, Art. 5.9, 7.2.15.3 CSN 73 0848	Requirements met	EN 14972-1, Art. 5.9, 7.2.15.3 CSN 73 0848	suits
6	transmission of alarm signals	Document No 1-34 in Article 3.2 Diom	EN 14972-1, Article 4.9.6, EN 12845+A2, Annex I	Requirements met	EN 14972-1, Article 4.9.6, EN 12845+A2, Annex I	suits
7	pipe dimensions	Document No 1-34 in Article 3.2 Diom	EN 14972-1, clauses 5.3, 6.5, 7.2.11, 7.2.12	Requirements met	EN 14972-1, clauses 5.3, 6.5, 7.2.11, 7.2.12	suits
8	extinguishing efficiency	Document No 1-34 in Article 3.2	Relevant part of EN 14972-XX or 14972-1, Annex A	Requirements met	Relevant part of EN 14972-XX or 14972-1, Annex A 8	suits
9	Compressive strength of pipes and fittings	Document No 1-34 in Article 3.2	EN 14972-1, Article 6.3	Requirements met	EN 14972-1, Article 6.3	suits

## Assessment of the production management system

### 1.4. Requirement of technical specification, technical regulation for production management system:

The production management system must comply with the technical specification and ensure that products placed on the market conform to the technical documentation.

### 1.5. The result of the assessment of the production management system:

The manufacturer's assumptions for compliance with the production management system are documented in the Manufacturer's Production Management System Verification.

## Conclusion

- a) The compliance of the specified properties of the certified product with the requirements of the Czech technical regulations and standards and with the manufacturer's declaration in relation to the basic requirements of Government Regulation No. 163/2002 Coll. as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll., specified in Building Technical Certificate No. 080-024518, has been demonstrated by the tests, assessments and investigation of Authorised Person 204.
- b) The submitted documentation demonstrates the manufacturer's ability to ensure the conformity of the certified product placed on the market with the technical documentation and the essential requirements in the context of the established production management system.
- c) The product meets the requirements of Section 5a of Government Regulation No. 163/2002 Coll. as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll.
- d) The findings and conclusions in this report shall be valid provided that there is no change in the facts under which the conformity assessment was carried out.
- e) The technical documentation of the product must be supplemented by surveillance reports in accordance with the provisions of Section 5a(5) of Government Regulation No. 163/2002

Coll. as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll.

f) Terms of validity of the certificate:

- The certificate holder shall provide customers with technical specifications and operating and maintenance instructions for the products in Czech.
- The holder of the certificate is obliged to immediately report any changes concerning the characteristics of the certified product, the legal personality of the certificate holder, the documents referred to in this certificate and the method of installation and use of the product to the Authorised Person 204.
- The certificate holder shall ensure that the Authorised Person 204 carries out supervision of the proper functioning of the production management system once every 12 months. The Authorised Person 204 shall issue a report on the evaluation of the surveillance.
- The certificate holder shall maintain the validity of the documents used in the certification procedure.
- The design of the subject fire extinguishing system, including the relevant calculations, may only be carried out by personnel who have been demonstrably trained by the manufacturer
- The design of the subject fire extinguishing system shall be carried out in accordance with the manufacturer's design guidelines applicable to the applications specified in this protocol and in accordance with EN 14972-1 Stable fire extinguishing systems - Fogging systems. Design and installation.
- The completed equipment shall be subjected to the pressure test and functional and operational tests defined in the manufacturer's documentation submitted and in EN 14972-1 including the relevant notation and requirements and limitations according to DIOM and FM and DFL certificates before being put into operation.
- The certificate holder shall provide for each variant of use the appropriate certificate or test evaluation from an independent organisation authorised to do so.

## Attachments

List of applications

List of components

## LIST OF APPLICATIONS

Protection system	Type of application	Standard
Occupancy protection	Data processing equipment, rooms/halls above raised floor	EN 14972-1: Annex A (FM 5560:2016 Annex M)
Occupancy protection	Raised floors and ceilings	EN 14972-1: Annex A (FM 5560:2016 Annex N)
Occupancy protection	Apartments, atriums, churches, hidden spaces, gyms, hospitals, hotel rooms, institutions, kitchens, libraries, meeting rooms in convention centres and hotels, metalworking workshops with non-hydraulic cutting operations, mineral processing (glass, cement, ore dressing, gypsum processing, etc.), museums, nursing or convalescent homes, offices, restaurant seating, classrooms in schools and universities, unused land	EN 14972-7 and Annex A (FM 5560 Annex G) (BS 8489-7:2016) (DFL-TM210415-1)
Occupancy protection	Household occupancy, domestic dwellings, single family dwellings such as individual dwelling house, individual flat, individual maisonette, portable house, houses in multiple occupation (HMO A), hostels A), guest houses A), apartment buildings 18 m or less in height and with a maximum total floor area of 2 400 m <sup>2</sup> B), C), residential buildings C), sheltered and extra care housing, residential facilities, residential rehabilitation facilities, hostels (e.g. (c) residential care facilities (e.g. educational establishments), hostels	EN 14972-17 and Annex A (BS 8458:2015)
Occupancy protection	Non-automatic, fully enclosed garages, underground garages, parking garages	EN 14972-5 and Annex A (VdS test report for parking lot)
Occupancy protection	Vertical fire spread in multi-storey buildings	EN 14972-1: Annex A (OIB Directive 2.3)
Occupancy protection	Offices, public areas with low fire load, hotel rooms, rooms in hospitals, nursing homes, schools, apartments, accommodation, as well as any other comparable risk.	EN 14972-1: Annex A (VdS side wall test method)
Occupancy protection	OH3 risk category: HC-3 Risk Category: sales, storage, and process areas enclosed OH-1 / HC-3: non-warehouse and manufacturing areas with common combustibles, plastics, and flammable liquids used or stored in quantities not exceeding incidental. No plastic structural components. Non-storage and manufacturing areas with common combustibles with non-carton plastics and flammable liquids not used or stored in quantities exceeding incidental. No plastic structural elements.	EN14972-2 and Annex A (FM 5560:2021 Annex P)



K6, IHR	<p>Internal combustion engines, oil pumps, oil tanks, fuel filters, generators, transformer boxes, gearboxes, drive shafts, lubrication skids, diesel powered generators and other similar equipment using liquid hydrocarbon fuels and/or hydraulic, heat transfer and lubrication fluids with volatiles less than or equal to heptane; Enclosures for the occasional use or storage of hydrocarbon flammable liquids (also known as flammable liquids) with a capacity of not more than two 208 litre drums. Exposed combustion turbines; insulated combustion turbines. Local protection of loading stations, such as the top of the crusher - typical Class A wood fuel.</p> <p>Local protection of volumes under the machines, such as the bottom of the crusher - fuel grade A typical wood.</p> <p>Local protection of mechanical machinery - Class A fuel, Class A fuel typical wood.</p> <p>Local protection of mechanical machinery - Class B fuel, Class B fuel typically lubricating oil, hydraulic oils, etc.</p> <p>Local protection of surrounding hazards next to mechanical machinery - Class B fuel, typically spilled oil, etc.</p>	<p>EN 14972-6: EN 14972-1 Annex A (DFL test method 170325-1275-1 part 1, 2, 4, 5, 8) DFL test method no. 151222-1123)</p>
LAK-7	Local water mist application systems usually used for flammable liquid hazards.	EN 14972-1: Annex A (FM 5560:2016 Annex I)
<p>TRAFO-4MS, 2V FLEET, B1, BM1</p> <p>Specific systems for outdoor transformers Conveyor belts, Tunnels</p>	<p>Internal combustion engines, oil pumps, oil tanks, fuel filters, generators, transformer boxes, gearboxes, drive shafts, lubrication skids, diesel-powered generators and other similar equipment using liquid hydrocarbon fuel and/or hydraulic, heat transfer and lubrication fluids with a volatility less than or equal to heptane;</p> <p>Enclosures for the occasional use or storage of hydrocarbon flammable liquids (also known as flammable liquids) with a capacity of not more than two 208 litre drums. Closed, semi-closed or open conveyors covered by a single row of N-tubes / road tunnels / outdoor transformers / biomass storage facilities.</p>	<p>EN 14972-9, EN 14972-1: Annex A (FM 5560:2016 Annex C); (DFL test method no. 151222-1123); (DFL test method 90329-03); (DFL test method 180719-1289-1)</p>
ETNA	Exhaust pipe	EN 14972-1: Annex A (ISO 15371:2009)
MODEL CT	Cable tunnels	EN 14972-1: Annex A (VdS V3883-8)
APS, KIP, Facades	Atria (large volumes) with max. width 26 m / attic / facades	EN 14972-10 and Annex A (DFL TM 70111-04)

## LIST OF COMPONENTS

**Table 1: List of specified components**

<b>Product name (according to standard) / product name</b>	<b>Manufacturer/producer</b>	<b>Business name/type/business name</b>	<b>Certificate according to the regulation (indicate the specific certificate number)</b>
Pump system	WILO POLSKA, INSTAL COMPACT	COR (1-4) HELIX VF...S.C./FFS	(CNBOP) NO 063-UWB-0234
Pump system	INSTAL COMPACT	ZH-CRFF/WF	(CNBOP) NO 063-UWB-0412
Valve station	VID FIRE-KILL	C-EL	(ITB) NO 020-UWB-3004/W
Valve station	VID FIRE-KILL	C-EL-PA	(ITB) NO 020-UWB-3004/W
Valve station	VID FIRE-KILL	WAC	(ITB) NO 020-UWB-3004/W
Sponges			
Spray nozzle for fire protection system	VID FIRE-KILL	OH-DC1	(FM) PR448914
Spray nozzle for fire protection system	VID FIRE-KILL	OH-DC2	(FM) PR448914
Spray nozzle for fire protection system	VID FIRE-KILL	OH-VSO	(FM) 3053358; DnV N1427Y32
Spray nozzle for fire protection system	VID FIRE-KILL	OH-DR1	DnV N141CHS4
Spray nozzle for fire protection system	VID FIRE-KILL	OH-UPR	DnV N141AS73 R1
Spray nozzle for fire protection system	VID FIRE-KILL	OH-L1	(RTH) STN-No.: RHT-DM-WN-030123
Spray nozzle for fire protection system	VID FIRE-KILL	OH-SW2	DnV N14202GR
Spray nozzle for fire protection system	VID FIRE-KILL	OH-PX2	DnV N141D1RJ R2; IBS 322091501-1
Hub for K6 system, IHR	VID FIRE-KILL	K6	(FM) 3040409
Hub for LAK-7 system	VID FIRE-KILL	LAK-7	(FM) PR452981
Sponges for transformer system, conveyor belts, tunnels	VID FIRE-KILL	BM1/B1	(FM) PR455685, DnV N141VUE4, IBS_322070404_A
Sponges for ETNA system	VID FIRE-KILL	K1	DnV MEDB0000309
Hub for Model CT system	VID FIRE-KILL	CT-ODC1	DnV N1422YD5
Sponges for APS, KIP, outdoor facades	VID FIRE-KILL	APS	IBS_APS_322092802-1
<b>Flexible hoses</b>	VID FIRE-KILL	OH-FLH	DnV TAP00001RV
<b>Pressure vessel for water</b>	VID FIRE-KILL	SAS	(FM) PR458175
<b>Filters</b>	VID FIRE-KILL	MODEL F	Not applicable

**Table 2: List of optional accessories (not included in the product assessment)**

<b>Order no.</b>	<b>Product name</b>	<b>Request</b>
1	Fasteners and fastening systems	Assessment in accordance with NV No. 163/2002 Coll.
2	Electrical and optical cables	Assessment in accordance with NV No. 163/2002 Coll.
3	Cable routes with preserved functionality under fire conditions	Assessment in accordance with NV No. 163/2002 Coll. Assessment in accordance with NV No 118/2016 Coll. (LVD Directive 2014/35/EU)
4	Electric fire alarm system	Assessment in accordance with NV No. 163/2002 Coll.
5	EPS detectors according to EN 54-XX	CPR, Assessment according to NV No. 163/2002 Coll.