

Translation

Authorised person 204 according to ÚNMZ Decision No. 5/2017
Branch 0800 - Fire safety in buildings

Published by

22/1997 Coll., on Technical Requirements for Products and on Amendments and Additions to Certain Acts, as amended, and § 2 and 3 of Government Regulation No. 163/2002 Coll., as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll.

BUILDING TECHNICAL CERTIFICATE

č. 080-025248

on the product:

FIRE-KILL Low Pressure Water Mist System™

Producers:

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

The authorised person 204 certifies with this building technical certificate the data on the technical characteristics of the product, their level and the procedures for their determination in relation to the basic requirements listed in Annex 1 of Government Regulation No. 163/2002 Coll., as amended by Government Regulation No. 312/2005 Coll. and Government Regulation No. 215/2016 Coll.

The certificate is a technical specification designed to assess the conformity of the product.

Number of pages of the building certificate including the title page: 6

The preparer of this Building Technical Certificate:

Ing. Hana Kafková
lead assessor

Validity of the certificate until: 14 April 2026

The person responsible for the accuracy of this Building Technical Certificate:

Authorised person's stamp 204

Prague, 14 April

2023 Ing. Zdeněk Kočí
Deputy Head of Authorised Person 204

Note: This Building Technical Certificate shall not be reproduced in any form other than in full without the written consent of the Head of Authorised Person 204.

1. Description of the product and definition of its use in construction:

FireKill™ Low Pressure Water Mist System

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 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 – Water mist systems. Part 1: Design, installation, inspection and maintenance
- DIOM requirements and restrictions

2. Definition of the properties to be monitored and how to assess them:

Table 1:

Č.	Name of the property being monitored:	Test procedure:	Subject of the exam:	Number of samples		Required (P) / Declared level (D)
				C/T	D	
1	Nominal activation conditions/response sensitivity	Assessment according to EN 14972-1, clauses 4.8.5, 4.11	Technical Specifications	1	1	Assessment according to EN 14972-1, clauses 4.8.5, 4.11
2	functional compatibility of specified components	EN 14972-1, Article 6	Technical Specifications			EN 14972-1, Article 6
3	design and installation	EN 14972-1, Art. 4, 5	DIOM			EN 14972-1, Art. 4, 5
4	water supply including additives for extinguishing agents	EN 14972-1, Art. 4.13.6, 5.11	DIOM			EN 14972-1, Art. 4.13.6, 5.11

5	electricity supply for operation	EN 14972-1, Art. 5.9, 7.2.15.3 CSN 73 0848	DIOM		EN 14972-1, Art. 5.9, 7.2.15.3 CSN 73 0848
6	transmission of alarm signals	EN 14972-1, Article 4.9.6, EN 12845+A2, Annex I	DIOM		EN 14972-1, Article 4.9.6, EN 12845+A2, Annex I
7	pipe dimensions	EN 14972-1, clauses 5.3, 6.5, 7.2.11, 7.2.12	DIOM		EN 14972-1, clauses 5.3, 6.5, 7.2.11, 7.2.12
8	extinguishing efficiency	Relevant part of EN 14972-XX or 14972-1, Annex A	Fog extinguishing system		Relevant part of EN 14972-XX or 14972-1, Annex A
9	Compressive strength of pipes and fittings	EN 14972-1, Article 6.3	Record of the exam		EN 14972-1, Article 6.3

Note: C - certification of the product (§ 5, 5a,6,10); T - verification/assessment of the conformity of the product (§ 7,8); D - supervision of the certified product (§ 5,5a,6,10)

3. Ensuring the production control system

The general requirements for the manufacturer's production management system are set out in Annex 3 to Government Regulation No. 163/2002 Coll., as amended.

4. Documents submitted by the manufacturer:

- 1) Application for the performance of the activities of an authorized person dated 27.4.2022.
- 2) Technical description of the system
- 3) Table of individual applications
- 4) DIOMs of individual applications
- 5) Table of components
- 6) Sample design
- 7) Overview of design systems - Idat Winsprink, FireCad, AutoSPRINK RVT, MagiCAD Sprinkler, "THE" Sprinkler Program 2001, SprincCAD, Canute and Lifecad
- 8) Instructions for use (included with Diom)
- 9) Confirmation of DFL - Danish Fire Laboratories ApS on the validity of the test protocols dated 7.2.2022
- 10) Test reports and certificates for individual applications including components:
- 11) Certificate No. PR448914 dated 30.5.2019 - FM (OH-DC1 & OH-DC2)
- 12) Certificate No. 3053358 dated 14.10.2015 - FM (OH-VSO & OH - OS)
- 13) Certificate No. N1422229 dated 4.2.2021 - DFL (OH-DR1)
- 14) Certificate No. N141AS73 dated 5.9.2016 - DFL (OH-UPR)
- 15) Certificate No. N14202GR dated 18.6.2020 - DFL (OH-SW2)
- 16) Certificate No. N141D1RJ dated 6.6.2017 - DFL (OH-PX2)
- 17) Certificate No. 3040609 dated 9.9.2011 - FM (K6)
- 18) Certificate No. PR452981 dated 29.3.2021 - FM (LAK-7)
- 19) Certificate No. PR455685 dated 31.5.2022 - FM (BM1, B1)
- 20) Certificate No. N141VUE4 dated 16.10.2019 - DFL (BM1, B1)
- 21) Certificate No. N1422YD5 dated 15.12.2020 - DFL (CT-ODC1)
- 22) Test report No. PR448914 dated 30.5.2019 - FM
- 23) Test report No. 3053358 dated 14.10.2015 - FM
- 24) Test report No. 160627-176 dated 27.12.2016 - DFL
- 25) Test report No. 210612-254-1 - DFL
- 26) Test report No. 210310-272a dated 30.9.2021 - DFL
- 27) Test report No. 160704-177 of 17.2.2017 - DFL
- 28) Test report No. 201207-266 dated 8.12.2020 - DFL
- 29) Test report No 190514-233 of 26.6.2019 - DFL
- 30) Test report No. 160214-166 of 13.7.2016 - DFL
- 31) Test report No 190514-234 of 26.6.2019 - DFL
- 32) Test report No. 211214-293 dated 11.2.2022 - DFL
- 33) Test report No. 200612-254-2 dated 12.6.2020 - DFL
- 34) Test report No. 200612-254-1 dated 12.6.2020 - DFL
- 35) Test report No. 160812-181A dated 8.5.2017 - DFL

- 36) Test report No. 210809-282 dated 12.1.2022 - DFL
- 37) Test report No. 180226-215A dated 12.7.2018 - DFL
- 38) Test report No. 3040609 dated 4.8.2015 - FM
- 39) Test report No. 3061155 dated 19.12.2017 - FM
- 40) Test report No 151120-162 of 27.1.2016 - DFL
- 41) Test report No. PR452981 dated 29.3.2021 - FM
- 42) Test report No. 090109-02 of 15.4.2011 - DFL
- 43) Test report No 151120-162 of 27.1.2016 - DFL
- 44) Test report No. PR455685 dated 31.5.2022 - FM
- 45) Test report No. 090401-36 of 7.4.2009 - DFL
- 46) Test Report No. 2018-Efectis-R002191[Rev.2] dated 9/2020 - Efectis
- 47) Test report No. 180911-221 of 22.7.2019 - DFL
- 48) Test report No 111004-7 of 28.10.2011 - DFL
- 49) Test report No. 120323-67 of 2.8.2012 - DFL
- 50) Test report No. PR448914 dated 30.5.2019 - FM
- 51) Test report No. 200608-262 dated 26.8.2020 - DFL
- 52) Test report No. 210608-277 dated 26.10.2021 - DFL
- 53) Test report No. 70215-009 of 15.2.2007 - DFL
- 54) Test report No 081211-27 of 17.12.2008 - DFL
- 55) Test report No. 100106-41 of 25.1.2010 - DFL
- 56) 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

5. Overview of technical regulations, technical standards and other documents used:

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

6. Verification tests:

Verification tests have not been carried out.

7. Specifying requirements for conformity assessment:

The product is classified in Annex 2, Group 10_03 according to Government Regulation No. 163/2002 Coll., as amended, and the prescribed method of conformity assessment corresponds to § 5a of the said Regulation. The manufacturer shall ensure a production management system in accordance with the requirements of Section 5a(1)(c) of that Regulation.

Surveillance of the certified product will be carried out once every 12 months (*during the conformity assessment procedure according to § 5a*).

8. Attachment:

List of applications.

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 ² 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	Internal combustion engines, oil pumps, oil tanks, fuel filters, generators, transformer boxes,	EN 14972-6: EN 14972-1 Annex A

	<p>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>(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 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; 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	Duct	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)