VID FIREKILL
LOW PRESSURE WATERMIST

VID FIREKILL
Low Pressure Water Mist
Industrial Applications

VID FIREKILL LOW PRESSURE WATER MIST

VID FIREKILL is a world leading innovative developer and manufacturer of water based firefighting products, specializing in fixed water based systems utilizing environmentally friendly firefighting methods.

Industrial facilities are at risk of large liquid and solid hydrocarbon fires due to multiple machines, chemicals and hot surfaces. Also, these facilities often feature complex structures, process enclosures and areas each with a different risk category and requirement for fire protection.

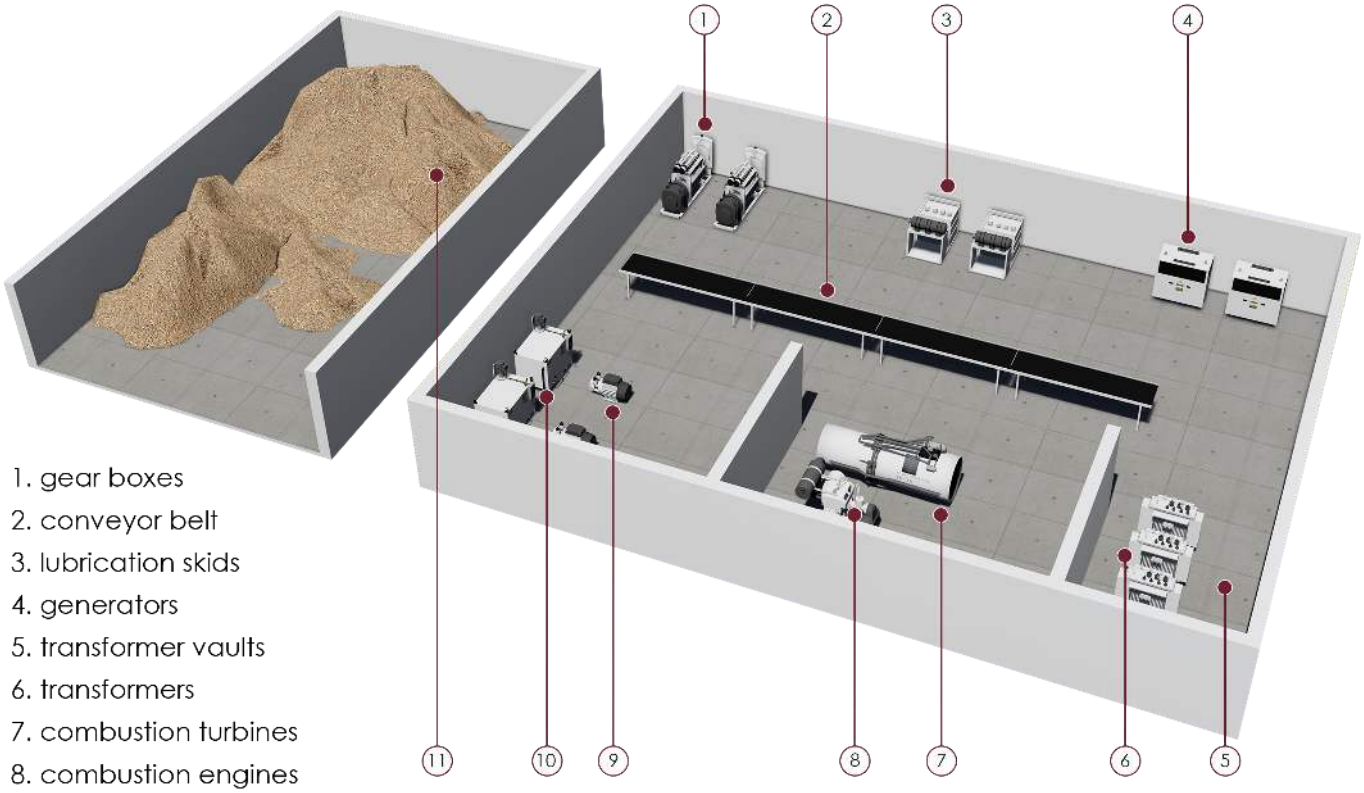
VID FIREKILL offers several solutions for the protection of applications such as:

- Internal combustion engines
- Oil pumps
- Oil tanks
- Combustion turbines
- Fuel filters
- Generators
- Transformer vaults
- Diesel engine driven generators
- Exposed combustion turbines
- Insulated combustion turbine areas
- Biomass storage areas
- Conveyor belts
- Lubrication skids
- Drive shafts
- Gear boxes

The **FIREKILL™** systems are approved to the highest standards by notifying bodies such as FM Approval and DNV/GL.

FIREKILL™ UNIQUE SYSTEMS

For fire protection of industrial applications several different systems are often needed to protect the location, secure a safe work environment, limit production downtime and maintenance expense after a fire.
Most often industrial protection requires either general protection of the entire location, local protection for special machinery, full flooding for hazardous areas or point protection for special machinery.
For the protection of industrial applications VID FIREKILL has developed a series of unique low pressure water mist systems capable of handling each of the above mentioned principles.
Depending on the facility structure and risk category each **FIREKILL™** system utilizes specially designed **FIREKILL™** products.



1. gear boxes
2. conveyor belt
3. lubrication skids
4. generators
5. transformer vaults
6. transformers
7. combustion turbines
8. combustion engines
9. oil pumps
10. oil tanks
11. biomass storage area

Various options for individually fitted systems in order to meet the exact needs and create the best solution.

FIRE PROTECTION WITH 8 BAR

The **FIREKILL™** low pressure water mist systems for protection of industrial land applications offer complete fire protection with water pressures down to 8 bar / 116 PSI while using as little water as high pressure water mist systems typically operating at plus 60 bar / 870 PSI.

Facts about Low Pressure Water mist:

- Low pressure water mist systems can be designed, installed and maintained with the same skillset as conventional sprinkler and waterspray systems
- Low pressure water mist systems use the same pressure class components as conventional sprinkler systems (EN: <16bar / 230PSI, NFPA: <12bar / 175PSI)
- Low pressure water mist systems are more robust and reliable than high pressure water mist systems as the system waterways and nozzle orifices are larger
- Low pressure water mist is environment friendly and non-toxic. Besides the low water and power consumption potable water is used - with no chemicals or toxic agents added.

BENEFITS OF THE FIREKILL™ LOW PRESSURE WATER MIST SYSTEM FOR INDUSTRIAL APPLICATIONS

Energy efficient

The **FIREKILL™** low pressure water mist system requires very low water flow rates resulting in a water saving of 60-90% compared to conventional sprinkler and waterspray systems. Similar water savings are found when using high pressure water mist systems, though with the **FIREKILL™** low pressure water mist system the water saving can be obtained with a more energy efficient solution.

Environmentally friendly

With lower water consumptions than conventional sprinkler and waterspray systems and lower water pressure than high pressure water mist systems the **FIREKILL™** low pressure water mist system is the most environmentally friendly solution found on the market.

Non-toxic

Compared to gas suppression systems the **FIREKILL™** low pressure water mist system only uses potable water, and when water is used as fire suppressant there is no toxic discharge.

Less business interruption

When a gas suppression system is activated it will discharge the entire amount of gas within the system – regardless of the size of the fire, and the system will not be operational before it has been refilled which may result in business interruption. The **FIREKILL™** system uses potable water which is easily accessible.

Cost effective, easy to install and requires low maintenance

With the use of low water pressure and low water consumption the **FIREKILL™** low pressure water mist system can be designed with small system components (e.g. pump, pipes and fittings) resulting in cost savings. Further, as the system installation procedures are similar to the installation of conventional sprinkler and waterspray systems but with less nozzles and smaller pipes, installation work can be done fast and easy saving time and money.

Robust and reliable

The low water pressure makes the **FIREKILL™** system reliable and robust, and due to the system's large waterways and orifice design the risk of strainers clogging is minimized.

FIREKILL™ LOW PRESSURE WATER MIST SYSTEMS FOR INDUSTRIAL APPLICATIONS

The system composition depends on the structure and risk category of the facility or area that needs protection.

FIREKILL™ K6 is FM Approved for total flooding protection of machinery spaces, special hazard machinery spaces, combustion turbines and insulated combustion turbines with volumes up to 4610 m3 (162800 ft3) and ceiling heights up to 12 m (39.37 ft ceiling height).

FIREKILL™ LAK7 system is FM Approved for protection of various industrial applications with local protection design.

FIREKILL™ Model N-pipe is a low pressure fine water spray deluge system, successfully tested and verified for the protection of many different applications. The N-Pipe is manufactured in different shapes suiting various applications, typically biomass storage, conveyors, wood industry machines etc.

FIREKILL™ Model B1 is an FM Approved open low pressure water mist nozzle developed for protection of different industrial applications, high hazard machinery spaces and bilge areas.

FIREKILL™ Model SAS system is an FM Approved modular standalone low pressure water mist system for total flooding protection of small enclosures or local application objects with no or limited water or power supply. The SAS system operates at a pressure between 2 – 16 bar and consists of water cylinders and a nitrogen cylinder that are interconnected by stainless steel hoses.

APPROVALS

All our products are successfully tested by ISO17025 accredited fire test laboratories and 3. party approved by organizations such as FM Approvals and DNV/GL.

FM APPROVED

Certificate of Compliance

This certificate is issued for the following:

Water Mist System

System Designation:	FIREKILL™ Total Flooding System Using Model K6 Open Nozzles for the protection of machinery in enclosures with volumes up to, and including, 162,800 ft³ (4610 m³) at a maximum height of 39.4 ft (12.0 m)
Design, Installation, Operation and Maintenance Manual:	FIREKILL™ Total Flooding System Using Model K6 Open Nozzles Design, Installation and Maintenance (DIOM) Manual for protection of machinery and combustion turbines in enclosures, Doc No 110629-02-004, dated 10-10-2007

Prepared for:

VID FIRE-KILL APS
SVALBARDVEJ 13
SVENDBORG
DK-5700
DENMARK

Manufactured at:

VID FIRE-KILL APS
SVALBARDVEJ 13
SVENDBORG
DK-5700
DENMARK

FM Approvals Class: 5560

Approval Identification: 3061155 Approval Granted: December 19, 2017

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

David B. Fuller
VP, Manager – Fire Protection
FM Approvals
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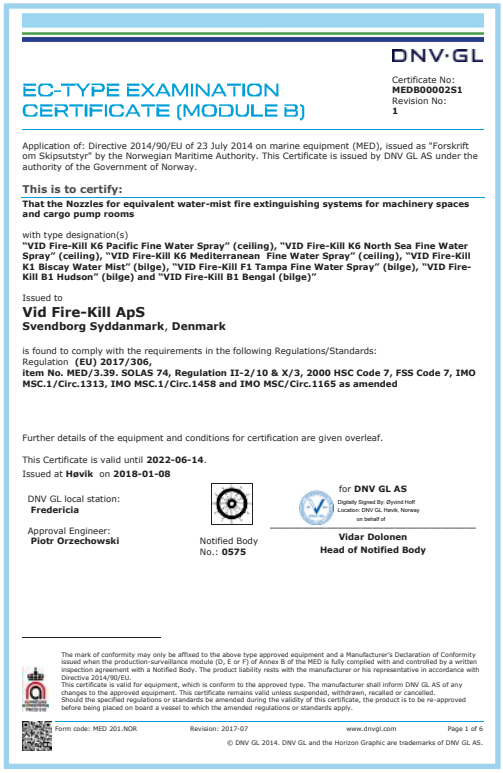
FM Approvals
Member of the FM Global Group



DNV·GL

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00002S1
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Nozzles for equivalent water-mist fire extinguishing systems for machinery spaces and cargo pump rooms

with type designation(s)
"VID Fire-Kill K6 Pacific Fine Water Spray" (ceiling), "VID Fire-Kill K6 North Sea Fine Water Spray" (ceiling), "VID Fire-Kill K6 Mediterranean Fine Water Spray" (ceiling), "VID Fire-Kill K1 Biscay Water Mist" (bilge), "VID Fire-Kill F1 Tampa Fine Water Spray" (bilge), "VID Fire-Kill B1 Hudson" (bilge) and "VID Fire-Kill B1 Bengal (bilge)"

Issued to
Vid Fire-Kill ApS
Svendborg Syddanmark, Denmark

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306,**
item No. MED/3.39. SOLAS 74, Regulation II-2/10 & X/3, 2000 HSC Code 7, FSS Code 7, IMO MSC.1/Circ.1313, IMO MSC.1/Circ.1458 and IMO MSC/Circ.1165 as amended

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-06-14**.
Issued at **Høvik** on **2018-01-08**

DNV GL local station:
Fredericia

Approval Engineer:
Piotr Orzechowski

Notified Body
No.: **0575**

for **DNV GL AS**
Digitally Signed By: Øyvind Hoff
Location: DNV GL Høvik, Norway
on behalf of

Vidar Dolonen
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Form code: MED 201.NOR Revision: 2017-07 www.dnvgl.com Page 1 of 6

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