



# Marine and Offshore Fire Protection



Ferries • Cruise Ferries • Cargo Ships



Car & Truck Carriers



VID FIREKILL is a world leading innovative developer and manufacturer of low pressure water mist systems.

# SAFETY AT SEA

## Reliable fire protection for marine and offshore

Reliable fire protection is of big importance for safety at sea. Marine and offshore environments are at high risk of fire due to the presence of a large amount of combustible materials and flammable liquids. A fire at sea is always a huge problem as there are no safe escape routes. A possible fire on ships or an offshore platform can have large consequences for personnel and the environment. That is why it is important to provide a fast and effective fire suppression system to ensure passengers and personnel safety, to protect property and safeguard the environment. While each fire protection system has its own pros & cons, it is important to choose the most suitable solution to meet all the specific fire hazards on board. For today's marine and offshore facilities, a low pressure water mist system is the most superior firefighting technology, ensuring full and reliable fire protection for your facilities at sea.

## Ferries and cargo ships fire protection is a big challenge

Ferries and cargo ships are full of potential fire hazards. The primary function of the ferry is to transport passengers, cars, and trucks. Ferries can be large vessels typically Ro-Ro

(Roll On Roll Off) transporting passengers and cars overnight from one country to another. Cargo ships usually transport heavy goods and materials. They transport a large number of cars and trucks from one continent to another. A fire on board can have serious consequences for the vessel's safety and can cause severe damages to property and goods. Most fires originate in the machinery space due to broken fuel pipes. In addition, a fire on the car deck can lead to an explosive fire due to the large fire potential as the car deck is usually loaded with different types of cars and trucks. Therefore fast-acting fire suppression is crucial to protect property, ensure passenger and crew safety and safeguard the continuity of your business.

## Complete ferries and cargo ships fire protection

We at VID FIREKILL provide effective and reliable fire protection for ferries and cargo facilities. Our low pressure water mist system can protect all areas including machinery spaces, car deck, public spaces and cabins, kitchen and more. With us, fire protection at sea is an easy task. With the right expertise and solutions, your ferry and cargo facilities can be equipped with the most appropriate fire protection to match and mitigate specific fire risks while ensuring your business goals.



# Maximized efficiency and performances with low pressure water mist technology

The FIREKILL low pressure water mist system offers complete fire protection with water pressure down to 6 bar while using much less water than sprinkler systems and much less energy than high pressure water mist systems. Low water pressure increases

reliability and robustness and also helps reduce installation, operational and maintenance cost. Unlike gas systems our low pressure water mist system is suitable for protecting all areas of vessels without any harm to people and the environment.



## BENEFITS OF OUR LOW PRESSURE WATER MIST SYSTEM

With the use of low water pressure and low water consumption the FIREKILL system can be designed with small system components (e.g. tank, pump, pipes and fittings) resulting in cost and space savings - a very important advantage at sea. Further, as the system installation procedures are similar to the installation of conventional sprinkler systems, but with less nozzles and smaller pipes, installation work can be done fast and easy saving time and money.

The FIREKILL system requires very low water flow rates resulting in a water saving of 60-90% compared to sprinkler systems. Similar water savings are found when using high pressure water mist systems, though with our system the water saving can be obtained with a much more energy efficient solution. With low water consumptions and low water pressure the FIREKILL system is the most environmentally friendly solution found on the market.

- Low water requirements
- Low water pressure
- Low electricity requirements
- 100% safe for people
- 100% safe for the environment
- Minimal water damaging
- Fast, robust and reliable
- Easy to install and maintain
- Cost effective
- Resource and space savings



### Sustainable solution

Reduced CO2 emissions up to 70%  
Sustainable fire safety design  
Reduced production footprint



### Water saving

Uses 80% less water than traditional sprinkler systems



### Energy efficient

Low energy consumption

**Make your business  
safe, sustainable  
and competitive**

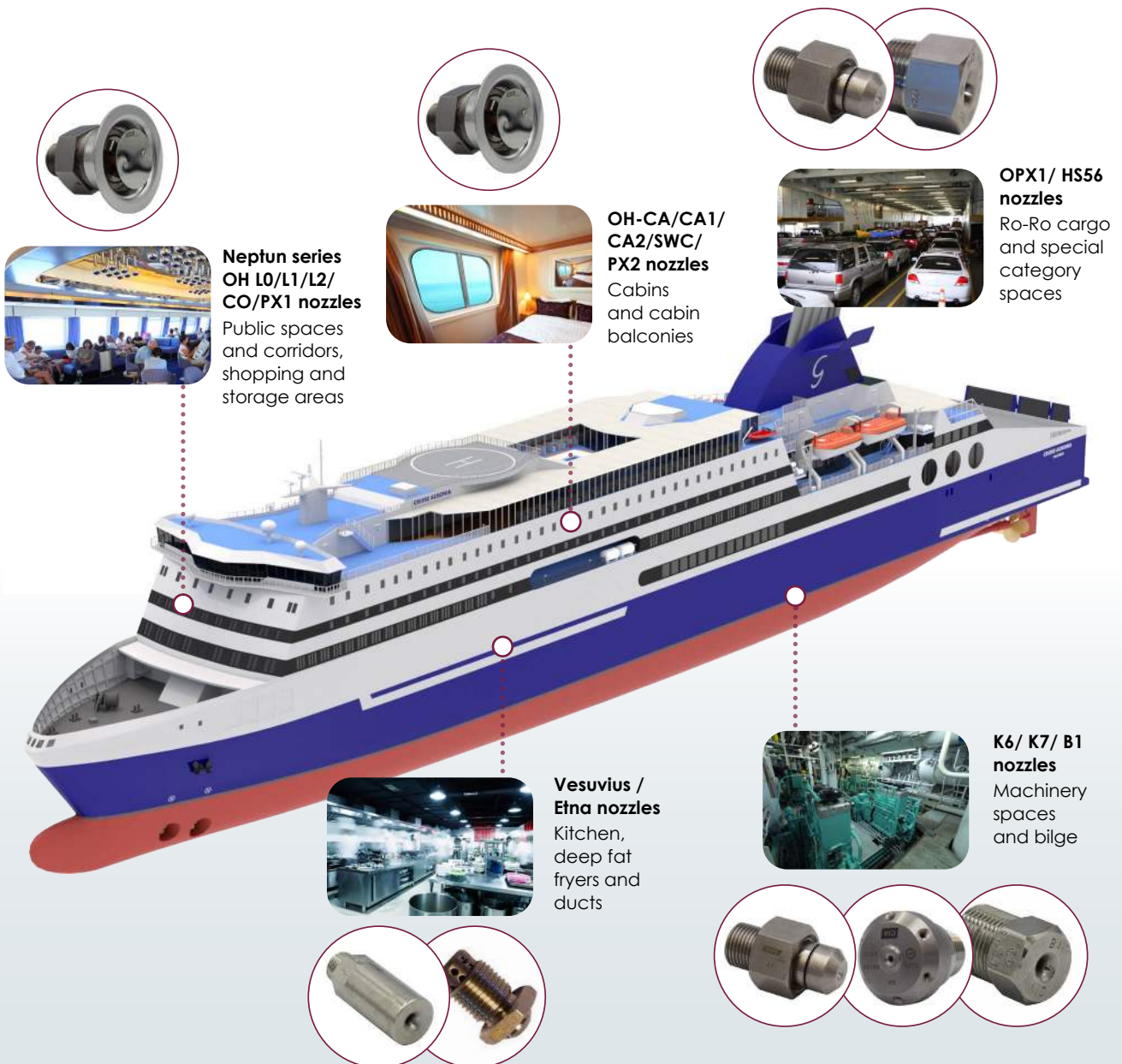


# FIREKILL™ - one system for complete Ferry & Ro-Ro Cargo fire protection

The FIREKILL system is certified to protect all areas on board a ferry, including:

- Cabins and balconies
- Public spaces and corridors
- Shopping and storage areas
- Machinery spaces including bilge protection
- Ro-Ro spaces and special category spaces
- Kitchen and deep fat fryers & ducts

Our system is tested and certified to protect all areas on board in accordance with the latest IMO MCS protocols and resolutions, and witnessed and certified by DnV in accordance with the Marine Equipment Directive (MED-B and MED-D) and Maritime & Coast Guard Agency (MER-B and MER-D).



We meet the next step in maritime transport  
**SUSTAINABILITY** with the new Ro-Ro Cargo Ship



# NEOLINER ORIGIN



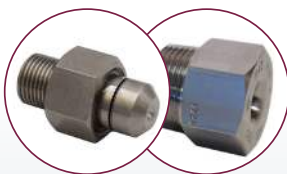
**OPX1/ HS56 nozzles**  
 Ro-Ro cargo and special category spaces



**K6/ K7/ B1 nozzles**  
 Machinery spaces and bilge



**LO/L1/CO/ CA/CA2 OH nozzles**  
 Cabins and cabin balconies



FIREKILL is on board of NEOLINER ORIGIN, a 136 m ro-ro cargo ship, powered by wind

„Our sail cargo ship is designed to carry vehicles, sailing boats, containers but also passengers. Safety onboard is a critical component of the Neoliner Origin's success. VID FIREKILL's technology (IMO approved solutions) will enable us to achieve fire safety in the vessel's machinery space, accommodation, cargo, and electric vehicle deck, which was our main concern”, said Guilhem Péan, Neoline's Technical Manager.



# FIREKILL™ - the right solution for protection of your Ferry & Ro-Ro Cargo vessels

The FIREKILL low pressure water mist system uses the widest range of nozzles specifically designed to protect every area in the vessels

## FIREKILL™ Nozzles

- **OH-CA/CA1/CA2** are automatic pendent nozzles designed for protection of accommodation spaces - tested to IMO MSC.265(84) and approved by DNV and MED-B.
- **OH-SWC** is an automatic sidewall nozzle designed for protection of accommodation spaces - tested to IMO Resolution MSC.265(84) and approved by DNV and MED-B.
- **OH-L0/L1/L2** are automatic pendent nozzles designed for protection of public spaces - tested to IMO Resolution MSC.265(84) and approved by DNV and MED-B.
- **OH-CO** is an automatic sidewall nozzle designed for protection of stairways and corridors - tested to IMO Resolution MSC.265(84) and approved by DNV and MED-B.
- **OH-PX2** is an automatic nozzle designed for protection of cabin balconies - tested to IMO MSC.1/Circ.1268 and approved by DNV and MED-B.
- **OH-PX1** is an automatic nozzle designed for protection of store rooms, workshops, pantries and other spaces in which flammable liquids are stored - tested to IMO Resolution MSC.265(84) and approved by DNV and MED-B.
- **K6** is an open nozzle designed for total flooding protection of machinery spaces Cat. A

and pump rooms - tested to IMO MSC/Circ.1165 and approved by DNV TA and MED-B.

- **K7 Kattegat** is an open nozzle designed for local protection in machinery spaces - tested to IMO MSC/Circ. 1387 and approved by DNV TA and MED-B.
- **OH-OPX1/ HS56** are open nozzles designed for protection of Ro-Ro and special category spaces - tested to IMO MSC/Circ.1430 Clause 4 and 5 and approved by DNV TA and MED-B.
- **Vesuvius/ Etna** are open nozzles designed for protection of deep fat cooking equipment & galley exhaust duct - tested to ISO 15371:2015 and approved by DNV TA and MED-B.
- **Bilge B1/ K1/F1** are open nozzles designed for total flooding protection of machinery spaces Cat. A and pump rooms in bilge application - tested to IMO MSC/Circ. 1165 and approved by DNV TA and MED-B.

## FIREKILL™ Valves

- **C-EL Valve** is an electrical control valve design to operate in open deluge systems as a zone valve or a full flooding valve.
- **WAC Alarm Valve** is a wafer style alarm check valve designed to detect the low water flows created when the watermist nozzle activates. The Model WAC utilizes a clapper function to detect the flow which ensures a safe and robust detection function.



### Aesthetic fire protection

The nozzles are available in custom print and different colored finishes to make the FIREKILL OH-Neptun blend in with almost every type of surface.

# ELBAS Project

## ELECTRIC VEHICLE FIRES AT SEA

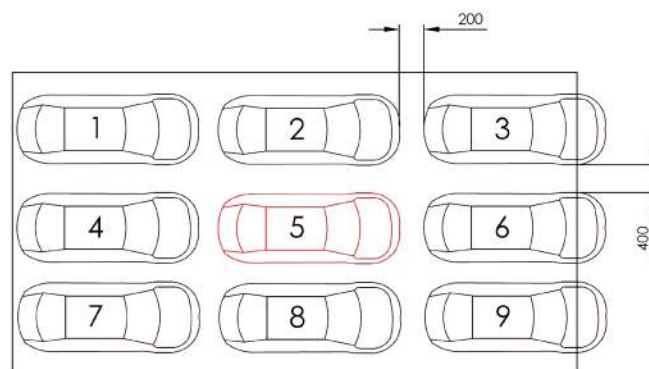
New technologies and methods for suppression, containment, and extinguishing of BATTERY CAR FIRES ON BOARD SHIPS



## Effective EV fire protection at sea

Fire risks from electric vehicle are an increasing concern, due to high temperatures involved, rapid spreading to adjacent vehicles. VID FIREKILL has developed and tested a water mist fire suppression solution to address these concerns within the ELBAS project "Electric vehicle fire at sea". The ELBAS project, carried out by DBI - the Danish Institute of Fire and Security Technology, proved that VID FIREKILL water mist solution would demonstrate superior performance on EV fires.

The fire was started using a diesel pool below the battery pack in EV car no. 5. The EV Car was a Tesla model 3, 2021 with a new battery used for the experiment. The water mist system was activated 7,5 minutes after the first detector reported a fire. At this point the fire had spread to the adjacent cars. All 9 cars had caught fire mainly at the bumpers and tires. The activation delay of 7,5 minutes was chosen to simulate the reaction time of a ship's crew.



### Temperature in the battery pack

From the curve it can be concluded that the temperature of the EV battery was reduced from 880 °C to 70 °C within 15 minutes of system activation. 30 minutes after activation of the water mist system, the battery temperature was reduced to a merely 30 °C.

### Temperatures of exposed sides of the surrounding vehicles

A steep drop in temperatures were registered after system release. Being up to 300° for Car 2, the average temperatures of the exposed surfaces of surrounding cars were 50-60 °C only 2 minutes after release.



### CONCLUSION

From the ELBAS fire tests, we can conclude, that the OH-OPX1 water mist nozzles were able to demonstrate superior performance in EV fires, by rapidly suppressing the fire and reducing heat in the surrounding area, thus preventing the fire from spreading to adjacent vehicles or from causing damage to surrounding structures.



# RELIABILITY ACCORDING TO THE HIGHEST STANDARDS

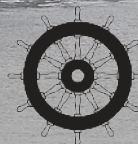
Our FIREKILL system complies with IMO and MED regulations - the global standards that currently defines the requirements for marine application of water mist systems. FIREKILL has been tested and approved based on existing full-scale fire test protocols published within the IMO standard and approved by DNV TA and MED. The system also has internal development of a new fire test protocol on electric vehicle fire at sea, performed and approved by DBI - the Danish Institute of Fire and Security Technology.

## FIREKILL is fully tested and approved

Based on these standards, our system is fully tested and approved to protect all areas in any type of ferry and cargo ship. FIREKILL uses significantly less water while operating at low water pressure - a significant advantage over sprinkler systems. Our system is completely safe for passengers and crew on board, as well as the environment and vessel's facilities.

## FIREKILL has four levels of approvals

In addition to fire tests, all system components have passed tests proving their strength and reliability. In addition, the production system is ISO 9001 and ISO 14001 certified and approved by DNV/GL. An important document that provides complete instructions for successful implementation of the system is the DIOM - Design, Installation, Operation and Maintenance manual. This document has been developed in accordance with the IMO regulations.



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