

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fixed water-based fire-fighting systems for ro-ro spaces and special category spaces equivalent to that referred to in resolution A.123(V)

with type designation(s)

VID FireKill OH-OPX1 Suez, VID FireKill OH-OPX1 Panama

Issued to

Vid Fire-Kill ApS
Svendborg, Denmark

is found to comply with

DNV GL rules for classification – Ships

DNV GL offshore standards

DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations

Application :

Approved for use as a fixed water-based fire-fighting systems for ro-ro spaces and special category spaces equivalent to that referred to in resolution A.123(V).

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-08-10**.

Issued at **Høvik** on **2016-08-11**

for **DNV GL**

DNV GL local station: **Fredericia**

Approval Engineer: **Tomasz Werchowicz**

Petter Langnes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

"VID FireKill OH-OPX1 Suez, VID FireKill OH-OPX1 Panama"

is a water mist system of deluge type. The system consists of nozzles and section valves, in addition to pump unit(s), piping, control system as associated equipment.

The system is to be designed in accordance with the "Principal Requirements" of IMO MSC.1/Circ.1430. Only nozzles are type approved by this certificate. Other components are to be approved and/or certified case by case.

Nozzles are manufactured by Vid Fire-Kill Aps, Svendborg, Denmark.

Application/Limitation

Installation should be in accordance with Principal Requirements of IMO MSC.1/Circ.1430 with the following parameters:

System type	Nozzle	Maximum spacing (m) ⁱ⁾	Min. pres. at nozzles (bar)	Min. coverage area (m ²)
Deck height up to 5.0 m ⁱⁱ⁾				
Deluge	OH-OPX1 Panama	3.5	6	See note ⁱⁱⁱ⁾
Deck height up to 2.5 m				
Deluge	OH-OPX1 Suez	4.0	6	See note ⁱⁱⁱ⁾

Notes

- Distance to bulkheads should be half spacing
- Installations with height above 5.0 will be considered case by case
- According to Principal Requirements of IMO MSC.1/Circ.1430 for type B or type C systems (as applicable)

Spray head information

Sprinkler / nozzle type	k-factor (lpm/bar ^{1/2})	Flow (lpm)	Pressure (bar)	Drawings
OH-OPX1 Panama	23	56.3	6	Ref. type examination documentation
OH-OPX1 Suez	23	56.3	6	Ref. type examination documentation
Nozzles are made of brass coated with NiSn. Maximum operating pressure is 16 bar.				
Nozzles are to be installed in a pendant (downward) position.				

For all applications

- The pumps or pump unit and the pressure tank are to be delivered with DNV GL product certificate. Other system components are to be certified or inspected in accordance with DNV GL Rules.
- Redundant pump arrangement is subject to approval in each case.
- Restrictions apply to use of this system on open ro-ro and open special category spaces (see IMO MSC.1/Circ.1430).
- The pump unit and section / sprinkler valves shall be installed in a room having ambient temperature between +4 °C and +45 °C
- Only stainless steel piping, or equivalent corrosion resistant pipes, is to be applied (to avoid clogging of nozzles). Primary water supply shall be fresh water of potable quality.
- Pipes, couplings and other components are regarded as "Class III" piping.

The following items are to be submitted for approval for each project:

- System arrangement plans including routing of pipes, location of nozzles, sections valves, release stations and pump unit.
- Documentation of power supply and control system.

Job Id: **262.1-014339-2**
Certificate No: **TAF00000D4**

- Specification of pipes, section valves, pumps, including drivers and associated components.
- Pressure drop calculations and water mist capacity calculations.
- Design, installation, operation and maintenance manual.

Installation testing:

- The system is to be cleaned in accordance with routines outlined in maker's system description manual.
- At least 2 sections should be tested with full flow through the nozzles. Manual release of all section valves (without water accepted) shall be carried out.
- Manual start of pumps shall be carried out.
- Alarms at the manned control stations shall be tested.
- Other tests as required by DNV GL Rules (pressure testing of piping, etc.) and according to maker's manual shall be carried out.

Periodical testing:

- Periodical control and inspection shall be carried out in accordance with maker's system description manual.
- At least one section should each year be tested with full flow through the spray heads (not the same section every year).

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

Fire Performance Test Reports:

- No.120413-68 dated 21 June 2012,
 - No.120413-69 dated 21 June 2012,
- both from Danish Fire Laboratories (DFL) ApS.

Component testing:

- No. 110415-5 dated 14 April 2012 from Danish Fire Laboratories (DFL) ApS.
- Letter from Danish Fire Laboratories (DFL) ApS dated 02-11-2012 regarding component tests.

Drawings from manufacturer:

- | | |
|-------------------------------------|---------------------------------------|
| - 120802-1057 dated 02 August 2012, | - 120802-1055 dated 02 August 2012, |
| - 120802-1058 dated 02 August 2012, | - 120802-1056 dated 02 August 2012, |
| - 101116-852A dated 05 May 2011, | - 81021-607A dated 11 September 2009, |
| - 71120-473 dated 21 November 2007, | - 71121-476A dated 15 June 2010. |

Datasheet pendent open low pressure water mist nozzle, Model: Suez & Panama OH-OPX1.

Tests carried out

Fire performance test in accordance with IMO MSC.1/Circ.1272.

Component test in accordance with IMO Res. A.800(19) and IMO Res. MSC.265(84), and in compliance with IMO MSC.1/Circ.1272.

Marking of product

The sprinklers heads and nozzles are to be marked with manufacturer name, type designation whereas other main components are to be marked with name of manufacturer.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.