DNV·GL

Certificate No:
MEDB00004WV

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 Fixed water based local application fire fighting systems components for use in category "A" machinery spaces

with type designation(s)
K7-Kattegat low pressure water mist system

Issued to
Vid Fire-Kill ApS
Svendborg, Syddanmark, Denmark

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/3.48 and Annex B, Module B in Directive. SOLAS 74 as amended Regulation II-2/10 & X/3 and 2000 HSC Code 7

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

This Certificate is valid until **2024-04-02**.

Issued at **Høvik** on **2019-04-03**

DNV GL local station:
Fredericia

Approval Engineer:
Tessa Biever

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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Job Id: **344.1-008911-1**
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Product description

"K7-Kattegat low pressure water mist system",
is a local application water mist system for machinery spaces of category A consisting of open low-pressure water mist nozzles, stainless steel piping, electrical operated control valves, filters, strainers, control systems and electrically driven pumps.

The system is to be designed according to principal requirements for the system, IMO MSC.1/Circ.1387 and SOLAS Ch.II-2, Reg.10.5.6.

Only the nozzles are type approved by this certificate. Pumps, pipes, valves, couplings and other systems components are subject to case by case approval.

The nozzles are manufactured by Vid Fire-Kill ApS, Denmark.

Application/Limitation

The nozzles are to be installed above the protected objects according to the following specifications:

Nozzle	K7	K7
Maximum horizontal spacing:	3.0 m x 3.0 m	3.0 m x 3.0 m
Vertical distance from object:	1.0 m – 3.75 m	0.75 m – 9.25 m
Minimum operation pressure:	2 bar (at nozzles)	6 bar (at nozzles)
Flow rate:	9.9 lpm (at 2 bar)	17.1 lpm (at 6 bar)
k-factor (using $Q = k \times p^{1/2}$):	7.0 lpm/bar$^{1/2}$	7.0 lpm/bar$^{1/2}$
Drawing:	180824-06, Rev.A	180824-06, Rev.A
Nozzles are to cover the area out to the periphery of the protected object (see IMO MSC.1/Circ.1387, annex 3.4.2.2). The nozzles are to be installed in a pendant (downward) position. Single nozzle or single rows are accepted when half spacing is used.		

For all systems

A. Nozzles are to be made of stainless steel or nikkle coated brass. The maximum operating pressure is 16 bar.
B. Turbo machinery should also be covered by the system but with gentle application of water. Essential electrical equipment and air intakes should preferably not be directly exposed to the water discharge. Electrical equipment as per Class Rules (or equivalent standard as specified by the Flag Administration) shall be applied for new buildings.
C. The pumps (or pump unit) shall be delivered with product certificate, whereas other system components are to be certified or inspected in accordance with Class Rules (or equivalent standard as specified by the Flag Administration).
D. Only stainless steel piping or equivalent corrosion resistant pipes are to be applied. Primary water supply shall be a fresh water of potable quality.
E. Pipes, couplings and other components are regarded as "Class III" piping.
F. The pump unit and section valves shall be installed in a room having ambient temperature between 4 °C and 45 °C.

The following documents are to be approved and filed by the Flag State Administration:

a. System arrangement plans including location of nozzles, sections valves, release stations and pump-unit (including water supply specifications).
b. Documentation of power supply and control system.
c. Specification of pipes, electrical motor, valves, pumps and associated components.
d. Pressure drop calculations and water capacity calculations.
e. Arrangement of interface to fire detection and alarm system (where applicable).
f. Manual with operating, test and maintenance instructions.

Other documents:

- Documentation for other components (according to DIN 3.1B and DIN 2.2, or equivalent), including qualification of welders and approval of welding procedures (if applicable) is to be submitted to the Flag Administration/Recognized organization in question.

Installation testing:
- At least one section should be tested with full flow through the nozzles;
- Test of manual and remote release of all section valves and start of pumps;
- Testing of alarms (SOLAS Ch. II-2, Reg.10.5.6.4);
- Pressure testing of water pipe system to at least 1.5 times maximum working pressure;
- System to be cleaned in accordance with routines outlined in makers installation manual;
- Testing of automatic start of system (in case of unattended machinery spaces);
- Other tests as required by Class Rules (pressure testing of piping, etc.) or a similar standard acceptable to the Flag Administration and according to maker's manual shall be carried out.

Periodical testing:
- The periodical testing shall comply with instructions from flag administration, statutory interpretations and maker’s maintenance manual.
- At least one section should each year be tested with full flow through the nozzles.

Type Examination documentation

Design, Installation, Operation and maintenance (DIOM) manual, 181019-01-01- K7 DIOM 1387 LP Rev.1 dated 2018-10-19 from maker.

Fire Test Report:
No. 180808-218 dated 2018-11-21 from DFL, Svendborg, Denmark.

Component Test Reports:
No. 110415-5 dated 2015-04-15 from DFL, Svendborg, Denmark
No. 150918-161 D dated 2015-12-02 from DFL, Svendborg, Denmark

Drawing, nozzle:
No. 180824-06 Rev.A dated 2018-08-24 from maker

Tests carried out

Fire performance testes according to IMO MSC.1/Circ. 1387.

Component tests in accordance with IMO Res. A.800(19) as amended by IMO Res. MSC.265(84) (as required by IMO MSC.1/Circ.1387).

Marking of product

The nozzles are to be marked with type designation. In addition, the nozzles or its packing shall be marked with the name and address of manufacturer and the MED mark of Conformity.