DNV·GL

Certificate No:
TAF000015Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fixed Water Based Local Application System

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

Issued to
Vid Fire-Kill ApS
Svendborg, Syddanmark, 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 local application system for machinery spaces of category A.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-04-03**

This Certificate is valid until **2024-04-02**.
DNV GL local station: **Fredericia**

Approval Engineer: **Tessa Biever**

for **DNV GL**

Digitally Signed By: Schei-Nilsson, Mårten
Location: DNV GL Høvik, Norway

Mårten Schei-Nilsson
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.

Job Id: **262.1-030315-1**
Certificate No: **TAF000015Z**

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 DNV GL rules (Pt.4 Ch.8 Sec.10, Table 1) shall be applied for new buildings.
C. The pumps (or pump unit) shall be delivered with DNV GL product certificate, whereas other system components are to be certified or inspected in accordance with DNV GL Rules.
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:

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 DNV GL

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 DNV GL Rules (pressure testing of piping, etc.) 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
Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

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 spray head is to be marked with type designation whereas pump / control unit is to be marked with name of manufacturer and type designation.

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.