

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 fire-fighting systems for ro-ro spaces, vehicle spaces and special category spaces: Prescriptive-based systems as per Circ. 1430 Clause 4

with type designation(s)

NF13A-RR-T141, NF13A-RR, NF11A-RR-T141, NF11A-RR-T68, NF11A-RR, NF9A-RR-T68, NF9A-RR

Issued to

Novenco Fire Fighting A/S
Odense SØ, Denmark

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2019/1397,**

item No. MED/3.49a. SOLAS 74 as amended Regulation II-2/19, II-2/20 & X/3, 2000 HSC Code 7 and FSS Code 7, IMO Circ.1430 Clause 4

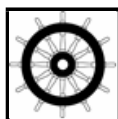
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-06-03**.

Issued at **Høvik** on **2020-06-04**

DNV GL local station:
Denmark CMC

Approval Engineer:
Andrii Pishchanskyi



Notified Body
No.: **0575**

for **DNV GL AS**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Types NF13A-RR-T141, NF11A-RR-T141, NF11A-RR-T68, NF9A-RR-T68 are sprinklers for automatic systems and types NF13A-RR, NF11A-RR, NF9A-RR are open nozzles for deluge systems.

The system consists of nozzles and section valves, in addition to pump unit(s), piping, control system as associated equipment.

Only nozzles and sprinklers are approved by this certificate. Other components are to be approved and/or certified case by case.

Nozzles and sprinklers are manufactured in Glamsbjerg, Denmark.

Application/Limitation

Approved for use for fixed water-based fire-fighting systems for ro-ro spaces, vehicle spaces and special category spaces (prescriptive-based system).

System design and installation shall be as per IMO MSC.1/Circ.1430, 3 "Principal requirements for all systems" and 4 "Additional prescriptive-based design requirements". In addition, uniform distribution of nozzles inside protected space as well as overlap of the spray pattern shall be ensured.

Sprinkler and nozzle characteristics are as follows:

Type	K-factor $\left[\frac{l}{\min \cdot \sqrt{\text{bar}}} \right]$	Min. pressure at nozzle [bar]	Rated working pressure [bar]	Material	Data sheet No.
NF13A-RR-T141	115	0.5	8	Brass	56-09-553
NF13A-RR	115	1.2			56-09-453
NF11A-RR-T141	80	0.5			56-09-554
NF11A-RR-T68	80	0.5			56-09-552
NF11A-RR	80	1.2			56-09-452
NF9A-RR-T68	57	0.5			56-09-551
NF9A-RR	57	1.2			56-09-451

The spray heads are to be installed in a pendant (downward) position.

For all applications

- The pumps shall be delivered with product certificate, whereas other system components are to be inspected in accordance with Class Rules (or equivalent standard as specified by the Flag Administration);
- Redundant pump arrangement is to be approved on a case by case basis;
- 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 valves shall be installed in a room having ambient temperature between +4°C and +45°C;
- 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;
- Specification of pipes, section valves, pumps, including drivers and associated components;
- Pressure drop calculations and water spray capacity calculations;
- Design, installation, operation and maintenance manual.

Installation testing:

- a. The system is to be cleaned in accordance with routines outlined in maker's system description manual;
- b. In case of deluge systems, 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;
- c. Manual start of pumps shall be carried out;
- d. Alarms at the manned control stations shall be tested;
- e. 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:

- 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.

Type Examination documentation

1. Data sheet Nos.:
 - a. 56-09-551;
 - b. 56-09-552;
 - c. 56-09-553;
 - d. 56-09-554;
 - e. 56-09-451;
 - f. 56-09-452;
 - g. 56-09-453;
2. Component test report Nos.:
 - a. WAL 05034 dated 2005-08-01;
 - b. 4P07146-01 Rev 1 dated 2015-01-12;
 - c. 5P02105-1 dated 2015-03-13;
 - d. 5P02105 dated 2015-03-23;
 - e. 4P07146 rev2 dated 2015-03-25;
 - f. 4P07792 rev1 dated 2015-03-25;
 - g. 5P02105-01 dated 2015-04-15;
 - h. Clogging test report dated 2015-02-06;
3. Authorization letter dated 2020-05-20.

Tests carried out

Component testing according to IMO MSC.1/Circ.1165.

Marking of product

The nozzles/sprinklers are to be marked with:

- Trademark;
- Type designation;
- Glass bulb release temperature;
- K-factor;
- Date of manufacture;
- MED Mark of Conformity (see footnote on page 1).