



Certificate no.:  
**TAF00001V2**

# TYPE APPROVAL CERTIFICATE

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## This is to certify:

that the **Fixed Dry Chemical Fire Extinguishing System for Gas Fuel Bunkering Station**

with type designation(s)  
**Dry powder skid 250 kg**

issued to

**AI Group**  
**NAINTRE, France**

is found to comply with

**DNV offshore standards**  
**DNV rules for classification – Offshore units**  
**DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021**

## Application:

**Approved as a fixed dry chemical fire extinguishing system for gas fuel bunkering station with capacity of at least 3.5 kg/s for a minimum of 45 second discharge.**

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

Issued at **Høvik** on **2024-02-12**

This Certificate is valid until **2029-02-11**.

for **DNV**

DNV local unit: **France CMC**

Approval Engineer: **Tessa Biever**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.



Form code: TA 251

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## Product description

'Dry powder skid 250 kg',

The system consists of a skid chassis equipped with:

- A powder tank with capacity of 250 kg (300 L) chemical powder (the powder amount is sufficient for protecting one bunkering station at one time).
- A pressure regulator.
- A control panel.
- Two nitrogen cylinders of 27 L (200 bar) and their control systems by pressure gauges and pressure switches.
- Two cylinders percussion devices with manual rescue.
- A pressure gauge and a pressure switch on the power outlet.

The design pressure of the system is 11 bar.

The mass of the assembly: 401 kg (empty tank), 659 kg (full tank)

For further details, see the Type Approval documentation below.

## Application/Limitation

Approved as a fixed dry chemical fire extinguishing system for gas fuel bunkering station with capacity of at least 3.5 kg/s for a minimum of 45 seconds discharge.

The permanently installed dry chemical powder extinguishing system shall cover all possible leak points in the gas fuel bunkering station area.

The system shall be arranged for easy manual release from a safe location outside the protected area.

The system response time (time from activation to powder release) shall not be more than 15 seconds.

The equipment is to be located indoor. If located exposed to weather and salty atmosphere, all sensitive regulating parts shall be separately protected.

The powder pressure vessel is subject for separate approval and shall be delivered with DNV product certificates. The pressure gas cylinders shall be in compliance with DNV-RU-SHIP Pt.4 Ch.7 Sec.1 [5].

Only approved and well documented extinguishing powder shall be used.

Arrangement of safety valves is subject to approval in each case. Other system components are to be inspected in accordance with the DNV Rules.

The following items are to be approved and filed by Flag Administration for each project:

- a) System arrangement plans including routing of pipes, location of nozzles, sections valves and release stations.
- b) Control and monitoring system documentation.
- c) Specification of pipes, valves and associated components.
- d) Capacity analysis, including pressure drop calculations and application rates.
- e) Design, installation, operation and maintenance manual.

Factory acceptance test (FAT):

- The whole system shall be pressure tests at 1.5 above design pressure.
- The factory acceptance test shall also include a discharge of sufficient amounts of dry chemical powder to verify that the system is in proper working order.

Installation test:

- After installation, the pipes, valves, fittings and assembled systems shall be subjected to a tightness test
- Functional testing of system, including remote and local release stations. When FAT of whole system has been performed, release of powder is not required.

## Type Approval documentation

Certification in accordance with Class Programme DNV-CP-0338, September 2021.

Operating and maintenance Procedure, Doc. No. 10104-109 Rev.0 from manufacturer.

Performance:

Test report No. 8130-O0163 dated 22 September 2022 from manufacturer, witnessed by DNV.

Drawing/data sheet:

Drawing No. 622T001I01, Rev. B4 (10104-100 Rev.2) dated 3 May 2022 from manufacturer.  
Drawing No. 622T001F02, Rev. B4 (10104-101 Rev.2) dated 3 May 2022 from manufacturer.

Technical datasheet Doc. No. 10104-106 Rev.0 from manufacturer.

**Tests carried out**

The system is tested for the discharge test.

**Marking of product**

The main components in the system are to be marked with name of manufacturer and type designation.

**Periodical assessment**

DNV'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 DNV-CP-0338, Section 4.