

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Fixed Dry Chemical Fire Extinguishing System for Gas Fuel Bunkering Station**

with type designation(s)

Autronica DCP Fixed System

Issued to

**Autronica Fire and Security AS
NØTTERØY, Norway**

is found to comply with

DNV GL rules for classification – Offshore units**DNV GL rules for classification – Ships****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****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 s discharge.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**This Certificate is valid until **2021-12-18**.Issued at **Høvik** on **2016-12-19**DNV GL local station: **Sandefjord**Approval Engineer: **Piotr Orzechowski**for **DNV GL**

**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

"Autronica DCP Fixed System"

A fixed installation based fire extinguishing system for use in gas fuel bunkering station areas. Main composition: A 2L/1.3 kg CO₂ pilot gas cylinder fitted in a release cabinet connected with rubber hoses and SS tubing to a 40L/150 bar N₂ cylinder that provides propellant gas via a pressure reducing valve (set point: 16 bar) and 15 mm SS tubing to a 200 kg dry chemical powder tank (safety valve set point: 16.5 bar). An automatically activated main valve (set point: 10 bar) on the powder tank feeds extinguishing powder through stainless steel distribution piping (DN50/40/25/20) to 8 pcs. 60°, ½" spiral jet nozzles.

For further details, see the Type Approval documentation below.

Application/Limitation

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.

Only approved and well documented extinguishing powder shall be used.

The system is approved with the piping lengths, dimensions, number of bends, etc. as found in the Type Approval documentation below. Only stainless steel piping shall be used.

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 DNVGL product certificates.

The pressure gas cylinders shall be in compliance with DNVGL-RU-SHIP Pt. 4 Ch. 7 Sec.1 [5].

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

This certificate does only address the functionality and performance of the entire system. All system components are subject to case by case approval.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

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

Test & Calculation Report, Fixed Dry Chemical Fire Extinguishing System for Gas Fuel Bunkering Station, Document No. 610295-TCR-600-001-A dated 2012-10-16 from Autronica Fire and Security AS.

Certificate of Compliance (for nozzle Model HHSJ), Certificate Number 20110610-EX2073 dated 10 June 2011 from Underwriters Laboratories Inc. (UL).

Other documents from Autronica:

- Technical description (20-1162012-600), Amendment 2 dated 2012-10-31.
- Maintenance Instruction (20-1162012-610), Amendment 3 dated 2012-10-31.
- Installation instruction (20-1162012-620), Amendment 1 dated 2012-04-20.
- Data Sheets (20-1162012-650), Amendment 3 dated 2012-10-31.



Job Id: **262.1-014275-2**
Certificate No: **TAF00000HW**

- Drawing no. 610259-PID-600-B dated 2012-08-24.
- Drawing no. 610259-GA-600-A dated 2012-05-03.

Tests carried out

In compliance with DNVGL Type Approval Programme 474.74.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

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.