

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Water and Foam Monitor**with type designation(s)
Long Jet Monitor (FWM-150S)

Issued to

Tanktech Co., Ltd.
Busan, Republic of Korea

is found to comply with

DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations
DNV GL rules for classification – Ships
DNV GL offshore standards**Application :****The water monitor is approved for installation on ships and offshore vessels.**Issued at **Høvik** on **2021-07-20**This Certificate is valid until **2026-07-19**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Helge Bjørnarå**

Sverre Olav Bergli
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.

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

Long Jet Monitor (FWM-150S),
water monitors consisting of branchpipe and turret made of stainless steel (AISI 316). The manually operated monitor is fitted with a jet nozzle.

Name	Type	Rotation	Elevation
FWM-150S	Manual	0° ~ 360°	-50° ~ 90°

For further details, see drawing listed under Type Approval documentation below.

Manufactured by Tanktech Co., Ltd., Busan, Korea.

Application/Limitation

The water monitor is approved for installation on ships and offshore vessels.

Size	Flow rate [m ³ /h]	Max jet Length [m]	Max jet Height [m]	Inlet pressure [bar]	k-factor [lpm/√bar]
FWM-150S	190 – 250 ¹⁾	80 – 110 ²⁾	24.8 ³⁾	7.0 - 15.0	1130

- 1) Flow rate measured at inlet pressure 7.0 to 15.0 bar.
2) Max length measured at inlet pressure 7.0 to 15.0 bar.
3) Max height measured at 10.0 bar and 30° angle.

Max working pressure at 15 bar.

Hydraulic test to 1.5 times working pressure to be documented before delivery.

Works certificate indicating mechanical properties of materials in the monitor and pressure test report is to accompany each product.

Materials are to be in accordance with the DNV-RU-SHIP Pt.4, Ch.6, Sec.1 (Pipe of class III).

The specific arrangement of water monitors, piping and control equipment is subject to approval in each case.

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

Type Approval documentation

Certification in accordance with Class Program DNVGL-CP-0338, September 2018.

Inspection report "hydrostatic test" dated 14 November 2019 witnessed by DNV GL.
Performance test report "max jet length test" dated 14 November 2019 witnessed by DNV GL.
Inspection report "movement test" dated 14 November 2019 witnessed by DNV GL.
Inspection report "mechanical test" dated 10 April 2020 witnessed by DNV GL.
Inspection report "height test" dated 10 April 2020 witnessed by DNV GL.
FWM-AJH190930-01, Rev.A0, dated 30 September 2019 from manufacturer.

Drawing No. FWM-150-01, Rev.0, dated 6 August 2018 from manufacturer.

Tests carried out

Tested as branchpipe (discharge coefficient/characteristics (flow) test, range test, leak test and mechanical test).



Job Id: **262.1-032535-1**
Certificate No: **TAF00001GW**

Marking of product

The product is to be marked according to EN 13565-1:2019, Section 7.

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 DNVGL-CP-0338 Section 4.