Certificate no.:
**TAS0000466**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**that the Watertight Door**

with type designation(s)
**Watertight Musketeer Door - FD**

issued to
**Winel B.V.**
**Assen**, **Netherlands**

is found to comply with
**DNV rules for classification – Ships**

## Application:

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

Issued at **Høvik** on **2024-02-13**
This Certificate is valid until **2029-02-12**.
DNV local unit: **Netherlands VMC**

for **DNV**

Approval Engineer: **Xiaolu Wu**

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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.

## Product description

Hinged watertight doors made of grade A steel.

## Application/Limitation

Maximum design pressure as stated on the below listed drawings:

30 kN/m2 / 50 kN/m2 /80 kN/m2 / 120 kN/m2

The doors have been Type Approved with respect to watertightness only. The doors have not been considered with respect to fire protection.

The watertight doors are found to comply with DNV-RU-SHIP Pt.3 Ch.12 Sec.3 (July 2022) for the maximum design pressures specified above.

The doors may be fitted in watertight bulkheads where the use of hinged watertight doors is accepted. The design pressure at the location where the door is to be fitted is to be equal or less than stated above.

Dimensions of the light opening of the doors can be smaller than shown on the drawings, provided that scantlings, maximum distance between the cleats and fabrication method and material are maintained. The Type Approval does not cover the support of the doors in the bulkheads, which is subject to approval. Drawings showing connection between door frame and bulkhead shall be submitted by yard/end user for a case-by-case approval.

Particular consideration shall be given if located in highly stressed areas or in areas critical to fatigue.

Each door is to be tested for tightness through hydrostatic testing at the design pressure according to DNV-RU-SHIP Pt.2 Ch.4 (July 2022), at the manufacturer.

The complete installation shall be function and leak tested according to DNV-RU-SHIP, Pt.2, Ch.4, Sec.8 (July 2022).

The tests are to be witnessed by a DNV surveyor.

Indication, showing whether the door is open/closed, shall be fitted on the bridge of the vessel.

## Type Approval documentation

Drawings:

007.00 1950x900 LH 12 cleats - 3 mWc

007.00 1950x900 LH 12 cleats - 5 mWc

007.00 1950x900 LH 14 cleats - 8 mWc

007.00 1950x900 LH 18 cleats - 12 mWc

010.00 2050x1000 LH 12 cleats - 3 mWc

010.00 2050x1000 LH 12 cleats - 5 mWc

010.00 2050x1000 LH 14 cleats - 8 mWc

010.00 2050x1000 LH 18 cleats - 12 mWc

88221-4058 Typical welding details

## Tests carried out

Prototype test for watertightness was done 2014-11-13, witnessed by DNV Rotterdam.

## Marking of product

The product is to be marked with:

- Manufacturer's name or brand
- DNV Type Approval Certificate No. TAS0000466
- Type designation
- Design pressure

## Periodical assessment

DNV has the permission to perform Certification Retention Survey at any time during the validity period of this certificate.

Periodical assessment will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.