DNV·GL

Certificate No:
TAP000024C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Vent Head for Tank

with type designation(s)
CMO

Issued to
Winel B.V.
ASSEN, Netherlands

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0187 – Type approval – Air vent heads

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.
Sizes: 50,65,80,100,125,150,175,200,250,300,350,400

Issued at **Høvik** on **2020-11-06**
This Certificate is valid until **2025-11-05**.
DNV GL local station: **Netherlands CMC**

Approval Engineer: **Maheshraja Venkatesan**

for **DNV GL**

Zeinab Sharifi
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.

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Job Id: **262.1-033185-1**
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Product description

Air vent head CMO (cylindrical model) type with non-metallic float (made of PE). Material of body is AlMg4.5 (temper: H111)

Manufacturing locations:

(1) Winel BV,
Dr. A.F. Philipsweg 55, 9403AD,
Assen, Netherlands

(2) Winel Vietnam Ltd.,
Landplot A2, An Hong Industrial park, An Hong Commune, An Duong district,
Haiphong, Vietnam

Application/Limitation

The certificate covers design assessment of air vent heads. Installation and other additional requirements related to installation are out of scope of this certificate.

The air vent heads are not considered as devices to prevent the passage of flame into cargo tanks. They shall not be installed on oil tanks (flash point<60°C).

Results of Discharge test (blocking velocity) & flow test (at a pressure drop of ΔP=250 mbar) on vent heads:

Size	80% of blocking velocity (m/s)	Dynamic loss coefficient
DN50	20.48	10.1
DN65	20.96	9.6
DN80	20.48	10.9
DN100	16.80	12.5
DN125	16.40	11.8
DN150	14.96	14.0
DN175	16.24	12.8
DN200	14.72	12.6
DN250	13.04	14.9
DN300	13.44	14.5
DN350	10.64	25.3
DN400	10.40	27.6

Type Approval documentation

Tests carried out

Impact test and compression loading test for plastic float, Tightness test, Flow Characteristics, Discharge/Reverse flow test

Marking of product

For traceability to this type approval the products are to be marked:

- Manufacturer's name or trademark
- Type designation
- Size

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment 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 DNVGL-CP-0338.