

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Vent Head for Tank**with type designation(s)
SWB

Issued to

Se-Won Ind. Co., Ltd.
Haman-gun, Gyeongsangnam-do, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
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: 50A to 500A (13 sizes)**Issued at **Høvik** on **2019-11-07**This Certificate is valid until **2024-11-06**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Mehdi Rowshan**

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.



Product description

Air vent heads type SW with metallic float.

Sizes: 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A

Materials:

Body & side cover:	SS400 (Hot dip Galvanized)
Ball float:	SS400 (Zinc Flake Coating/Powder Coating)
Wire Net:	copper/Monel400/SUS904L/SS400/Duplex
Disk Packing:	NBR
Top Cover Packing:	NBR
Hex.Bolt/P.W:	SS400 (Hot dip Galvanized)

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).

Galvanized steels shall be protected by hot dip galvanizing with the zinc layer shall be 70 to 100 microns.

Product certificate is not required for air vent heads installed in ship class vessels.

Results of Discharge test and flow test on air vent heads with wire mesh:

Size	80% of blocking velocity (m/s)	Flow resistance coefficient (*)	Size	80% of blocking velocity (m/s)	Flow resistance coefficient (*)
DN50	64.7	2.16	DN250	25.6	6.98
DN65	65.8	4.56	DN300	32.9	9.53
DN80	56.8	5.53	DN350	33.5	10.41
DN100	55.1	10.01	DN400	32	10.04
DN125	30.9	7.57	DN450	27.9	8.30
DN150	46.5	6.36	DN500	24.6	11.77
DN200	36.7	10.47			

(*)Flow resistance coefficients are calculated at a pressure drop equal to 250 mbar

Type Approval documentation

Documents

Drawing Number: SW-A11-TA rev.03

Test Report No: SW-TR19-0801: Tightness test, Float test, Flow Test, Measuring of

Discharge/ Reverse flow rate, Measurement of shape/Wall thickness of ball floats

Status

AP

FI

Tests carried out

Tightness test, Float test, Flow Test, Measuring of Discharge/ Reverse flow rate, Measurement of shape/Wall thickness of ball floats

Marking of product

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

- Manufacturer's name or trade mark
- 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.