

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Vent Head for Tank**with type designation(s)
Aero 1.1, 1.3, Aero 1.2

Issued to

John Gjerde AS
GJERDSVIKA, Norway

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.**

Type:	Sizes:
Aero 1.1, 1.3	DN 50,65,80,100,125,150,200,250,300,350 & 400
Aero 1.2	DN 50,65,80,100,125,150,200,250,300,350 & 400

Issued at **Høvik** on **2019-05-29**This Certificate is valid until **2022-06-30**.for **DNV GL**DNV GL local station: **Ulsteinvik**Approval Engineer: **Adel Samiei**

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

Self-closing air vent head w/ non-metallic float disc on guiding pin and wire mesh. The air vent head might be equipped with heating element

Materials:

Body/Cover/Guide pin: S235JR+N (Hot dip galvanized) / Aluminium-5083-H111

Float: ABS Plastic

Manufactured by: Saldus Welding in Saldus, Latvia.

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).

Heating elements functionality is not a part of this approval.

Size	80% of blocking velocity at Discharge test (m/s)		Dynamic coefficient (ζ) resulted from flow characteristic tests at ΔP (mmWG)			
			Aero 1.1 / 1.3		Aero 1.2	
	Aero 1.1 / 1.3	Aero 1.2	ΔP	ζ	ΔP	ζ
DN50	17.07	38.16	4500	49.34	4000	8.77
DN65	15.35	17.49	4000	16.12	4000	25.05
DN80	17.13	20.00	4500	12.07	4200	3.11
DN100	11.09	13.49	4300	6.92	4200	7.59
DN125	9.81	10.92	3800	24.29	3700	9.69
DN150	12.58	10.39	4500	14.66	4500	5.22
DN200	13.19	23.65	4500	19.67	4500	12.00
DN250	19.30	17.75	3400	13.17	2000	9.16
DN300	19.31	13.40	4000	17.01	2000	20.07
DN350	18.72	14.45	3500	10.26	3200	11.90
DN400	13.69	12.03	2500	21.16	2000	17.77

Type Approval documentation

Tests carried out

Flow Characteristics test, leakage test, discharge/reverse flow test, compression test of float, float impact test.

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.