DNV·GL

Certificate No:
TAP000018G

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Vent Head for Tank

with type designation(s)
DISC-A

Issued to
Kwang San Co., Ltd.
Busan Busan, 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 all vessels classed by DNV GL.
Sizes: 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A

Issued at **Høvik** on **2018-04-19**
This Certificate is valid until **2023-04-18**.
DNV GL local station: **Gimhae Station**

Approval Engineer: **Mehdi Rowshan**

for **DNV GL**

Marianne Spæren Marveng
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.

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Job Id: **262.1-026885-1**
Certificate No: **TAP000018G**

Product description

Air vent heads with metallic and non-metallic disc float and a mesh cover (30 mesh or 5 mesh).

Flange connections: JIS 5K, JIS 10K, JIS 16K, ANSI 150LB, 300LB, 600LB,

The following materials are covered by this certificate:

Body, top cover, side cover	SS400, FCD450 (hot galvanized zinc 70~100 microns)
Disk	Polypropylen, SS400 (hot galvanized zinc 70~100 microns)
Mesh	SS400 (hot galvanized zinc 70~100 microns)
Bolts and washers	SS400 (hot galvanized zinc 70~100 microns)
Seals/gaskets	NBR, EPDM, CR, SBR

Application/Limitation

The certificate covers design assessment of air vent heads. Installation and other additional equirements 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).

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

Dynamic coefficient as result of discharge test and flow test on air vent heads with wire mesh for each size in 250 mbar pressure drop are shown as table below:

Size	Non- Metallic disc			Metallic disc		
	80% of blocking velocity (m/s)	Flow resistance coefficient (ζ)@ pressure drop (ΔP)		80% of blocking velocity (m/s)	Flow resistance coefficient (ζ)@ pressure drop (ΔP)	
		ΔP(mbar)	ζ		ΔP(Pa)	ζ
50A	24.02	250	11.195	37.95	250	7.809
65A	17.99	250	7.086	22.13	250	7.853
80A	20.48	250	10.295	23.59	250	9.062
100A	32.14	250	7.168	24.62	250	5.032
125A	24.09	250	8.334	26.75	250	5.210
150A	28.95	250	8.936	23.45	250	6.856
200A	27.66	250	10.824	23.79	250	9.373
250A	35.24	250	8.854	31.89	250	9.413
300A	34.08	250	9.674	36.04	250	9.343
350A	32.14	250	9.059	34.20	250	9.811
400A*	39.24	250	10.451	39.76	250	11.238
450A*	40.10	250	15.663	39.82	250	15.910
500A*	38.78	250	21.858	39.73	250	21.038

*For these sizes blocking was not happened during the test

Type Approval documentation

Tests carried out

Flow Test, Tightness Test, discharge/Reverse Flow Test, Metalic Impact and compression Test

Marking of product

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