Certificate number: 82741/A0 BV
File number: .
Product code: 2235I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Qingdao ExSafe Valve Co., Ltd.

QINGDAO - CHINA

for the type of product

HIGH VELOCITY VENT HEADS

High velocity valve EM standard/breather type

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships
IMO MSC/ Circ. 677
ISO 15364:2021
ISO/IEC 80079-49:2024

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 22 Jun 2031

For Bureau Veritas Marine & Offshore,
At BV SHANGHAI, on 22 Jun 2026,
Jennifer Zhang

This certificate was created electronically and is valid without signature

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

High velocity valve EM standard/breather type

1.1 - Ratings

Design standards: ISO15364-2021 / ISO/IEC80079-49:2024

			Set opening pressure (kPa)		Design pressure (kPa)		Rated flow (m3/h)		
Model	**Nominal diameter (mm)**	**Max. vent pipe length (m)**	**Pressure valve**	**Vacuum valve**	**Pressure valve**	**Vacuum valve**	**Pressure valve**	**Vacuum valve**	**Gas freeing cover**
EM-50A	50	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	700	600	850
EM-65A	65	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	800	600	850
EM-80A	80	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	1250	800	1150
EM-100A	100	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	2400	900	1900
EM-125A	125	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	3750	1500	2900
EM-150A	150	≤ 291	13 ~ 21	–3.5 ~ –7	21.0	–7	5000	1900	3800
EM-200A	200	≤ 44	13 ~ 21	–3.5 ~ –7	21.0	–7	15600	2700	24000
EM-250A	250	≤ 5	13 ~ 21	–3.5 ~ –7	21.0	–7	20710	6950	42900
EM-300A	300	≤ 5	13 ~ 21	–3.5 ~ –7	21.0	–7	64200	13800	121000

Max. MESG (mm): ≥0.65

Permissible ice thickness (mm): 20

Outlet velocity of pressure valve (m/s): ≥30

Applying product group: IIA & IIB

1.2 - Material specification

Part	**Material**
Valve body	FCD400-15 / SUS304 / SUS316L / SC450
Valve cover	FCD400-15 / SUS304 / SUS316L / SC450
P-valve flange	SS400 / SUS304 / SUS316L
P-valve disc	SUS316L
Flame screen	SUS316L
Valve stem	SUS304 / SUS316 /SUS316L
Valve stem lifting plate	SUS304 / SUS316 /SUS316L
V-valve seat	SUS316L
V-valve disc	SUS316L
Vent cover flame screen	SUS316L

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Manual of installation, use and maintenance "Instruction Manual for P/V Valve" Rev. A4 dated 27/11/2025.
- Drawing N° EM-00 dated 30/04/2026: *Standard type assembly*.
- Drawing N° EM-00T dated 30/04/2026: *Breather cap type assembly*.
- Product description N° EX202606-1 Rev. 2 dated 18/06/2026: *EM-50A/-65A/-80A/-100A/-125A/-150A/-200A/-250A/-300A.*

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 - Test carried out as per *ISO 15364:2021, ISO 80079-49:2024* and *MSC.1/Circ.677.*

- Test report N° EX202507-1 dated 17/07/2025: *EM-50A to EM -200A.*
- Test report N° EX202601-1 dated 30/12/2025: *EM-250A to EM -300A.*

3.2 - Corrosion and freezing test.

- Test report N° 202619000189 dated 05/06/2026: *EM-80A.*
- Test report N° 202519100941 dated 24/10/2025: *EM-100A.*
- Test report N° 202619000190 dated 05/05/2026: *EM-150A.*
- Test report N° WFC202605064 dated 12/06/2026: *EM-50A and EM-300A.*

4. APPLICATION / LIMITATION

4.1 - Approved as end-of-line non-oscillating high-velocity pressure/vacuum valve with integral gas-freeing cover, installed as combined unit or separately on vent outlets to relieve pressure-vacuum in cargo tanks and to prevent the passage of flame (vacuum side) into cargo tanks in tankers and in case of chemical tankers carrying flammable products with MESG of mixture of 0,65 mm and greater (apparatus Group II B) or 0,90 mm and greater (apparatus Group II A) as applicable and subject to suitability of materials with both seawater and the cargoes carried.

4.2 - Size and installation to be in accordance with manufacturer's instructions and Bureau Veritas Rules, especially with respect to vent pipe length and diameter, direction of valve flanges and accessibility to valve for its maintenance. The valves are to be installed in an upright mounting position. They have to be so constructed as to direct the efflux vertically upwards.

The in-service requirements described in the *MSC/Circ. 450* and *MSC/Circ. 731* and *2.5.1 of MSC/Circ. 677* are to be taken into consideration by the users in charge of vent system. The flow capacity curves are to be available to the users.

4.3 - Valve setting, valve fitting and pressure loss calculations shall be submitted to the relevant authority for the concerned ship.

4.4 - Valves are to be installed according to manufacturer's instruction.

4.5 - The manufacturer's instruction manual for installation, use and maintenance shall be kept on board ships at all times.

4.6 - The installation of electrical heating system onboard will be subject to a review by the Society on a case-by-case basis in accordance with the relevant requirements stated in Bureau Veritas Rules.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The devices are to be supplied by **Qingdao ExSafe Valve Co., Ltd.** in compliance with the type described in this certificate and in compliance with the requirements stated on the front page of this certificate. This type of product is within the category IBV of Bureau Veritas Rule Note *NR 320*.

5.2 - Each finished device is to be pneumatically tested to verify the maximum leakage rate specified according to *ISO 15364*.

5.3 - The setting of the device is to be confirmed during the Society's Surveyor attendance at works.

5.4 - Bureau Veritas product certificate is required.

5.5 - For information, **Qingdao ExSafe Valve Co., Ltd.** has declared to Bureau Veritas the following production site:

Qingdao ExSafe Valve Co., Ltd.:

Liuting Industrial Park, Chengyang District, Qingdao City

QINGDAO

CHINA

6. MARKING OF PRODUCT

Each device is to be permanently marked indicating at least:

- Manufacturer's name or logo
- Style, type, model or other manufacturer's designation for the device
- Pressure and vacuum setting
- Serial number
- Explosion group
- Additional markings of which the product complies with
- Bureau Veritas' Mark

7. OTHERS

It is **Qingdao ExSafe Valve Co., Ltd.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****