



Marine & Offshore

Certificate number: 61010/A1 BV

File number: .

Product code: 2205I

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

WOUTER WITZEL EUROVALVE B.V.
LOSSER - NETHERLANDS

for the type of product

BUTTERFLY VALVES

Butterfly Valves Wafer and Double Flanged types
EVS-i, EVTLS-i, EVFS-i, EVCS-i and EVCLS-i

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
Bureau Veritas Rules for the Classification of Offshore Units

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: 30 Apr 2025

For Bureau Veritas Marine & Offshore,
At BV GRONINGEN, on 17 Jul 2023,
Olaf RUITER

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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Butterfly valves wafer type EVS-i, EVTLS-i, EVCS-i and EVCLS-I

Butterfly valves double flanged type EVFS-i

1.1 Rating

Design Code: EN 593 and API 609

Range	Body type	Size	Maximum Working Pressure (bar)	Class & Pressure rating	Design Temperature (°C)*
EVS-i	Flangeless Wafer type	DN 400 to DN 1000 NPS 16"- 40"	16	PN 6, 10, 16, Class 150	-20°C to 200°C
EVTLS-i	Lugged Wafe type	DN 40 to DN 1000 NPS 1-1/2"- 40"	16	PN 6, 10, 16, Class 150	-20°C to 200°C
EVFS-i	Double Flanged type	DN 40 to DN 1400 NPS 1-1/2"- 56"	16	PN 6, 10, 16, Class 150	-20°C to 200°C
EVCS-i	Flangeless Wafer – Semi lug type	DN 40 to DN350 NPS 1-1/2"- 14"	16	PN 6, 10, 16, Class 150	-20°C to 200°C
EVCLS-I	Flangeless Wafer – Semi lug type with long neck	DN 40 to DN 300 NPS 1-1/2"- 12"	16	PN 6, 10, 16, Class 150	-20°C to 200°C

* : EPDM : -20°C/120°C

NBR : 0°C/90°C

FPM : 0°C/160°C

Silicone : 0°C/200°C

The maximum service pressure and temperature are not to exceed those specified by the manufacturer.

1.2 Material specification

Part	Material
Body	Alu-Bronze: CC333G EN1982, C95800 ASTM B148 / C95500 ASTM B148 Stainless Steel: 1.4408 EN 10213, ASTM A351 CF8M Ductile Iron: 5.3106 EN 1563 (JS1030), ASTM A395 60.40.18, ASTM A536 60.40.18 Ductile Iron (low temp.): 5.3103 EN 1563 (JS1049) Carbon Steel: 1.0619 EN 10213, ASTM A216 - WCB Bronze: 2.1096.01 DIN 1705 (CC491K, EN 1982), ASTM B584 C83600 Bronze: 2.1086.01 DIN 1705 (CC482K, EN 1982), ASTM B584 C90500 Bronze: CC493K EN 1982, ASTM B584 C93200
Shaft	Duplex SS: 1.4462 EN 10088, ASTM A182 Grade F51 Super Duplex SS: 1.4501 EN 10272 Martensitic SS: 1.4057 EN 10088 ASTM A276 Grade 431 Aluminium Bronze: CuAl10Ni5Fe4 EN 12163, ASTM B150 C63000 Monel K500®: NA 18 BS 3076 Hastelloy-C®: ASTM B547 N10276
Disc	Austenitic SS: 1.4408 EN 10213, ASTM A351 CF8M Duplex SS: 1.4517 EN 10213, ASTM A351 CD-4MCu Duplex SS: 1.4470 EN 10213, ASTM A351 Grade 4A Super Duplex SS: 1.4469 EN 10213, ASTM A995 Grade 5A/6A Ductile Iron / Rilsan coated: 5.3106 EN 1563 (JS1030), ASTM A395 60-40-18 Aluminium Bronze: CC333G EN 1982, ASTM B148 C95800 Hastelloy-C®: ASTM A494 CW-12MW CuNi: 2.0835 DIN 17658 Bronze: 2.1096.01 DIN 1705 (CC491K, EN 1982), ASTM B584 C83600 Bronze: 2.1086.01 DIN 1705 (CC482K, EN 1982), ASTM B584, C90500
Sealing	EPDM, NBR, FPM, Silicone

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

2. DOCUMENTS AND DRAWINGS

- Drawing N° DTAF006-C for EVS-i DN400-1000" Rev.C dated 15/05/2023
- Drawing N° DTAF007-C for EVTLS-i DN400-1000" Rev.C dated 15/05/2023
- Drawing N° DTAF018-B for EVTLS-i DN40-350" Rev.B dated 15/05/2023
- Drawing N° DTAF008-C for EVFS-i DN400-1000" Rev.C dated 15/05/2023
- Drawing N° DTAF019-B for EVFS-i DN40-350" Rev.B dated 15/05/2023
- Drawing N° DTAF025-A for EVFS-i DN1200-1400" Rev.A dated 16/01/2023
- Drawing N° DTAF020-B for EVCS-i DN40-350" Rev.B dated 15/05/2023
- Drawing N° DTAF021-B for EVCLS-i DN40-300" Rev.B dated 15/05/2023
- Production drawing N°FBA1601 A "Body Casted EVS-i DN400 PN16" dated 19/07/2018
- Production drawing N°FBA1800 B "Body Casted EVS DN450 PN16" dated 23/03/2018
- Production drawing N°FBA2000 B "Body Casted EVS DN500 PN16" dated 23/03/2018
- Production drawing N°FBA2400 A "Body Casted EVS-i DN600 PN16" dated 23/03/2018
- Production drawing N°FBC1600 A "Body Casted EVFS-i DN400 PN16" dated 23/03/2018
- Production drawing N°FBC1800 A "Body Casted EVFS-i DN450 PN16" dated 23/03/2018
- Production drawing N°FBC2000 B "Body Casted EVFS-i DN500 PN16" dated 23/03/2018
- Production drawing N°FBC2400 A "Body Casted EVFS-i DN600 PN16" dated 23/03/2018
- Production drawing N°FCA1601 B "Body Machined EVS-i DN400 PN16" dated 12/09/2018
- Production drawing N°FCA1800 B "Body Machined EVS-i DN450 PN16" dated 26/03/2018
- Production drawing N°FCA2000 B "Body Machined EVS-i DN500 PN16" dated 27/03/2018
- Production drawing N°FCA2400 B "Body Machined EVS-i DN600 PN16" dated 27/03/2018
- Production drawing N°FCC1600 B "Body Machined EVFS-i DN400 PN16" dated 29/03/2018
- Production drawing N°FCC1800 B "Body Machined EVFS-i DN450 PN16" dated 26/03/2018
- Production drawing N°FCC2000 C "Body Machined EVFS-i DN500 PN16" dated 27/03/2018
- Production drawing N°FCC2401 B "Body Machined EVFS-i DN600 PN16" dated 11/09/2018
- Product Data Sheet N° PDS 01.61.001 "EVS-i" dated 22/05/2023
- Product Data Sheet N° PDS 01.62.001 "EVFS-i" dated 22/05/2023
- Product Data Sheet N° PDS 01.63.001 "EVTLS-i" dated 22/05/2023
- Product Data Sheet N° PDS 01.64.001 "EVCS-i" dated 22/05/2023
- Product Data Sheet N° PDS 01.65.001 "EVCLS-i" dated 22/05/2023
- Material data sheet N°M16 Rev.G dated 28/06/2023 for EPDM
- Material data sheet N°M113 Rev.C dated 28/06/2023 for FPM
- Material data sheet N°M141 Rev.C dated 28/06/2023 for Silicon
- Material data sheet N°M200 Rev.B dated 28/06/2023 for NBR

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 Design calculations:

- N° TB - FBC1600 "Body EV-i -Series Double Flange - Size 400"dated 28/01/2020
- N° TB - FBC1800 "Body EV-i -Series Double Flange - Size 450"dated 28/01/2020
- N° TB - FBC2000 "Body EV-i -Series Double Flange - Size 500"dated 28/01/2020
- N° TB - FBC2401 "Body EV-i -Series Double Flange - Size 600"dated 28/01/2020
- N° TB - FCA1601 "Body EV-i -Series Wafer - Size 400"dated 28/01/2020
- N° TB - FCA1800 "Body EV-i -Series Wafer - Size 450"dated 28/01/2020
- N° TB - FCA2000 "Body EV-i -Series Wafer - Size 500"dated 28/01/2020
- N° TB - FCA2400 "Body EV-i -Series Wafer - Size 600"dated 28/01/2020

3.2 Fire resistance test not performed.

4. APPLICATION / LIMITATION

4.1 May be used for the following services on board:

- Shipside valves - Sea water and fresh water - Bilge and ballast transfer - Compressed air - Cargo oil for tankers - Inert gas systems - Fuel-oil and lubricating oil transfer - Domestic and sanitary systems - washing and fire extinguishing - Hydraulic oil - Deck foam systems - Non-essential systems

4.2 The valves belong to Class I, Class II and Class III according to the relevant requirements stated in Part C, Ch 1, Sec 10. Valves fitted on the ship side and collision bulkhead, and valves fitted on fuel oil and lub oil tanks under static pressure belong to Class II.

4.3 The valve body, disc and seat should be suitable for the intended service. In particular the nature of materials, joints included, is to be selected according to the fluid to be conveyed and the temperature.

4.4 The approval does not include any operating gear for remote control of the valves.

4.5 Bilge valves will be fitted in association with a non-return valve.

4.6 The valves are to be installed according to the manufacturer's instructions and Society's Rule requirements.

4.7 Installation on board ships where a fire safe design is required remains to be approved on a case by case basis.

4.8 The use of stainless steel and grey cast iron is to be restricted as per the BUREAU VERITAS Rules.

4.9 When the butterfly valves are not fitted with flanges their use may be accepted as shipside valves provided that arrangements are made to allow a possible disassembling at sea of the pipes immediately inboard without any risk of flooding.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **Wouter Witzel EuroValve B.V.** in compliance with the type and the requirements described in this certificate.

5.2 This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 BV product certificate is required.

5.4 Bureau Veritas Certificates are required for materials of valve housings of Class I (DN \geq 50) and Class II (DN \geq 100). Materials of valve housings of Class I (DN $<$ 50) and Class II (DN $<$ 100) and for other parts of Class I and Class II are to be with Work's certificates.

5.5 Each valve housing for Class I and Class II is to be hydraulically pressure tested to 1.5 times the design pressure. Valves intended to be fitted on the shipside below the load waterline are to be tested by hydraulic pressure not less than 0,5 MPa.

5.6 For information, **Wouter Witzel EuroValve B.V.** has declared to Bureau Veritas the following production site:

Wouter Witzel EuroValve B.V.
Industrieterrein De Pol 12
7581 CZ LOSSER
NETHERLANDS

6. MARKING OF PRODUCT

The valve shall be permanently marked with at least:

- Manufacturer's name or logo
- Type designation
- Size
- Society's brand as relevant

7. OTHERS

It is **Wouter Witzel EuroValve B.V.**'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.

This certificate supersedes the Type Approval Certificate N° 61010/A0 BV issued by the Society.

*** END OF CERTIFICATE ***