



Marine & Offshore
Division

Certificate number: 14087/C0 BV

File number: ACM 145/2016/02

Product code: 2205I

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

TTV INTERNACIONAL, S.L.

LEGANES (Madrid) - SPAIN

for the type of product

BUTTERFLY VALVES

Series Wafer, Lug and Double Flanged type

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 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: 10 Mar 2020

For BUREAU VERITAS,

At BV MADRID, on 10 Mar 2015,

Montserrat Espin



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. 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 Division 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 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

Series Wafer, Lug and Double Flanged type

1.1 Design Specifications

Wafer and Lug type size range	DN 32 - DN 1000
Flanged type size range	DN 150 - DN 1000
Pressure rating	PN 10, PN 16

Seat lining	Design Temperature related to elastomers (°C)
EPDM	- 5 to + 90
EPDM-H.T	- 10 to + 110
NBR	- 10 to + 80
CSM (Hypalon)	- 10 to + 80
FPM (Viton)	- 5 to + 180
NR (Polysopreno)	- 10 to + 60
MVQ (Silicone)	- 30 to + 150
Silicone-HT	- 50 to + 160

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

1.2 Materials

Body	Cast iron GG25, Nodular cast iron GGG40/GGG50, Stainless steel AISI 304/316, Cast carbon steel, Aluminium, Bronze C-352, Aluminium bronze C-415
Disc	Cast iron GG25, Nodular cast iron GGG40/GGG50, Stainless steel AISI 304/316, Cast carbon steel, Aluminium, Bronze C-352, Aluminium bronze C-415, Hastelloy, Uranus B6, Monel K500, 1.4460
Shaft	Stainless steel AISI 304/316/420, Hastelloy, 1.4462, Monel
Seat	EPDM, EPDM H.T., NBR, CSM (Hypalon), FPM (Viton), NR (Polysopreno), MVQ (Silicone), SILICONE-HT

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

2. DOCUMENTS AND DRAWINGS

- Manufacturer's catalogue and technical specifications Ref.D.L.M.-20831-2004 dated 2004
- Drawings of butterfly valves:
 - N° 4327-5077-010-A3 Rev. 0 Wafer valve DN 32-200 PN 10/16 dated 06/04/04
 - N° 4330-5080-010-A3 Rev. 0 Wafer valve DN 250-400 PN 10/16 dated 07/04/04
 - N° 4331-5081-010-A3 Rev. 0 Wafer valve DN 450-1000 PN 10 dated 07/04/04
 - N° 4341-5091-010-A3 Rev. 0 Wafer valve DN 450-1000 PN 16 dated 07/04/04
 - N° 4342-5092-010-A3 Rev. 0 Flanged valve DN 150-200 PN 10/16 dated 12/04/04
 - N° 4343-5093-010-A3 Rev. 0 Flanged valve DN 250-400 PN 10/16 dated 12/04/04
 - N° 4344-5094-010-A3 Rev. 0 Flanged valve DN 450-1000 PN 10 dated 12/04/04
 - N° 4345-5095-010-A3 Rev. 0 Flanged valve DN 450-1000 PN16 dated 12/04/04
 - N° 4347-5097-010-A3 Rev. 0 Lug valve DN 32-200 PN 10 dated 13/04/04
 - N° 4353-5103-010-A3 Rev. 0 Lug valve DN 250-400 PN 10/16 dated 15/04/04
 - N° 4354-5104-010-A3 Rev. 0 Lug valve DN 450-1000 PN 10 dated 15/04/04
 - N° 4355-5105-010-A3 Rev. 0 Lug valve DN 450-1000 PN 16 dated 15/04/04
- Installation instructions dated 01/01/1999

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

BUREAU VERITAS certificates of inspection N° 0047/MDD/03 dated 22/04/2003, N° 0098/MDD/03 dated 25/06/2003 and N° 0124/MDD/03 dated 04/08/2003:

- Shell strength test (maxi. working pressure x 1,5)
- Seat tightness test (maxi. working pressure x 1,1)
- Checked material certificates
- Visual inspection

4. APPLICATION / LIMITATION

4.1 May be used for the following services on board:

- Shipside valves, fuel oil and lubricating oil, ballast and bilge, washing and fire extinguishing, sea water and fresh water, cargo systems for tankers, domestic and sanitary systems, inert gas and non essential systems.

4.2 The butterfly valves belong to Class II and Class III according to the relevant requirements stated in:

- Part C, Chapter 1, Sec 10 of BUREAU VERITAS Rules for the Classification of Steel Ships.
- Part C, Chapter 1, Sec 7 of BUREAU VERITAS Rules for the Classification of Offshore Units.

Valves under static pressure on oil fuel tanks or lubricating oil tanks and valves fitted on the ship side and collision bulkhead belong to Class II.

4.3 Use of grey cast iron is restricted according to Pt C, Ch 1, Sec 10 Table 5 of the BUREAU VERITAS Rules, can be used for class III and class II system (only when the design pressure does not exceed 1,3 MPa). The use of stainless steel and aluminium is restricted as per BUREAU VERITAS rules.

4.4 The butterfly valve body, disc and sealing shall 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.

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

4.6 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.

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

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

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **TTV INTERNACIONAL, S.L.** in compliance with the type and the requirements described in this certificate. This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.

5.2 Bureau Veritas Certificates are required for materials of valve housings of Class II (DN ≥ 100). Materials of valve housings of Class II (DN < 100) and for other parts of Class II are to be with Work's certificates.

5.3 Each valve housing for Class II is to be hydraulically pressure tested to 1.5 times the design pressure.

Place of production:

TTV INTERNACIONAL, S.L.

Pol. Ind. Ntra. Sra. de Butarque

C/ Severo Ochoa, 11

28914 LEGANES (Madrid)

SPAIN

6. MARKING OF PRODUCT

The product shall be marked with at least:

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

7. OTHERS

This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the products and of the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 14087/B0 BV issued on 19/02/2010 by the Society.

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