

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Butterfly Valves**

with type designation(s)

XUROX: Wafer, lug and flanged

Issued to

COMPLEMENTOS Y VÁLVULAS DE MARIPOSA, S.L. COVALMA
Valdemoro MADRID, Spain

is found to comply with

DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems****DNV GL class programme DNVGL-CP-0186 – Type approval – Valves****Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.****Temperature range:** Depending on the gasket materials, see page 2
Max. working press.: Class 150, PN10, PN16 (see page 2)
Sizes: See page 2Issued at **Høvik** on **2018-02-28**for **DNV GL**This Certificate is valid until **2023-02-27**.DNV GL local station: **Madrid**Approval Engineer: **Maheshraja Venkatesan****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.



Product description

Butterfly valves - Elastomer lined with wafer/ lugged/ flanged ends. Designed according to API 609 and face to face dimension is according to ISO 5752.

Sizes:

Wafer type: DN 32,40,50,65,80,100,125,150,200,250,300,350,400,450,500,600,700,800, 900, 1000 & 1200
Lug type: DN 32,40,50,65,80,100,125,150,200,250,300,350,400
Flanged type: DN 150,200,250,300,350,400,450,500,600,700, 800, 900, 1000 & 1200

Material:

Body:

ASTM B564 Gr.N06625	ASTM B62 C83600	ASTM A395 grade 60-40-18
ASTM A182 F51	ASTM B148 Gr.9D C95500	ASTM A395 grade 65-45-15
ASTM A182 F53		EN 1563 EN-GJS-400-15
ASTM A216 Gr.WCB		EN 1563 EN-GJS-400-18
ASTM A351 Gr.CF8M		
ASTM A494 CW-12MW		
ASTM B625 N08904		
ASTM B625 N08031		

Shaft: A276-420 or A276-316 or A276-304 (Stainless steel)
Disc: Ferrite/Pearlite Nodular cast iron – ASTM A395, GJS500-7
Carbon steel – ASTM A216 WCB
Stainless steel – ASTM A351-CF8M
Aluminium Bronze – ASTM B148/C95500
Hastelloy C276 – ASTM A494 CW-12MW
Duplex – ASTM A890 Gr.4A
Super Duplex – ASTM A890 Gr.5A
Inconel 625 – ASTM A494 CW6MC
Uranus B6 – ASTM B625 Gr.N08904
Alloy 31 – ASTM B625 Gr.N08031

Application/Limitation

Valves covered by this certificate are approved to be use in ship piping, machinery piping and cargo piping systems.

Pressure Temperature ratings (depending on the material of construction):

- class 150: ASME B16.34/B16.42/B16.24
- PN10 & PN 16: relevant parts of EN 1092

Design temperatures related to elastomers:

EPDM : -20 to +95°C
EDPM HT : -20 to +120°C
BUNA-N : -10 to +100°C
VITON : -15 to +180°C (For seawater, maximum design temeprature is 150°C)
SILICONE : -60 to +160°C (For seawater, maximum design temeprature is 100°C)
HYPALON : -20 to +125°C (For seawater, maximum design temeprature is 90°C)
EPICCORIDRIN : -40°C to +90°C
FLUCAST : -10°C to +130°C
PFTE : -20°C to +250°C

(*) EPDM and HYPALON shall not be used for hydrocarbon services.

When used as shiplside valves the disc must not extend outside the hull plating in open position.

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

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Materials chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Austenitic stainless steels (e.g. CF8M, 316) covered by this certificate are not seawater resistant and shall not be used in direct contact with seawater.

Valves covered by this certificate are not fire safe and shall not be installed in systems where fire safe application is required.

This certificate does not cover valves to be installed in LNG/LPG applications.

Nodular cast iron of the ferritic type, with specified minimum elongation of 12%, may be used in class II and III piping (when the minimum design temperature is not less than 0°C and in valves located on the ship's side and bottom and valves on the collisionbulkhead).

Production Tests

All valve bodies shall be subjected by the manufacturer to a hydrostatic test at a pressure equal to 1.5 times the nominal pressure (The nominal pressure is the maximum allowable working pressure at room temperature). The test pressure need not be more than 70 bar in excess of the nominal pressure.

All valves assembly shall be subjected to seat leakage test at 1.1 times maximum working pressure at closed position.

Production Testing and acceptance criteria shall be in accordance with API 598

Valves fitted on ship's side and bottom are also to be hydrostatically tested at a pressure equal to 5 bar applied independently on each side of the closed disc.

Certification

Valve bodies shall be delivered with material certificates in accordance with DNV GL Ship Pt.4 Ch.6 Sec.2 Table 3. Materials with VL and W certificates shall be manufactured in a foundry approved by the society.

DNV GL product certificates are required for valves with DN > 100 mm and design pressure > 16 bar, and for ship side valves where DN > 100 mm regardless of pressure rating. For other valves a manufacturer's product certificate may be accepted.

Type Approval documentation

Drawing number	Title	Date	Rev.
Wafer Type			
Plano TIPO DN32-200	WAFER VALVE DN 32-200 (11/4" - 8")	02/07/2014	0
Plano TIPO DN 250-400	WAFER VALVE DN 250-400 (10"-16")	12/09/2014	0
Plano TIPO DN 450-1000	WAFER VALVE DN 450-1000 (18"-40")	11/05/2016	0
Plano TIPO DN 1200	WAFER VALVE DN 1200 (48")	11/05/2016	0
Lug Type			
Plano TIPO DN 32-200	LUG VALVE DN 32-200 (11/4" - 8")	12/09/2014	0
Plano TIPO DN 250-400	LUG VALVE DN 250-400 (10"-16")	12/09/2014	0
Flange Type			
Plano TIPO DN 150-200	Flange Valve DN 150-200 (6"-8")	12/09/2014	0
Plano TIPO DN 250-400	Flange Valve DN 250-400 (10"-16")	12/09/2014	0
Plano TIPO DN 450-1000	Flange Valve DN 450-1000 (18"-40")	11/05/2016	0
Plano TIPO DN 1200	Flange Valve DN 1200 (48")	11/05/2016	0

For information only: DNV Type Approval, Rev 3, dated: 09/05/2017



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Marking of product

For traceability to this type approval, the final products are to be marked with:

- manufacturer's name or trade mark
- valve type designation
- size
- maximum design pressure and temperature
- arrow to indicate direction of flow on one way flow valves.

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.