

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diaphragm Valve

with type designation(s)
811 Threaded, 833 Flanged

Issued to

Mil Inbal Valves Ltd.
Rishon Lezion, Israel

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition July 2015
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
811 Threaded	Dependent on the sealing material see certificate	21 bar	DN 1½" to 2"
833 Flanged	Dependent on the sealing material see certificate	21 bar	DN 1½" to 4"

This Certificate is valid until **2020-06-30**.

Issued at **Høvik** on **2016-05-23**

for **DNV GL**

DNV GL local station: **Haifa**

Approval Engineer: **Adel Samiei**

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

The diaphragm is the only moving part and forms a sealed chamber in the internal portion of the valve, separating operating pressure from line pressure, and forms a drop tight seal with the seating surface of the body, when pressure is applied to the control space. Threaded (valve 811) and flanged (valve 833) end connection.

Materials:

Body	Sleeve
Nodular cast iron of the ferrittic type: EN-GJS-400-15 according to EN1563 ASTM A536 grade 65-45-12	Rubber B4 EPDM BUNA-N
Cast Steel ASTM A216 gr. WCB/WCC/LCB/LCC	
Stainless Steel ASTM A351 / A744 gr. CF8M	
Stainless Steel 6Mo UNS S31254	
Stainless Steel Duplex UNS S31803	
Stainless Steel Super Duplex UNS S31803 ASTM A995 Gr5A/6A	
BS EN1982 CC491K / CC492K (BS1400 grade LG2/LG4)	
BS EN1982 (19999) CC333G (AB2) / UNS C95800	
Titanium ASTM B367 grade GR-C2	

Limitations

The valves are approved for ship piping systems, machinery piping systems and cargo piping systems on-board ships and mobile offshore units taking into account the below limitations.

The valves are to be covered with two layers fire insulation 25mm 128kg/m³ ceramic fibres.

Nodular cast iron of the ferrittic type (with specified minimum elongation of 12%), may be used in class II and III piping and in valves located on the ship's side and bottom and valves on the collision bulkhead.

Nodular cast iron of the ferrittic type shall not be used for media having a temperature exceeding 350°C or below 0°C.

The range of fluid working temperature is depending upon the sealing / sleeve material:

- EPDM 0°C to +130°C
- Buna-N 0°C to +100°C
- Rubber B4 0°C to +65°C

Valves with threaded connection shall not be used in piping systems conveying toxic or flammable media or service where fatigue, severe erosion or crevice corrosion is expected to occur.

Valves with tapered thread are only approved for:

- Class I piping systems up to (and including) DN25
- Class II and III piping systems up to (and including) DN50

Valves with parallel thread are only approved for Class III piping systems up to (and including) DN50.

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).

Job Id: **262.1-004626-3**
Certificate No: **TAP000005W**

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 EN12266-1

Certification

DNV GL product certificate is required for valves with DN>100 mm (4") and PN>16 bar. For other valves manufacturer's certificate is accepted.

Each product/delivery is to be accompanied by the following documents:

- Material Certificate for valve body in accordance with DNV GL ship rules pt.4 Ch.6 Sec.2 Table3.
- Instruction manual/specification sheet.

Type Approval documentation

Tests carried out

Burst – fire tests

Marking of product

For traceability to this type approval each product is at least to be marked with:

- Manufacturer's name
- Type designation

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey – every second year before the expiry date of this certificate - to verify that the conditions for the type approval are complied with.