

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Butterfly Valves**

with type designation(s)
Wafer type, Lug Type

Issued to

Dikkan Gemi ve Endustriyel Vana Sanayi Ticaret Anonim Sirketi
Izmir, Turkey

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0186 – Type approval – Valves

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
Wafer type	0°C to +180°C	up to 16 bar (see page 2)	DN50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700
Lug Type	0°C to +180°C	up to 16 bar (see page 2)	DN50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700

Issued at **Høvik** on **2022-10-03**

This Certificate is valid until **2027-10-02**.

for **DNV**

DNV local station: **Istanbul**

Approval Engineer: **Maheshraja Venkatesan**

.....
Sinisa Sedlan
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Ductile iron butterfly valves with centric disc and one-piece shaft comprising of wafer and lug types with following material of construction:

Part	Wafer Type		Lug Type	
	DIKKAN Figure 282B.K67	DIKKAN Figure 282B.KA7	DIKKAN Figure 283B.K67	DIKKAN Figure 283B.KA7
Body	EN-GJS400-15 EN 1563			
Disc	AISI 316	CC333G EN 1982	AISI 316	CC333G EN 1982
Stem	1.4021 EN 10088-3 (or AISI 420)			
Seat	NBR/ EPDM/ VITON			

Application/Limitation

Valves covered by this certificate are approved to be used in ship and machinery piping systems (class II & III) with below maximum working pressure ranges:

Series	Sizes	Maximum allowable Pressure, bar(g)
Wafer/ Lug type	DN50(2") – DN150(6")	16
	DN200(8") – DN700(28")	10

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic stainless steel shall not be used in direct contact with seawater.

The valves covered by this certificate are to be considered fire safe and therefore can be installed wherever fire safe application is required.

Valves with EPDM seats shall not be used for hydrocarbon services.

Butterfly valves are not to be used as quick closing valves on fuel oil tanks or ship's side and bottom or as stop valves on fuel oil tanks.

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

Type Approval documentation

Tests carried out

Burst testing as per EN 12516-3



Job Id: **262.1-036326-1**
Certificate No: **TAP00002HY**

Production testing and Certification

Production Testing and Certification for the actual intended application shall follow EN 12266 (leakage rate A) and the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Marking of product

Minimum marking requirements shall be as outlined in the standard EN 19.

Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338.