



Certificate No:
TAP00002KH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Ball Valve**

with type designation(s)
Q47F/E, Q41F/E

Issued to

Zhejiang Boteli Technology Co.,Ltd.
Wenzhou, China

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:
Q47F/E	-29°C to 200°C	Class 150/ 300 according to ASME B16.34	2" to 24" (see page 2)
Q41F/E	-29°C to 150°C	Class 150/ 300 according to ASME B16.34	1/2" to 8" (see page 2)

Issued at **Høvik** on **2022-11-04**

This Certificate is valid until **2027-11-03**.

for **DNV**

DNV local station: **Ningbo FIS**

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.



Form code: TA 251

Revision: 2021-03

www.dnv.com

Page 1 of 2

Product description

Ball valves with two type designations designed according to API 6D or ISO 17292:

Type designation	Pressure rating	Sizes covered
Q41F/E (Floating ball)	Class 150/ Class 300	½", ¾", 1", 1¼", 1½", 2", 2½", 3", 4", 6" and 8"
Q47F/E (Trunnion mounted)	Class 150/ Class 300 (cast steel)	6", 8", 10", 12", 14", 16", 18" and 20"
	Class 150/ Class 300 (forged steel)	2", 3", 4", 5", 6", 8", 10", 12", 14", 16", 18", 20" and 24"

Material of construction:

Part	For both types Q47F/E and Q41F/E
Body and connector	ASTM A216 WCB, ASTM A351 CF8M, ASTM A995 4A, ASTM B148 C95800 ASTM A105 ASTM A182 F51, ASTM A182 F316
Stem	ASTM A182 F51, ASTM A182 F316, ASTM B150 C63200
Ball and seat ring	ASTM A182 F51, ASTM A182 F316, ASTM B148 C95800
Gasket	SS316 +F.G., UNS S31803+F.G., UNS S32750+PTFE, UNS S32750+ F.G.
Bolting	ASTM A193 B7, ASTM A193 B8M

Application/Limitation

The approval is valid for ship piping systems, machinery piping systems and cargo piping systems onboard ships and offshore mobile units.

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

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

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

Type Approval documentation

Production testing and certification

Production testing and certification for the actual intended application shall follow standard API 6D 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 valve design standard.

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.