Certificate no.:
TAP00002ZJ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Ball Valve

with type designation(s)
Series C31, Series C32

issued to
Habonim Industrial Valves and Actuators Ltd.
Kfar ha-Nasi, **Israel**

is found to comply with
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers
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:
Series C31	-196°C to +230°C	Class 150	DN15, DN50, DN100, DN150, DN200
Series C32	-196°C to +230°C	Class 300	DN80

Issued at **Høvik** on **2025-03-17**
This Certificate is valid until **2030-03-16**.
DNV local unit: **Haifa**

for **DNV**

Approval Engineer: **Maheshraja Venkatesan**

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 USD 300 000.

Product description

Cryogenic flanged floating ball valves type 31 and 32 series, constructed according to ASME B16.34 with flange connections according to ASME B16.5.

Sizes covered:

- Series C31, class 150: DN15 (½"), DN50 (2"), DN100 (4"), DN150 (6"), DN200 (8")
- Series C32, class 300: DN80 (3")

Materials:

Body:	A351 CF8M
Ends:	A351 CF8M
Ball:	A351 CF8M
Bonnet:	A351 CF8M
Stem:	AM-19
Bolting:	ASTM A193 B8M CL.2
Body gasket:	Graphite, TFM
Ball Seat:	TFM, PCTFE, CF PCTFE

End connections:

Flanges Type RF Class 150 and 300 acc. to ASME B16.5

Manufacturing location:

Habonim Industrial Valves and Actuators Ltd.,
Kfar ha-Nasi, Israel

Application/Limitation

Valves covered by this certificate may be used in under the following design conditions:

Service:	General machinery service or LNG/LPG applications – Cryogenic Service
Temperature range:	-196°C to 230°C
Pressure rating:	C31 Series: According to Class 150 in ASME B16.34. C32 Series: According to Class 300 in ASME B16.34.

The approval does not include actuator and/or other equipment for remote control of the valves.

The valves covered by this certificate are not fire tested and therefore shall not be installed wherever fire safe application is required.

Evaluation of flow or capacity are not covered under the scope of approval. The manufacturer shall certify the flow properties according to a recognized standard for each size and type of valve.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. The use of austenitic stainless steel with seawater shall be according to DNV Rules for Ships Pt.4 Ch.6 Sec.2 [1.1].

Type Approval documentation

Tests carried out

Cryogenic valves test/shell test/seat test for C31 (size ½", 2", 4", 6" and 8") and C32 (size 3").

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow 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 in addition to minimum design temperature towards cryogenic applications.

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com.