Certificate no.:
TAS00004C4

TYPE APPROVAL CERTIFICATE

This is to certify:

that the LTM End Joining Shackle

with type designation(s)
QAC240527LTMEJS

issued to
Qingdao Anchor Chain Co., Ltd.
Qingdao, Shandong, China

is found to comply with
DNV-OS-E302 – Offshore mooring chain, Edition July 2022

Application:

to be used for Temporary, Mobile and Long Term Mooring as defined in DNV-OS-E301, Position Mooring, July 2021

Issued at **Høvik** on **2024-06-19**
This Certificate is valid until **2029-06-18**.
DNV local unit: **Qingdao**

for **DNV**

Approval Engineer: **Pierre-Eric Moulia**

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

LTM End Joining Shackle for mooring chains with sizes from Ø40 mm up to 162 mm, in R3, R3S, R4 and R4S grades. The shackles are according to ISO 20438 except for the total length dimension (L).

Application/Limitation

The Shackle is to be used in Temporary, Mobile and Long-Term Mooring lines as defined in Offshore Standard DNV-OS-E301 Position Mooring July 2021.
The Shackle shall be manufactured and tested in accordance with Offshore Standard DNV-OS-E302 Offshore Mooring Chain July 2022.
The approval is conditional that manufacturer is holding an Approval of Manufacturer DNV Certificate.
Individual Product Certificate is to be issued for each delivery.

Type Approval documentation

Tests carried out

For every order, testing shall be carried out according to DNV-OS-E302 July 2022.

Marking of product

Each shackle shall be marked according to Offshore Standard DNV-OS-E302 July 2022 Ch2 Sec2 §1.4 & §3.9.

Periodical assessment

For retention of this Type Approval, a DNV surveyor shall perform a periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days). The objective of the periodical assessment is to verify that the conditions for the Type Approval have not been altered. (Ref DNV-CP-0338 Type approval scheme).
Validity of this certificate can be checked at https://approvalfinder.dnv.com