Certificate No:
TAS00003S2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Special Thimble Shackle 710 t

with type designation(s)
ASDO-111897

Issued to
Anker Schroeder ASDO GmbH
Dortmund, Nordrhein-Westfalen, Germany

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 **2023-01-18**
This Certificate is valid until **2028-01-17**.
DNV local unit: **Essen**

Approval Engineer: **Pierre-Eric Moulia**

for **DNV**

Inger-Helene Hals
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

Special Shackles to connect mooring lines with mooring chain up to 82.5 mm R4 and rope with breaking strength up to 710 ton.

This approval covers 2 shackles, one with a Ø102mm body and the other with a Ø108mm body.

Application/Limitation

The approval is conditional that the manufacturer is approved by DNV to make R4 grade material of designations given in the type approval drawings.

The shackles with the Ø108 mm body are to be used in connection with mooring lines for Temporary, Mobile and Long Term Mooring as defined in Offshore Standard DNV-OS-E301 “Position Mooring” July 2021.

The shackles with the Ø102 mm body can only be used for long term mooring as they are proof load tested at 4888 kN instead of 5499 kN.

The shackles shall be manufactured and tested in accordance with Offshore Standard DNV-OS-E302 “Offshore Mooring Chain” July 2022.

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 “Mooring Chain” 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/