Certificate No:
**TAS00003A5**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the BRUCE ANCHOR RAZOR - Sizes 10750 KG & 18000 KG**

with type designation(s)
**BA202000008 & BA202100038**

Issued to
**Bruce Anchor Ltd**
**Aberdeen**, **United Kingdom**

is found to comply with
**DNV-OS-E301 – Position mooring, Edition July 2021**

## Application :

**To be used for mobile mooring as defined in DNV-OS-E301 July 2021 "Position Mooring"**

Issued at **Høvik** on **2021-12-14**
This Certificate is valid until **2026-12-13**.
DNV local station: **Manchester**

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

Drag Embedment Type Anchor.

Sizes 10750 Kg and 18000 Kg are included for the moment in this type approval.

The anchor shackles are covered by their own and separate type approval certificate.

## Application/Limitation

Each delivered anchor shall be proof load tested at 50% of the minimum breaking strength of the anchor line.

This certificate does not include any geotechnical design review to establish the maximum anchor soil resistance which is site specific.

The anchors are to be used for Mobile Mooring, as defined in DNV-OS-E301 Position Mooring July 2021.

The materials shall be manufactured and tested according to applicable parts of DNV-OS-B101, at works which have been approved by DNVGL, and delivered with EN 10.204 3.2 type material certificates.

The anchor line MBL for a given anchor size shall not be greater than twice the anchor proof load test value.

## Type Approval documentation

## Tests carried out

Anchor shackles are tested separately (by shackle manufacturer) according to DNV-OS-E302.

Fabrication of anchors shall be in accordance with DNV-OS-C401.

## Marking of product

The anchors shall be marked according to DNV-OS-E301 July 2021, Ch3 Sec 2 §3.3.1

## 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/