DNV·GL

Certificate No:
TAS0000091

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fluke Anchor

with type designation(s)
Stevpris® Mk6

Issued to
Vryhof Anchors B.V.
Capelle a/d IJssel, Netherlands

is found to comply with
DNVGL-OS-E301 – Position mooring, Edition July 2015

Application :

to be used for Temporary and Mobile Mooring as defined in DNVGL-OS-E301, Position Mooring, July 2015, for weights ranging from 500 kg to 25,000 kg

This Certificate is valid until **2021-01-31**.

Issued at **Høvik** on **2016-01-29**

for **DNV GL**

DNV GL local station: **Rotterdam**

Approval Engineer: **Pierre-Eric Moulia**

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.

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Job Id: **262.1-012743-1**
Certificate No: **TAS0000091**

This certificate TAS0000091 replaces S-6866 that expires on 2015-01-31.

This certificate does not include any Geotechnical design review. To satisfy DNVGL-OS-E301, the anchor resistance has to be calculated according to DNV-RP-E301 "Design and Installation of Fluke Anchors".

Product description

Drag Embedment Type Anchor.

The sizes covered by this type approval are from 500 Kg to 25000 Kg because they can be proof load tested with current available test rig.

For anchors sizes above 25mT that cannot be proof load tested due to practical reason: Drawings (or dimensions list) and design calculations shall be submitted for test waiver approval.

The anchors are to be used for Temporary or Mobile Mooring as defined in Offshore Standard DNVGL-OS-E301 `Position Mooring' July 2015.

For anchors to be used for long term mooring (>5 yrs), static and fatigue calculations (anchor + shackle) shall be submitted and reviewed by DNVGL.

Application/Limitation

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

The chain size/grade of the anchor line shall not been greater than the one listed in below table:

anchor size [kg]	proof load [kN]	R4 chain size [mm]
500	161	16.6
1000	305	23.0
1500	443	27.8
2000	577	31.9
2500	709	35.5
3000	838	38.7
3500	966	41.6
4000	1092	44.4
4500	1217	47.0
5000	1341	49.4
5500	1464	51.8
6000	1586	54.0
6500	1707	56.2
7000	1828	58.2
7500	1947	60.2
8000	2066	62.2
8500	2185	64.0
9000	2303	65.9

anchor size [kg]	proof load [kN]	R4 chain size [mm]
9500	2420	67.7
10000	2537	69.4
11000	2770	72.8
12000	3001	76.0
13000	3206	78.8
14000	3420	81.6
15000	3604	84.0
16000	3824	86.8
17000	4044	89.5
18000	4262	92.2
19000	4479	94.7
20000	4696	97.3
21000	4911	99.8
22000	5126	102.2
23000	5340	104.6
24000	5553	106.9
25000	5766	109.3

Individual Product Certificate is to be issued for each size/delivery.

Type Approval documentation

Tests carried out

Each delivered anchor shall be proof load tested. Ref DNVGL-OS-E301 Ch.3 Sec.2 § 3.4.3

For anchors between 500 Kg and 25 mT sizes, that are not proof load tested: This type approval certificate cannot be used, case-by-case approval shall be conducted; Drawings (or dimensions list) and design calculations shall be submitted for test waiver approval.

Anchor shackles which are not according to DNVGL-OS-E302 shall be proof load tested with the anchor and shall be included in the anchor certificate.

If anchor shackles are tested separately (by shackle manufacturer) and in a non-representative way, then anchor shackle calculation shall be submitted.

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

Marking of product

The anchors shall be marked according to DNVGL-OS-E301 July 2015, Ch3 Sec 2 §3.3.1
- Mass of anchor
- Certificate no.
- Date of proof load test
- DNVGLs stamp

Periodical assessment

For retention of the Type Approval, DNVGL surveyor shall perform a survey every 2 ½ year and before the expiry date of this Certificate to verify that the conditions of the type approval are complied with.