DNV·GL

Certificate No:
TAK00001RV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)
Euroflex Tail

Issued to
Lankhorst Euronete Portugal S.A.
Maia, Portugal

is found to comply with
DNV GL class programme DNVGL-CP-0100 – Type approval – Synthetic fibre ropes for towing, mooring and anchoring
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft
OCIMF Mooring Equipment Guidelines (MEG4), Fourth Edition 2018 [test requirements]

Application :

Mooring of Ships and HSLCs.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-07-09**
This Certificate is valid until **2024-07-08**.
DNV GL local station: **Lisbon**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

Rikard Törnqvist
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: **262.1-031867-1**
Certificate No: **TAK00001RV**

Product description

Euroflex Tail
8-strand plaited synthetic fibre tails (Ref. Product Data Sheet No. PDSET-0):
- *Fibre material: Polyester/Polyolefin dual fibres*
- Specific gravity: 1,14 (sinks in seawater)
- Elongation at break: 12,5 %

Compliance with OCIMF Mooring Equipment Guidelines (MEG4)
Mooring Tail Base Design Certificate, Euroflex Tail – 56 mm to 88 mm. Certificate reference: MTBDCET. Mooring Tail Certificates will be issued with basis in form IMP339/17 (Mooring Tail Certificate).

Lankhorst has performed the full test scenario as per OCIMF MEG4.

Rope Characteristics
The Rope Characteristics are tabulated on the next pages observing the following:

Fibre ropes are to be delivered with a linear mass within ±5 % of the nominal linear mass given in the tables.

The *reference number* corresponds to the approximate diameter, in millimetres.

The *linear density*, in kilotex, corresponds to the net mass per length of rope, expressed in grams per metre or in kilograms per thousand metres.

The *breaking forces* quoted in the below table relate to unspliced ropes/tails, and are as provided in the Product Data Sheet No. PDSET-0 (Euroflex Tail 8 strand).

ROPE CHARACTERISTICS EUROFLEX TAIL				
Reference number	**Nominal linear density [Ktex]**	**Nominal linear mass, [kg/m]**	**Minimum Breaking Force (MBF), [kN]**	**Line Design Break Force (LDBF), [kN]**
56	2 010	2,010	823	741
60	2 310	2,310	941	847
62	2 470	2,470	1 000	900
64	2 630	2,630	1 061	954
68	2 960	2,960	1 197	1 077
72	3 320	3,320	1 334	1 200
76	3 700	3,700	1 481	1 332
80	4 110	4,110	1 628	1 465
84	4 520	4,520	1 785	1 607
88	4 970	4,970	1 964	1 767

Manufactured by

Lankhorst Euronete Portugal S.A., Rua da Cerfil, 4471-909 Maia – Portugal
Lankhorst Euronete Portugal S.A., Av do Cabedelo, Darque, 4935-160 Viana do Castelo – Portugal
Lankhorst Euronete Portugal S.A., Av Padre Américo 434, 4580-147 Beire-Paredes - Portugal

DNV GL local station: Lisbon

Responsibilities

The Company (stated on the front page of this Certificate) takes the responsibility that both design and manufacture are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

The Type Approval covers tails with diameter from 56 mm to and including 88 mm.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, and according to:

- OCIMF's Mooring Equipment Guidelines (MEG4) [requirements to testing].

Marking of product

Product shall be marked with *manufacturer's name*; **Lankhorst Euronete Portugal S.A.**, *place of production, type designation* and *dimensions*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.

END OF CERTIFICATE