DNV·GL

Certificate No:
TAK00001DY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)
EUROFLEX,
EUROFLOAT PREMIUM

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

Application :

Mooring and Towing 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 **2018-12-04**
This Certificate is valid until **2023-12-03**.
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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Product description

EUROFLEX and EUROFLOAT PREMIUM
Fibre material: Polyester (PES)/Polyolefin dual fibres

EUROFLEX
8-strand braided synthetic fibre ropes (4x2) (Ref. LEP Rope Supply Specification No. 282018R3):
- Specific gravity: 1,14 (sinks in seawater)
- Elongation at break: 12,5 %

ROPE CHARACTERISTICS EUROFLEX			
Diameter, mm	**Nominal linear density Ktex**	**Nominal linear mass, kg/m**	**Minimum Breaking Strength (MBS), kN**
24	367	0,367	146
28	502	0,502	207
32	656	0,656	269
36	830	0,830	336
40	1020	1,020	411
44	1240	1,240	493
48	1480	1,480	583
52	1730	1,730	680
56	2010	2,010	784
60	2310	2,310	896
64	2630	2,630	1010
68	2960	2,960	1140
72	3320	3,320	1270
88	4970	4,970	1870
96	5900	5,900	2210
104	6890	6,890	2570
112	8030	8,030	2970
120	9230	9,230	3380
128	10500	10,500	3830
136	11870	11,870	4300
144	13340	13,340	4800

Fibre ropes are to be delivered with a linear density within ± 5 % of the nominal linear density given in the table. The unspliced MBS data as provided in the LEP Rope Supply Specification No. 282018R3.

EUROFLOAT PREMIUM
8-strand braided synthetic fibre ropes (4x2) (Ref. LEP Rope Supply Specification No. 282018R3):
- Specific gravity: 0,98 (floats in seawater)
- Elongation at break: 15 %

ROPE CHARACTERISTICS EUROFLOAT PREMIUM			
Diameter,	**Nominal linear density**	**Nominal linear mass,**	**Minimum Breaking Strength (MBS),**

mm	Ktex	kg/m	kN
32	530	0,530	207
36	670	0,670	259
40	850	0,850	324
44	990	0,990	377
48	1200	1,200	456
52	1410	1,410	534
56	1620	1,620	613
60	1880	1.880	701
64	2160	2,160	799
68	2450	2,450	900
72	2750	2,750	1000
76	3050	3,050	1098
80	3390	3,390	1205
88	4110	4,110	1470
96	4900	4,900	1735
104	5730	5,730	2019
112	6690	6,690	2323

Fibre ropes are to be delivered with a linear density within ± 5 % of the nominal linear density given in the table. The unspliced MBS data as provided in the LEP Rope Supply Specification No. 282018R3.

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 ropes with diameter from 24 mm to and including 144 mm.

Scope of assessment is limited to evaluation of net mass per metre, type of lay and static strength.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, and according to:
- ISO 2307:2010

The fibre rope is manufactured in accordance with;
- LEP Rope Supply Specification No. 282018R3.

Marking of product

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

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 DNV GL Type Approval Certificate.

END OF CERTIFICATE