Certificate No:
TAK0000242

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)
12-strand UHMWPE Ropes

Issued to
Hunan Xinhai Co., Ltd.
Yuanjiang, Hunan, China

is found to comply with
DNV class programme DNV-CP-0100 – Type approval – Synthetic fibre ropes for towing, mooring and anchoring
ISO 10325:2018 "Fibre ropes – High modulus polyethylene – 8-strand braided ropes, 12-strand braided ropes and covered ropes"

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.

Issued at **Høvik** on **2022-04-08**
This Certificate is valid until **2027-04-07**.
DNV local station: **Wuhan NB & CMC**

Approval Engineer: **Gisle Hersvik**

for **DNV**

Gustav Heiberg
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

Ultra High Molecular Weight PolyEthylene (UHMWPE) Ropes: 12-strand braided synthetic fibre ropes.
- Specific gravity: 0,97 (floats in seawater)

ROPE CHARACTERISTICS				
Reference number[a] [mm]	Linear density[b c]		Minimum Breaking Strength[d e] [kN]	
	Nominal [Ktex]	Tolerance [%]	Unspliced ropes	Ropes with eye-spliced terminations
6	23.0	±10	40	36
8	40.0		69	62
10	61.0	±8	105	95
12	87.0		150	135
14	117		200	180
16	152	±5	255	230
18	190		315	285
20	233		380	340
22	280		450	405
24	331		520	470
26	386		600	540
28	445		685	615
30	508		775	700
32	575		865	780
34	646		965	870
36	722		1070	965
38	801		1175	1060
40	884		1285	1155
44	1062		1525	1375
48	1255		1775	1600
52	1464		2045	1840
56	1688		2330	2095
60	1928		2635	2370
64	2183		2950	2655
68	2453		3285	2955
72	2738		3635	3270
76	3038		4000	3600
80	3353		4375	3940
88	4028		5180	4660
96	4762		6064	5435

a corresponds to the approximate diameter, in millimeters.
b linear density, in kilotex,
c corresponds to the net mass per length of rope, expressed in grams per meter or in kilograms per thousand meters.
d linear density is under reference tension and is measured as specified in ISO 2307.
e breaking forces relate to new dry and wet ropes.

Application/Limitation

The Type Approval covers ropes with diameter from 6 mm to and including 96 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 2307:2019

Initial setting/cycling of ropes has not been carried out prior to break testing.

The fibre rope is manufactured in accordance with ISO 10325:2018 “Fibre ropes - High modulus polyethylene - 8-strand braided ropes,12-strand braided ropes and covered ropes”.

Marking of product

Product shall be marked with *manufacturer’s name*; **Hunan Xinhai Co., Ltd., China**, *production plant* and *type designation* and *diameter*.

Additionally, the rope shall be marked using one orange yarn along in one of the visible strands.

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 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 assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE