

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)

**8-Strand Polyester (PES) & Polypropylene (PP) Mixed Rope (Mooring Tail),
12-Strand Polyester (PES) & Polypropylene (PP) Mixed Rope (Mooring Tail)**

Issued to

**Jiuli Rope Co., Ltd
YANGZHOU, JIANGSU, China**

is found to comply with

DNV class programme DNV-CP-0100 – Type approval – Synthetic fibre ropes for towing, mooring and anchoring

ISO 10556:2009 "Fibre ropes of polyester/polyolefin dual fibres"

OCIMF Mooring Equipment Guidelines (MEG4), Fourth Edition 2018 [test requirements]

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 **Hamburg** on **2023-06-05**

This Certificate is valid until **2028-06-04**.

DNV local unit: **Nanjing NB & CMC**

for **DNV**

Approval Engineer: **Gisle Hersvik**

**Thorsten Lohmann
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

8-strand Polyester (PES) & Polypropylene (PP) Mixed Rope (Mooring Tail): 8-strand braided synthetic fibre rope
12-strand Polyester (PES) & Polypropylene (PP) Mixed Rope (Mooring Tail): 12-strand braided synthetic fibre rope

- Fibre material: Polyester (PES) 3300 dtex / Polypropylene (PP) 2000D
- Specific gravity: 1.05 (sinks in seawater)
- Elongation at break: 14 %

Compliance with OCIMF Mooring Equipment Guidelines (MEG4)

Mooring Tail Base Design Certificates - For PES & PP Mixed Rope 48 mm and 120 mm

Certificate No.: **JL-DNV-MEG4-TBDS-23-01** Issue date: **2023-04-12**

Certificate No.: **JL-DNV-MEG4-TBDS-23-02** Issue date: **2023-04-12**

Mooring Tail Certificate will be issued with reference to Mooring Tail Base Design Certificate.

Jiuli Rope Co., Ltd. has performed the full test scenario as per OCIMF MEG4.

Rope Characteristics

The Rope characteristics are tabulated on the next page observing the following:

Fibre ropes are to be delivered with a linear mass $\pm 5\%$ of the nominal linear density given in the tables.

Linear Density are tabulated on the following pages.

Breaking load values are given for spliced ropes. The TDBF (Tail Design Break Force) is the value for spliced rope.

8-strand Polyester (PES) & Polypropylene (PP) Mixed Rope:

Reference number/Size		Linear density	Tail Design Break Force (TDBF)	
Diameter [mm]	Circ [Inch]	[ktex]	[kN]	[Ton]
48	6	1270	404	41.2
50	6-1/4	1385	438	44.7
52	6-1/2	1500	471	48.1
54	6-3/4	1615	507	51.7
56	7	1730	543	55.4
58	7-1/4	1860	582	59.4
60	7-1/2	1990	620	63.3
62	7-3/4	2130	661	67.4
64	8	2270	701	71.5
66	8-1/4	2415	744	75.9
68	8-1/2	2560	786	80.2
70	8-3/4	2715	832	84.9
72	9	2870	877	89.5
76	9-1/2	3205	934	95.3
80	10	3540	1070	109.2
84	10-1/2	3910	1180	120.4
88	11	4280	1290	131.6
92	11-1/2	4690	1405	143.4
96	12	5100	1520	155.1
100	12-1/2	5550	1645	167.9
104	13	6000	1770	180.6
108	13-1/2	6450	1905	194.4
112	14	6900	2040	208.2
116	14-1/2	7430	2185	223
120	15	7960	2330	237.8

Notes: Performance parameters of other specifications in this range can be calculated by interpolation.
Grommet Tail Design Break Force: TDBF in grommet configuration (1.7× efficiency).

12-strand Polyester (PES) & Polypropylene (PP) Mixed Rope:

Reference number/Size		Linear density	Tail Design Break Force (TDBF)	
Diameter [mm]	Circ [Inch]	[ktex]	[kN]	[Ton]
48	6	1270	404	41.2
50	6-1/4	1385	438	44.7
52	6-1/2	1500	471	48.1
54	6-3/4	1615	507	51.7
56	7	1730	543	55.4
58	7-1/4	1860	582	59.4
60	7-1/2	1990	620	63.3
62	7-3/4	2130	661	67.4
64	8	2270	701	71.5
66	8-1/4	2415	744	75.9
68	8-1/2	2560	786	80.2
70	8-3/4	2715	832	84.9
72	9	2870	877	89.5
76	9-1/2	3205	934	95.3
80	10	3540	1070	109.2
84	10-1/2	3910	1180	120.4
88	11	4280	1290	131.6
92	11-1/2	4690	1405	143.4
96	12	5100	1520	155.1
100	12-1/2	5550	1645	167.9
104	13	6000	1770	180.6
108	13-1/2	6450	1905	194.4
112	14	6900	2040	208.2
116	14-1/2	7430	2185	223
120	15	7960	2330	237.8

Notes: Performance parameters of other specifications in this range can be calculated by interpolation.
Grommet Tail Design Break Force: TDBF in grommet configuration (1.7× efficiency).

Application/Limitation

The approval range covers ropes with diameter from 48 mm to and including 120 mm.

The OCIMF MEG4 approval range covers ropes with diameter from 48 mm to and including 120 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].
- DNV-CP-0100.

The fibre ropes are manufactured in accordance with:

- Rope Specification: 8-strand Polyester (PES) & Polypropylene (PP) Mixed Rope

- Rope Specification: 12-strand Polyester (PES) & Polypropylene (PP) Mixed Rope
- ISO 10556:2009 – Fibre ropes of polyester/polyolefin dual fibres
- ISO 9554:2019 – Fibre ropes — General specifications

Marking of product

Product shall be marked with *manufacturer's name*; **Jiuli Rope Co., Ltd**, *place of production* and *type designation*, *diameter*, *product code* and *strength*.

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