

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Synthetic Fibre Ropes**with type designation(s)
High-Performance Polyamide Ropes

Issued to

Zhejiang Four Brothers Rope Co., Ltd
Linhai, China

is found to comply with

DNV GL class programme DNVGL-CP-0100 – Type approval – Synthetic fibre ropes for towing, mooring and anchoring**Zhejiang Four Brothers Rope Co., Ltd. Factory Standard Q/ZJSX 007-2016 "Power-Winchine Rope"****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 **2018-03-18**This Certificate is valid until **2023-03-17**.DNV GL local station: **Ningbo**for **DNV GL**Approval Engineer: **Gisle Hersvik**

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.



Product description

High-Performance Polyamide Ropes; made from monofilament or multifilament yarns

6-strand twisted and 12-strand plaited synthetic fibre ropes (Ref. Factory Standard Q/ZJSX 007-2016):

- Specific gravity: 1,14 (sinks in seawater)

ROPE CHARACTERISTICS			
Diameter, mm	Nominal linear mass, kg/m	Minimum Breaking Load (MBL), kN	
		(6-strand Type-S)	(12-strand Type-T)
40	1,040	304	304
44	1,250	412	412
48	1,480	490	490
52	1,640	531	531
56	2,000	651	651
60	2,160	686	686
62	2,350	784	784
64	2,450	795	795
68	2,810	925	925
70	3,110	1 010	1 010
72	3,250	1 040	1 040
78	3,770	1 180	1 180

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

Application/Limitation

The Type Approval covers ropes with diameter from 40 mm to and including 78 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

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

The fibre rope is manufactured in accordance with;

- Zhejiang Four Brothers Rope Co., Ltd. Factory Standard Q/ZJSX 007-2016 "Power-Winchine Rope".

Marking of product

Product shall be marked with *manufacturer's name*; **Zhejiang Four Brothers Rope Co., Ltd., China**, *production plant* and *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.



Job Id: **262.1-012302-4**
Certificate No: **TAK000016C**

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