Certificate No:
TAK000021V

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)
MARINA MAXI 8 and MARINA MAXI 12 Mooring Lines,
MARINA MAXI 8 and MARINA MAXI 12 Mooring Tails

Issued to
Axiom Cordages Limited
District -Palghar, Maharashtra, India

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]
OCIMF Guidelines for the Purchashing and Testing of SPM Hawsers (2000)

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 **2021-08-19**
This Certificate is valid until **2026-08-18**.
DNV local station: **Mumbai 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

MARINA MAXI 8: 8 Strand plaited / braided synthetic fibre rope
MARINA MAXI 12: 12 Strand plaited / braided synthetic fibre rope

- Fibre material: Polyester/polyolefin dual fibre (mixed 95% PP and 05% PES)
- Specific gravity: 0.98 (floats in seawater)

Compliance with OCIMF Mooring Equipment Guidelines (MEG4)

Mooring Line Base Design Certificate – For MARINA MAXI 28 mm and 112 mm
Ref No.: ACL/MEG4-MM/LBDC/21/001
Mooring Line Certificate will be issued with reference to Mooring Line Base Design Certificate.

Mooring Tail Base Design Certificate – For MARINA MAXI 48 mm and 112 mm
Ref No.: ACL/MEG4-MM/TBDC/21/001
Mooring Tail Certificate will be issued with reference to Mooring Tail Base Design Certificate.

Axiom Cordages Limited has performed the full test scenario as per OCIMF MEG4.

Compliance with OCIMF 2000, Guidelines for the Purchasing and Testing of SPM Hawsers

Size 6 (48 mm) to Size 14 (112 mm)

Rope Characteristics

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

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

All LDBF (Line Design Break Force) values are given for both un-spliced and spliced ropes.

Ref. Number / Size		Linear Density -rope	Mass -rope	Line Design Break Force [kN]	
Diameter [mm]	Circ. [Inch]	[g/m]	[kg/220m]	Un-spliced	Spliced
28	3-1/2	409.00	90.00	160.0	144.0
32	4	545.45	120.00	197.0	198.0
34	4-1/4	604.50	133.00	220.0	198.0
36	4-1/2	677.27	149.00	243.0	219.0
38	4-11/16	754.54	166.00	289.0	261.0
40	5	790.90	174.00	336.0	302.0
44	5-1/2	968.18	213.00	400.0	360.0
48	6	1145.45	252.00	465.0	419.0
52	6-1/2	1341.00	295.00	545.0	490.0
56	7	1560.00	343.00	620.0	558.0
60	7-1/2	1795.45	395.00	710.0	639.0
64	8	2036.36	448.00	801.0	720.0
66	8-5/32	2181.81	480.00	851.0	766.0
68	8-1/2	2295.45	505.00	901.0	811.0
70	8-11/16	2450.00	539.00	951.0	856.0

72	9	2573.00	566.00	1001.0	901.0
76	9-1/2	2877.27	633.00	1099.0	989.0
78	9-10/16	3041.00	669.00	1163.0	1046.0
80	10	3186.36	701.00	1226.0	1104.0
82	10-1/8	3363.63	740.00	1285.0	1157.0
84	10-1/2	3522.72	775.00	1344.0	1210.0
86	10-5/8	3700.00	814.00	1398.0	1258.0
88	11	3864.00	850.00	1452.0	1307.0
90	11-1/8	4050.00	891.00	1516.0	1364.0
92	11-1/2	4250.00	935.00	1579.0	1422.0
96	12	4577.27	1007.00	1707.0	1536.0
100	12-1/2	4991.00	1098.00	1826.0	1644.0
104	13	5400.00	1188.00	1945.0	1751.0
112	14	6268.18	1379.00	2264.0	2038.0

Application/Limitation

The OCIMF MEG4 approval range covers ropes with diameter from 28 mm to and including 112 mm.

The OCIMF 2000 approval range covers ropes with diameter from 48 mm to and including 112 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].
- OCIMF 2000, Guidelines for the Purchasing and Testing of SPM Hawsers (1st Edition 2000) [testing].
- DNVGL-CP-0100.

The fibre ropes are manufactured in accordance with;
- Product Specification (MARINA MAXI), Form No. ACL/OCIMF/MM-001.

Marking of product

Product shall be marked with *manufacturer's name*; **Axiom Cordages Limited, India**, *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 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 and Certificate Renewal) shall be performed according to DNVGL-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.dnvgl.com

END OF CERTIFICATE