DNV·GL

Certificate No:
TAK0000094

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Synthetic Fibre Ropes

with type designation(s)
Timm Master,
Timm Wave

Issued to
Wilhelmsen Ships Service AS
LYSAKER, Norway

is found to comply with
Det Norske Veritas' Type Approval Programme 1-504.1, 2012, Synthetic Fibre Ropes for Towing, Mooring and Anchoring of Ships and High Speed and Light Craft
ISO 10556 "Fibre ropes of polyester/polyolefin dual fibres (2009)"

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.

This Certificate is valid until **2018-12-31**.

Issued at **Høvik** on **2016-04-01**

for **DNV GL**

DNV GL local station: **Station Oslo Maritime and CAP**

Approval Engineer: **Gisle Hersvik**

Arnstein Gloppen
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

Timm Master & **Timm Wave**; 8- and 12-strand plaited/braided synthetic fibre rope (floating), polyolefines yarn, with or without marine finish, without or with cover around strand or rope, UV-stabilized for global use.

Double Construction: Mixed Polyolefins "B5" Yarn. Outer "B5" Yarn Covered With High Performance Polyester.

- Specific gravity: 0.99 (floats in seawater)

ROPE CHARACTERISTICS					
Diameter,	**Circ,**	**Nominal linear mass,**		**Minimum breaking load (BL),**	
mm	**inches**	**kg/220m**	**kg/m**	**kp**	**kN**
16	2	30	0,14	5 910	58
18	2 ¼	38	0,17	7 440	73
24	3	67	0,31	13 050	128
28	3 ½	91	0,41	17 640	173
32	4	119	0,54	23 040	226
36	4 ½	150	0,68	29 040	285
40	5	185	0,84	35 720	350
44	5 ½	224	1,02	43 080	423
46	5 ¾	244	1,11	47 010	461
48	6	266	1,21	51 110	501
50	6 ¼	288	1,31	55 380	543
52	6 ½	311	1,42	59 820	587
54	6 ¾	336	1,53	64 430	632
56	7	361	1,64	69 200	679
58	7 ¼	387	1,76	74 140	727
60	7 ½	414	1,88	79 250	777
62	7 ¾	441	2,01	84 520	829
64	8	470	2,14	89 960	882
68	8 ½	530	2,41	101 340	994
70	8 ¾	562	2,55	107 280	1 052
72	9	594	2,70	113 390	1 112
76	9 ½	661	3,01	126 100	1 237
78	9 ¾	696	3,16	132 700	1 301
80	10	732	3,33	139 470	1 368
84	10 ½	807	3,67	153 500	1 505
88	11	885	4,02	168 190	1 649
90	11 ¼	925	4,20	175 790	1 724
94	11 ¾	1 008	4,58	191 470	1 878
96	12	1 051	4,78	199 560	1 957
100	12 ½	1 140	5,18	216 220	2 120
104	13	1 232	5,60	233 540	2 290
108	13 ½	1 328	6,04	251 520	2 467
112	14	1 428	6,49	270 150	2 649
116	14 ½	1 531	6,96	289 440	2 838
120	15	1 637	7,44	309 370	3 034

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

For all covered ropes, weights in table are for load bearing elements (Core).

Diameter, mm in table (Nominal diameter), is corresponding with ISO «reference number» (equal), and measured can be different.

Application/Limitation

The Type Approval covers ropes with diameter from 16 mm to and including 120 mm (the range 40-96 mm produced in Korea).

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

Manufactured by

Timm Slovakia, S.r.o., Nozdrkovce 37, 91104 Trenčín, Slovakia

DNV GL local office; Ostrava

India Nets, Plot No. D-1 to 12, b-1,2 & F-3 to 5, Indore Special Economic Zone, Phase-1, Sector-III, Pithampur-454775, Dist.Dhar, Madhya Pradesh, India

DNV GL local office: Mumbai

Dong Yang Rope Mfg., Ltd., 333-1, Jangrim-dong, Saha-gu, Busan, Korea

DNV GL local office: Pusan

Daehan Rope Co., Ltd., Address: 36-31, Masa-Ro, Saengnim-myeon, Gimhae-Si, Gyeong sang nam-do, Korea

DNV GL local office: Changwon

Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this Certificate.

Type Approval documentation
Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, and in accordance with:

- EN 2307:2010

The fibre rope is manufactured in accordance with EN ISO 10556:2009 (previous EN 14686) "Fibre ropes of polyester/polyolefin dual fibres" and ISO 9554:2010 "Fibre ropes – Genereal specifications".

Initial setting/cycling of ropes and testing of break strength are carried out in accordance with OCIMF Guidelines.

Marking of product

Product shall be marked with *manufacturer's name*; **Wilhelmsen Ships Service AS, Lysaker, Norway**, *production plant* and *type designation* and *diameter*.

Additionally the rope shall be marked using *three black yarns* 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 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 two (2) years (Certificate Retention) and at renewal after four (4) 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 the DNV GL Type Approval Certificate.

END OF CERTIFICATE