

TYPE APPROVAL CERTIFICATE

Certificate No:
TAK0000094
Revision No:
1

This is to certify:**That the Synthetic Fibre Ropes**

with type designation(s)
Timm Master 8,
Timm Master 12, Timm Master 12 SBA

Issued to
Wilhelmsen Ships Service AS
Lysaker, Norway

is found to comply with
DNV GL class programme DNVGL-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 GL.

This Certificate is valid until **2024-05-01**.

Issued at **Høvik** on **2019-05-02**

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

Approval Engineer: **Gisle Hersvik**



for **DNV GL**

Digitally Signed By: Törnqvist,
Rikard
Location: DNV GL Høvik, Norway
Signing Date: 03.05.2019

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.

Job Id: **262.1-016722-7**
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Product description

Timm Master 8, 8-strand plaited/braided synthetic fibre rope

Timm Master 12, 12-strand plaited/braided synthetic fibre rope

- with or without marine finish, without or with cover around strand or rope.
- UV-stabilized.
- Double Construction: Mixed Polyolefins "B5" Yarn. Outer "B5" Yarn covered with High Tenacity Polyester (HT PES) yarn.

Timm Master 12 SBA, same as **Timm Master 12**, but with SBA.

- SBA = Snap Back Arrestor – element reducing recoil

<u>Type designation</u>	<u>Cover</u>	<u>Specific Gravity</u>	
Timm Master 8	-	0,99	Floats in seawater
Timm Master 12	-	0,99	Floats in seawater

Compliance with OCIMF Mooring Equipment Guidelines (MEG4)

Mooring Line Base Design Certificate – for Timm Master 32 mm and 72 mm

Document No.: TS CERT 7801 E (Mooring Line Base Design Certificate TM template)

Wilhelmsen Ship Service has decided to a limited scope for some tests, as follows:

- B8.5.7 Angled endurance: 1,700 cycles (17,000 cycles mentioned in MEG4).
- B8.5.10 Axial compression fatigue: 1,000 cycles (10,000 cycles mentioned in MEG4).

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

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

All LDBF (Line Design Break Force) values are for spliced ropes. Values for unspliced ropes are 10% higher.

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

SBA (Snap Back Arrestor) in Timm Master 12 SBA is reducing danger for recoil (snap back) and is not influencing rope's performance indicators. The SBA effects are verified by DNV GL.

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ROPE CHARACTERISTICS							
Description	ISO Ref. number	LDBF -spliced [kN] - up to:	LDBF -spliced [mT] - up to:	Mass -excl. SBA [kg/220m]	Mass -incl. SBA [kg/220m]	Linear Density load bearing [kg/m]	Tenacity load bearing [kN/kg/m]
F30	40	315	32	185	194	0,84	375
F35	45	397	40	234	243	1,06	373
F45	51	508	51	300	314	1,36	373
F55	55	590	60	348	362	1,58	373
F60	57	632	64	374	388	1,70	372
F70	62	746	76	441	462	2,00	372
F80	67	869	88	515	536	2,34	371
F100	73	1028	104	610	631	2,77	371
F120	81	1261	128	750	778	3,41	370
F140	88	1485	151	885	913	4,02	369
F170	96	1761	179	1051	1079	4,78	369
F200	104	2061	210	1232	1269	5,60	368

A more detailed table is shown here:

ROPE CHARACTERISTICS					
ISO Ref. number	Linear Density -rope [g/m]	Mass -rope [kg/220m]	LDBF with splice or Tail [kN]	LDBF with splice or Tail [mT]	Tenacity load bearing -spliced [kN/kg/m]
32	540	119	203	20	377
36	682	150	256	26	376
40	841	185	315	32	375
44	1 016	224	380	38	374
45	1 062	234	397	40	374
46	1 110	244	415	42	374
48	1 207	266	451	46	374
50	1 309	288	489	49	373
51	1 362	300	508	51	373
52	1 415	311	528	53	373
54	1 525	336	569	57	373
55	1 582	348	590	60	373
56	1 640	361	611	62	373
57	1 698	374	632	64	372
58	1 758	387	654	66	372
60	1 880	414	699	71	372
62	2 007	441	746	76	372

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ROPE CHARACTERISTICS

ISO Ref. number	Linear Density -rope [g/m]	Mass -rope [kg/220m]	LDBF with splice or Tail [kN]	LDBF with splice or Tail [mT]	Tenacity load bearing -spliced [kN/kg/m]
64	2 137	470	794	80	372
67	2 341	515	869	88	371
68	2 410	530	894	91	371
70	2 553	562	947	96	371
72	2 700	594	1 001	102	371
73	2 775	610	1 028	104	371
76	3 006	661	1 113	113	370
78	3 165	696	1 171	119	370
80	3 328	732	1 231	125	370
81	3 411	750	1 261	128	370
84	3 666	807	1 355	138	370
88	4 021	885	1 485	151	369
90	4 204	925	1 552	158	369
94	4 583	1 008	1 690	172	369
96	4 779	1 051	1 761	179	369
100	5 182	1 140	1 908	194	368
104	5 602	1 232	2 061	210	368
108	6 037	1 328	2 220	226	368
112	6 489	1 428	2 384	243	367
116	6 957	1 531	2 555	260	367
120	7 442	1 637	2 731	278	367