Lankhorst | Ropes

Subject:
MEG4 Performance Indicators

Information

Maritime Division
Engineer: PDJ
Date: 09/ 07/ 2020 rev. 02

Example of a fully MEG4 compliant Mooring Line Base Design Certificate

Lankhorst Euronete Portugal

TYPE APPROVED PRODUCT DNV·GL DNVGL.COM/AF

MOORING LINE BASE DESIGN CERTIFICATE

1 This product has been manufactured, tested and documented following the guidelines in appendix B of the OCIMF Mooring Equipment Guidelines, Fourth Edition (MEG4)

General information

Line manufacturer:	2 Lankhorst Euronete Portugal, S.A.
Line manufacturer address:	Rua da Cerfil (Cap. Gramaxo), Maia, Portugal
Line design designation (Product name):	3 Lankoforce
Line construction:	12 strands braided
Design range:	20 mm-48 mm
Material type and grade	HMPE SK78

4 Certificate reference:	MLBDCLF Rev2
Type Approval:	TAK00001DZ
Issue date:	16/05/2019
Expiry date:	16/05/2024
Independent inspection agency:	DNVGL
Independent inspector:	Paulo Viana
Jacketed (Y/N):	No

5 **Base design performance indicators**

Performance indicators		Smallest diameter		Largest diameter	
Diameter	*mm*	Design: 20	Measured 20	Design: 48	Measured 50
Line Design Break Force (LDBF)	*t*	34,3		170,1	
Line Linear Density (LLD)	*kg/m*	0,216		1,246	
Load Bearing Linear Density (LBLD)	*kg/m*	0,216		1,246	
Line Tenacity (LT)	*t/kg/m*	159		137	

6

		D/d Ratio: 5	D/d Ratio: 10
Angled Break Force* (ABF)	*% Av. NSBF ****	194	195

7

Angled Endurance* (AE)	*% Av. NSBF ****	102	111

8

		-20°C	0°C	20°C	40°C	60°C	80°C
Temperature (T)**	*% BF at 20°C*	111	109	100	92	84	78

9

Axial Compression Resistance* (ACR)	*% Av. NSBF ****	100

10

	% LDBF	10	20	30	40	50
Average Immediate Strain* (e)		0,2	0,4	0,7	0,9	1,1

11

Splice type	Tuck

12 ** Performance indicators are tested on 20 mm mooring line*
*** Temperature indicator performed at yarn level*
**** NSBF - New Straight Break Force*

Completion date: 01-07-2019

Anabela Carrapatoso
Lankhorst representative

13 Digitally Signed By: paulo.viana@dnvgl.com
Signing Date: 9 de Julho de 2019

Paulo Viana
Independent inspector

Rev.2 IMP339/14

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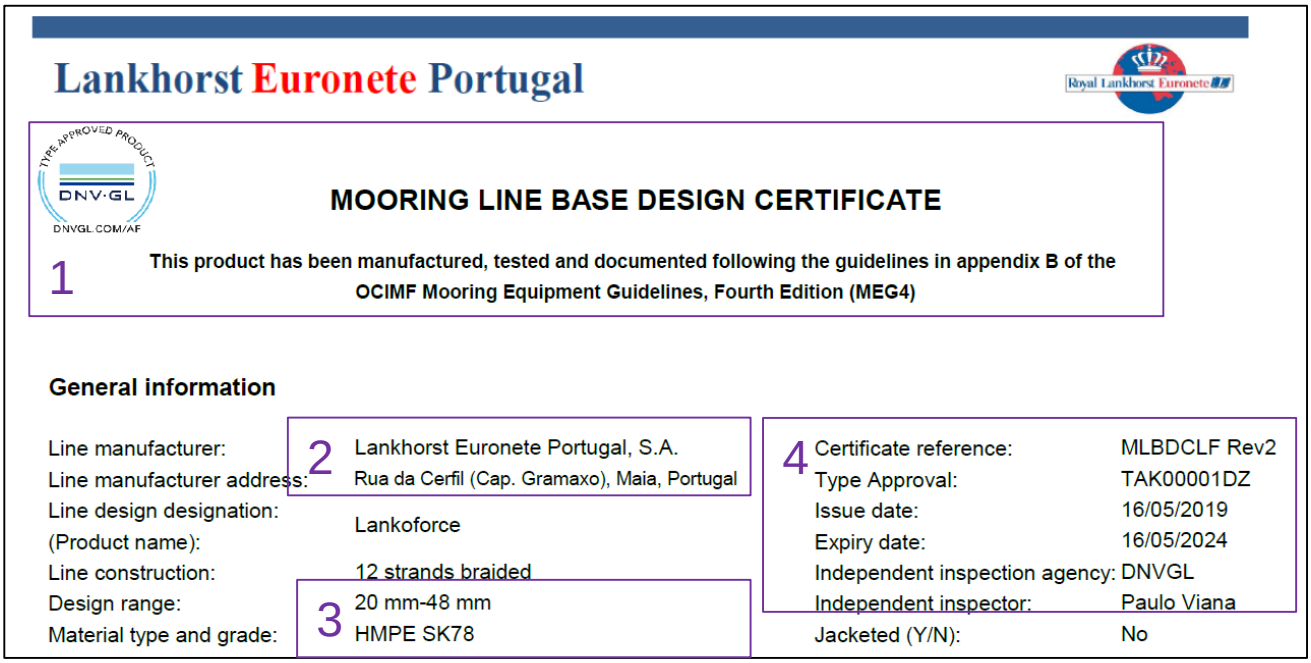
Lankhorst Ropes

General Information, what to look for?



Lankhorst Euronete Portugal

TYPE APPROVED PRODUCT DNV·GL DNVGL.COM/AF

MOORING LINE BASE DESIGN CERTIFICATE

1 This product has been manufactured, tested and documented following the guidelines in appendix B of the OCIMF Mooring Equipment Guidelines, Fourth Edition (MEG4)

General information

Line manufacturer:	2 Lankhorst Euronete Portugal, S.A.	4 Certificate reference:	MLBDCLF Rev2
Line manufacturer address:	Rua da Cerfil (Cap. Gramaxo), Maia, Portugal	Type Approval:	TAK00001DZ
Line design designation: (Product name):	Lankoforce	Issue date:	16/05/2019
		Expiry date:	16/05/2024
Line construction:	12 strands braided	Independent inspection agency:	DNVGL
Design range:	3 20 mm-48 mm	Independent inspector:	Paulo Viana
Material type and grade:	HMPE SK78	Jacketed (Y/N):	No

1. The Mooring Line Base Design Certificate should begin with a clear statement that makes it 100% evident that the rope is manufactured, tested and documented according to Appendix B of the OCIMF MEG4 Guidelines. Statements like “in order to meet” or only stating that the rope is “manufactured according MEG4 Guidelines” are vague and most probably do not (completely) comply.

2. The name and address of the rope manufacturer should be clearly stated, please note a trader is not the manufacturer!

3. Design range, this is the range of diameters that the certificate is valid for; diameter either above or below this range are not included and so do not comply with MEG4.
   Fiber including grade and/or type should be clearly stated, unclear and/or untraceable names should be reviewed with extreme care.

4. Certificate reference, should be linked to an independent 3rd party, the name of this independent inspection agency, including the inspectors name should be clearly stated.

   Linked Type Approval can be checked online on the 3rd party's online approval finder page.

   Mooring Line Base Design Certificates are valid for 5 years, always check the expiry date. (Only needed at the time of purchasing and valid at time of order. The cert. is valid for total lifetime of rope after ordering)

Base design indicators, What to look for?

5 Base design performance indicators

Performance indicators		Smallest diameter	Largest diameter
Diameter	*mm*	Design: 20 Measured 20	Design: 48 Measured 50
Line Design Break Force (LDBF)	*t*	34,3	170,1
Line Linear Density (LLD)	*kg/m*	0,216	1,246
Load Bearing Linear Density (LBLD)	*kg/m*	0,216	1,246
Line Tenacity (LT)	*t/kg/m*	159	137

5. The first set of base design performance indicators are showing the basic properties of the rope.
Please note, that in the Base Design Certificate only the smallest and largest diameter of the certified range are shown, all in between intermediate sizes are covered by the base design.

The most important parameter is the ‘Line Design Break Force (LDBF)
and should match with the Ship Design Minimum Breaking Load (SDMBL) with a maximum +5% tolerance. Above +5%, the rope can be too strong and could damage related mooring equipment.

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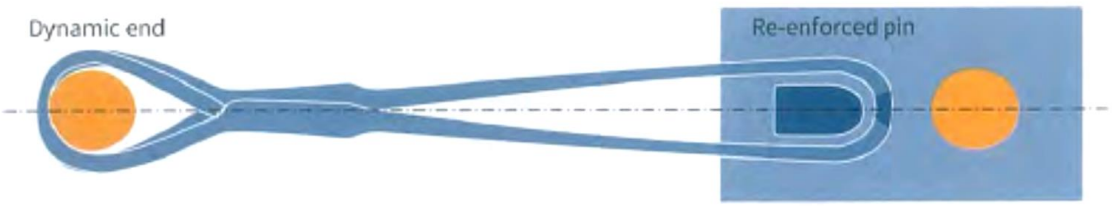
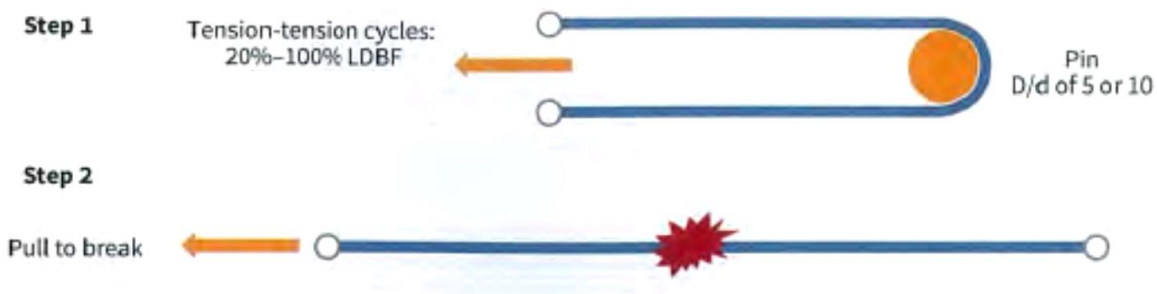
Base design indicators, What to look for?

			D/d Ratio: 5	D/d Ratio: 10
6	**Angled Break Force* (ABF)**	*% Av. NSBF ****	194	195
7	**Angled Endurance* (AE)**	*% Av. NSBF ****	102	111

6. The Angled Break Force test (ABF) gives an indication of the rope's strength loss when bent, for example, around chocks, rollers, winches etc.
The higher this percentage, the less the rope is effected by bend efficiency loss. 200% would be the max. rating possible. In this test, the rope sample is preloaded 10 times up to 100% of the LDBF and then broken on the 11th cycle.



7. The Angled Endurance test (AE) gives an indication of the rope's strength loss and long term performance, when bent around chocks, rollers, winches etc. The higher this percentage, the less (long term) bend efficiency/impact loss is shown by the rope. (If the rating is higher than 100%, it means the rope has become stronger than at the start of the test.) In this test, the rope sample is subjected to 17000 cycles and loaded between 20 and 100% of the LDBF. On completion of the 17000 cycles the rope is straightened and pulled until it breaks.



Base design indicators, What to look for?

8

		-20°C	0°C	20°C	40°C	60°C	80°C
Temperature (T)**	*% BF at 20°C*	111	109	100	92	84	78

8. Temperature, this gives an indication of the rope strength efficiency when used in different temperature (climate) conditions.
To fully comply with the MEG4 guidance, the complete range of temperatures should be tested.

9

Axial Compression Resistance* (ACR)	*% Av. NSBF ******	100

9. Axial Compression Resistance (ACR) - in this test a rope sample is subjected to 10.000 cycles under relative normal working load levels (acc. to API procedures). After the test is completed, the rope sample is pulled until it breaks. The higher the percentage the better, indicating the rope's ability to withstand the effects of axial compression in use.

10

	% LDBF	10	20	30	40	50
Average Immediate Strain* (e)		0,2	0,4	0,7	0,9	1,1

10. Average Immediate Strain (e) – in this test the strain level of the rope in its new bedded-in condition is measured. Elastic elongation is a very important property and should be carefully checked, in order to select the correct rope with the specific mooring parameters needed.

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Base design indicators, What to look for?

11

Splice type	Tuck

11. Splice type, describes the type of splice used during testing, this should also be the same as delivered.

12

** Performance indicators are tested on 20 mm mooring line*
*** Temperature indicator performed at yarn level*
**** NSBF - New Straight Break Force*

13

Digitally Signed By: paulo.viana@dnvgl.com
Signing Date: 9 de Julho de 2019

Completion date: 01-07-2019

Anabela Carrapatoso
Lankhorst representative

Paulo Viana
Independent inspector

Rev.2 IMP339/14

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Member Of

12. Always check the extra notes made carefully.

13. A 3rd Party witnessed and reviewed base design certificate should be stamped, signed and the inspectors name should be clearly shown.

Example of a fully MEG4 compliant Tail Base Design Certificate

Lankhorst Euronete Portugal

MOORING TAIL BASE DESIGN CERTIFICATE

This product has been manufactured, tested and documented following the guidelines in appendix B of the OCIMF Mooring Equipment Guidelines, Fourth Edition (MEG4)

General information

Tail manufacturer:	Lankhorst Euronete Portugal, S.A.	Certificate reference:	MTBDCET Rev2
Tail manufacturer address:	Rua da Cerfil (Cap. Gramaxo), Maia, Portugal	Type Approval:	TAK00001RV
Tail design designation: (Product name):	Euroflex Tail	Issue date:	05/07/2019
		Expiry date:	05/07/2024
Tail construction:	8 strands braided	Independent inspection agency:	DNVGL
Design range:	56 mm - 88 mm	Independent inspector:	Paulo Viana
Material type and grade:	Euroflex	Jacketed (Y/N):	No

Base design performance indicators

Performance indicators		Smallest diameter	Largest diameter
Diameter	*mm*	Design: 56 Measured 61	Design: 88 Measured 96
Tail Design Break Force (TDBF)	*t*	75,6	180,2
Tail Linear Density (TLD)	*kg/m*	2,096	4,952
Load Bearing Linear Density (LBLD)	*kg/m*	2,096	4,952
Tail Tenacity (LT)	*t/kg/m*	36	36

14 **Dynamic stiffness (Ksh, Kex)**

Sheltered (Ksh)	11,4 x TDBF
Exposed (Kex)	19,2 x TDBF

15 **Tension-tension endurance (CTF)**

CTF 50%	9,90 x 10^7 cycles
CTF 20%	9,31 x 10^{12} cycles

	% TDBF	**10**	**20**	**30**	**40**	**50**
Average Immediate Strain* (e)		0,8	2,0	3,1	4,1	5,1

Splice type	Tuck

** Performance indicators are tested on 56 mm mooring line*

Digitally Signed By: Viana, Paulo
Signing Date: 9 de Outubro de 2019

Completion date: 05-07-2019

Anabela Carrapatoso
Lankhorst representative

Paulo Viana
Independent inspector

Rev.2 IMP339/15

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Base design indicators, What to look for?*

14

Dynamic stiffness (Ksh, Kex)	Sheltered (Ksh)	11,4 x TDBF
	Exposed (Kex)	19,2 x TDBF

14. Dynamic stiffness (ksh, Kex), This test produces two accurate stiffness values (sheltered 5-15% load/LDBF and exposed 20-40% load/LDBF) These numbers are very critical for mooring engineers, to be able to make accurate calculations.

15

Tension-tension endurance (CTF)	CTF 50%	9,90 x 10^{7} cycles
	CTF 20%	9,31 x 10^{12} cycles

15. Tension-tension endurance (CTF), these figures are providing information about the the rope resistance against tension-tension fatigue at two different load levels.
The higher these numbers are, the less the rope suffers from tension-tension fatigue and so a longer overall rope service life is to be expected.
Two actual rope samples are tested according the OCIMF TCLL test method.

Always check if this data is available, as it is mandatory to comply fully to the MEG4 guidelines, we have seen official Type Approvals in de market stating that only limited testing was done. This does not meet the OCIMF guidelines.

* Only additional points regarding a Tail Base Design Certificate are highlighted, all others are similar to a Mooring Line Base Design Certificate.

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MEG4, What to look for?

16

DNV·GL

To whom it may concern

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Sociedade Unipessoal, Lda
Av. Infante Santo 43 1 Esq
1350-177 Lisboa, Portugal

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Your email	Your message of	Our reference	Tel. - Extension	Date
		MWIFISWVIA20200424-1		2020.04.24

This is to inform that following the completion of the type certification according to the DNVGL-CP-0100 Synthetic fibres for towing, mooring and anchoring, of Lankhorst Euronete Portugal's several rope types (DNVGL Type Approval Certificates TAK00001DZ, TAK00001DW, TAK00001DY, TA00001DX), Lankhorst has an ongoing process for Type Approval, according to the Appendix B of the Mooring Equipment Guidelines, Fourth Edition (2018) for the following rope types:

- Euroflex tails (completed, TAK00001RV)
- Nylon Tails
- Strongline
- Euroflex
- Eurofloat Premium
- Tipto Twelve
- Tipto Eight
- Lankoforce (completed, TAK00001DZ)
- Lankoforce with jacket (completed, TAK00001DZ)
- Lankoline

Yours sincerely,

Paulo Viana
DNVGL Portugal, Sociedade Unipessoal Lda

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MWIFISWVIA20200424-1

16. As testing according to the MEG4 guidelines is a very time consuming process and dependent on test equipment availability, there can be a long period of time needed to fulfill all rope tests. In the event a rope type, or some of the information on the mooring line base design certificate is missing or is marked as TBD/ TBC / in progress etc. a covering letter of the independent witnessing 3rd party should be supplied.

MEG4, What to look for? Non correct/ not complete certificate example 1

BRANDNAME®

COMPANY LOGO

1a **Mooring Line Certificate**

1b We hereby certify that the rope as listed below has been manufactured according ISO 9554:2010 and OCIMF Mooring Equipment Guidelines: 4th Edition, 2018. The ropes have been inspected visually and during the manufacturing process and before delivery. Sampling test have been carried out according to the company quality and also meet the requirements of ISO 2307:2010.

Client	: [customer name]	Certificate No.	: 2019.xxxx.x
Client order No.	: XXXXXXX	Issue Date	: 02-12-2019
Reference / Vessel	: m/v [name of vessel]	1c Tested acc. To	: ISO 2307:2010 CI-1500A

Line supply information

Ship design MBL	1d : 46.68 T.
NSBF	: –
Diameter	: 48 mm.
Jacketed	: No
Splice type and design	: Hand-spliced with a minimum of 6 tucks
Material type and grade	: High Tenacity Polyester & High Tenacity Polyolefin
Manufacturer's part code and unique line identifier	: XXXXXX
Line design designation Product name	: [brandname] (Floating)
Line construction	: 8 Strand Braided
Length	: 220 mtr.
Rotating	: No

Performance indicators

Line Design Break Force (LDBF)	1e : 450.28 kN		
Line Linear Density (LLD)	: 1.18 kg/m		
Load Bearing Linear Density (LLD)	: 1.18 kg/m		
		Measured	Maximum
Line Tenacity (LT)	: 38.5 T/kg/m		38.9 T/kg/m
		D/d Ratio: 5	D/d Ratio: 10
Angled Break Force* (ABF) % Avg NSBF	: 75		80
Angled Endurance (AE)	1f : TBD		TBD

Temperature (T)	: -20°C	0°C	20°C	40°C	60°C	80°C
% BF at 20°C	1g : TBD	100%	100%	TBD	TBD	TBD

Axial Compression Resistance* (ASR)	: in progress				
	: LDBF: 10%	LDBF: 20%	LDBF: 30%	LDBF: 40%	LDBF: 50%
1h Average Immediate Resistance* (ASR)	: 2.5	4.5	6.5	8.4	10.2

Line Description:
Both ends [brand name] PES sleeve protected eye of 2 mtr.

LRS Certificate number:
XXXxxxxxxx/xx
1i

1j [name]
Signature of Competent Person

Company address

MEG4, What to look for? Explanation non correct/ not complete certificate example 1

1a. Please note this a (general) Mooring Line Certificate, (manufacturer certificate) not a Mooring Line Base Design Certificate.

1b. In the statement, if it states that the rope is manufactured according to OCIMF MEG4, then it is not tested according to MEG4 guidelines.

1c. Here it is stated that it is tested according to ISO 2307 and CI (Cordage Institute) 1500A, OCIMF MEG4 is also not mentioned here. It is not tested according to MEG4 guidelines.

1d. Ship design MBL, number given by ship owner. (OK)

1e. Line Design Break Force (LDBF) This should be in the range of 100-105% of the Ship Design Minimum Breaking Load (SDMBL) as specified in 1d. Here it is actually rated below this value!! and so does not meet the MBL requirements as clearly described in the MEG4 guidelines.

1f. TBD (to be determined), these values should be shown. If TBD is used, the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

1g. TBD, these values should be shown. If TBD is used, the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

1h. When tested correctly according to MEG4 sections B5.6.11 and B8.5.4, the average Immediate Strain level presented here seems technically very unlikely to be able to reached for the given type of fiber. If tests are not witnessed by an independent 3rd party, also the correct technical execution of these tests is not verified.

1i. What does the stated certificate number actually refer to? Is it referring to the full Mooring Line Base Design Certificate? Or only to a single break test or …? A DNVGL/Lloyds Register/BV/ABS certificate alone is not enough to be sure the rope it complying with the MEG4 Guideline. Always ask for this certificate and check closely the content to see what it refers to.

1j. An official Mooring Line Base Design Certificate should be verified and stamped by an independent 3rd party inspection. A Mooring Line Certificate can be provided by the rope supplier without a 3rd party stamp, however, there should be a clear link to a valid Mooring Line Base Design Certificate. This is not the case here.

MEG4, What to look for? Non correct/ not complete certificate example 2

2a

Mooring line certificate – MEG4

Line supply information

Ship design MBL:	N/A
NSBF (if tested):	36,7T
Diameter:	40mm
Length:	220Mtr.
Jacketed:	No
Splice type:	Tucked
Material type and grade:	MIX PP/PES
Manufacturer's part code:	PD402ND8220
Unique line identifier:	N/A
Line design designation:	PD 2ND 8
Line construction:	8 x 1
Rotating:	No

Performance indicators

Line Design Break Force:	36,7T
Line Linear Density:	0,860kg/m
Load Bearing Linear Density:	0,860kg/m
Line Tenacity:	29,84T/kg/m

2b

	D/d ratio: 5	D/d ratio: 10
Angled Break Force* (ABF) % Avg NSBF	TBC	TBC
Angled Endurance* (ABF) % Avg NSBF	TBC	TBC

	-20 °C	0 °C	20 °C	40 °C	60 °C	80 °C
Temperature (T) % BF at 20 °C	TBC	TBC	TBC	TBC	TBC	TBC

2c

Axial Compression Resistance (ACR)	90 % Avg NSBF

2d

	10% MBL	20% MBL	30% MBL	40% MBL	50% MBL
Average Immediate Strain* (e)	TBC	TBC	TBC	TBC	TBC

2e **Performance indicates a 28mm mooring line*

Line description: *Each end soft protected eye 1,8Mtr.*

2f Health and Safety EXE – Docks Regulations 1934, Regulation 20 (a)(ii) and 22 (a) – Shipbuilding and ship-repairing Regulations 1960, regulation 36 (1) – The construction (lifting operation) regulations 1961, regulation 34 (1) (b)

According CE machine guidelines (98/37/CE, changed last time 98/79CE). The undersigned XXXXXXXX, manager of the company XXXXXXX states that the slings manufactured by XXXXXX to conditions they are used and maintained according to "tips on the use in maintenance" meet the essential safety and health of the EEC Directives Machine.

MEG4, What to look for? Explanation non correct/ not complete certificate example 2

2a. Please note this a (general) Mooring Line Certificate, (manufacturer certificate) not a Mooring Line Base Design Certificate.

2b. TBC (to be confirmed), these values should be shown. If TBC is used, the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

2c. Seems not to be an actual tested value, but a statement about average spliced strength.

2d. TBC (to be confirmed), these values should be shown. If TBC is used, the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

2e. Possible, but no connection is made to the official Mooring Line Base Design Certificate.

2f. An official Mooring Line Base Design Certificate should be verified and stamped by an independent 3rd party inspection. A Mooring Line Certificate can be provided by the rope supplier without a 3rd party stamp, however, there should be a clear link to a valid Mooring Line Base Design Certificate stating that the rope has been tested according to the MEG4 guidelines. This is not the case here.

MEG4, What to look for? Non correct/ not complete certificate example 3

COMPANY LOGO

Customer:	[customer name]	**Vessel:**	[name vessel]
Order No:	[order number]	**Shipping Marks:**	

3a We hereby certify that the rope as listed below supplied to your firm has been manufactured in order to meet the requirements of ISO 9554:2010 and OCIMF Mooring Equipment Guidelines: 4th Edition, 2018. All ropes have beer inspected visually during the manufacturing process and before delivery. Sampling tests have being carried out according to the company's quality system in force and meet the requirements of EN ISO 2307:2010.

3b **Mooring Tail Certificate**

Tail supply information

Ship design MBL t : NSBF (if tested) t :

TDBF (Wet-spliced): 168,5 tons/1.652 kN

Diameter mm: 88mm (11") Length m : 11

Jacketed (Y/N) : NO Splice type & design : Manual Hand splice tucked (6 tu

Material type and grade : 50% H.T POLYESTER – 50% H.T. OLEFIN

Manufacturer's part code and unique line identifier : J21741-09 / 147731

Tail design designation (product name) : [product name]

Tail construction : 8 STRAND (4x2 PLAITED)

Rotating (Y/N) : NO

Performance indicators

Tail Design Breaking Force (TDBF) - t : 168,5

Tail Linear Density (TLD) Kg/m : 4,74

Load Bearing Linear Density (LBLD) Kg/m : 4,74

Tail Tenacity (MLT) t/Kgs/m : 41,69 t/kgs/m

Dynamic Stiffness (Ksh, Kex) – Sheltered (Ksh) : 11.529 * 10^3 kN/mtr

Exposed (Kex) : 11.803 * 10^3 kN/mtr

3c Tension – tension endurance (CTF) – CTF 50% - cycles

– CTF 20% - cycles

Immediate Strain (e)	%LDBF 10	%LDBF 20	%LDBF 30	%LDBF 40	%LDBF 50
	2,0%	3,8%	4,3%	6,0%	7,0%

25/10/2019

3d Our company is certified by ISO **9001 :2015 (QUALITY MANAGEMENT SYSTEM)** and ISO **14001 : 2015 (ENVIRONMENTAL MANAGEMENT SYSTEM)**

We hereby declare that above products are **ASBESTOS FREE** according to **SC249 Sola Regulation 3-5** and **MSC.1 / Circ. 1379**

COMPANY LOGO

MEG4, What to look for? Explanation non correct/ not complete certificate example 3

3a. In the statement it is only stated that the rope is manufactured according to OCIMF MEG4, not that it is tested according this guideline.

3b. Please note this a (general) Mooring Tail Certificate, (manufacturer certificate) not a Mooring Tail Base Design Certificate.

3c. These values should be present and tested, if there are no values the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

3d. An official Mooring Line Base Design Certificate should be verified and stamped by an independent 3rd party inspection. A Mooring Line Certificate can be provided by the rope supplier without a 3rd party stamp, however, there should be a clear link to a valid Mooring Line Base Design Certificate stating that the rope has been tested according to the MEG4 guidelines. This is not the case here.

MEG4, What to look for? Non correct/ not complete certificate example 4

COMPANY LOGO

Company name
Address1
Address2
T:
E:
W:

4a **MOORING LINE CERTIFICATE**

Name and address of Manufacturer: [company name]

4b We hereby confirm that the above mentioned product was released for delivery after inspection by a competent person.

Manufactured acc to:	ISO 9554:2010, ISO 10556:2009	Certificate No. [number]
Tested acc to:	ISO 2307:2010, CI 1500A	GL NO: [number]
		Vessel: [vessel name]

Line supply information			
NSBF (if tested)	:	Not requested	Customer Order No. [number]
Diameter	:	64mm	
Length	:	220 Mtrs	
Jacketed	:	NO	
Splice type and design	:	5 to 6 tucks	
Material Type and Grade	:	Mixed Polyolefin and HT Polyester	
Manufacturer's part code and unique line identifier			
Line design designation (Product Name)	:	[product name]	
Line construction	:	8 strand braided	
Rotating	:	No	
Performance indicators			
Line Design Breaking Force (LDBF)	:	73.8 TON	
Line Linear Density (LLD)	:	2.05 kg/m	
Load Bearing Linear Density (LBLD)	:	2.05 kg/m	
Line Tenacity (TT)	:	Measured (T/kg/m)	Maximum (T/kg/m) Maximum (kN/g/m)
		36.0	36.0 0.36

4c

	D/d ratio: 5	D/d ratio: 10
Angled Break Force* (ABF) %Avg NSBF	Under testing	Under testing
Angled Endurance* (AE) %Avg NSBF	Under testing	Under testing

	-20C	0C	20C	40C	60C	80C
%BF relative to BF at 20C	under testing					
Axial Compression Resistance* (ACR)	under testing					

	%LDBF 10	%LDBF 20	%LDBF 30	%LDBF 40	%LDBF
Average Immediate strain	Under testing				

Performance indicators were tested on 32mm [product name] 8 strand (according to CI 1500B)

LINE DESCRIPTION: [PRODUCT NAME] ANCHOR BRAND HIGH TENACITY [NAME] PP & POLYESTER MIXED 8 STRAND ROPE, UV RESISTANT, RESISTANT TO CHEMICAL, REGULAR LAY, NATURAL WHITE COLOUR WITH 2 BLACK & 1 ORANGE TRACER YARN, 2 MTR CANVAS COVERED EYES SPLICED (SIX TUCKS) AT BOTH ENDS.

4d

Is the equipment safe to operate?	Yes	No	Stamp
Name and signature of the person making this test certificate.	Name and signature of the person authenticating this certificate		
[name] [function]	Quality Control Dept		

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MEG4, What to look for? Explanation non correct/ not complete certificate example 4

4a. Please note this a (general) Mooring Line Certificate, (manufacturer certificate) not a Mooring Line Base Design Certificate.

4b. Please note MEG4 is not mentioned.

4c. These values should be present and tested, if there are no values the buyer should insist on the supplier providing for a covering letter signed by an independent 3rd party (for example, DNVGL, Lloyds Register, BV, ABS) indicating when the test will be completed.

4d. An official Mooring Line Base Design Certificate should be verified and stamped by an independent 3rd party inspection. A Mooring Line Certificate can be provided by the rope supplier without a 3rd party stamp, however, there should be a clear link to a valid Mooring Line Base Design Certificate stating that the rope has been tested according to the MEG4 guidelines. This is not the case here.