



Marine Design Appraisal Document

Lloyd's Register EMEA
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Date
18 December 2019

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RTS/ENG/195207/GKV/VSZ

Machinery General Design Appraisal

Client : AEGIR-Marine B.V.
Manufacturer : AEGIR-Marine Production B.V.
Subject : Stern Tube Seals
G.A. Registration No. : ROT.14.M.026 (E1)

Valid until 17 December 2024

This Design Appraisal Document (D.A.D.) supersedes and cancels the previous D.A.D. No. RTS/ENG/140192 (Issue No. 0), dated 16 October 2014.

The plans and calculations as listed in paragraph 1 of the Appendix have been examined for compliance with:

Rules and Regulations for the Classification of Ships (Ship Rules), July 2019

Part 5, Chapter 6,

Rules and Regulations for the Classification of Special Service Craft (SSC Rules), July 2019

Part 11, Chapter 2,

Rules and Regulations for the Classification of Inland Waterways Ships (IWW Rules), November 2019

Part 5, Chapter 4,

and will be assigned an appraisal status, as indicated, in accordance with the following conditions and comments:-

A. Details

Equipment : Forward Stern Tube Seal
Type : Prime Blue
Diameter Range : Ø 41 mm – Ø 700 mm
Propeller Shaft Lubrication : Water
Approved Oil Gland : No
Suitable for SCM Descriptive Note : No

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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B. Mandatory Requirements:-

1. It is noted, that the PRIME Blue Seals are not adjustable from within the vessel and therefore each type of PRIME Blue Seal is to be installed in combination with an inflatable seal. The arrangements are to be such, that the sealing ring with garter spring (Pos. 1) can be replaced with the ship afloat. AQS
 - a. For twin- or multiple screw vessels a brake or alternatively a locking device of robust construction is to be fitted, in order to prevent the shaft from rotating, in case the inflatable seal is pressurised after possible failure of the PRIME Blue Seal.
 - b. For single-screw vessels a complete spare sealing ring with garter spring or a complete set of working parts, for each type of PRIME Blue Seal fitted, is to be available on board. Thereby accommodating replacement of the seal with the ship afloat whenever considered practicable.
 - c. Manufacturers instructions how to replace the seal with the ship afloat are to be carried on board.
2. The axial sealing of the sealing ring is to be maintained also when the shaft line will be installed under slope conditions.
3. The PRIME Blue Seal arrangements are to be capable of accommodating the effects of differential expansion between hull and line shafting for all water temperatures in the proposed areas of operation.

C. General Comments:-

1. The seals are to be installed in accordance with the Manufacturer's instructions and to the requirements of the Rules, and tried under working conditions, all to the attending Surveyor's satisfaction. AQS
2. The relevant materials to be made and tested in accordance with the "Rules for the Manufacture, Testing and Certification of Materials". AQS
3. The locking or securing arrangements to be to the Surveyor's satisfaction. AQS
4. Vessels, built in compliance with the Ship Rules, being fitted with these type of seals will not be eligible for the Notation "O.G." in the Register Book (Part 5, Chapter 6, Section 3.12.7 refers).
5. It is noted, that forced water lubrication will be provided and reference is made in this respect to the applicable requirements, mentioned in the following paragraphs of the Rules:- AQS

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- Part 5, Chapter 6, Sections 3.12.2 & 3.12.3 of the Ship Rules.
- Part 11, Chapter 2, Sections 4.16.4 & 4.16.5 of the SSC Rules.
- Part 5, Chapter 4, Sections 3.11.2 & 3.11.3 of the IWW Rules.

6. For the relevant screw shaft Survey intervals reference is made to the following paragraphs of the Rules:-

- Part 1, Chapter 3, Section 17.1.4 of the Ship Rules.
- Part 1, Chapter 4, Section 10.1.4 of the SSC Rules.
- Part 1, Chapter 3, Section 15.1 of the IWW Rules.

7. An instruction plate is to be fixed to the bulkhead in way of the gland, clearly explaining the purpose of the inflatable seal and that the shaft line is to be locked when subject seal is in use.

AQS



Vishal Shenoy
Senior Specialist
Engineering Systems
Rotterdam Technical Support Office

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Appendix

1. The documents listed below have been examined

Document No.	Rev.	Title	Status	Date
A-04-2-0000-000-00A	--	PRIME Blue Seal General Arrangement	AQ	16-Oct-2014
A-04-2-0000-000-00	--	PRIME Blue Standard Dimensions	SI	16-Oct-2014

Appraisal Status Key

AQ	Approved subject to matters raised that require resolution – and provided the arrangements are to the Surveyor's satisfaction.
AQS	Details to be submitted by the client to the local surveyor's Office responsible for surveying the building and the arrangements verified in accordance with the Rule/Regulations requirements by the surveyor.
SI	Retained as supporting documentation for information only.

The date is the date with which the document is stamped.

2. The documents listed below have been considered together with the submitted documents in the appraisal

Drawing No.	Dated	Title
12238-2	06-12-2013	Test Report Testing various profiles
14020601	06-01-2014	Certificate of mating ring
SG-13.1504	09-12-2013	Pressure Test Report version 10-11-2013

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