



Marine Design Appraisal Document

Lloyd's Register EMEA
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Date
30 October 2015

Please quote this reference number on all future communications
RTS/ENG/150538/MPB

MACHINERY GENERAL DESIGN APPRAISAL

Client & Manufacturer : Amnitec B.V.
Subject : Stainless Steel Compensator, Types RFB, RWB, RFA-R & RFA-S
Type Approval Certificate No. : **15/30016**

Valid until 29 October 2020

The undernoted documents have been reviewed for compliance with the requirements of Lloyd's Register Rules and Regulations for Ships, July 2015 and the Lloyd's Register Type Approval System TA14, version June 2015 and this Design Appraisal Document is a supplement to the Type Approval Certificate.

APPROVAL DOCUMENTATION:-

<u>Drawing No.</u>	<u>Rev.</u>	<u>Title</u>
--	06-12-05	Pump Connector, Types RWB / RFB
--	12/04/2006	Design Calculations, Type RFB50-RFB250
--	--	Strength Calculations wire braid for RWB / RFB Pump Connectors
--	A, 26-01-04	Axial Expansion Joint, Type RFA-S
--	A, 26-01-04	Axial Expansion Joint, Type RFA-R
--	12/04/2006	Design Calculations, Type RFA200-RFA80
--		Fitting instructions
--	29-10-2015	Design Calculations, Type RFB50-RFB250, EJMA 10 th Edition

TEST REPORTS

AMNITEC Inspection Certificate: Test ROT 1512415, RFB, DN50 dated 19.03.2015
AMNITEC Inspection Certificate: Test ROT.1512415, RFB, DN65 dated 19.03.2015
AMNITEC Inspection Certificate: ABS No. 2935992, RFB, DN80 dated 24.06.2015
AMNITEC Inspection Certificate: ABS No. 2935992, RFB, DN100 dated 24.06.2015
AMNITEC Inspection Certificate: RMRS 15.00596.271, RFB, DN125 dated 17.06.2015
AMNITEC Inspection Certificate: RMRS 15.00596.271, RFB, DN250 dated 18.06.2015
AMNITEC Inspection Certificate: RMRS 15.00596.271, RFB, DN250 dated 18.06.2015

SUPPORTING DOCUMENTATION:-

LR Rotterdam Production Quality Assessment No. PQA-ROT154712, dated 09.07.2015

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

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CONDITIONS OF APPROVAL / OPERATIONAL LIMITATIONS:-

1. Restricted for use in thermal oil piping systems, with oils having a flashpoint of not less than 60 deg.C (closed cup).
2. Materials for Class II piping systems are to be manufactured and tested in accordance with requirements of the "Rules for the Testing, Manufacture and Certification of Materials" (Part 5, Chapter 12, Section 1.6 refers).
3. Expansion pieces are to be protected against over extension and compression, Pt 5 Ch13, 2.7.2
4. Compensators and expansion pieces are to be protected against mechanical damage, if necessary (Part 5, Chapter 13, 2.7.3 refers).
5. Flanged connections are to be practically metal to metal and jointing material is to be impervious to oil heated to 250 deg.C, as per Part 5, Chapter 14, Section 4.5.2 of the Rules.
6. In addition the following product limitation(s) will be stated on certificate:-
 - 6.1 Operational limits to be applied depending on the materials of connectors and expected service temperature in accordance with the manufacturer's instructions.

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.



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Rotterdam Technical Support Office

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