CERTIFICATE NUMBER
16-LD1459720-PDA

DATE
02 Feb 2016

ABS TECHNICAL OFFICE
London Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of

CHEMCO INTERNATIONAL

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **IMO PSPC-COT Approved Oil Cargo Tank Coating**

Model: **RA 500M over RS 500P ON SHOT BLASTED / HYDRO BLASTED STEEL OR ON A COMPATIBLE SHOP PRIMER.**

This Product Design Assessment (PDA) Certificate 16-LD1459720-PDA, dated 02/Feb/2016 remains valid until 01/Feb/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Nitin Tyagi
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

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Tier: 2 - PDA Issued

Product: **IMO PSPC-COT Approved Oil Cargo Tank Coating**
Model: **RA 500M over RS 500P ON SHOT BLASTED / HYDRO BLASTED STEEL OR ON A COMPATIBLE SHOP PRIMER.**

Intended Service:
A coating which may be used as a Cargo Oil Tank coating and can be applied directly to mechanically prepared bare steel or on a compatible shop primer.

Description:
This coating system has been identified by infrared scanning, by determination of specific gravity, and by determination of volatile/non-volatile content.

The coating system consists of first coat of RS 500P and second coat of RA 500M applied on blast cleaned surface or on a compatible shop primer.

Coating components:

RS 500P is a two pack epoxy system consisting of base resin and hardener.
RS 500P (Part A)
HR 500P (Part B)

RA 500M is a two pack epoxy system consisting of base resin and hardener.
RA 500M (Part A)
HF 500M (Part B):

Compatible shop-primers are:
- Hempel's Shop Primer 15890
- Sigmaweld 190 Shop Primer
- Interplate 937 Shop Primer
- Muki Z 2001 Shop Primer
- Cerabond 2000 Shop Primer

Rating:
Compliance of the subject coating with IMO PSPC MSC.288(87) requirements has been verified and demonstrated and 'RA 500M over RS 500P ON SHOT BLASTED / HYDRO BLASTED STEEL OR ON A COMPATIBLE SHOP PRIMER' is considered to have passed the requirements of IMO PSPC MSC.288(87) Performance Standards for Protective Coatings for Cargo Oil Tanks on Crude Oil Tankers.

Service Restriction:
1) For protective coatings to be applied in cargo oil tanks during the construction of new crude oil tankers for complaince with IMO Res MSC.288(87).
2) The manufacturer must have a certified quality management system and be under the appropriate ABS Type Approval category, Recognized Quality System (RQS) and be audited annually.
3) Quality Assurance and Quality Control process and procedures are to be in place which demonstrate the consistency of each successive batch, records of testing are to be made available at audits when required. Employees responsible for Quality testing are to be independent of personnel involved in production.
4) The manufacturer is responsible for identifying all containers in the batch with some form of permanent marking.
5) If the manufacturer wants to subcontract the process, the secondary company is to be given a duplicate PDA and is required to do a Type Test and maintain a valid Manufacturing Assessment certificate.
6) This Product Design Assessment will become invalid if the formulation of either the epoxy based system or the shop primer is changed. It is the responsibility of the manufacturer to inform ABS immediately of any changes to the formulation.

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7) Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
8) For applications requiring coating system approval in accordance with IMO PSPC MSC.288(87), use on suitable prepared bare steel.
9) The approved product is solely related to the corrosion protection properties of the subject coating system as per IMO PSPC and it is not relevant to the evaluation of the toxicity, flammability and polluting properties of the product.
10) The scope of Type Approval is to comply with MSC.1/Circ. 1221 Dated 11th December 2006.

Comments:
1. This assessment was not conducted on behalf of any Administration.
2. Subject 'RA 500M over RS 500P ON SHOT BLASTED / HYDRO BLASTED STEEL OR ON A COMPATIBLE SHOP PRIMER' coating strictly to be applied in accordance with the IMO PSPC requirements and/or the requirements provided by the applicable manufacturer's data-sheet, whichever is stricter. Special care is to be taken during application at low temperatures to ensure that ice crystals do not form on the steel surface to be coated.
3. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
4. The manufacturer can download the Confirmation of Type Approval from the ABS website at www.eagle.org which would be considered equivalent to a Type Approval Certificate or Statement of Compliance as mentioned in MSC 288(87).
5. Product is to be supplied with Product Datasheet, Safety datasheet and Application procedure.

Notes/Drawing/Documentation:
RA 500M (Part A), Material Safety Data Sheet, issue date: August 2015

RS 500P (Part A), Material Safety Data Sheet, issue date: August 2015

HF 500M (RA 500M Part B), Material Safety Data Sheet, issue date: August 2015

HR 500P (RS 500P Part B), Material Safety Data Sheet, issue date: August 2015

RS 500P, Product Data sheet, Issue date: January 2016

RA 500M, Product Data sheet, Issue date: September 2016

Testing Advising Assuring test report no. N968457 - Scheme 5, Issue No: 02, Issued date: 09-11-2015 - PSPC COT Full Test for RA 500M and RS 500P over Hempel' 15890 shop primer

Testing Advising Assuring test report no. N968458 - Scheme 1, Issue No: 02, Issued date: 09-11-2015 - PSPC COT Full Test for RA 500M and RS 500P over Sigmaweld 190 shop primer

Testing Advising Assuring test report no. N968459 - Scheme 2, Issue No: 02, Issued date: 09-11-2015 - PSPC COT Full Test for RA 500M and RS 500P over Interplate 937 shop primer

Testing Advising Assuring test report no. N968460 - Scheme 4, Issue No: 02, Issued date: 09-11-2015 - PSPC COT Full Test for RA 500M and RS 500P over Muki Z 2001 shop primer

Testing Advising Assuring test report no. N968461 - Scheme 3, Issue No: 02, Issued date: 09-11-2015 - PSPC COT Full Test for RA 500M and RS 500P over Cerabond 2000 shop primer

Testing Advising Assuring test report no. N953423, Issue No: 02, Issued date: 29-10-2013 - PSPC SWBT Full Test for RA 500M and RS 500P applied on rusted wet steel

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Testing Advising Assuring test report no. N953421, Issue No: 01, Issued date: 25-02-2011 - PSPC SWBT Full Test for RA 500M and RS 500P on blasted / dry steel

Terms of Validity:
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STANDARDS

ABS Rules:
2016 ABS Rules for Condition of Classification: 1-1-4/7.7, 1-1-A3, 1-1-A4

National:
NA

International:
IMO Resolution MSC.288(87) (adopted on 14 May 2010) - Performance Standards for Protective Coatings for Cargo Oil Tanks on Crude Oil Tankers.

Government:
NA

EUMED:
NA

OTHERS:
NA