CERTIFICATE NUMBER
18-HS1749223-PDA

DATE
19 Jul 2018

ABS TECHNICAL OFFICE
Houston Materials

CERTIFICATE OF
Design Assessment

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

ITW PERFORMANCE POLYMERS

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: **Synthetic Repair Compounds & Resins**

Model: **Aluminum Liquid (F-2) (Stock #: 10710, 10720)**
Aluminum Putty (F) (Stock #: 10610, 10620)
Bronze Putty (BR) (Stock #10260)
Stainless Steel Putty (ST) (Stock #10270)
Titanium Putty (...

This Product Design Assessment (PDA) Certificate 18-HS1749223-PDA, dated 19/Jul/2018 remains valid until 18/Jul/2023 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

Tim Kimble
Engineer/Consultant

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Tier: 3 - Type Approved, unit certification not required

Product: **Synthetic Repair Compounds & Resins**
Model: **Aluminum Liquid (F-2) (Stock #: 10710, 10720)**
Aluminum Putty (F) (Stock #: 10610, 10620)
Bronze Putty (BR) (Stock #10260)
Stainless Steel Putty (ST) (Stock #10270)
Titanium Putty (Stock #: 10760, 10770)

Intended Service:
Marine & Offshore Application - Patching, Sealing, Coating, Rebuilding, and Resurfacing worn areas. Also for use as a Protective Coating on new equipment.

Description:
Aluminum Liquid (F-2) is an aluminum-filled, pourable epoxy that cures at room temperature.
Aluminum Putty (F) is an aluminum-filled, epoxy putty that cures at room temperature.
Bronze Putty (BR) is a bronze-filled, epoxy putty that cures at room temperature.
Stainless Steel Putty (ST) is a stainless steel-filled, epoxy putty that cures at room temperature.
Titanium Putty is a titanium-reinforced epoxy putty that cures at room temperature.

Please also see the attached "pdf" Technical Data Sheets.

Rating:
Aluminum Liquid (F-2)
Adhesive Tensile Shear: 2,700 psi
Compressive Strength: 9,820 psi
Cure Hardness: 85D
Flexural Strength: 7,180 psi

Aluminum Putty (F)
Adhesive Tensile Shear: 2,600 psi
Compressive Strength: 8,420 psi
Cure Hardness: 85D
Flexural Strength: 6,760 psi

Bronze Putty (BR)
Adhesive Tensile Shear: 2,680 psi
Compressive Strength: 8,540 psi
Cure Hardness: 85D
Flexural Strength: 6,180 psi

Stainless Steel Putty (ST)
Adhesive Tensile Shear: 2,385 psi
Compressive Strength: 8,400 psi
Cure Hardness: 85D
Flexural Strength: 5,280 psi

Titanium Putty
Adhesive Tensile Shear: 2,000 psi
Compressive Strength: 15,200 psi
Cure Hardness: 87D
Flexural Strength: 7,700 psi

Please also see the attached "pdf" Technical Data Sheets.

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Service Restriction:
- Unit Certification is not required for this product.
- If repair involves any pressure-containing or structural component, or if repairs are extensive, the ABS Surveyor is to be contacted prior to starting preparation in order to obtain the Surveyor's acceptance for the specific application.
- 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.

Comments:
- The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- This coating has been type approved as complying with the identified standards.
- Proper application in accordance with the manufacturer's instruction is needed, which should reflect the application of the test cases used to determine compliance.
- ABS expressly disclaims all warranties with respect to the coating and the design assessment, including warranties of merchantability and fitness for a particular purpose. Successful coating is dependent on coating properties (some of which may not have been addressed in the approval standard), proper application (including surface prep, application, curing environment, etc.) and proper maintenance. These aspects are beyond the scope of this type approval.

Notes/Drawing/Documentation:
Drawing No. 14-HS183296B2-2-PDA 3-28-2018 PDAsigned application, PDA application for 14-HS183296B2-PDA, Revision: -, Pages: 1
Drawing No. 20180308151942184, Declaration of Conformity - 10710 thru 10270, Revision: -, Pages: -
Drawing No. Aluminum Liquid F-2 012612, Aluminum Liquid F-2 04-14-18 - Technical Data Sheet, Revision: -, Pages: 2
Drawing No. Aluminum Putty F 041612, Aluminum Putty F 04-14-18- Technical Data Sheet, Revision: -, Pages: 2
Drawing No. Bronze Putty BR 041712, Bronze Putty 04-14-18 - Technical Data Sheet, Revision: -, Pages: 2
Drawing No. Model Sheet - 14-HS183296B2-PDA, Model Sheet - 14-HS183296B2-PDA, Revision: -, Pages: 1
Drawing No. Stainless Steel Putty ST 041712, Stainless Steel Putty ST 04-14-18 - Technical Data Sheet, Revision: -, Pages: 2
Drawing No. Titanium Putty 041712, Titanium Putty 04-14-18 - Technical Data Sheet, Revision: -, Pages: 2
Drawing No. ITW Performance Polymers Test Report MTL2857 ABS Certification of Multiple Metal Filled Epoxies dated 10 Jul 17. Revision: -, Pages: 1

Previous Supporting Documents:
Drawing No. 07 AUG 2006, INCOMING EMAIL SUBJ:DEVCON RE-INASTATEMENT PROCESS, Revision: -, Pages: 1
Drawing No. 16 AUG 2006, INCOMING LTR SUBJ:TO CONFIRM DEVCON PRODUCTS LISTED PREVIOUSLY HAVE NOT CHANGED SINCE LAST AUDIT, Revision: -, Pages: 1

Terms of Validity:
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STANDARDS

ABS Rules:
ABS Rules for Conditions of Classification, Part 1, 2018; Steel Vessels Rules: 1-1-4/7.7, 1-1-A3, 1-1-A4.

National:
ASTM C177 (2013)
ASTM D149 (2013)
ASTM D150 (2018)
ASTM D638 (2014)
ASTM D695 (2015)
ASTM D696 (2016)
ASTM D790 (2017)
ASTM D1002 (2010)
ASTM D2240 (2015)

International:
NA

Government:
NA

EUMED:
NA

OTHERS:
NA