



Confirmation of Product Type Approval

Company Name: TPR FIBERDUR GMBH & CO. KG

Address: INDUSTRIEPARK EMIL MAYRISCHGALILEO-ALLEE 6 D-52457 Germany

Product: Thermosetting, Fiberglass (FRP) Pipe, Fittings and Joints

Model(s): Fiberdur EP = GRE system, Fiberdur CS EP = GRE system, Fiberdur VE - GRVE system, Fiberdur CS VE - GRVE system

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	17-HG1658215-PDA	13-SEP-2017	12-SEP-2022
Manufacturing Assessment (MA)	17-HN3357213	12-JUL-2017	11-JUL-2022
Product Quality Assurance (PQA)	NA	NA	NA

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Intended Service

Shipboard Class III Piping Systems Range of Application as per "Fire Endurance Requirement Matrix" Table 1 in 4-6-3 of the ABS Steel Vessel Rules e.g. notation "L3" or "0". Non conductive types above are not to be installed in hazardous areas and are not to convey fluids with a conductivity less than 1000 pico siemens per meter.

Description

All pipes and fittings noted are made from the composite material, conductive (Navicon) and non-conductive, filament wound fiber reinforced thermosetting epoxy resin matrix: Epoxy(EP) or Vinylester(VE) resin.

Fiberdur EP = GRE system has an additional liner Of 0.5 mm.

Fiberdur CS EP = GRE system has an additional liner Of 2.5 mm.

Fiberdur VE = GRVE system has an additional liner Of 0.5 mm.

Fiberdur CS VE = GRVE system has an additional liner Of 2.5 mm.

Fittings: Elbows (22,5°, 30°, 45°,60°, 90°), Tees, reducing Tees, Reducers, Flanges.

Joining methods: Cylindrical Conical joint and Conical Conical joint.

Ratings

Ratings for EP = GRE:

-EP (*) & CS EP (*) ; Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range

-50°C t 80 °C

-EP Fibermarine (*) & CS EP Fibermarine (*); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range -50°C t 80 °C

-EP Fibermarine HighLine (*) & CS EP Fibermarine HighLine (*); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN16; Temp. Range -50 °C t 80 °C

-EP Fibermarine conductive (Navicon) & CS EP Fibermarine conductive (Navicon) ; Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range -50°C t 80 °C

-EP Fibermarine HighLine conductive (Navicon) & CS EP Fibermarine HighLine conductive (Navicon); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN16; Temp. Range -50 °C t 80 °C

Ratings for VE = GRVE:

-VE (*) & CS VE (*) ; Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range -50 °C t 65 °C

-VE Fibermarine (*) & CS VE Fibermarine (*); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range -50 °C t 65 °C

-VE Fibermarine HighLine (*) & CS VE Fibermarine HighLine (*); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN16; Temp. Range -50 °C t 65 °C

-VE Fibermarine conductive (Navicon) & CS VE Fibermarine conductive (Navicon); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN10, PN16; Temp. Range -50 °C t 65 °C

-VE Fibermarine HighLine conductive (Navicon) & CS VE Fibermarine HighLine conductive (Navicon); Nom. Diameter 25 mm - 1000 mm; Nom. Pressure PN16; Temp. Range -50 °C t 65 °C

For higher temperatures maximum working pressure to be reduced as per manufacturers catalogue.

External Pressure as per Manufacturers specification (SF=3) against collapse test pressure.

(*) conductive (Navicon) and non-conductive

Service Restrictions

Unit Certification is required for this product according to 4-1-1/Table 6, Item 14.

The Pipes are not to be installed in spaces, where a fire endurance test "L1" or "L2" is required in the Fire Endurance Requirement Matrix, 4-6-3/ Table 1 of the Rules. The Materials have been tested according to ASTM D635. Acceptance of these alternative flame spread tests for pipes installation in areas, requiring low flame spread characteristics, is subject to the relevant flag state Administration requirements. Also additional smoke and toxicity test requirements are subject to the relevant flag state Administration. Further, non conductive type pipes are not to be installed in hazardous areas.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

The installation of the piping systems is to be carried out by qualified personnel in accordance with the manufacturer's specifications and instructions. Each particular application and installation is to be specifically ABS approved in conjunction with the relevant piping system.

External pressure is to be considered in each case in accordance with Steel Vessels Rules 4-6-3/5.3.

Plastic pipes are to be permanently marked with identification in accordance with a recognized standard. Identification is to include pressure ratings, design standard as indicated in Steel Vessels Rules 4-6-3/5.17

Acceptability of flame-spread tests performed in accordance with ASTM D635 may be subject to approval by the Administration of the vessel's Registry.

ABS piping systems are to be subject to a hydrostatic test pressure of not less than 1.5 times the design pressure to the satisfaction of the attending Surveyor in accordance with 4-6-3/19 of the Steel Vessel Rules.

Not to be installed in areas classified as "hazardous" by 4-8-4/27.3 of the Steel Vessel Rules.

Notes, Drawings and Documentation

SeeAttachedFile

Term of Validity

This Product Design Assessment (PDA) Certificate 17-HG1658215-PDA, dated 13/Sep/2017 remains valid until 12/Sep/2022 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.

ABS Rules

2017 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3, 1-1-Appendix 4 and 4-6-3.

2017 Offshore Support Vessels 1-1-4/7.7, 1-1-Appendix 3, 1-1-Appendix 4 and 4-6-3.

2017 Steel Vessels Under 90 Meters (295 Feet) in Length Rules 1-1-4/7.7, 1-1-Appendix 3, 1-1-Appendix 4, 4-1-1/3.3, and 4-4-2/7.

2017 Conditions of Classification - Offshore Units and Structures - 1-1/Appendix 2.

2017 ABS Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-Appendix 2, 1-1-Appendix 3, 4-2-2/7.

2017 Facilities on Offshore Installations Rules 1-1-4/9.7, 1-1-Appendix 2, 1-1-Appendix 3

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read "Joseph W. ...".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 30-Jul-2019 12:52

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.