



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 09/FEB/2021. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 03/DEC/2020 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

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.

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.

Product Name: Thermoplastic Pipe, Fittings and Joints

Model Name(s): CPVC Schedule 40, CPVC Schedule 80 and OceanTUFF (aka LabWaste) Pipe and Fittings

Presented to:
SPEARS MANUFACTURING COMPANY
15853 OLDEN STREET
United States

Intended Service: Marine & Offshore Applications for non-essential Systems including Fresh Water, Sea Water, Potable Water, Drains, Sanitary, Vents, and Brine in Services requiring no Fire Endurance Testing, no Smoke and Toxicity Testing or Electrical Conductivity. Piping to be used in Non-hazardous areas only.

Description: CPVC Schedule 40 and Schedule 80 Pipe and LabWaste Pipe and Fittings Sizes: 1/2" through 12"

Ratings: Please see "pdf" attachment for a Pressure Rating Table and the de-rating factors for higher temperatures. LabWaste is rated for open ended drains only.

Service Restrictions: Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 1) Not to be used in fire main or areas classified as "hazardous" in accordance with 4-8-4/27 of the Steel Vessels Rules and 4.3.6 of the Mobile Offshore Drilling Units Rules. 2) Fire Endurance Testing in accordance with 4-6-3/5.11 of the ABS Steel Vessels Rules has not been carried out. 3) Where plastic pipes are to be utilized for any installation within tanks or other locations which may be subject to a vacuum condition inside the pipe or a head of liquid on the outside of the pipe, external pressure is to be considered. The pipe is to be designed for an external pressure of not less than the sum of the pressure imposed by the maximum potential head of liquid outside the pipe plus full vacuum of 14.5

psi (1 bar) inside the pipe. The maximum external pressure for a pipe is to be determined by dividing the collapse test pressure by a safety factor of 3. This collapse pressure may be verified experimentally or determined by a combination of testing and calculation methods. These details are to be submitted to ABS before installation of the pipe, for ABS approval on a case by case basis. 4) Not to be used for compressed air or gas. 6) Detailed drawings of piping system for each application on board are to be submitted for review. 7) This material is not considered electrically conductive, and therefore cannot be used in hazardous areas or with nonconductive fluids in accordance with Steel Vessels Rules 4-6-3/5.15 and Mobile Offshore Drilling Units Rules 4-2-2/7.5.8. 8) This material has not been tested for fire endurance and therefore can only be used in services/locations indicated as 0, no fire endurance testing required, in accordance with Steel Vessels Rules 4-6-3/Table 1 and Mobile Offshore Drilling Units Rules 4-2-2/Table 2.

Comments: Duplicate PDA reside with Spears Coastline Plastic (403928) -YULEE. 1) The Manufacturer has provided a declaration about the control of, or the lack of, Asbestos in this product. 2) Additional Guidance on Hanger Spacing, Pressure De-rating as Temperature Increases and other Data available on additional information link. 3) Fittings with Metal Inserts or added Fiber Reinforcement may have other limitations. 4) Spears CPVC 4120 passed IMO FTP Code Annex I Part 5 for Surface Flammability (IMO Resolution A.653(16) for Low Flame Spread.). 5) Please confirm flame spread test acceptability with the flag administration. 6) All pipes and fittings are to be permanently marked with identification including pressure rating, design standard to which the pipe or fitting is manufactured, and the material with which the pipe or fitting is made.

Notes / Documentation: 80C-1 - CPVC Fittings IP-1 - IP1 Schedule 40 & 80 CPVC Pipe LPCB ISO 9001 C293-9 - ISO 9000-2008 (Spears Sylmar) LPCB ISO 9001 C1195-1 - ISO 9000-2008 (Spears Yulee) LW-1 - CPVC LABWASTE NA-1 - CPVC Drainage System Chemical Resistance Guide NA-2 - CPVC Product and Material Data Test Reports

Term of Validity: This Product Design Assessment (PDA) Certificate 15-HS1440412-PDA, dated 04/Dec/2015 remains valid until 03/Dec/2020 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: Rules for Conditions of Classification, Part 1 2015 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2015 Steel Vessel 4-6-3/Table 1, 4-6-3/5.1, 5.3, 5.7, 5.9, 5.13.1, 7.3, & 11.3.1, 4-6-3/9; 2015 ABS Rules for Conditions of Classification, Part 1 – 2015 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2015 Mobile Offshore Drilling Units 4-2-2/7.5.1, 7.5.2, 7.5.4, 7.5.5, 7.5.7(a), 4-6-3/7.9; 2015 Rules for Building and Classing Facilities on Offshore Installation - 3-5/1;

National Standards: NSF/ANSI STD 14 (2015) & 61 (2014); ASTM D1784 - 2011, ASTM F441/ F441M - 2015, ASTM F2618- 2015 for LabWaste.

International Standards: IMO International Code for Application of Fire Test Procedures, Annex 1, Part 5 for Surface Flammability (A.653), Adopted on 19 October 1989;

Government Authority:
EUMED:
Others: CAN/ULC S102.2 - 2010 for LabWaste

| Model Certificate | Model Certificate No | Issue Date | Expiry Date |
|-------------------|----------------------|-------------|-------------|
| PDA | 15-HS1440412-PDA | 08/DEC/2015 | 03/DEC/2020 |



ABS Programs

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 was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. 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.