



## ***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 02-FEB-2020. 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 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:** Expansion Joint, Bellows Type  
**Model Name(s):** Garflex Style 8100

**Presented to:**  
GARLOCK SEALING TECHNOLOGIES  
1666 DIVISION STREET  
NY 14522  
United States

<b>Intended Service:</b>	Marine & Offshore Applications - Expansion joints for use in Brine, Base Oil, Potable Water, Bilge, Mud, Engine Cooling Water, Sea Water, Electrical Equipment Cooling, Ballast, Drill Water, Thruster Cooling, Water Maker, Fuel Oil and Lube Oil Systems and class III circulating water system in machinery spaces.
<b>Description:</b>	Garflex 8100 expansion joint made of rubber, reinforced with nylon tire cord. CR cover and NBR liner, reinforced with steel wire cord fitted with floating flanges made of black zinc chromate coated cast ductile iron or zinc plated carbon steel.
<b>Tier:</b>	3
<b>Ratings:</b>	I.D.Size / Max. Allowable Working Pressure 2" to 12" / 232 psi (16 bar) 14" to 16" / 100 psi (10 bar) Face-to-Face: 5", 6", 8" Operating Temperature: Up to 122°F (50°C) to 230°F (110°C)
<b>Service Restrictions:</b>	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. i) Expansion joints are to be installed as close as possible to an anchor point. ii) Expansion joints are to be installed in accessible locations to permit regular inspection and/or periodic servicing.
<b>Comments:</b>	The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. i) Each expansion joint shall be permanently marked with

manufacturer's name, nominal diameter, manufactured date (month and year).

**Notes / Documentation:** Drawing Style 8100 Garflex Expansion Joint Flammability Testing Chem Lab. Job # 9449 Chem Lab Procedure CL-10-32 dated 4-Mar-10 Burst testing dated 26-Mar-10 witnessed by ABS Surveyor Garlock Sealing Technologies letter dated 29-Mar-10 Aero Nav Laboratories Inc. Report of Fire Test, Style 8100 & 206 Fire Resistance Testing ISO 15540, Revision A.

**Term of Validity:** This Product Design Assessment (PDA) Certificate 15-VC1321984-PDA, dated 03/Feb/2015 remains valid until 02/Feb/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: Steel Vessels 4-6-2/5.8.1; 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: Mobile Offshore Drilling Units 4-2-1/11.7;

**National Standards:**  
**International Standards:**  
**Government Authority:**  
**EUMED:**  
**Others:** None.

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	15-VC1321984-PDA	03-FEB-2015	02-FEB-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.