



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 11/DEC/2018. 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 06/NOV/2017 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): 523483

Presented to:
HOSE MASTER, LLC
1233 EAST 222ND STREET
United States

Intended Service:	Marine & Offshore Applications - For Class III piping systems.
Description:	Expansion Joint type single of 20" NPS x 18" OAL with bellows 2 plies constructed with ASTM A240-321 and Vanstoned Flanged Ends Class 150# 20" manufactured with ASTM A182-304.
Tier:	3
Ratings:	Size: 20"; Design Pressure : 5 psi (0.34 Bar); Design Temperature: 1,200 °F (649 °C); Design Cycle Life: 3,000
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.
Comments:	i) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. ii) Bellows design for 15 psi and greater will hold Full Vacuum iii) Hydrotest to 7.5 psi at Ambient Temperature
Notes / Documentation:	Supporting Data: Bellows Design Analysis - Expansion Joint 523483 dated 18 September 2012; Dwg. No. 523483, Rev. - 20" NPS x 18" OAL Single Expansion Joint Design # 523483 - Physical Dimension per Dwg. 523483.
Term of Validity:	This Product Design Assessment (PDA) Certificate 12-HS955548-PDA, dated 07/Nov/2012 remains valid until 06/Nov/2017 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: 2012 Steel Vessels Rules 1-1-4/7.7,1-1-Appendix 3, 4-6-2/5.8.2; 2012 MODU Rules 4-2-1/11.9

National Standards: EJMA-2003, 8th Edition.

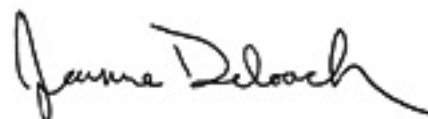
International Standards:

Government Authority:

EUMED:

Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	12-HS955548-PDA	07/NOV/2012	06/NOV/2017



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.