



CERTIFICATE NUMBER
18-HS1784826-PDA

DATE
15 Nov 2018

ABS TECHNICAL OFFICE
Houston ESD - Piping

CERTIFICATE OF Design Assessment

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

HOSE MASTER, LLC

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: **Expansion Joint, Bellows Type**

Model: **EJ015, EJ050, EJ100 and EJ150**

This Product Design Assessment (PDA) Certificate 18-HS1784826-PDA, dated 15/Nov/2018 remains valid until 14/Nov/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

Daniel Hyun SON

Hyun Young Son

Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

HOSE MASTER

1233 EAST 222ND STREET

CLEVELAND OH

United States 44117

Telephone: 800-221-2319

Fax: 216-481-2020

Email: Sales@hosemaster.com

Web: hosemaster.com

Tier: 3 - Type Approved, unit certification not required

Product: Expansion Joint, Bellows Type
Model: EJ015, EJ050, EJ100 and EJ150
Intended Service:
Marine & Offshore Applications

Description:

Austenitic stainless steel and high nickel alloy bellows type expansion joints assembled in Single or Universal configurations with weld end, fixed flanged or floating flanged fittings and permitted options for hardware, liners, covers and lifting devices.

Rating:

Size: 2" to 60"

Design Pressure: Up to 15 psi

Size: 2" to 48"

Design Pressure: Up to 50 psi

Size: 2" to 36"

Design Pressure: Up to 100 psi

Size: 2" to 24"

Design Pressure: Up to 150 psi

Design Temperature: up to 1,200 °F (649 °C)

Design Cycle Life: up to 10,000

Contact the manufacturer about pressure and temperature rating and axial/lateral/rotation movement rating for specific bellows design.

Service Restriction:

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) After assembly on board, each piping system including the subject expansion bellows should be subjected to a leak test using air, halides, or other suitable medium to a pressure depending on the leak detection method applied.
- iii) Bellows design for 15 psi and greater will be able to hold full vacuum.
- iv) Expansion joints are to bear permanent identification, such as manufacturer's name or trademark, standard of compliance, material identity, pressure rating, etc., as required by the standard of compliance or the manufacturer's specification. Such markings may be cast or forged integral with, stamped on, or securely affixed by nameplate on the component, and are to serve as a permanent means of identification of the component throughout its service life in accordance with 4-6-1/7.1.4 & Table 2 of the ABS Steel Vessels Rules.

Notes/Drawing/Documentation:

Supporting Data:

Bellows Design Analysis Expansion Joint EJ015ABS0200, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;

Dwg. EJ015ABS0200 Rev. -, 2" NPS x 10.5" OAL Single Expansion Joint, dated 10/16/2013;

Bellows Design Analysis Expansion Joint EJ015ABS0200-1200, 2" NPS x 6.125" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;

Dwg. EJ015ABS0200-1200 Rev. -, 2" NPS x 6.125" OAL Single Expansion Joint, dated 11/06/2018;

Bellows Design Analysis Expansion Joint EJ015ABS6000, 60" NPS x 15.125" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;

Dwg. EJ015ABS6000 Rev. -, 60" NPS x 15.25" OAL Single Expansion Joint, dated 10/16/2013;

Bellows Design Analysis Expansion Joint EJ015ABS6000-1200, 60" NPS x 19.5" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;

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Dwg. EJ015ABS6000-1200 Rev. -, 60" NPS x 19.5" OAL Single Expansion Joint, dated 11/06/2018;
Bellows Design Analysis Expansion Joint EJ015ABS6000_625, 60" NPS x 15.125" OAL Single Expansion Joint - EJMA 9, dated 10/19/2018;
Dwg. EJ015ABS6000_625 Rev. -, 60" NPS x 15.25" OAL Single Expansion Joint - EJMA 9, dated 10/19/2018;
Bellows Design Analysis Expansion Joint EJ050ABS0200, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ050ABS0200 Rev. -, 2" NPS x 10.5" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ050ABS0200-1200, 2" NPS x 8.75" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;
Dwg. EJ050ABS0200-1200 Rev. -, 2" NPS x 8.75" OAL Single Expansion Joint, dated 11/06/2018;
Bellows Design Analysis Expansion Joint EJ050ABS4800, 48" NPS x 15.25" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ050ABS4800 Rev. -, 48" NPS x 15.25" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ050ABS4800-1200, 48" NPS x 19.625" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;
Dwg. EJ050ABS4800-1200 Rev. -, 48" NPS x 19.625" OAL Single Expansion Joint, dated 11/06/2018;
Bellows Design Analysis Expansion Joint EJ100ABS0200, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ100ABS0200 Rev. -, 2" NPS x 10.5" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ100ABS0200-1200, 2" NPS x 6.875" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;
Dwg. EJ100ABS0200-1200 Rev. -, 2" NPS x 6.875" OAL Single Expansion Joint, dated 11/06/2018;
Bellows Design Analysis Expansion Joint EJ100ABS3600, 36" NPS x 17" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ100ABS3600 Rev. -, 36" NPS x 17" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ100ABS3600-1200, 36" NPS x 20.125" OAL Single Expansion Joint - EJMA 9, dated 11/06/2018;
Dwg. EJ100ABS3600-1200 Rev. -, 36" NPS x 20.125" OAL Single Expansion Joint, dated 11/06/2018;
Bellows Design Analysis Expansion Joint EJ150ABS0200, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ150ABS0200 Rev. -, 2" NPS x 10.5" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ150ABS0200-1200, 2" NPS x 9.25" OAL Single Expansion Joint - EJMA 9, dated 11/05/2018;
Dwg. EJ150ABS0200-1200 Rev. -, 2" NPS x 9.25" OAL Single Expansion Joint, dated 11/05/2018;
Bellows Design Analysis Expansion Joint EJ150ABS0200_276, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2018;
Dwg. EJ150ABS0200_276 Rev. -, 2" NPS x 10.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2018;
Bellows Design Analysis Expansion Joint EJ150ABS2400, 24" NPS x 14.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2013;
Dwg. EJ150ABS2400 Rev. -, 24" NPS x 14.5" OAL Single Expansion Joint, dated 10/16/2013;
Bellows Design Analysis Expansion Joint EJ150ABS2400-1200, 24" NPS x 16.5" OAL Single Expansion Joint - EJMA 9, dated 11/05/2018;
Dwg. EJ150ABS2400-1200 Rev. -, 24" NPS x 16.5" OAL Single Expansion Joint, dated 11/05/2018;
Bellows Design Analysis Expansion Joint EJ150ABS2400_625, 24" NPS x 14.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2018;
Dwg. EJ150ABS2400_625 Rev. -, 24" NPS x 14.5" OAL Single Expansion Joint - EJMA 9, dated 10/16/2018;
GAP Analysis EJMA 8 vs. EJMA 9 S-Value & Cycle Variations dated 16 October 2013;

Terms of Validity:

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STANDARDS**ABS Rules:**

The Rules for Conditions of Classification, Part 1 2018 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2018 Steel Vessel Rules 4-6-2/5.8.2

The Rules for Conditions of Classification, Part 1 – 2018 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2018 Mobile Offshore Drilling Units Rules 4-2-1/11.9

National:

2009 Standards of the Expansion Joint Manufacturers Association (9th Edition EJMA), 2011 Addenda

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA