



Type Approval Certificate

[Pipe Fittings - Expansion Joints / Flexible Joints]

Initial Approval 19 February 2021
Manufacturer Elaflex Hiby GmbH & Co. KG
 Schnackenburgallee 121, D-22525 Hamburg, Germany

Product Description Rubber Expansion Joints

- 1) Type : ERV-R, ERV-G
 Bellows Material : Butyl/EPDM, NBR, PA-, PES-Textilcord, CR
 Medium for ERV-R : Fresh water, Sea water, Waste water, Drinking water
 Medium for ERV-G : Fuel oil, Lubricating oil, Hydraulic oil, Sanitary
- 2) Type : ERV-GS, ERV-GS HNBR
 Bellows Material : NBR/H-NBR, Steel-Wire-Cord, CR
 Medium : Fuel oil, Lubricating oil, Fresh water, Sea water,
 Air, Hydraulic oil, Waste oil, Mist gas

“ See Appendix 1 ”

Approval Condition “ See Appendix 1 ”

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 5, Ch. 6, Sec. 1 of the Rules for the Classification of Steel Ships.

This Certificate is valid until 18 February 2031

Issued at Busan, Korea on 18 March 2026



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME26011963298) and certificate No.(HMB27110-PE001).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 18 March 2026

A. Product Description

1. Product Specification

Type	Size (mm)	Max. Operating Temp. (°C)	Max. Working Press. (bar)		Effect Area Q (cm ²)	Length (mm)
			PN10	PN16		
ERV-R *)	25 ~ 1000A	50 70 100	10 8 6	16 12 10	15 ~ 8700	130 ~ 300
ERV-G *)	25 ~ 1000A	50 70 90	10 8 6	16 12 10	15 ~ 8700	130 ~ 300
ERV-GS	25 ~ 600A	60 90	10 6	16 10	10 ~ 3080	130 ~ 200
ERV-GS HNBR	25 ~ 600A	60 100	10 6	16 10	10 ~ 3080	130 ~ 200

- *) Fire sleeve applications
Expansion joints with bellows reinforcement other than steel, intended for application in piping systems conveying flammable media or sea water, where failure may result in flooding shall be completely covered by a fire sleeve of type FSH (fire tested acc. to ISO 15540/41).
- DN20 up to DN 300, where fire resistance by the Rules is required.
 - DN300 up to DN1000, where fire resistance is not required.

2. Approved Drawings and Documents

- 1) Product catalogue for ERV Rubber Expansion Joint, section 4, Revision 12. 2025

3. Test Reports, etc.

- 1) Test Report of Pressure test & Burst test dated 24/01/2020
- 2) Test Report of Pressure test & Burst test dated 05/02/2020
- 3) Test Report of Pressure test & Burst test dated 05/04/2020
- 4) Test Report of Endurance test dated 12/12/2019
- 5) Test Report of Endurance test dated 17/12/2019
- 6) Test Report of Endurance test dated 21/01/2020
- 7) Test Report of Endurance test dated 08/01/2020
- 8) Test Report of Endurance test dated 14/01/2020
- 9) Test Report of Impulse test dated 11/04/2011
- 10) Test Report of Flame resistance test dated 27/08/2009

B. Approval Condition

1. Application & Limitation

- 1) Materials for the Flange, bellows and end pipes are to be complied with the requirements of the Rules Pt 2, Ch 1 or to be satisfactory to the Surveyor.
- 2) Rubber expansion joints are to be installed at visible and accessible positions.
- 3) Installation is not permitted ;
 - In permanently pressurized starting air lines of diesel engines
 - In cargo lines of tankers
 - At the ship's side

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is required in case where the expansion joints are used for Class II piping system.

3. Marking

- 1) The product or packing is to be marked with manufacturer name or trade mark, size and type designation on a suitable position.

4. Others

- N/A

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