



Marine &amp; Offshore

Certificate number: 01346/M1 BV

File number: ACM 135/503/2-3

Product code: 2102I

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**ELAFLEX HIBY GmbH & Co. KG**

Hamburg - GERMANY

*for the type of product*

**NON-METALLIC EXPANSION JOINTS / BELLOWS**

RUBBER EXPANSION JOINTS, types: ERV YELLOW BAND and RED BAND

### Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Offshore Units

BUREAU VERITAS Rules on Materials and Welding for the Classification of Marine Units

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 18 Aug 2030**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 24 Jun 2025,

Heiko Lange

***This certificate was created electronically and is valid without signature***



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## **THE SCHEDULE OF APPROVAL**

### **1. PRODUCT DESCRIPTION:**

**Rubber expansion joints, type: ERV YELLOW BAND and RED BAND**

**ERV YELLOW BAND:** Suitable for Petroleum based products.

**ERV RED BAND:** Not suitable for all kind of mineral oil products, cooling water with added oil containing corrosion preventatives and oily compressor air.

#### 1.1 Identification and technical data:

File number	Type	Size	Nominal pressure [bar]	Max. working temperature [°C]
ACM 135/503/2	ERV YELLOW BAND	DN 25 up to DN 400	16	90
		DN 250 up to DN 1000	10	
ACM 135/503/3	ERV RED BAND	DN 25 up to DN 400	16	100
		DN 250 up to DN 1000	10	

The max. working pressure is not to exceed one quarter of the burst pressure at the service temperature.

#### 1.2 Materials and components:

<b>Flanges</b>	Stainless steel, carbon steel, zinc plated or hot galvanized
<b>Liners</b>	NBR (yellow band), EPDM (red band)
<b>Reinforcement</b>	PA textile cord, butyl rubberized (red band)
<b>Cover</b>	CR (yellow band), EPDM (red band)

The nature of materials should be suitable for the intended service temperatures.

### **2. DOCUMENTS AND DRAWINGS:**

According to following documents:

Designation	Rev.
Manufacturer's catalogue: Rubber Expansion Joints Section 4	06.2025

### **3. TEST REPORTS:**

According to the following tests:

- Hydraulic pressure impulse test according to DIN EN ISO 6803.
- Burst pressure test of ERV-R32 at ELAFLEX – Gummi Ehlers GmbH, Hamburg / Germany, dd. 05.04.2019 witnessed by an IACS member.
- Burst pressure test of ERV-R300 at ELAFLEX – Gummi Ehlers GmbH, Hamburg / Germany, dd. 05.04.2019 witnessed by an IACS member.
- Burst pressure test of ERV-R500 at ELAFLEX – Gummi Ehlers GmbH, Hamburg / Germany, dd. 05.04.2019 witnessed by an IACS member.
- Burst pressure test of ERV-R600 at ELAFLEX – Gummi Ehlers GmbH, Hamburg / Germany, dd. 05.02.2020 witnessed by an IACS member.
- Burst pressure test of ERV-R900 at ELAFLEX – Gummi Ehlers GmbH, Hamburg / Germany, dd. 24.01.2020 witnessed by an IACS member.
- Flame resistance test according to DIN EN ISO 15540.

### **4. APPLICATION / LIMITATION:**

4.1 The Expansion joints may be used for the following services on board depending on type:

Inside engine room with fire protective cover FSH:

- Liquid fuel - Lubricating oil - Fresh and sea water system - Cooling water system - Ballast system - Bilge system

Outside engine room:

- Cargo oil piping system - Fresh and sea water system - Ballast system - Bilge system - Sanitary discharge

4.2 A fire protective cover type FSH is to be fitted when used for flammable fluids, sea water and bilge lines.

- 4.3 On board installation and maintenance requirements have to be in accordance with the Society's Rules requirements and the manufacturer's instructions.
- 4.4 For piping led overboard below the freeboard deck, the compensators are not to be fitted unless a suitable stop valve is fitted at the shell. Furthermore, efficient means are to be provided to avoid the flooding of the ship in case of rupture of the compensators.
- 4.5 Reduction factors are to be taken in consideration for maximum working pressure and tolerable movement caused by temperature influence according to manufacturer's instructions.
- 4.6 The calculated maximum values of axial and lateral movements at design full cycles are not to be exceeded.
- 4.7 In all cases, the associated pipelines are to be suitably aligned, supported and anchored. The joints are to be at any time accessible, well visible and protected against over extension and compression and against mechanical damage.
- 4.8 Piping system drawings and calculation notes are to be submitted for review whenever expansion bellows are fitted on board.

## **5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 The expansion joints are to be supplied by **ELAFLEX HIBY GmbH & Co. KG** in compliance with the type and the requirements described in this certificate.
- 5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.
- 5.3 BUREAU VERITAS product certificate is required.
- 5.4 For information, **ELAFLEX HIBY GmbH & Co. KG** has declared to BUREAU VERITAS the following production site:  
**ELAFLEX HIBY GmbH & Co. KG, Hamburg / GERMANY**
- 5.5 Each rubber expansion joint with fixed flanges is to be hydraulic pressure tested to 1.5 times the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

## **6. MARKING OF PRODUCT:**

Each expansion joint should be marked with:

- Manufacturer's name or logo
- Date of manufacture (month/year)
- Type designation
- Nominal diameter
- Pressure rating
- BUREAU VERITAS' marks

## **7. OTHERS:**

- 7.1 It is **ELAFLEX HIBY GmbH & Co. KG**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 01346/M0 BV issued on 05 Jun 2025 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*