



Marine & Offshore

Certificate number: 06823/E0 BV

File number: ACM 135/503/1

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-GUMMI EHLERS GmbH

Hamburg - GERMANY

for the type of product

NON-METALLIC EXPANSION JOINTS / BELLOWS

RUBBER EXPANSION JOINTS, type: ERV-GS / GS-HNBR

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Offshore 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 is a renewal of certificate N° 06823/D0 BV expiring on 04/10/2017

This certificate will expire on: 04 Oct 2022

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 22 Sep 2017,

Adama Diene



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. 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

ELAFLEX rubber expansion joints, yellow steel, type: ERV-GS / ERV-GS HNBR

1.1 Technical data:

Size range	DN 25 to DN 450		DN 450 to DN 700	
Max. working pressure [bar]	16	10	10	6
Max. working temperature [°C]	60	90 / 100	60	90 / 100

Maximum working temperature: +90°C (ERV-GS) / +100°C (ERV-GS HNBR)

1.2 Material specification:

Inner tube	NBR (nitrile) / HNBR (special nitrile)
Reinforcement	Steel wire cord, CR rubberised
Cover	Chloroprene CR (neoprene)
Swivel flanges	Stainless steel, Carbon steel, zinc plated or hot galvanised

2. DOCUMENTS AND DRAWINGS

According to following documents:

Drawing No.	Rev.	Designation
Catalogue page 427 - 428	5.2016	RUBBER EXPANSION JOINTS ERV-GS
Catalogue page 431 - 432	5.2016	RUBBER EXPANSION JOINTS ERV-GS HNBR

3. TEST REPORTS

- 3.1 Tests carried out: burst test, fire resistance test, impulse test and hydraulic test.
- 3.2 Fire test reports according to ISO 15440 issued by WTD 71 dated 02.11.2005.
- 3.3 Impulse test reports according to DIN EN ISO 6803 issued by TÜV-SÜD dated 30.01.2006 and by CONTINENTAL CONTITECH dated 11.04.2011.
- 3.4 Flame resistance tests according to DIN EN ISO 15540, Test Report No. IBB 472 dated 27.08.2009.
- 3.5 Burst pressure test report dated 02.02.2012 issued by CONTINENTAL CONTITECH.

4. APPLICATION / LIMITATION

- 4.1 May be used for the following services on board:
 - Sea water *, fuel oil, lubricating oil and other flammable liquids (only fire type DN 25 to DN 400, 10 bar max),
 - Fresh water, bilge, closed sanitary lines without connection to the ship's side, non-essential pipe systems.
 * Where fitted in fire fighting lines, larger sizes may be accepted up to DN 600 outside machinery spaces and provided agreement of the flag authorities of the ship.
- 4.2 In all cases, the associated pipes 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.
- 4.3 On board installation and maintenance requirements have to be in accordance with the Society's Rules requirements and the manufacturer's recommendations.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The expansion joints are to be supplied by the manufacturer in compliance with the type and 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 Arrangements shall be made for a Society's Surveyor to attend the tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme, BV Mode I, has been arranged, in order to issue the BUREAU VERITAS certificate for the units to be fitted on board ships classed with BUREAU VERITAS.
- 5.5 **ELAFLEX-GUMMI EHLERS GmbH** has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.
- 5.6 Each rubber expansion joint with end fittings is to be hydraulically pressure tested to twice the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

6. MARKING OF PRODUCT

Each expansion joint is to be clearly marked to avoid any wrong utilization with at least:

- Manufacturer's name or logo
- Type description: coloured brand
- Maximum working pressure
- BUREAU VERITAS' marks

7. OTHERS

- 7.1 This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **ELAFLEX-GUMMI EHLERS GmbH, Hamburg / GERMANY** will accept full responsibility for informing shipbuilders, ship owners or their subcontractors of the proper methods of use and general maintenance of the units and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 06823/D0 BV issued on 04 Oct 2012 by the Society.

*** END OF CERTIFICATE ***