



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. **30 946 - 83 HH**
Company **Elaflex-Gummi Ehlers GmbH**
Schnackenburgallee 121
22525 Hamburg, GERMANY

Product Description **RUBBER COMPENSATORS**

Type **ERV**
Optionally with fire sleeve type FSH

Environmental Category **None**

Technical Data / Range of Application **Size Range: DN 25 - 300 (fire sleeve applications)**
up to DN 1000 (none fire resistant applications)

Nominal Pressure: **PN* 25, 16, 10**

| Types | Liner | Reinforcement | Cover | M.A.W.T.* |
|-----------------|------------|----------------------|---------|-----------|
| ERV-YELLOW BAND | NBR | PA textile cord | CR | 100°C |
| ERV-RED BAND | Butyl/EPDM | PA textile cord | EPDM | 100°C |
| ERV-CR | CR | PA textile cord | CR | 90°C |
| ERV-ROTEX | EPDM | Polymer textile cord | EPDM | 130°C |
| ERV-ORANGE BAND | NBR | PA textile cord | CR | 90°C |
| ERV- GREEN BAND | Hypalon | PA textile cord | Hypalon | 100°C |
| ERV- WHITE BAND | Nitrile | PA textile cord | CR | 90°C |
| ERV- VITEX | FPM | PA textile cord | ECO | 90°C |
| RED SPOT | Butyl EPDM | PA textile cord | EPDM | 90°C |

* Individual nominal pressure according to product data sheets released by Elaflex

Connections: **Stainless steel, carbon steel, zinc plated or hot galvanized**

Test Standard **VI-7-8 Regulations for the Performance of Type Tests, Part 6 - Test Requirements for Mechanical Components and Equipment:2008**

Documents
- Fire test report according to ISO 15540 issued by WTD 71 dated 2006-12-13
- Burst pressure test report dated 2008-10-08, Certificate GL 50 483 - 06 HH
- Product data sheets 423, 435, 407, 415, 411, 439, 443, 451, 447, 419, 471 of catalogue Edition

Remarks **Compensators are to be installed at visible and accessible positions.**
For selection and installation the manufacturer instructions are to be observed.

Valid until **2014-10-05**

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File No. **II.D.07**

Hamburg, 2011-01-06

Germanischer Lloyd

Hanspeter Raschle

i.A. J. Markus
Hagen Markus



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RANGE of APPLICATION / LIMITATION

The compensators of type ERV are type approved for the use according to their suitability in:

Fuel-, lubricating oil-,hydraulic oil-, bilge-, ballast-, fresh water cooling-, sea water cooling-, water filled fire extinguishing-, compressed air systems as well as in ancillary piping systems.

For the use in fuel oil and lubricating oil systems, seawater cooling systems and bilge and ballast water systems arranged in machinery spaces each compensator is to be provided with a fire sleeve of type FSH. For the use in fire extinguishing systems the compensator is to be provided with a fire sleeve always.

For further information refer to the Rules I-1-2 Machinery Installations, Section 11 U.

LIMITATION

Compensators made of non-metallic materials are not permitted:

- In permanently pressurized starting air lines of diesel engines
- In cargo lines of tankers
- At the ship's side

FINAL INSPECTION

Prior to installation on board ship each compensator is to be subjected in the manufacturer's works to a pressure test under the supervision of a GL surveyor.

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This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".