EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000B2Z
Revision no.:
0

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

that the **Materials other than steel for pipes conveying oil or fuel oil: — flexible pipe assemblies and compensators**

with type designation(s)
ELAFLEX Expansion Joint ERV-GS and ERV-GS HNBR, ERV with fire sleeve type FSH

issued to
ELAFLEX HIBY GmbH & Co. KG
Hamburg, **Germany**

is found to comply with the Implementing Regulation **(EU) 2024/1975** for
Item no. **MED/3.15c** (Row **1 of 1**)
according to the following requirements:
SOLAS 74 Reg. II-2/4, IMO Res. MSC.36(63)-(1994 HSC Code) 7, IMO Res. MSC.36(63)-(1994 HSC Code) 10, IMO Res. MSC.97(73)-(2000 HSC Code) 7, IMO Res. MSC.97(73)-(2000 HSC Code) 10, IMO MSC/Circ.1120, SOLAS 74 Reg. X/3

Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2025-05-14**

Expiry date: **2030-03-23**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Hagen Markus

Notified Body
no.: **0098**

for **DNV SE**

Christine Mydlak-Röder
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Rubber expansion joints consisting of rubber bellows with fabric or steel reinforcement and swivel flanges made of carbon steel, hot dip galvanized and zinc plated steel, stainless steel, gun metal or bronze.
Design of bellows, flanges and expansion joint configurations according to Elaflex “Rubber Expansion Joints Catalog - Group 4”.

Please see Appendix: Product Description

Application/Limitation

Range of Application see Appendix "Application/Limitation".
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).
Limitations
Rubber expansion joints are to be installed at visible and accessible positions.
Installation is not permitted:
- In permanently pressurized starting air lines of diesel engines
- In cargo lines of tankers
- At the ship's side

Installation
For selection and installation of the expansion joints the Elaflex “Rubber Expansion Joints Catalogue -Group 4” is to be observed. In piping systems conveying fuel oil, lubricating oil, sea water cooling and compressed air, a shut-off device, e.g. globe valve, is to be provided to isolate the expansion joint in case of bellows rupture.

Please see Appendix: Application/Limitation

Type Examination documentation

Tests carried out

Fire resistance tests according to ISO 15540/41:2016

Marking of product

Please see Appendix: Marking of product

APPENDIX

Application/Limitation

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Types	Working pressure[1]	Temperature range	Size range
ERV-G	Up to 16bar depend on size[1]	up to +90°C	DN20 up to DN 300, where fire resistance by the Rules is required (fire sleeve applications) > DN300 up to DN1000, where fire resistance is not required DN700 up to DN1000[2]
ERV-G LT			
ERV-R		up to +100°C	
ERV-Rotex		up to +130°C	
ERV-BR		up to +70°C	
ERV-CR		up to 90°C	
ERV-GR		up to +100°C	
ERV–W		up to +90°C	
ERV-VITEX		up to +110°C	
RED SPOT (ERP)	10bar	up to +90°C	
ERV-G AF	20bar	up to +65°C	DN50 – DN150
ERV-H2+			
ERV-OR	25bar	up to +90°C	DN20 – DN200

Notes
[1] Working pressure and vacuum according to product data sheets released by Elaflex
[2] For installation in piping systems without vibration load

Types	Working pressure	Temperature range	Size range
ERV-GS Yellow steel	up to 10bar	up to +90°C	DN20 up to DN600
ERV-GS HNBR Yellow steel		up to +100°C (+120°C short term)	

APPENDIX
Marking of product

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Bellows	
Scope	**Example**
Manufacturers trademark	
Type	ERV
Nominal pressure	PN16
Nominal size	DN50, 2 in.
Production date Year/Quarter/Week	
QR Code	
ERV Yellow steel – GS	Double yellow band
ERV Yellow steel – GS HNBR	Yellow-Blue-Yellow band
ERV-G	Yellow band
ERV-G LT	Yellow band + white imprint LT
ERV-G AF	Yellow band
ERV-H2+	Grey Band
ERV-R	Red band
ERV-ROTEX	Double red band
ERV-BR	Blue Spot
ERV–Red Spot (ERP)	Red Spot
ERV-CR	White imprint ”CR”
ERV–OR	Orange band
ERV–GR	Green band
ERV–W	White band
ERV-VITEX	White-green-white band

Flanges	
Scope	Example
Manufacturers trademark	
Batch number	
Flange manufacturer short sign	
Type of material	S235JR
DN / PN	80 / 16
Serial number / QR Code	

APPENDIX
Product Description

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Overview

Types	Design			Piping systems / Media
	Liner	Reinforcement	Cover	
ERV-G	NBR	PA textile cord	CR	Fuel oil, lubricating oil, hydraulic oil, bilge, sea water and freshwater cooling, ballast water, water filled fire extinguishing, compressed air, sanitary.
ERV-G LT	NBR		CR	
ERV-G-AF	Special compound[1]		CR	All aviation fuels. Design to aviation hose standard EN ISO 1825 / EI 1529. For piping systems of air refuelling vehicles or refuelling vehicles.
ERV-H2+	Special compound[1]		CR	For hydrogen and methane or mixtures ('Hythane'). For piping systems in the industrial sector and for ships.
ERV-R	Butyl / EPDM		EPDM	Fresh and sea water, light acids, alkalis, salt solutions.
ERV-Rotex	EPDM	Polymer textile cord	EPDM	Heating water, cooling water, hot air and sanitary water.
ERV-BR	BR/NR	PES textile cord	BR/NR	Abrasive media such as sludges, slurries, solid/liquid mixtures and emulsions, dust or powdering products (e.g. carbon-black steel) and all kind of non-oil containing water.
RED SPOT (ERP)	Butyl EPDM	PA textile cord	EPDM	Ballast water, sea water and fresh water, cooling water, water filled fire extinguishing and sanitary.
ERV CR	CR		CR	Fuel oil, lubricating oil, hydraulic oil, bilge, sea water and freshwater cooling, ballast water, water filled fire extinguishing, compressed air, sanitary.
ERV-OR	NBR		CR	
ERV-GR	CSM		CSM	
ERV-W	NBR		CR	
ERV-VITEX	FKM		ECO	
FSH, Fire sleeve for ERV		For the use in fuel oil and lubricating oil systems, sea water cooling, bilge and ballast water systems arranged in machinery spaces each compensator of type ERV is to be provided with a fire sleeve of type FSH.		

Types	Design			Piping systems / Media
	Liner[1]	Reinforcement	Cover	
ERV-GS Yellow-Steel	NBR	Steel wire cord, CR rubberised	CR	Fuel oil, lubricating oil, hydraulic oil, bilge, sea water and freshwater cooling, ballast water, water filled fire extinguishing, compressed air, sanitary. Application in ballast water lines (not through pipe tunnels and double bottom).
ERV-GS HNBR Yellow-Steel	HNBR			

Note
[1] Seamless, electrically conductive