



Type Approval Certificate

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

This certificate supersedes certificate number 03/20021 (E2) issued on 23.03.2011 and 03/20022 (E2) issued on 14.05.2013 which are hereby cancelled.

This certificate is issued to:

PRODUCER ELAFLEX - Gummi Ehlers GmbH
Schnackenburgallee 121
22525 Hamburg
Germany

DESCRIPTION Rubber expansion joint consisting of:

Gelbstahl

Tube : NBR/HNBR (nitrile), seamless, electrically conductive
Reinforcement : galvanised steel wire cord, CR rubberised
Cover : Chloroprene CR
Flanges : stainless steel, carbon steel, zinc plated or hot galvanized

Gelbring Rotring ROTEX

Tube : NBR Butyl/EPDM EPDM
Reinforcement : Nylon text.cord Nylon text.cord Poymer text.cord
Cover : Chloroprene CR EPDM EPDM
Flanges : stainless steel, carbon steel, zinc plated or hot galvanized

Certificate No. 16/20031
Issue Date 03 March 2016
Expiry Date 02 March 2021
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Olaf Schmidt
Hamburg Technical Support Office

Lloyd's Register EMEA
LR031.1.2013.12



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TYPE

ERV- GS Gelbstahl (Yellow Steel)
ERV- GS HNBR Gelbstahl HNBR (Yellow Steel HNBR)
ERV- G Gelbring (Yellow Band)
ERV- R Rotring (Red Band)
ERV- ROTEX (Double Red Band)

APPLICATION

Piping systems in marine and offshore fields, classed or intended for classification with Lloyd's Register

ERV- GS and ERV-GS HNBR Gelbstahl

- + Oil fuel, lubricating oil and other flammable liquids
- + Sea* - and fresh water cooling lines
- + Ballast lines in machinery spaces and duct keels
- + Bilge lines in duct keels only
- + Cargo lines for MDO and lubricating oil carrier
- + Cargo lines inside cargo oil tanks of oil tankers
- + All other non- essential pipe lines

ERV- Gelbring/Rotring/ROTEX

Fresh and sea* water lines; ballast lines
in machinery spaces, duct keels and double bottom water ballast tanks;
bilge lines inside duct keels only; sanitary discharge and cargo lines
(NBR only) inside the cargo oil tanks of tankers.

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**APPLICATION,
CONT.**

All Types

*Where fitted in sea water lines in machinery compartments, guards are to be provided which will effectively enclose, but not interfere with the action of the expansion joint and which will reduce to the minimum practicable any flow of water in the event of failure of the flexible element

The expansion joints are to be installed in well visible and accessible locations and protected against over extension and compression and against mechanical damage. The adjoining pipes are to be suitably aligned, supported, guided and anchored.

The producer's instructions and recommendations are to be considered

STANDARD

Lloyd's Register Rules and Regulations for the Classification of Ships, Edit. 2016

Lloyd's Register Rules and Regulations for the Classification of Naval Ships, Edit. 2016

RATINGS

ERV- GS and ERV-GS HNBR Gelbstahl

MAWP : 16 bar at max. service temperature of 60°C,
DN 25 to DN 400

MAWP : 10 bar at max. service temperature of 100°C
(NBR short time) and 120°C (HNBR short time),
DN 25 to DN 600

Restrictions for oil fuel, lubrication oil and other flammable liquids

MAWP : 10 bar at max. service temperature of 90°C, DN 25 to DN 600

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RATINGS, CONT. ERV- Gelbring/Rotring/ROTEX

Gelbring: PN 16 for DN 25 to DN 350, PN 10 for DN 400 to DN 1000 at 90°C max.

Rotring : PN 16 for DN 25 to DN 350, PN 10 for DN 400 to DN 1000 at 100°C max.

ROTEX : PN 6 at 110°C max., PN 10 at 100°C max. for DN 25 to DN 1000

OTHER CONDITIONS

For Naval Ship applications it is to be noted that additional project based requirements (Tailoring – Departures from the Rules and Rule additions as per Vol. 1, Pt. 1 Ch. 2, 3.2) are not covered by this Type Approval.

The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

The Design Appraisal Document No. HTS/ENS 34199-16, issue no. 0, dated 03.03.2016 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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<p>Olaf Schmidt Hamburg Technical Support Office</p>  <p>Lloyd's Register EMEA</p> <p><small>LR031.1.2013.12</small></p>	 <p>Lloyd's Register</p>
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