

## Type Approval Certificate Extension

This is to certify that Certificate No. 03/20029 (E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

**PRODUCER** REIFLEXA P. Reischl GmbH & Co. KG  
Am Knick 5  
22113 Oststeinbek  
Germany

| DESCRIPTION                          | Tube              | Reinforcement     | Cover                  |
|--------------------------------------|-------------------|-------------------|------------------------|
| Yellow:                              | ECO               | Nylon text cord   | ECO or CR- Chloroprene |
| Red :                                | EPDM              | Nylon text cord   | EPDM                   |
| HP :                                 | EPDM              | Polymer text cord | EPDM                   |
| Green :                              | CSM-Hypalon       | Nylon text cord   | CR-Chloroprene         |
| White :                              | NBR-Nitrile white | Nylon text cord   | CR-Chloroprene         |
| -----Flange material on request----- |                   |                   |                        |

**TYPE** 1 A ; 1 S in versions: "yellow", "red", "HP", "green" and "white"

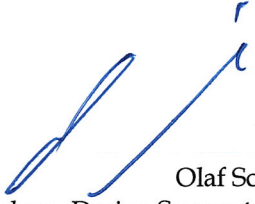
**APPLICATION** Marine and offshore, viz.: Fresh and sea\* water lines; ballast lines in machinery spaces, duct keels and double bottom water ballast tanks; bilge lines inside duct keels only; sanitary discharge and cargo lines (NBR Nitrile black only) inside the cargo oil tanks of tankers.

\*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 2012

**Certificate No.** 03/20029 (E2)  
**Issue Date** 23 May 2013  
**Expiry Date** 06 March 2018  
**Sheet** 1 of 2

  
 Olaf Schmidt  
 Hamburg Design Support Office  
 Lloyd's Register EMEA

Lloyd's Register EMEA  
71 Fenchurch Street, London EC3M 4BS

## RATINGS

Type 1 A : PN 16 for DN 32 to DN 150  
PN 10 for DN 200 to DN 800  
Type 1 S : PN 16 for DN 32 to DN 200  
(Maximum temperature: + 90°C)\*\*

\*\*The producer's instructions and recommendations are to be considered.

*"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."*

*The attached Design Appraisal Document No. HMD 10047-03, Issue No. 2, dated 23.05.2013 and its supplementary Type Approval Terms and Conditions form part of this Certificate.*

All other details remain as the previous Certificate No. 03/20029 (E1) to which this extension should be attached.

|                 |               |
|-----------------|---------------|
| Certificate No. | 03/20029 (E2) |
| Issue Date      | 23 May 2013   |
| Expiry Date     | 06 March 2018 |
| Sheet           | 2 of 2        |

  
Olaf Schmidt  
Hamburg Design Support Office  
Lloyd's Register EMEA

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# Marine Design Appraisal Document

Lloyd's Register EMEA  
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Am Sandtorkai 41  
20457 Hamburg  
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Email: hamburg-design-support@lr.org

Date  
23 May 2013

Please quote this reference number on all future communications  
HPC 0810453/29239-13/OS/HR

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002  
ISSUED TO: REIFLEXA P. REISCHL GMBH & CO. KG  
FOR: RUBBER COMPENSATOR TYPES 1A AND 1S  
IN VERSIONS "YELLOW", "RED", "HP", "GREEN", "WHITE"  
TYPE APPROVAL CERTIFICATE NO. 03/20029 (E2)**

**This Marine Design Appraisal Document supersedes and cancels  
document number HMD 10047-03, Issue No. 1, dated 21.10.2008**

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002, and this Design Appraisal Document forms part of the Certificate.

## APPROVAL DOCUMENTATION

|                     |  |            |
|---------------------|--|------------|
| Form LR2571         | Application for Type Approval and/or Marine Equipment<br>Directive Certification from Lloyd's Register EMEA (LR) | 29.01.2013 |
| Typ 1A              | Catalogue Sheet  | undated    |
| Typ 1S              | Catalogue Sheet  | undated    |
| Standard Elastomers | Catalogue Sheet  | undated    |

## TEST REPORT

|             |                                |            |
|-------------|--------------------------------|------------|
| HPC 0810453 | Visit Report - LR Hamburg Port | 11.03.2013 |
|-------------|--------------------------------|------------|

  
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FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Date  
**23 May 2013**

Quote this reference on all future communications  
**HPC 0810453/29239-13/OS/HR**

### **Supplementary Type Approval Terms and Conditions**

*Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.*

*Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.*

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

*Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.*

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

Lloyd's Register EMEA  
is a member of the Lloyd's Register Group



Part 1A

Subject: Hose Assemblies

Product: Rubber Compensator (Part 1A)

| Producer / Licence No.   |  | Description of Product   |                               |                      | Cert. No. |
|--|--|--|-------------------------------|----------------------|-----------|
| Type   | Details of Approval  | Application  | Remarks                       |                      |           |
| <p>1 A ; 1 S<br/>in versions: "yellow",<br/>"red", "HP", "green"<br/>and "white"</p> | <p><b>Yellow:</b><br/><u>Tube / Reinforcement / Cover</u><br/>ECO/Nylon text cord/ECO or CR-Chlor.</p> <p><b>Red:</b><br/><u>Tube / Reinforcement / Cover</u><br/>EPDM/Nylon text cord/EPDM</p> <p><b>HP:</b><br/><u>Tube / Reinforcement / Cover</u><br/>EPDM/Polymer text cord/EPDM</p> <p><b>Green:</b><br/><u>Tube / Reinforcement / Cover</u><br/>CSM-Hypalon/Nylon text cord/CR-Chloropr.</p> <p><b>White:</b><br/><u>Tube / Reinforcement / Cover</u><br/>NBR-Nitrile white/Nylon text cord/CR-Chlor.</p> <p>-----Flange material on request-----</p> <p>Type 1 A : PN 16 for DN 32 to DN 150<br/>PN 10 for DN 200 to DN 800<br/>Type 1 S : PN 16 for DN 32 to DN 200<br/>Maximum temperature: + 90°C</p> | <p>Marine and offshore, viz.: 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 Nitrile black only) inside the cargo oil tanks of tankers.</p> <p>*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.</p> <p>The expansion joints are to be installed in well visible and accessible locations and protected against over extension and compression and against mechanical damage.</p> <p>The adjoining pipes are to be suitably aligned, supported, guided and anchored.</p> <p>The producer's instructions and recommendations are to be considered.</p> | <p>Expires: 06 March 2018</p> | <p>03/20029 (E2)</p> |           |