

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Elastic Couplings**

with type designation(s)

**ARCUSAFLEX AC 1.5, AC 2.3, AC 2.6 / 2.7, AC 3, AC 4 / 4.1, AC 5 / 5.1, AC 6 / 6.1, AC 6.5, AC 7, AC 7.5, AC 8, AC 8D, AC 9, AC 9D, AC 10.2, AC 10.2D, AC 11, AC 11D, AC 11.7, AC 11.7D, AC 11.9, AC 12, AC 12D**

Issued to

**Dipl.-Ing. Herwarth Reich GmbH**

,

is found to comply with

**DNV GL rules for classification – Ships****DNV GL rules for classification – High speed and light craft****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2021-01-27**.Issued at **Hamburg** on **2016-04-15**DNV GL local station: **Essen**Approval Engineer: **Axel Albrecht**for **DNV GL**-----  
**Frank Lutz**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-020793-1**  
Certificate No: **TAM0000054**  
Revision No: **1**

## Product description

Highly Torsionally Flexible Rubber and Silicone Disc Coupling

## Application/Limitation

The approval is valid for propulsion and auxiliary duty according to catalogue September 2015 edition and data sheets W4 AC 12/06 (rubber), W6 AC Si 05/06 (silicone) dated 2007-01-24, with the following limitations:

Permissible maximum torque range  $T_{max}$  for repetitive loads as transient vibration during start and stop or clutching in is limited to  $1.2 \times T_{Kmax1}$ .

Correction factors for dynamical stiffness, damping and power loss as function of ambient temperature according to correction curves in data sheet Arcusaflex – Change of technical data at standard rubber elements (dated Bochum, 20.12.06/Bentele).

Maximum permissible ambient temperature is 70° C for rubber coupling and 100 °C for silicone coupling.

Couplings for single propulsion duty have to meet the requirements in the DNV GL Rules Pt.4, Ch.4, Sec.5 E Control, alarm, safety functions and indication.

## Type Approval documentation

### Tests carried out

Messungen an den drehelastischen Gummikupplungen Arcusaflex AC6 und AC7, RWTH Aachen dated September 1994.

Test report for DNV Type Approval (rubber elements) dated 2006-28-12.

Test report for DNV Type Approval (silicone elements) dated 2006-05-24

## Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

## Periodical assessment

For retention of the Type Approval, DNV GL surveyor shall perform survey every 2.5 years and before expiry date of this certificate to verify that the conditions of the type approval is complied with.

## Other conditions

Connection to driven and driving unit is not included in this approval and has to be approved in each separate case.

DNV GL product certificate is not required for couplings according DNV and the common DNV GL Rules for auxiliary duty with rating up to 500 kW and rated torque less than 5 kNm, where torsional vibration calculations are not required.

## Note

The Type Approval Certificate No. TAM0000054 is replacing the Type Approvals DNV M-11790 and GL 98 166-97 HH.

END OF CERTIFICATE