

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Elastic Couplings**with type designation(s)
VULKARDAN F

Issued to

**Vulkan Kupplungs- und Getriebebau Bernhard Hackforth
GmbH & Co. KG
Herne, Nordrhein-Westfalen, Germany**

is found to comply with

DNV GL rules for classification – Ships**DNV GL rules for classification – Yachts****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.**Issued at **Hamburg** on **2020-08-04**This Certificate is valid until **2025-08-03**.DNV GL local station: **Essen**for **DNV GL**Approval Engineer: **Wolfgang Schütz**

**Olaf Drews
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 300,000 USD.



Job Id: **262.1-034362-1**
Certificate No: **TAM000016B**

Product description

Torsionally highly elastic (natural rubber / silicone) coupling with axial membrane

Place of production

Vulkan Kupplungs- und Getriebebau B.Hackforth GmbH & Co.KG, Herne Germany

Application/Limitation

The coupling series are approved for auxiliary and propulsion duty. Ratings and coupling characteristics according to catalogue "VULKARDAN F" (edition 11/2019) and with limitations as given in the certificate. Permissible damping power and other coupling characteristics to be adjusted for the actual application according to the guidelines given in the catalogue "VULKARDAN F" (edition 11/2019) / PERFORMANCE DATA and for other ambient temperatures, vibratory torques and mean load as per documentation in the below mentioned test reports.

Stiffness and damping properties as per "Explanation of technical data" (edition 01/2019) and for other ambient temperatures, vibratory torques and mean loads. Duty-Class factor "C – continuous service" to be applied.

Approved sizes of "VULKARDAN F":

Vulkardan F					
Dimension Group	Size				
	Natural Rubber				Silicone
F5010	F5014	F5011	F5015	F5012	F5011S
F5020	F5024	F5021	F5025	F5022	F5021S
F5410	F5414	F5411	F5415	F5412	F5411S
F5420	F5424	F5421	F5425	F5422	F5421S
F5710	F5714	F5711	F5715	F5712	F5711S
F5720	F5724	F5721	F5725	F5722	F5721S
F6010	F6014	F6011	F6015	F6012	F6011S
F6210	F6214	F6211	F6215	F6212	F6211S

Type Approval documentation

Tests carried out

TEST WITNESSED 2016-05-20 test-report-5415 Static + dynamic Standard
Verified test reports listed above under "Type Approval Documentation"

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, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNVGL-CP-0338, Sec.4.

END OF CERTIFICATE