



Certificate No. 02-002816/024794

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

Highly flexible coupling VULKARDAN –E

MANUFACTURER:

VULKAN Kupplungs- und Getriebebau Bernhard Hackforth & Co. KG

Heerstraße 66
D-44653 HERNE
Germany

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS: Rules for the classification of ships, Part 9. - Machines.

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2023-10-14**

Place and date: Split, 2019-10-14

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

Highly flexible coupling VULKARDAN E, series 4000, 4001, 4110, 4111, 4400, with one or two natural rubber or silicone elastic elements.

Type of coupling, dimension group, nominal and permissible torque values, power loss, rotational speed and radial displacement, together with the values of stiffness and damping are specified in the manufacturer's catalogue "VULKARDAN E" (edition 07/2018) and "Explanation of Technical Data" (edition 01/2019).

APPLICATION / LIMITATIONS:

Application: for propulsion and auxiliary duty.

Coupling without torsional displacement limiter are not to be used in propulsion lines of single propelled vessel.

TYPE APPROVAL DOCUMENTATION:

Drawings and calculations approved by CRS with letter: 2492/TSEv/KF/024794 (2019-10-14)

MARKING OF PRODUCT:

- *manufacturer's mark*
- *type number identification*
- *location and year of final fitting*

CONDITIONS FOR CERTIFICATION:

Connecting details at input and output side of coupling are not covered with this Type Approval.

The manufacturer shall make arrangements for the CRS Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits in case an alternative survey scheme has been approved. Relevant CRS Product certificate for each particular highly flexible coupling will be issued after satisfactory completion of the procedure.