DNV·GL

Certificate No:
TAM00000JE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Elastic Couplings

with type designation(s)
RB

Issued to
Renold Clutches and Couplings
Cardiff, United Kingdom

is found to comply with
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft

Application :

Valid for propulsion and auxiliary duty.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2017-06-06**
This Certificate is valid until **2021-06-30**.
DNV GL local station: **Southampton**

Approval Engineer: **Dag Harald Williksen**

for **DNV GL**

Oddvar Deinboll
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.

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Job Id: **262.1-006570-3**
Certificate No: **TAM00000JE**

Product description
Flexible rubber couplings.

Application/Limitation
The approval is valid for auxiliary purposes, gen.sets and other systems with prime mover other than diesel engines.

Ratings and technical data according to Renold General Catalogue E4-05-158 Rev 100.

Available for nominal torques up to 13,05 kNm.

Maximum allowable ambient temperature for natural rubber couplings: 70 ^{0}C

RB Technical Data

COUPLING SIZE		0.12	0.2	0.24	0.37	0.73	1.15	2.15	3.86	5.5
NOMINAL TORQUE T_{KN} (kNm) MAXIMUM TORQUE T_{Kmax}(kNm) VIBRATORY TORQUE T_{KW} (kNm)		0.314 0.925 0.122	0.483 1.425 0.188	0.57 1.72 0.222	0.879 2.635 0.342	1.73 5.35 0.672	2.731 8.1 1.062	5.115 15.303 1.989	9.159 27.4 3.561	13.05 41.0 5.075
ALLOWABLE DISSIPATED HEAT AT AMBIENT TEMP 30 C P_{KW} (W) P_{KW}	Si70 SM60 SM70 SM80	252 90 98 100	315 112 123 138	346 125 138 154	392 140 155 173	513 185 204 228	575 204 224 250	710 246 270 302	926 336 369 410	1144 426 465 520
DYNAMIC TORSIONAL STIFFNESS C_{Tdyn} (MNm/rad)										
@0.25 T_{KN}	Si70 SM60 SM70 SM80	0.004 0.007 0.011 0.016	0.006 0.009 0.014 0.021	0.006 0.010 0.017 0.025	0.010 0.016 0.026 0.039	0.021 0.032 0.052 0.079	0.031 0.049 0.079 0.119	0.060 0.093 0.150 0.225	0.091 0.142 0.230 0.346	0.119 0.186 0.300 0.453
@0.5 T_{KN}	Si70 SM60 SM70 SM80	0.013 0.016 0.022 0.026	0.017 0.021 0.028 0.033	0.020 0.025 0.034 0.040	0.030 0.038 0.052 0.062	0.062 0.078 0.105 0.125	0.093 0.118 0.159 0.189	0.176 0.223 0.300 0.358	0.271 0.343 0.460 0.549	0.355 0.449 0.602 0.719
@0.75 T_{KN}	Si70 SM60 SM70 SM80	0.030 0.035 0.043 0.049	0.038 0.045 0.055 0.063	0.046 0.054 0.066 0.076	0.070 0.082 0.101 0.117	0.142 0.167 0.205 0.238	0.215 0.253 0.310 0.360	0.407 0.479 0.586 0.680	0.625 0.735 0.900 1.043	0.818 0.962 1.178 1.366
@1.0T_{KN}	Si70 SM60 SM70 SM80	0.050 0.057 0.066 0.078	0.064 0.073 0.085 0.100	0.077 0.088 0.103 0.121	0.118 0.134 0.157 0.185	0.240 0.273 0.319 0.377	0.363 0.413 0.483 0.570	0.686 0.780 0.912 1.077	1.053 1.197 1.400 1.653	1.379 1.567 1.833 2.164
RADIAL STIFFNESS NO LOAD (N/mm)	Si70 SM60 SM70 SM80	1153 1020 1255 1728	1424 1260 1550 2135	1622 1435 1765 2430	1801 1594 1962 2700	2391 2116 2586 3654	2610 2310 2845 3915	3243 2870 3530 4860	4226 3740 4600 6330	5343 4728 5810 8008
RADIAL STIFFNESS @T_{KN} (N/mm)	Si70 SM60 SM70 SM80	2096 2046 2134 2310	2594 2536 2638 2855	2948 2880 3000 3250	3335 3207 3435 3610	4335 4250 4396 4885	4754 4650 4835 5235	5904 5780 6000 6500	7690 7520 7820 8465	9726 9510 9890 10700
AXIAL STIFFNESS NO LOAD (N/mm)	Si70 SM60 SM70 SM80	788 1030 1100 2940	962 1250 1350 3690	1077 1400 1510 4060	1225 1600 1710 4620	1589 2095 2200 6060	1780 2310 2500 6700	2202 2850 3100 8220	2886 3700 4100 10760	3663 4700 5200 13580
MAX AXIAL FORCE (1) @T_{KN} (N)	Si70 SM60 SM70 SM80	540 1080 1150 1300	675 1350 1440 1600	750 1500 1600 1760	850 1700 1800 2000	1100 2200 2360 2600	1230 2460 2600 2900	1500 3000 3200 3500	1950 3900 4100 4600	2500 5000 5300 5800

Tests carried out
Test report No. 41.2383 (90/04/06)

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

Periodical assessment
For retention of the Type Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued.

END OF CERTIFICATE