SHELL
LUBRICANT
SOLUTIONS

Shell Rhodina BBZ

A high performance, semi-synthetic grease engineered for demanding blade bearing applications

- Provides protection and lubrication for blade bearings in high-demand applications.
- Provides excellent false brinelling performance, demonstrated through bearing testing and more than 20 years in market.
- Designed for equipment operating in difficult climates, as measured by false brinelling tests under cold climate conditions.
- Provides excellent low temperature performance in very cold climates, demonstrated through testing done at Imperial College.

For more information, please visit shell.com/wind-lubricants

Shell Rhodina BBZ Can Help Reduce Downtime and Lower Maintenance Costs

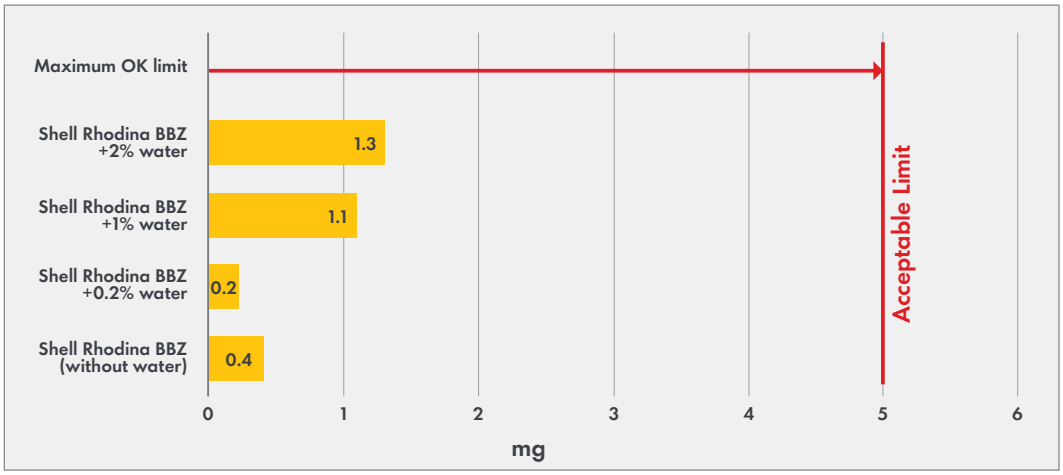
Fafnir Fretting Test

Reliability Results: Shell Rhodina BBZ is able to **withstand** water contamination

Tested: The ability of Shell Rhodina BBZ to protect against fretting when mixed with water in service.

Method: Fafnir Fretting test, ASTM D4170

Fafnir Fretting test shows **very good** performance (max limit of 5mg loss). Rhodina BBZ Fafnir Fretting results are so low that they are within the repeatability of the test.*

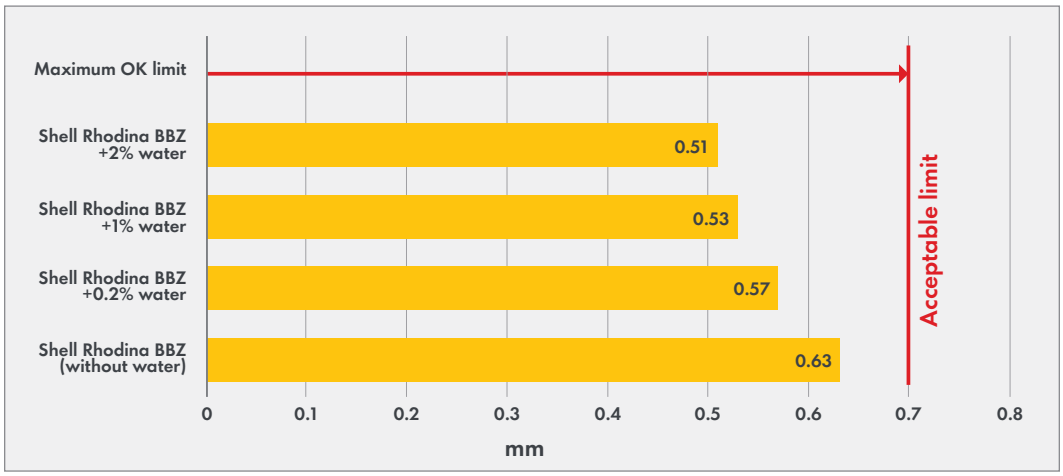


Four Ball Wear Scar Test

Tested: The ability of Shell Rhodina BBZ to maintain very good anti-wear proprieties when mixed with water in service

Method: Four ball wear scar diameter, ASTM D2266

Four ball wear scar test shows **very good** performance (max limit of 0.7mm)*



Synthetic Sea Water (SSW) EMCOR Test

Tested: The ability of the grease to protect steel from corrosion

Method: SSW EMCOR test (two bearings tested per product)

Simulating exposure to sea water in EMCOR SSW test clearly demonstrates the superior performance of Shell Rhodina BBZ*

Product	SSW EMCOR Score
Shell Rhodina BBZ	0-0
Competitor M	3-3
Competitor K	3-3

Shell Rhodina BBZ Score in the EMCOR test: 0-0

Competitor product Score in the EMCOR test: 3-3

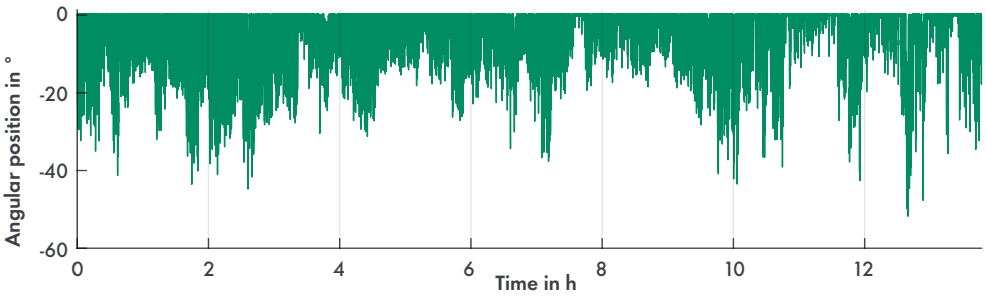
Rated on a 0-5 scale	
0 = no rust	Excellent
1-2 = negligible/light corrosion (up to three spots of rust)	Good
3 = medium corrosion (up to 1% rust)	Poor
4 = high corrosion (5% rust)	Bad
5 = heavy corrosion (10% rust)	Very bad

Wet Grease test

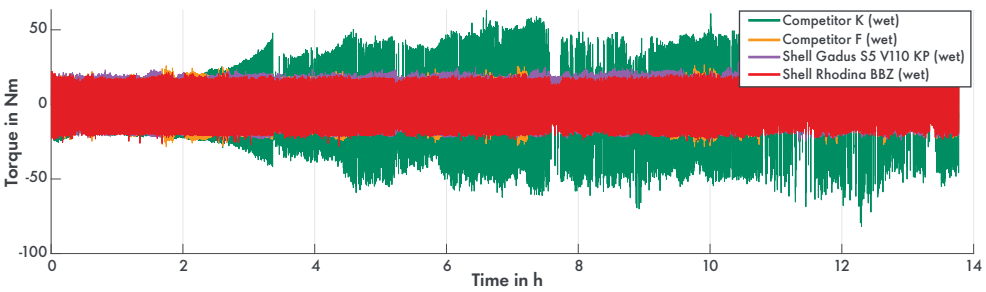
Tested: The effect of site-specific wind conditions and individual pitch control on wear of blade bearings.*

Method: Tested according to Fraunhofer IWES test conditions

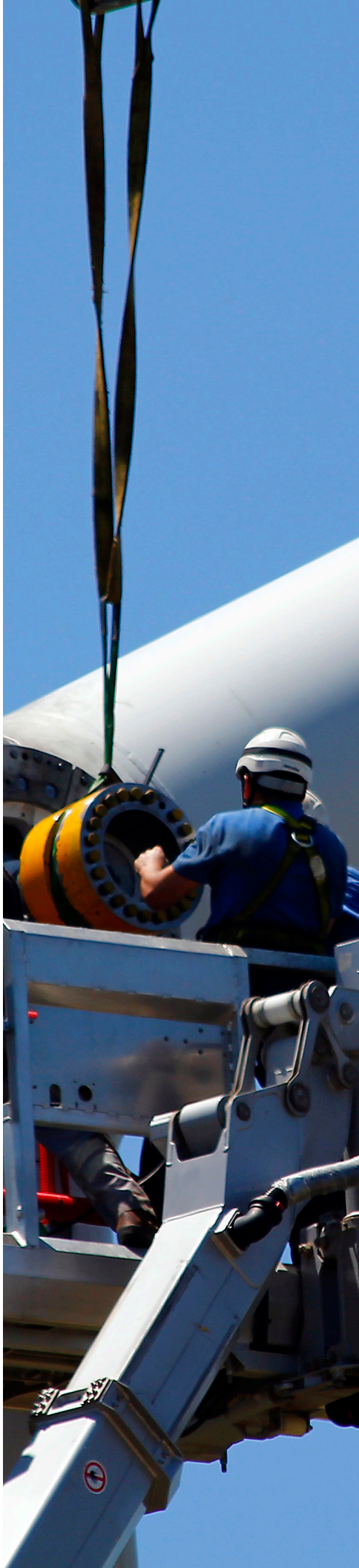
Dynamic test profile from the field



Test Results



*All data is measured using industry standards and Shell experience, Shell protocols and Shell methodology. No guarantees are provided.



Approvals & Compatibility

Shell Rhodina BBZ meets the grease requirements of the top 10 wind turbine OEMs (approved by Vestas, SGRE, and Goldwind; meets the requirements for GE), top 5 bearing OEMs, and top 5 lubrication system OEMs according to specifications provided by these OEMs, component OEMs and approval documents. Official documentation of OEM approvals is available upon request. Please consult your Shell Technical Advisor to confirm suitability for use.

The grease is compatible with:

- A wide range of materials used in wind turbines, such as metals and polymers.
- Most other greases used in the industry.

Please consult your Shell Technical Advisor before replacing an existing grease with Shell Rhodina BBZ.

A Complete Portfolio for Wind Turbines

1 Main Gearbox
- Shell Omala S5 Wind
- Shell Omala F Wind

2 Yaw & Pitch Drives
- Shell Omala S5 Wind
- Shell Omala S4 GXV Plus
- Shell Omala S4 WE

3 Generator Bearing
- Shell Gadus S5 V110KP
- Shell Gadus S5 V100

4 Pitch & Blade Bearing
- Shell Gadus S5 V110KP
- Shell Rhodina BBZ

5 Hydraulic Pitch & Brake System
- Shell Tellus S4 VE (fine)
- Shell Tellus S4 VX
- Shell Tellus S2 VX (fine)
- Shell PANOLIN S4 HLP Synth EAL

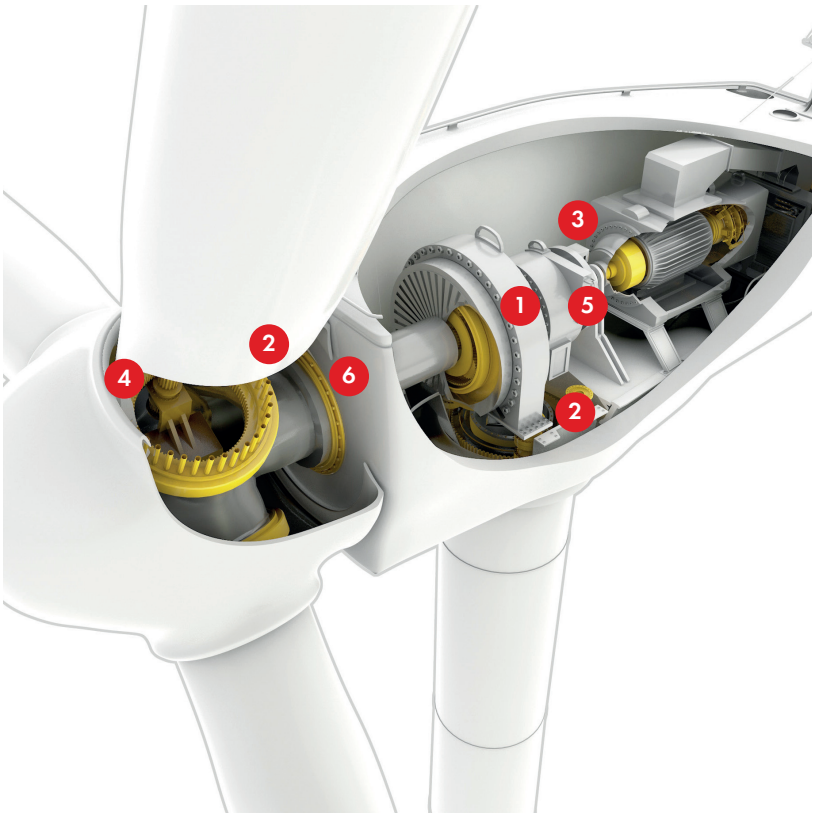
6 Main Shaft Bearing
- Shell Gadus S5 V460KP

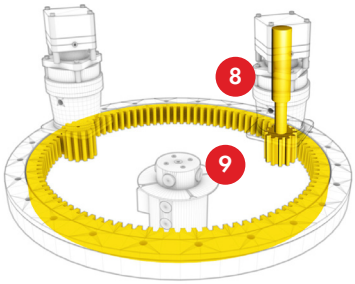
7 Transformer
- Shell Midel 7131
- Shell Diala S4 ZX-I

8 Yaw Bearing (Roller)
- Shell Gadus S5 V110KP
- Shell Rhodina BBZ

8 Yaw Bearing (Plain)
- Shell Gadus S5 V460KP
- Shell Gadus S5 T460

9 Open Gear
- Shell Gadus S4 OG
- Shell Gadus S2 OGH





Contact Us

For more information, visit **shell.com/wind-lubricants** or contact your local Shell team.