

Project: Wear measurement on special shaft
Contact person/customer: igus GmbH – Team iglidur®
Task: Wear comparison of plain bearings made of iglidur® Z (ZFM-1214-12) and competitor's bearings (Techtron HPV)
Test description and results:

<p>Starting situation: The special shafts provided are to be tribologically investigated in linear operation. The materials iglidur® J and X are to be tested in the drylin® standard wear test. Shaft: 1.4305, Diam. 20 mm, different qualities (h6 / h9) Bearing: JUM-02-20 / XUM-02-20</p>	<p>Test: Load: 100 N, P = approx. 0.3 MPa Stroke: approx. 270 mm Speed: average approx. 0.2 m/s Driven by means of crank assembly, dry operation, continuous operation, RT</p>
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The above specifications show the results of performed tests. All specifications are neither one or more guarantees of specific properties nor one or more guarantees about the suitability of a product for a particular purpose, since the tests took place under laboratory conditions. The guarantee of specific properties of the products and/or its suitability for a particular application must be in written form in the order confirmation. As the results were obtained under laboratory conditions that can almost never simulate the real use, we recommend application-specific measurements under real operating conditions.

Result:

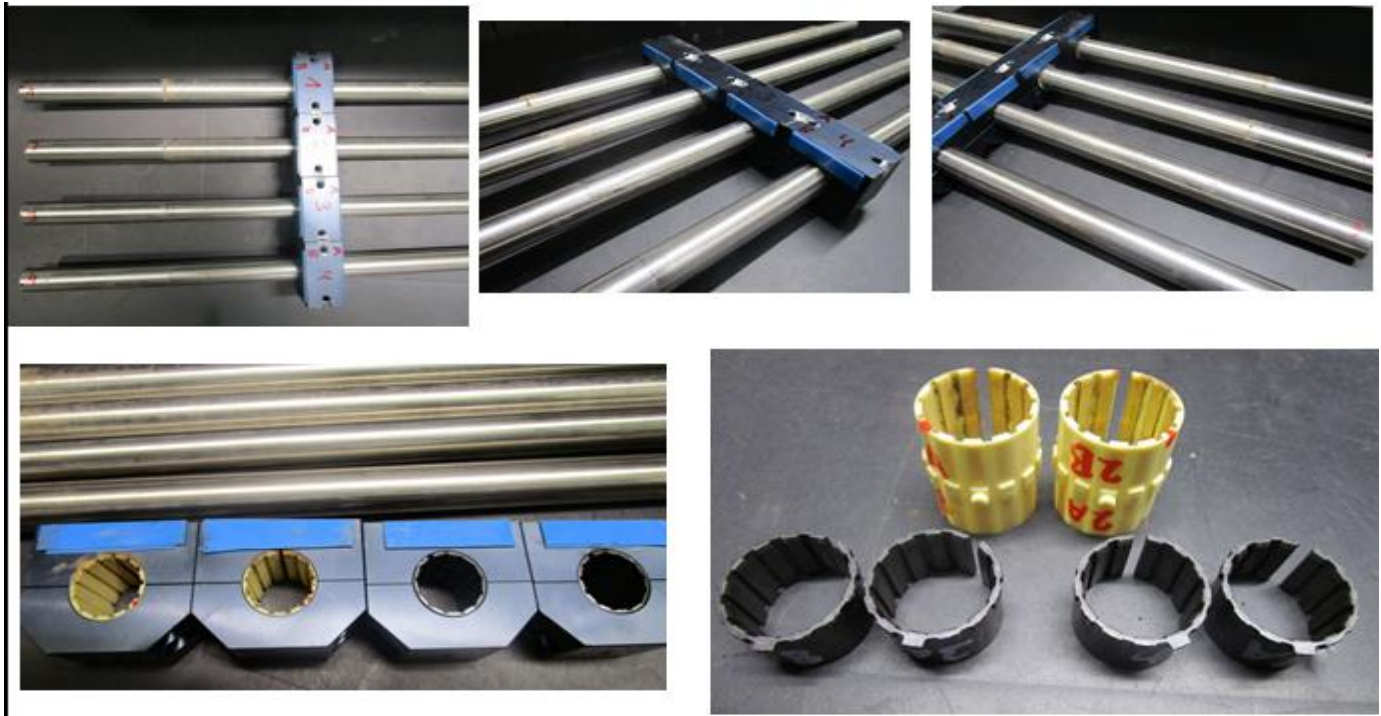
The two shafts each ran over a distance of approx. 310 km against two different bearings. The result shown here proportionally reflects the increased wear during running-in – i.e. the respective wear rate could level off if the shaft is allowed to run for longer.

The measured values include tolerances and errors. Due to the short running distance and, as a result, the low wear values, the values shown here are more uncertain.

The two values have not been substantiated – each test was only carried out once.

	Shaft		Running distance	Wear rate
				volumetric
Bearing:	JUM	h6	310 km	0.42 µm/km
Bearing:	JUM	h9	310 km	0.35 µm/km
Bearing:	XUM	h6	310 km	0.21 µm/km
Bearing:	XUM	h6	310 km	0.22 µm/km

Pictures 2 - 6



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Conclusion:

On the basis of the tests described here, the material iglidur® X has better wear rates than iglidur® J (by a factor of approx. 2).

The difference between the two shafts does not appear to be significant and is well within the measured-value variations and tolerances of a linear wear test.

All the wear rates recorded here correspond to the values of the igus® "EWMR" shafts and do not signify any deterioration of performance or service life under the test conditions indicated here.

These tests show that the indicated shaft appears to be basically suitable as a guide shaft/counter partner for an igus® bearing.

For the provision of more detailed information, more extensive series of tests have to be carried out.

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