

All tests at our Institute are conducted by experts. Our employees include specialists from the fields of physics, chemistry, and mineralogy as well as material testing and technology.

**Further testing methods are:**

- Gas Corrosion Tests for Reducing Media
- Rotary Kiln Test
- Gas Permeability of Refractories at Elevated Temperature
- Induction Melting Aggregates
- Wedge-Splitting Test
- Quantitative Oxidation Test
- Blast Wear
- Computer-Aided Thermochemistry
- Thermal Conductivity

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Deutsches Institut  
für Feuerfest und  
Keramik GmbH

We are a central institute with more than 50 years of experience in all areas of refractories technology. We are absolutely committed to neutrality and are therefore a partner to all companies working in refractories technology.

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## Friction Wear

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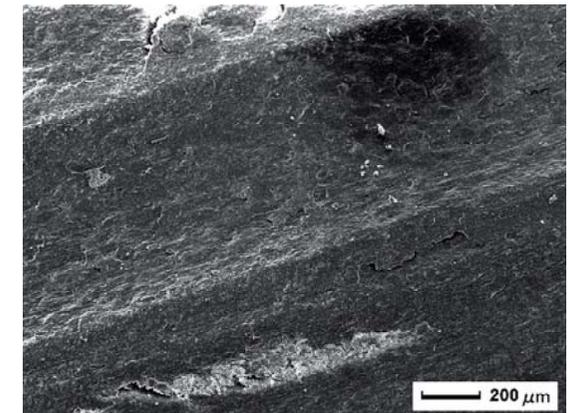
Wear due to friction is one of the most important corrosion mechanism in many processes. DIFK developed a new testing facility to measure the wear rates and the coefficient of friction quantitatively.

The tribologic pair consists of a rotating ceramic or metal sample (30 mm bore x 25 mm) that is in contact with a fixed body made of metal or ceramic at a defined contact pressure. The whole arrangement is heated up by means of a furnace (max. 1200°C). The atmosphere may be air, neutral (Ar, N<sub>2</sub>) or a reducing gas (Ar + 5 % H<sub>2</sub>). The parameters velocity, loading, temperature, atmosphere and time may be agreed upon the partners. The wear [mm] and the coefficient of friction are monitored continuously.

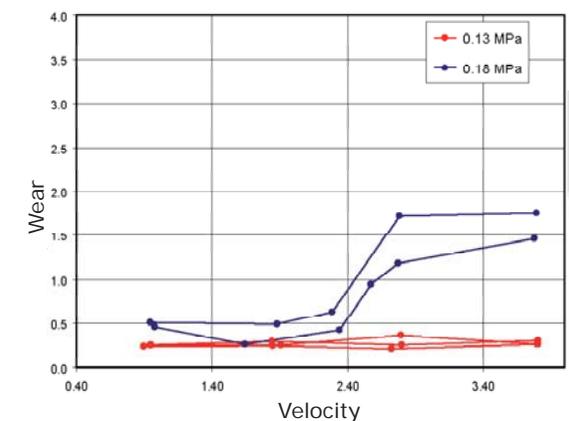


**Fig. 1** shows running experiments at room temperature and 1200°C

After the test the wear [mm] as well as the coefficient of friction are plotted as continuous curve against the time of the test.



**Fig. 2** shows a wear surface (SEM)



**Fig. 3** shows results at different contact pressure