

## Thermocyclic Lifetime Prediction

### Measured values

- Testing temperature
- Lifetime

### Description of facility

For testing of thermal barrier coatings and oxidation protection coatings several computer controlled thermo cyclic rigs are available with testing temperatures up to 1200°C and rapid cooling to room temperature. Samples or parts are moved into the hot furnace, held at temperature for a pre-defined time, and then cooled down rapidly in moving air to RT. Typical lifetimes for 1h cycles at 1100°C (50 min heating/10min cooling) are between 500 to 3000hrs. Test rigs in horizontal and vertical arrangement are in operation. Typical sample geometries are pins, plates, disks, or turbine blades.

### Application

Testing of thermal barrier coatings

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*This handout, and cross-references to related measurement techniques and facilities are available at: <http://messtec.dlr.de/link-266-en>.*

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