

HIGH-PERFORMANCE CERAMICS

CONTAINMENT SHELLS FOR PUMP MANUFACTURE

Application:

Magnetically coupled centrifugal pumps in the chemical industry

Material:

Zirconium Oxide **FZM**

Containment shells made of **FZM** Zirconium Oxide offer the following advantages as compared to conventional materials:

- ▶ **FZM** is anti-magnetic. No performance-hindering eddy currents are generated, thus making it possible to reduce the operating power by 10-15%. Magnetic coupling enables hermetic sealing of the drive unit. Completely leak-free operation is possible with minimum maintenance. Negative effects on the environment as a result of leaking media during pumping processes are reduced considerably.
- ▶ **FZM** is corrosion resistant. Universal application in the case of acids and alkalis, except for - Hydrofluoric acid (HF) 1% concentration, unstable at rt - Silicic acid (H₂SiF₆) 30% concentration, unstable at 30°C.
- ▶ **FZM** is characterized by high mechanical strength. Nominal pressures of up to 30 bar at temperatures up to 200°C present no problems. Safety due to small E-module (elastic deformation). In order to keep the magnetic gap as small as possible, the wall thickness in the cylindrical area of the spacer can measure just 1.8 to 3.0 mm. Pressures of 50 bar with a wall thickness of 1.8 mm were achieved without destruction of the containment shell.



Due to the properties described, containment shells made of **FZM** are excellently suited for use in magnetically coupled pumps in the chemical industry. The design of the containment shell is adjusted to the individual type of pump in agreement with the customer.

- ▶ Anti-magnetic
- ▶ Corrosion resistant
- ▶ High mechanical strength
- ▶ Thermal shock resistant

Competence in Advanced Ceramics Engineering for customized solutions

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