

FLUIDIAMOND

DIAMOND FACE TECHNOLOGY

In an industrial plant, mechanical seals can be considered as a fuse. Installed in very critical applications, could be the cause of production shutdown, increasing maintenance costs and reason of failure could be related to the operating conditions, the stresses coming from the machine, but also on how the plant is operated. A chemical deposition treatment normally applied on silicon carbide rings, allows to have a diamond film, increasing the chemical and tribological characteristics. Thanks to this development, Fluiten Mechanical seals developed with "FLUIDIAMOND" technology can tolerate operations with poor lubrication, in "Dry Running" conditions and to be used where the PxV factor (operating pressure x peripheral speed) reaches highly critical high.

APPLICATION BENEFITS

- Minimum friction coefficient
- High resistance to abrasion
- Excellent thermal conductivity
- Wide resistance to chemical aggression
- High corrosion resistance

FLUITEN DLC TREATMENT

- **Young's modulus:** 950 ÷ 1100 *GPA*
- **Coating thickness:** 5 μm
- **Roughness:** 0,02 ÷ 0,04 μm
- **Coeficent of friction in dry running conditions:** 0,01 - 0,15
- **Hardness:** 2000 *HV*
- **Thermal conductivity:** 550 *W/mK*

THERMAL CONDUCTIVITY

- **Pharmaceutical and Biotechnology:** "Fluilift" Mechanical seals with zero process contamination.
- **Food:** Sealed with materials in accordance with EC regulation 1935/2004.
- **Oil & Gas:** Pipeline Pumps, well water injection, multi-phase and "Heavy Duty" applications.
- **Power:** Boiler feed and hypercritical pumps in the nuclear sector.
- **Chemical:** Applications with slurry, abrasive fluids, acids and bases.

ECONOMIC ADVANTAGES

Installation with Fluiten "FLUIDIAMOND" seals technology allows to reach very long operating times, reducing a lot the maintenance activities and operating costs. Transformation of existing seals with FLUIDIAMOND solution in pharmaceutical applications eliminates possible contamination of sterile processes. In the chemical, petrochemical and petroleum industries, the reduction of absorbed power obtained with FLUIDIAMOND is significant for cost reduction also. Energy savings can be about 50%, compared to a mechanical seal with traditional materials.

OPERATIONAL LIMITS

- **Temperature:** - 40 ÷ 200 $^{\circ}\text{C}$
- **Pressure:** 0 ÷ 150 *barg*
- **Rotation speed:** 40 *m/sec*

*Contact our Technical Sales Service for further information and to evaluate the specific applicability.

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