The Offshore market is gaining importance for the Wind power industry since years. In the past years the construction and assembly method of Offshore turbines have changed. A lifetime in the Offshore of 26 years is a typical requirement, that brings components to the limit in harvest conditions. The connection between the Monopile and transition piece of wind-power offshore towers must be sealed to protect the bolts against salt water.

To meet the new challenges in the Offshore market, FST has developed a more robust seal in terms of seal interference and contact surface. The new sealing solution can be designed to the needs of the special MP/TP design (different design space for seal, with/without grout material, loading level). But a catalogue part (nozzle 20788) is available as well and can be ordered directly incl. mounting and storage manual.

VALUES FOR THE CUSTOMER

- FE supported design evaluation
- Catalogue design is existing
- Long-term material aging simulation model
- Small quantities and different sizes are possible
- Reliable joint-vulcanized connection
- Coating of the seal to reduce friction for radial adjustments during installation process

Catalogue design 20788
FEATUTRES & BENEFITS – AGING MODEL

For the development of our Monopile / Transition Piece Seals we are in close contact to the contractors and operators. A method to simulate the aging effect of the elastomeric material by using long-term material aging test results in different media for the specific material. The combination of FST’s design competence, the new coating of a MP/TP seal and the simulation model can offer you a reliable sealing solution.

OTHER IMPORTANT INFORMATION

- Lifetime estimation is based on a simulation model by using initial material parameters
- The relaxation rate was defined via long-term relaxation measurements and its conversion to a mathematical curve as well as extrapolation by Arrhenius.
- With this model a comparison of the material condition of a new profile and a 26 years old profile in different loading cases can be created

Relaxation test results and function fit

Arrhenius extrapolation to 30°C

Released shape after 26 years of compression

Reaction force over time

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

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