

Walkersele®

X-Gen

Case Study: Wind turbine main shaft bearing seal

Problem

Conventional large diameter rotary sealing products typically utilize a fabric-backing. Global supply of this material came into short supply as a result of Covid-19 travel restrictions, which meant that a wind turbine operator was left with no replacement parts available for maintenance.

Existing supply chain halted due to Covid-19 and lockdown

Application

Wind turbine bearing application

- Temperature: 30-50°C
- Pressure: ambient
- Media: bearing oil
- Size: 2.4 m diameter

Existing solution

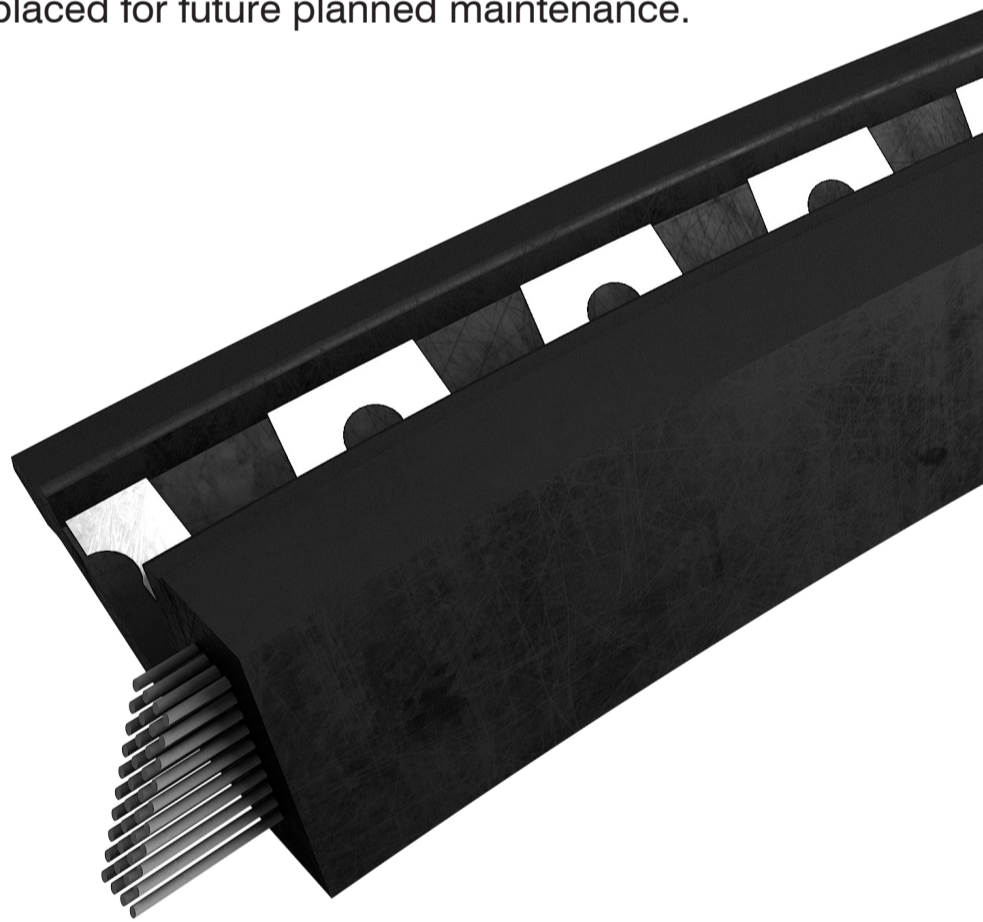
Fabric-backed alternative rotary seal design

James Walker solution

Customer trials were underway for a new development of seal backing material, to enhance performance over conventional fabric designs. This was seen as an opportunity to solve the supply issues and switch to the next generation design in testing.

The test programme was accelerated to validate the design and allow it to go into a live turbine application. Through close collaboration with the customer the new design was approved in a quick turnaround. This enabled them to place an order for seals which were prioritised to meet urgent maintenance requirements.

An initial order for 2.4 m diameter seals was completed in time to avoid the maintenance delays, and a further 3.6 m diameter order was placed for future planned maintenance.



Results and benefits

2.4 m diameter seals were successfully manufactured on schedule. Expediting this process also provided the customer with an alternative design option that they can use for future maintenance and next generation designs.

Testing accelerated to meet schedule



New design widens customer's options for available sealing materials



Delivered on schedule to meet urgent customer maintenance requirements



Successfully expedited testing and validation of a new design

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