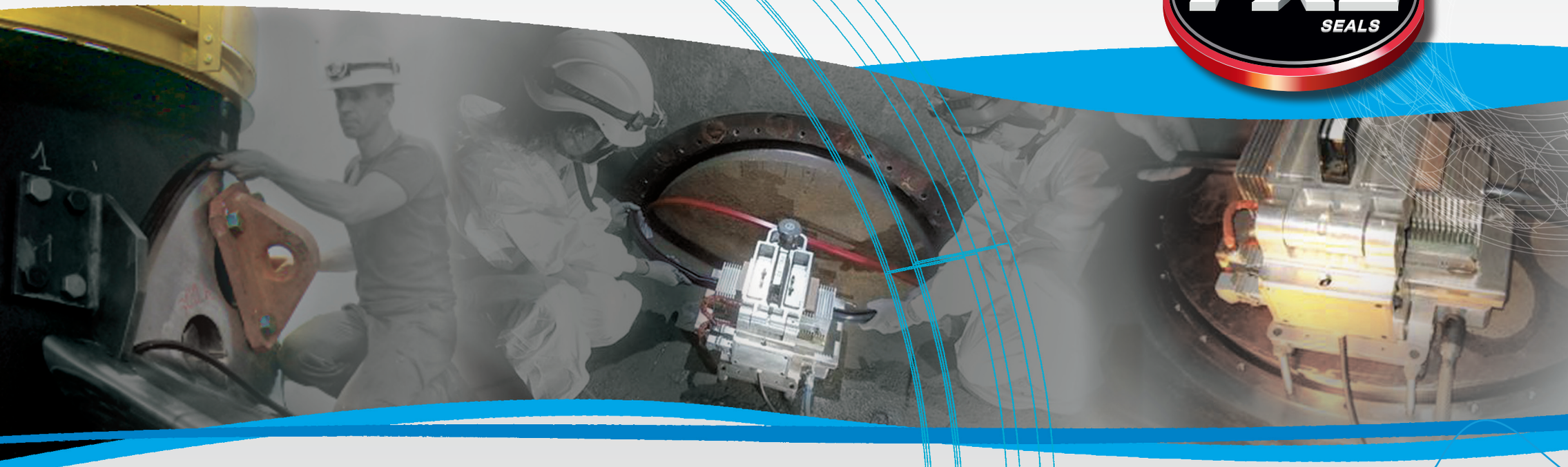
PXL ON-SITE

On-site services and operations



www.pxlseals.com

BLADES SEALS

Specifically designed to cope with the type of off-centring that blade seals are subject to, the single-block U150-XI DE is an upgrade on packing seals, U-joints and other frequently used systems.

BULB TURBINE - BLADE SEAL
Strasbourg, France

Client : EDF

The challenge : Replacing the seal on-site without disassembly.

Process : On-site vulcanisation using the MD WAY process (portable press).

Solution used :
- The seal is designed and manufactured
- Metrological tests are carried out on the housing (off-centring, etc.)
- Surface state tests are carried out
- The housing is prepared
- Box-jointing is carried out through vulcanisation and the seal joints are assembled
- A full job report is delivered

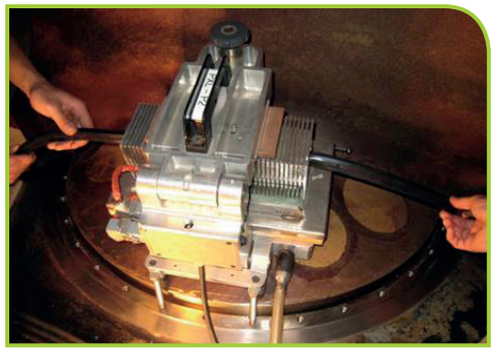
BULB TURBINE - BLADE SEAL
La Rance Tidal Power Station, France

Client : EDF

The challenge : Replacing the seal on-site without disassembly.

Process : On-site vulcanisation using the MD WAY process (portable press).

Solution used :
- The seal is designed and manufactured
- The service platform is loaded
- The seal covers are removed and refitted
- The turbine is set in motion (rotation)
- Metrological tests are carried out on the housing (off-centring, etc.)
- Surface state tests are carried out, including tests to assess the condition of the bearings
- The housing is prepared
- Box-jointing is carried out through vulcanisation and the sealing joints are assembled
- The requalification process is set up
- A full job report is delivered



BLADES SEALS

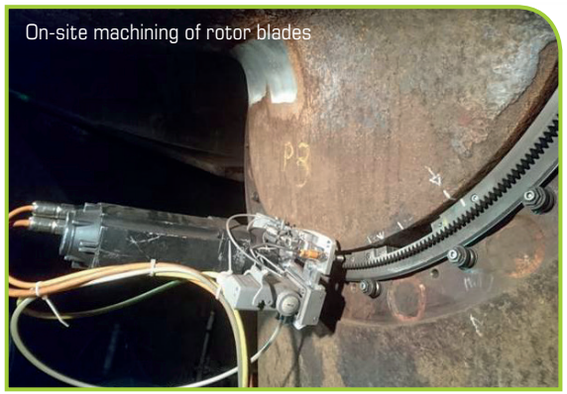
KAPLAN TURBINE –BLADES SEALS
Seysell Hydroelectric Power Station, France

Client : CNR

The challenges :
- On-site machining of rotor blade bearings.
- Replacing the seal on-site without disassembly.

Processes :
- Unique machining systems.
- On-site vulcanisation using the MD WAY process (portable press).

Solution used :
- An expert assessment on the size and the quality of the housing is carried out. PXL SEALS recommends on-site machining of the trunnion
- The seal is designed and manufactured
- A sub-contractor is enlisted to machine the trunnion blade on-site
- Metrological tests are carried out on the housing (off-centring, etc.)
- Surface state tests are carried out post-machining, quantifying the Ra
- The housing on the hub side is prepared
- Box-jointing is carried out through on-site vulcanisation (MD WAY) and the seal joints are assembled


On-site machining of rotor blades


On-site seals vulcanisation

KAPLAN TURBINE – BLADE SEALS
Passos del Toros, Uruguay

Client : GE Energy

The challenges : Replacing the seal on-site without disassembly.

Processes : On-site vulcanisation using the MD WAY process (portable press).

Solution used :
- The seal is designed and manufactured
- Box-jointing is carried out through vulcanisation and the seal joints are assembled
- A full job report is delivered

SEALS FOR VALVES

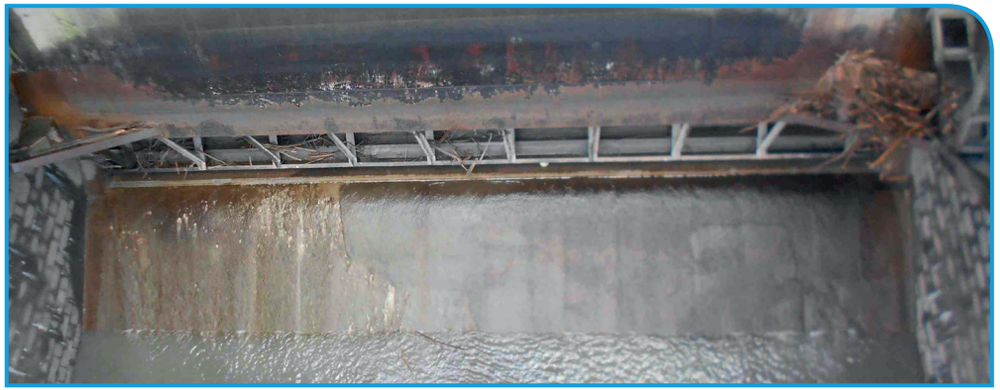
Because of our experience with the various types of valve seals, operators regularly call upon PXL SEALS to either optimise, totally redesign their seals or to develop new ones. The aim is to reduce leaks while enhancing seal durability.

SECTOR GATE - LATERAL SEALS, FOR SILLS AND JOINTS WITH CORNER BLOCKS *Saint Hilaire du Rosier*

Client : Eiffel

The challenge : Following a series of sealing defects, EDF called on the services of PXL SEALS.

Solution used :
- A diagnostic is carried out in order to identify the location of the leaks in addition to dry-mounting operations
- A technical dossier containing the necessary recommendations is drafted
- The sill joint seal is manufactured with lateral corner blocks
- Corner blocks are shaped to form joints with the sill seal
- The sill seal is glued with the corner blocks
- The finished blocks are shaped to fit with the range of the sill
- A full job report is delivered

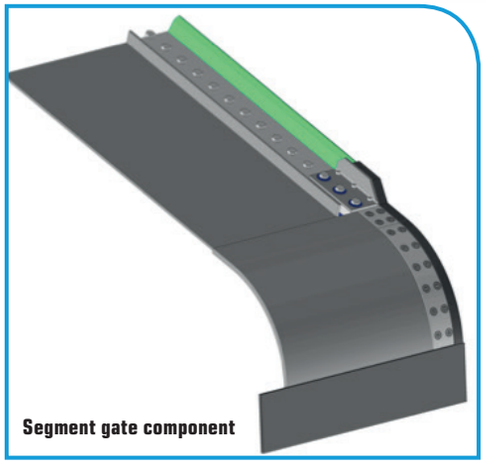


SEGMENT GATE - COMPONENT SEALS
Beauvoir Dam

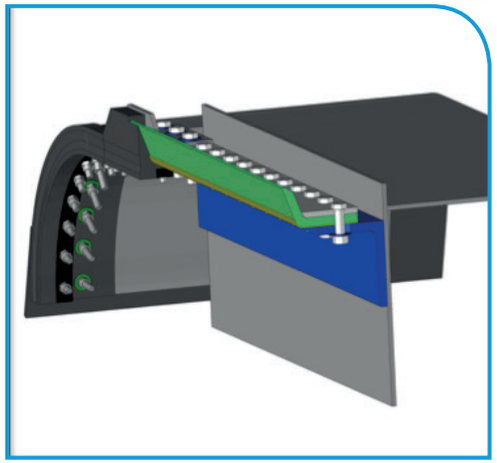
Client : SIGEDI

The challenge : It was necessary to devise a specific sealing system suitable for use with this application.

Solution used :
- Seal joints are designed and manufactured
- Connecting blocks are shaped in the workshop
- On-site assistance is provided with assembly of the lateral seals
- Shaping is carried out on-site in order to fit the knuckle joint
- A full job report is delivered



Segment gate component



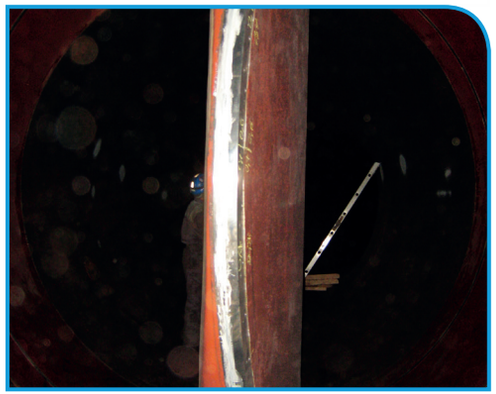
SEALS FOR VALVES

BUTTERFLY VALVE - FOOT VALVE SEAL
Grandval Dam

Client : EDF

The challenge : To fit and adjust a 3600mm diameter seal on-site.

Solution used :
- A sealing system which allows radial adjustment of the seal over time is devised
- The seals are shaped and assembled in the workshop
- The disc seal is adjusted on-site
- A full job report is delivered



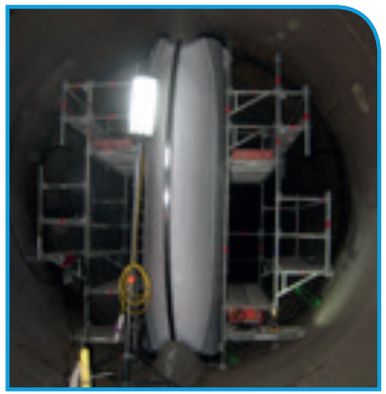
BUTTERFLY VALVE: SEAL FOR A DISC LOCATED INSIDE THE VALVE BODY Génissiat Dam

Client : CNR

The challenge : To design a new sealing system suitable for use with a large diameter valve.

Specificity :
The sealing system is built into the butterfly valve body.

Solution used :
- Digital simulation and analysis are carried out
- The sealing system is designed and developed
- The outer edges are shaped and glued on-site
- The joint is assembled on-site
- The cut of the seal is shaped on-site
- A full job report is delivered



LARGE SCALE AND COMPLEX SEALS

The PXL SEALS team is capable of adapting to the specific and often challenging conditions that come with the territory of complex applications.

LARGE SCALE SEAL
Monaco Seawall

Client : NFM

In 2000, the client selected PXL SEALS to design a bespoke, large-scale seal. The seal, moulded in one single component, meets an extremely specific design brief.
15 years later, the client called on PXL SEALS again to carry out maintenance work on the seals, scheduled for 2016.

The seals are used on a mechanical ball joint on a floating mechanical barge operating 8 metres below sea level, and must be capable of keeping this joint watertight. The socket requiring waterproofing measures 2.3m in diameter.

The challenges :
- Adapting our vulcanisation processes to the dimensions and the specific nature and design of the seal
- Carrying out vulcanisation on-site in extremely difficult conditions and in a confined space

Processes : Replacing the ball seal without disassembly using the MD WAY process

Solution used :
- The situation is assessed and the vulcanisation process is adapted to the situation
- On-site vulcanisation is carried out using the MD WAY process (portable press)
- On-site vulcanisation is carried out on the secondary joints


The Monaco Seawall

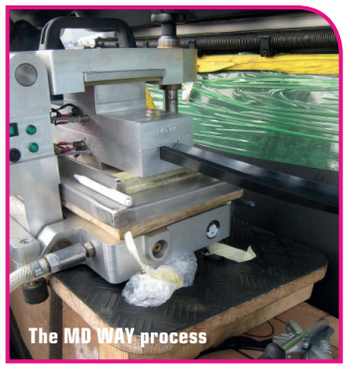

The MD WAY process

RADAR ANTENNA SEAL A vessel belonging to the Royal Dutch Navy (HNLMS Evertsen)

Client : ROTHE ERDE

The challenges : Successfully inserting the MD WAY on-site vulcanisation system into a seal assembled as an extension. Issues linked to a lack of space.

Solution used :
- The seal is created
- The situation is assessed and a stretching system is devised in order to enable vulcanisation
- Box-jointing is carried out through vulcanisation of the sealing joint
- A full job report is delivered


The MD WAY process

LARGE SCALE AND COMPLEX SEALS

FPSO TURRET SEAL - OIL AND GAS

A ship in South Korea

Client : SBM

The challenge : Assembling a number of large-scale seals on-site, measuring between 25 and 30m in diameter.

Solution used :
- Systems for cutting, stretching and gluing the sealing joints are designed and executed
- The seals are shaped, drilled and glued
- Setting gauges are designed for radial compression
- The seals are assembled
- The radial compression is adjusted
- A full job report is delivered

SILL SEAL FOR A SHIP GATE

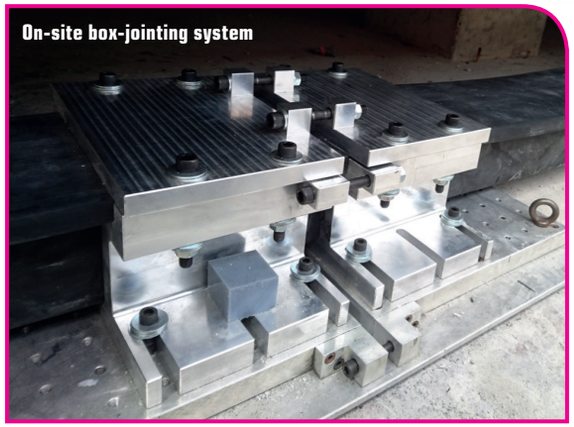
Autonomous Port of Marseille

Client : SPIE et ELADIS

A sealing joint for a concrete gate 87m long, 16m thick and 15m high, used to seal off a harbour in the port of Marseille.

The challenge : Ensuring that the structure is fully watertight by assembling and gluing this extremely large and extremely heavy joint in a context where access is difficult.

Solution used :
- Tools are created for cutting and gluing
- An operational method uses compression and stretching tests
- On-site assembly is carried out (gluing)
- A full job report is delivered



On-site box-jointing system

Seal fitted at the base of the ship gate

ON SITE

With more than 20 years of experience, we are more than capable of meeting your sealing needs in hydroelectricity and industry.

Need work carried out right away?
Are you planning repairs for a seal?
PXL SEALS has the right solutions for you:

ON-SITE DIAGNOSTIC

- A methodical analysis of the on-site environment will be carried out in order to identify effective solutions.
- The causes of the fault will be analysed and the appropriate corrective action will be determined.

DEVISING SOLUTIONS

- We will design a functional solution that takes the input data into account.
- We are able to draw on digital simulation and, where necessary, testbed modelling.

ON-SITE OPERATION

- We carry out all our work on-site, from the removal of the seal covers right up to housing preparation and the installation of the new seals.
- We also monitor work carried out by external service providers, where applicable.

WORK TRACKING

- We play an active role in the requalification phases and deliver detailed job reports tracking all operations carried out.

PXL SEALS operates in more than 100 locations across all 5 continents

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