




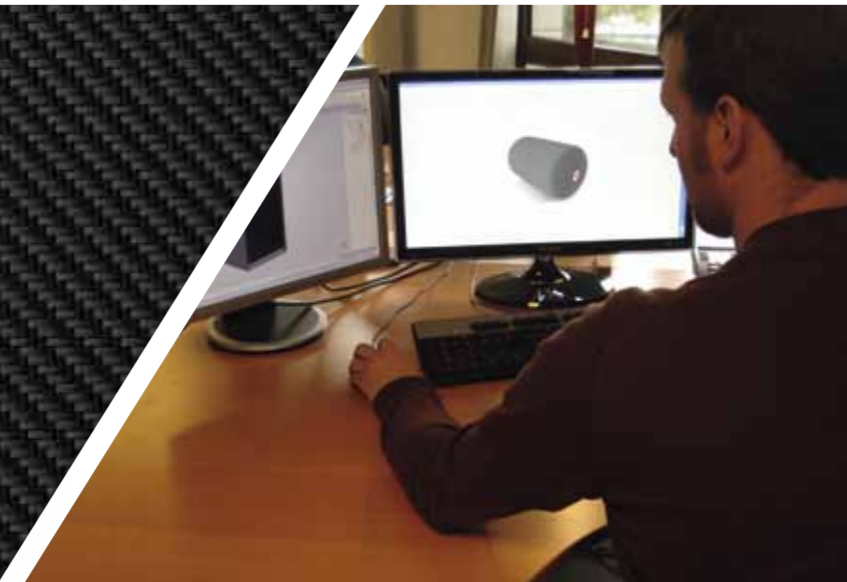
 **NUCLEAR**
Expertise
& solutions



 **PRONAL**
Elastomer Engineering

www.pronal.com

Key resources in one place...



Turnkey nuclear solutions



With their experience, our teams combine their complimentary expertise to ensure your requirements. We offer a turnkey service covering all aspects of project management from the initial research to design, manufacture, on-site installation and staff training. We can also provide a maintenance service for your installations.

Study & design

High-performance tools and resources...

- Solidworks software
- CATIA software
- Laboratory and test bench for experimentation and modelling



The expertise of our technical team covers highly specialised areas such as chemicals, material resistance, mechanics and more.

... Dedicated to your projects.

- Complete study & calculation notes
- Drawings
- Project management
- Installation and user guides
- QCP : Quality Control Plan

Manufacturing

PRONAL boasts specific production means for the manufacture of elastomer, plastomer and composite products:

- Hot vacuum vulcanisation
- High frequency welding
- Vulcanisation press
- Cold vulcanisation
- Automatic cutting machine
- Metal part treatment unit



Tests

Our facilities have a specific product testing zone. With our test bench, we can control our complete range up to 100 bars and check all safety ratings prior shipment. These tests guarantee our products and their performance.

Expertise & certifications

PRONAL's team has the required certifications and approvals to design, manufacture and install products in the nuclear industry:

- ISO 9001 version 2008 CERTIFICATION
- RN1 & ACC certified (DATR)



From on site installation to team training...

Our after sales service provides global turnkey solutions and can install most products.

We can also provide:

- inspection
- installation
- diagnostic
- dedicated solutions to your requirements

In addition, PRONAL can provide product training course to your staff.

This training can be given :

- to your premises
- on site
- during training sessions organised on our premises

➤ A solution to all requirements



➤ To Stop

Stoppers are used :

- to carry out leak tests on pipes, valves, etc.,
- to isolate pipes during maintenance, chemical cleaning, argon welding operations,
- to act as temporary stoppers to prevent spillage of toxic products,
- to replace a valve or welded element.

Stoppers can be made from PMUC materials.



➤ To Store

Tanks are used for temporary or permanent storage of :

- chemical prior to their treatment,
- oils,
- water...

Depending on the liquid stored, our flexible tanks can hold up to 500m³. We can also perform material compatibility tests in our laboratory.



➤ To Seal

We provide a range of sealing solutions :

- between two pipes,
- for piping tests.

Each solution is designed according to your specifications, with back-pressure up to 35 bars. (508 PSI).



➤ To Lift

PRONAL cushions can lift loads up to 60 metric tons...

... as well as other applications:

- support, press, clamp, and more.
- These lifting cushions have many advantages:
- low thickness, progressive and smooth lifting, adaptable to all surface...



➤ To Separate

PRONAL compensators are used to separate hydraulic fluids or nitrogen from the surrounding environment. The process uses a completely flexible synthetic rubber bladder.

They are used to avoid :

- air emulsification
- pollution...



➤ Custom made products

We focus our expertise to adapt and develop new modular solutions. Contact us !

Applied solutions

Manhole stoppers for steam generators

These are the stoppers **used during maintenance on steam generators;** it's necessary to quickly close the manholes in case of a leak in the primary pipings.

Product studied and developed in collaboration with EDF.



Hydraulic decontamination stoppers

Stoppers **used for pipe decontamination and staff biological protection** during steam generator replacements.



Valve test stoppers

Inflatable stoppers used **to test flapper valve on RIS/RCP circuits.**



Flexible tanks for chemical

For temporary or long term storage of chemical waste or demineralised water.



Inflatable tool for welded pipe inspection

These inflatable tools are **used to centre the source during gamma-graphic inspections of primary welded pipes;** they are particularly designed to follow the shape of the elbow.



Stoppers for chemical cleaning

In collaboration with EDF, PRONAL has developed inflatable solutions to allow chemical cleaning operations in the exchanger.

They are remotely installed in pipes using rods. These stoppers are completely resistant to chemicals and provide a perfect seal.



Environmental Protection

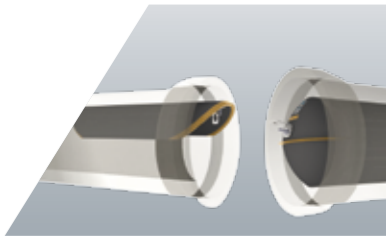
Nuclear installation compliance with safety and environmental concerns

The nuclear industry is more and more concerned with the environmental and safety compliance. With its large experience and wide product range (land, sea, underground), PRONAL provides a turnkey solution to pollution risks for nuclear installations and their surrounding area.

Anti-pollution stoppers

In case of fire, leak or incident, any spillage of toxic liquid or contaminated water used to fight the fire must be contained. **PRONAL's OPAP and OFR stoppers quickly and completely block any pipe from Ø 100 to over 2000 mm.**

They are permanently installed in the pipe **without disturbing the flow** and are resistant to almost all toxic chemical agents.



Sea & land barriers

These barriers are used **to contain, drive and stop all types of pollution.** With their flexible technology, **they follow any irregularities on the ground, can also float and resist to swell and wind.**

Our barriers are **reliable and easy to handle** – essential for pollution control.



Flexible tanks

As a temporary or permanent installation, **PRONAL tanks are a safe and reliable solution to reduce pollution risks for storage related to a leak or a unit failure.**

They can also store fire fighting water.



Retention tanks

Designed for all environmentally dangerous products, **PRONAL retention tanks are used for unit maintenance or for the storage of permeable equipments.**



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