ENDURICA USER SPOTLIGHT

Inflatable sealing technology is used in critical applications, from anchoring drill rigs to the seabed to gas loading systems, pipeline welding, and watertight doors/panels. Capable of adapting to varying environmental and service conditions, inflatable seals can be expanded and contracted pneumatically or hydraulically to accommodate changes in components that move in relation to one another, and those that are frequently connected and disconnected.

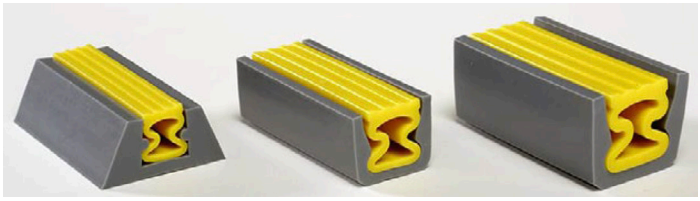
Inside the world's most demanding applications, you'll find trusted engineered solutions from Technetics Group. Along with global manufacturing locations, their experience is vast, and their solutions comprehensive.

From the advanced R&D center to their company-wide commitment to relentless testing and precision, they are committed to improving safety and optimizing performance for each of their clients.

ELASTOMERIC PRODUCTS INCLUDE:

- CEFIL'AIR® Inflatable Seals
- Extruded Profiles
- Plate Seals
- Molded Seals

Technetics Group is one of the world's best-known sealing and component design manufacturing businesses delivering highly engineered seal designs and critical component solutions. With innovative manufacturing and responsive technical expertise, their engineering leadership is respected and admired across the globe.



Delivering confidence to our customers for critical applications in the most demanding environments is our passion.

ENDURICA VALUE ADD FOR TECHNETICS:

- Winning innovation
- Right-the-first-time engineering for demanding environments
- Readiness for Digital Twin applications

WINNING ON DURABILITY

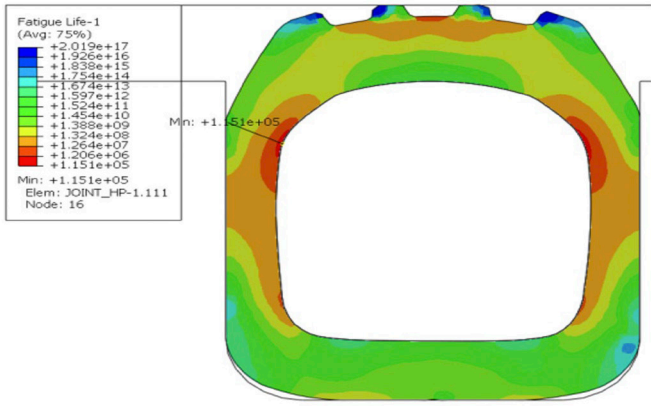
CLIENT DURABILITY REQUIREMENT

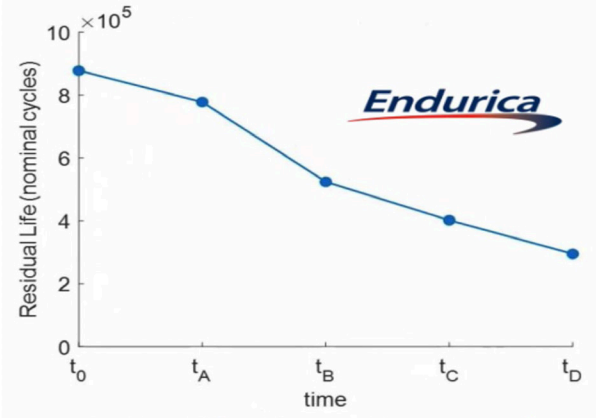
Technetics uses workflow from Endurica to predict the life of CEFIL'AIR inflatable seals which provide a flexible connection between a ship's turret and the riser buoy of an offshore oil and gas rig. Endurica CL™ is used to predict the initiation of a crack with propagation criteria and to study different seal extrusion profiles. Non-linear material models (Ogden Hyperelasticity) were considered for FEA analysis through ABAQUS combined with ENDURICA for fatigue life prediction. Prediction of residual life for the seal is estimated with the help Endurica DT™ software solutions.

"In optimizing a geometry to extend the fatigue life of a product I ran a few iterations of inner-cavity geometries and found one specific geometry with Endurica that achieved 500,000 cycles to failure in contrast to the 30,000 I had before. It's more than a 10-time improvement and that's really significant. These concrete numbers are really powerful in helping us and our customers to make good decisions."

- François Rouillard
R&D Mechanical Engineer,
Maestral Sealing Laboratory,
Technetics

The seals operate at up to 250 kPa inflation pressure, with a mean temperature of 10°C. The seals must function for a specified number of years while enduring lyophilizer cycles without cracking. Analysis with Endurica CL™ and DT™ helped Technetics to design better inflatable seals by considering the large strain behavior, leveraging the parameterized modeling techniques, and fatigue analysis. Prediction of fatigue life has helped engineers at Technetics to accelerate the design life cycle for the best in class products to maintain the market leading position. Additionally, fatigue analysis with Endurica has allowed Technetics to respond quickly and effectively to customer needs and to ensure delivery of "right the first time" solutions.





Residual life estimation incrementally

To learn more about inflatable sealing technology, visit our website to contact a specialist for a custom-engineered solution for your application.

Technetics GROUP
www.technetics.com

Endurica
Get Durability Right®
1219 West Main Cross St., Suite 201
Findlay, OH 45840 USA
Phone: 419-957-0543
www.endurica.com