

ENDURO™ Liner Hanger Packer



The **ENDURO™** RLH features proprietary SureSet and SafeSlip technology providing the most reliable hanger in both setting and retrieving operations. Designed to exceed expectations over a wide range of completion operations including, fracturing, gravel-packing, sand control, and primary completions. The **ENDURO™** RLH is conveyed via tubing or drill pipe with the Enduro ST and Enduro RT running and setting tools, and are designed for extreme high torque operations, including rotating and drilling the liner into position.

The **ENDURO™** Liner Hanger Packer is a premium retrievable liner top packer that can be used in a wide variety of applications: as a production or isolation seal bore packer; vertical, deviated, and horizontal wells; gravel packing; fracturing; and hanging liners. The packer is designed for primary conditions - operable in high pressures and temperatures up to 7,500 psi (51.7 MPa) and 400°F (204°C). Due to the static nature of the mechanism, the sealing material is formed from a material rated at 400°F (204°C) in primary applications. The Solace Liner Packer can be configured with WELLFIRST proprietary Thermo Seal Packing Element Technology for use in static and dynamic applications up to 675°F (357°C) and 2,500 psi (17.2 MPa).

Features

- **High temperature and pressure applications**
- **SureSet™** — seal energized to replace seal efficiency over time
- **SafeSlip™** — unique dovetail slips energized to maintain maximum extension regardless of top or bottom pressure
- **Small footprint** — a thermal tie-back adapter kit and one-piece internal mandrel eliminates the need to seal into a long tie-back and also allows the hanger to be fished from the internal mandrel.
- **THERMONATOR™** thermal element refined over 20 years of thermal experience and testing.
- **Innovative pre-heating manufacturing process**, results in less than 1% minimum initial seal degradation
- **Soft and hard release options available**
- **High torque**
- **Design meets ISO 14310**
- **Fewer sealing points than competitive hangers**



THERMONATOR™ Sealing Technology

For high temperature applications, When the **ENDURO™** is configured with the proprietary **THERMONATOR** Seal which was tested at world renowned CFER Technologies test facility to 700°F and 2,500 psi. The **THERMONATOR**'s seal material is chemically inert and is rated at 1,200°F and 3,000 psi. It is processed and heat treated to remove all filler materials to result in a seal that both seals better with solids impregnation in a dynamic state and also eliminates any risk of losing set force due to volume loss caused by material evaporation.

SureSet™ Technology Features

SureSet™ ensures the **THERMONATOR** sealing element is secured in the maximum extruded position and energized from both the top and bottom of the seal to provide maximum sealing efficiency over time. **SureSet**'s energization mechanism is designed to maintain sealing efficiency by transferring stored energy to the seal over the life of the install. An integral ratchet mechanism secures the set seal to ensure, that regardless of top or bottom pressure, no energy is lost from the **ENDURO™** dovetail slips once set.

SafeSlip™ Technology

The **ENDURO™** unique **SafeSlip™** slips are neatly housed into the hanger during conveyance. The **SafeSlip™** mechanism ensures that the hangers slips are engaged into the casing wall with maximum extension regardless of pressure.