



## GENERAL PRODUCT SHEET

### **FREECAP GT™ – Thermal Swellable Packers for Geothermal and SAGD Applications**

#### PRODUCT DESCRIPTION:

TAM developed the FREECAP GT™ for geothermal and Steam-Assisted Gravity Drainage (SAGD) applications to complement its existing swellable packer line. Two configurations are available: the GFR, which is built integral to the casing, and the FFR, which once set to the seal ID enables pipe movement relative to the packer.

The high-temperature swellable packer, or FREECAP GT (Geothermal), can be used for many zonal isolation applications in geothermal wells or can be used to optimize production in Cyclic Steam Stimulation (CSS) and SAGD applications in heavy oil reservoirs. The packer allows uniform or selective placement of steam along the entire length of the horizontal section of the wellbore and is designed to handle high temperatures, up to 575°F (302°C). The FREECAP GT has proven to be valuable in scabbing off damaged sections of casing in injectors and producers.

#### PROVIDE SOLUTIONS FOR:

- Geothermal wells
- Steam injection
- High-temperature wells
- Wells with high tubing movement
- SAGD applications
- Damaged casing

#### FEATURES:

- Swells when it comes in contact with cool or hot fluids
- Can be supplied with either water-swell or oil-swell elastomers
- Offers a maximum temperature rating of 575°F (302°C)
- Provides differential pressure rating in excess of 2500 psi (172 bar)
- Utilizes anti-extrusion slats at each end to aid in differential pressure containment
- Two configurations available:
  - The FFR incorporates a release assembly to allow for thermal expansion and high tubing movement while the packer remains stationary
  - The GFR can be run on its own or in conjunction with a geothermal expansion joint

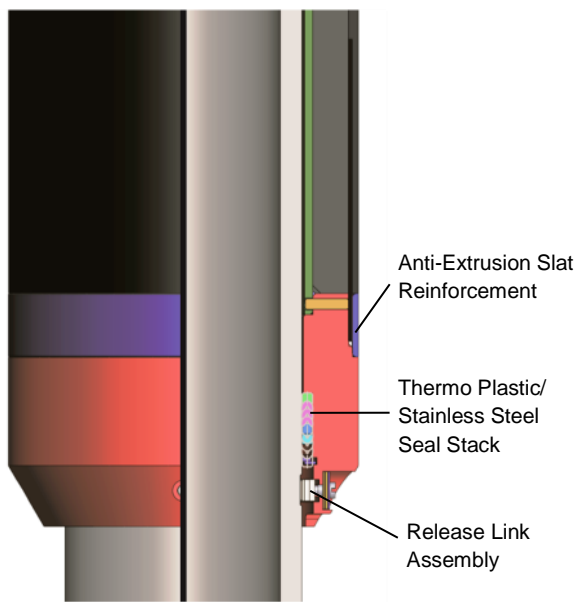
#### BENEFITS:

- Proprietary high-temperature elastomer swells to seal the annulus in any open or cased hole application
- Unique design of built-in expansion joint protects the pipe during thermal expansion/contraction, while maintaining annular differential pressure sealing capability

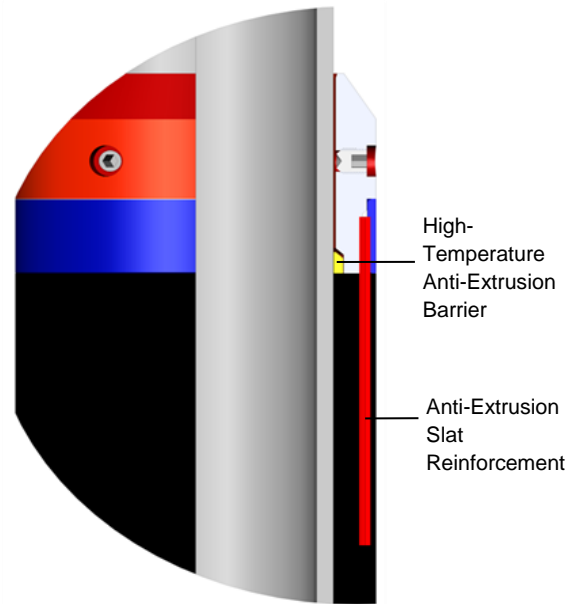




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FREECAP FFR™



FREECAP GFR™

**COMMON TOOL SIZES\*:**

Base Pipe OD		Element OD	
in.	mm	in.	mm
4.50	114.3	6.00	152.4
5.50	139.7	8.13	206.5
7.00	177.8	8.13-8.38	206.5-212.9

\*More sizes available on request

Base Pipe O.D.		Element O.D.	
in.	mm	in.	mm
3.50	88.9	4.50	114.3
4.50	114.3	5.63-6.13	143.0-155.7
5.50	139.7	8.13	206.5
6.63	168.3	8.13	206.5
7.00	177.8	8.13	206.5

\*More sizes available on request

**WATER SWELL AND OIL SWELL ELASTOMER TECHNICAL SPECIFICATIONS:**

Operation Requirement	Range	Comment
Hot Water/Hot Oil/Steam Injection	Design to suit application	Water or oil
Temperature Range	350°F to 575°F (177°C to 302°C)	-
Time to Set	Days – depends on swell temperature	Contact TAM for application-specific times
Chemical Exposure	Common oilfield chemicals, H <sub>2</sub> S, CO <sub>2</sub> , HCl	No effect
ΔP Capability	Up to 2500 psi (172 bar)**	Contact TAM for application-specific simulations
Element Length	Standard sizes are 3 ft to 6 ft (0.9 m to 1.8 m)	Custom lengths available on request
Base Pipe	Tensile/burst/collapse	Customer-specified base pipe is supplied by TAM

\*\*Contact TAM for higher pressure application