

TAM FREECAP[®] SWELLABLE PACKERS

- Automatically swells to provide zonal isolation after exposure to well fluids — oil- or water-based
- Integral to or installs on any casing
- Standard and custom seal lengths
- Up to 200% usable volume expansion



TAM INTERNATIONAL
Inflatable and Swellable Packers

FREECAP with screens for flow diversion

ISO 9001: 2008 Certified Company

A SAFER, SIMPLER ALTERNATIVE

In many applications, TAM FREECAP® packers can be a safer and simpler alternative to zonal isolation than cementing and perforating. Depending upon downhole conditions and customer requirements, they are effective in applications including:

- Zonal Isolation
- Flow Diversion
- Stimulation
- Intelligent Wells
- Selective Production
- Cement Enhancement
- Gravel Pack
- Fracturing
- Water/Gas Shut-off
- Swellable Float Collar

When TAM FREECAP packers contact wellbore fluids, the proprietary elastomer swells through adsorption/absorption to seal the annulus in any open or cased holes. There are no moving parts, installation requires no inner string activating tools, and therefore there is no failure mechanism present.

TAM FREECAP packers are available in either oil-activated, water-activated or a combination compound that swells in both oil and water. For more information, ask for our test reports.

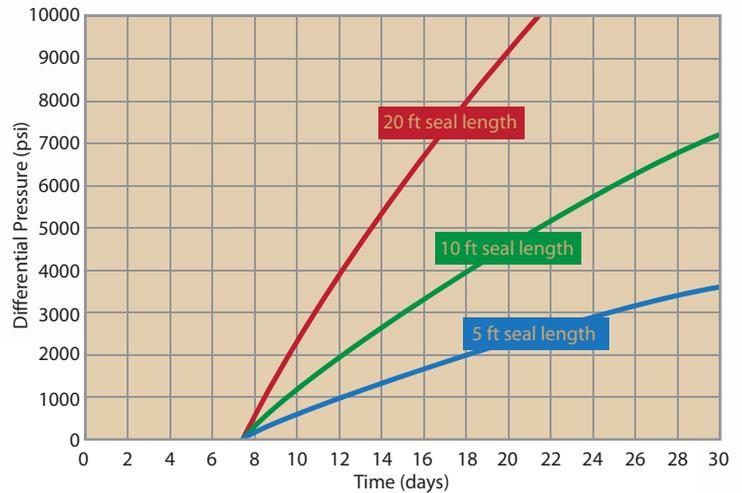
The proprietary elastomer compounds react to well-bore fluids, drilling mud, or completion fluids and can expand up to 3 times their run-in volume. Expansion rates and differential pressure ratings are dependent upon temperature, expansion fluid, time, rubber compound, and length of seal (see charts). TAM has an extensive elastomer lab to undertake most types of elastomer testing, enabling us to respond to new or unique swellable packer applications.

The TAM FREECAP is available in two variations to accommodate nearly any field application and to fit any size casing (also available for a variety of Intelligent Well applications). FREECAP packers can be run alone, in series, or in conjunction with TAM inflatable packers.

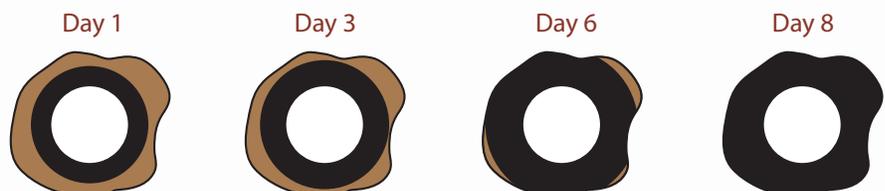
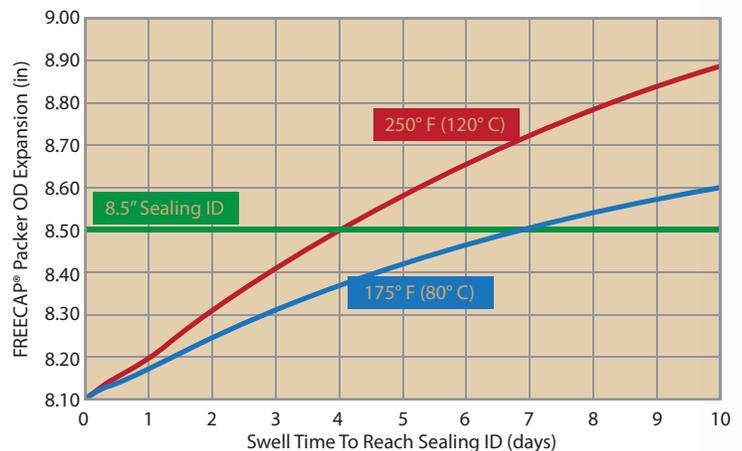
TYPICAL SWELL RATE

7" CASING, 8.12" OD FREECAP
IN 8-1/2" BOREHOLE, 32 API GRAVITY OIL

Differential Pressure Rating vs. Seal Length

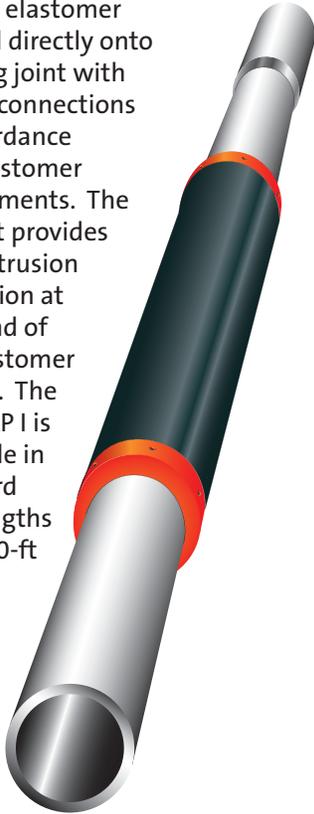


Expansion vs. Time & Temperature



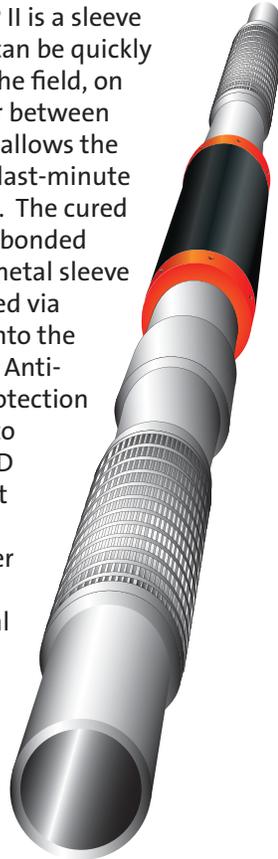
FREECAP I

The FREECAP I packer has the elastomer bonded directly onto a casing joint with thread connections in accordance with customer requirements. The product provides anti-extrusion protection at each end of the elastomer section. The FREECAP I is available in standard seal lengths up to 20-ft (6.1m).



FREECAP II

The FREECAP II is a sleeve design that can be quickly installed in the field, on blank pipe or between screens, and allows the flexibility of last-minute adjustments. The cured elastomer is bonded onto a thin metal sleeve that is secured via set screws onto the casing joint. Anti-extrusion protection and sealing to the casing OD is provided at each end of the elastomer section. Standard seal lengths are available in 1-ft (.3m), or 3-ft (.9m) sections.



SMART FREECAP

The TAM Smart FREECAP swellable packer may be installed with a Flatpak, ¼" Control Line, or Electric Cable for Intelligent Well completions.



OPEN-HOLE COMPLETION & INTELLIGENT WELL APPLICATIONS



FREECAP swellable packers used as cementing and perforating replacement/frac isolation.



FREECAP packers can be built to accommodate any number of control lines in an Intelligent Well completion.

GRAVEL-PACK APPLICATION

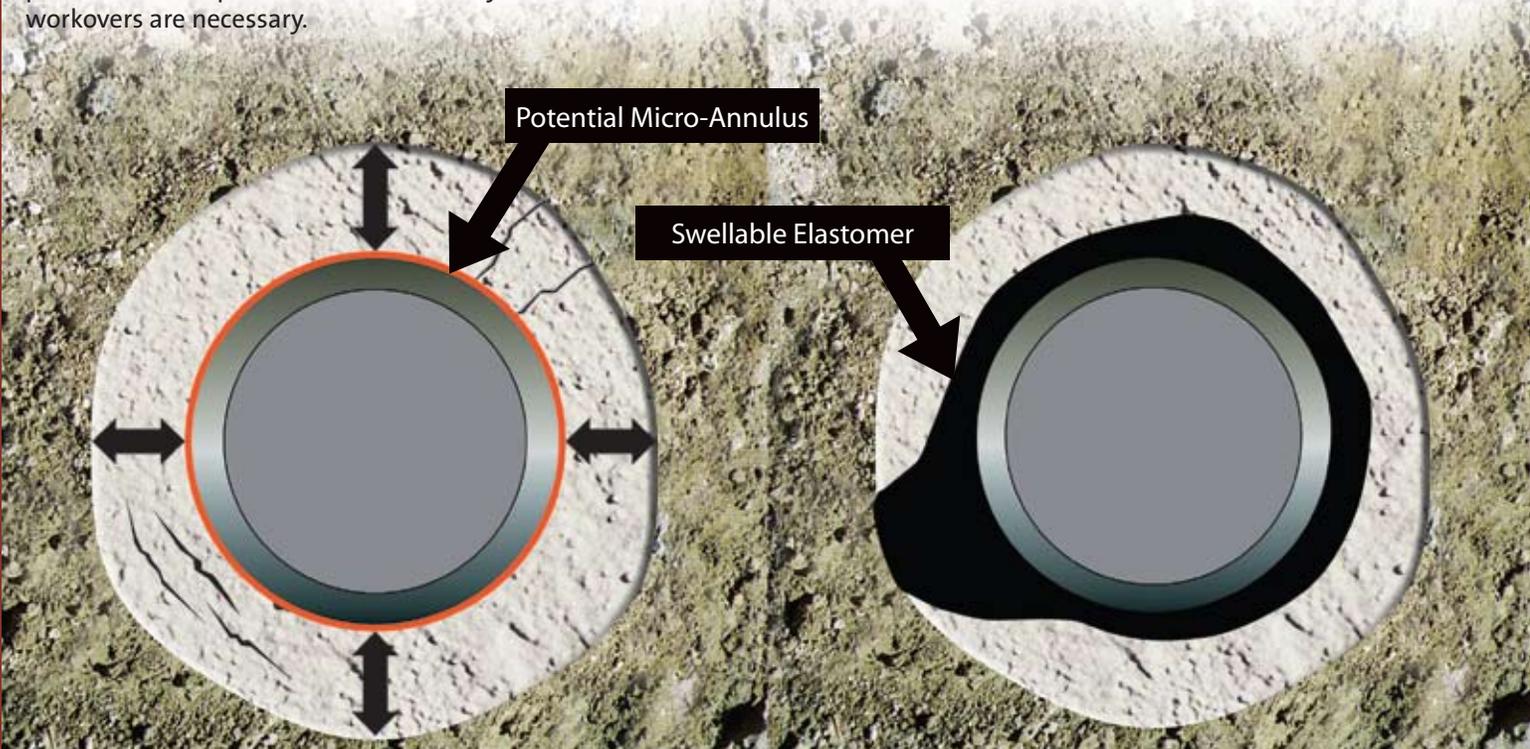
Including FREECAP swellable packers as part of an open-hole gravel-pack completion adds the ability to isolate sections of the lateral from potential water production.



CEMENT INTEGRITY

Long-term well integrity relies on a dependable cement sheath. Cement sheath failure can lead to lost production, sustained casing pressure, and early water production. Even the perfect cement job is subject to damage by stresses induced from drilling activities and/or stresses induced by pressure and temperature fluctuations during production. To repair these failures, costly workovers are necessary.

A swellable packer can be used to minimize stresses at the elastomer/cement interface, thereby preventing cement failure. In the event of a micro-annulus or mud channel, the swellable packer will react with fluid that comes in contact with the elastomer and fill the flow path. Placing FREECAP swellable packers in critical areas can ensure long-term annular isolation.



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