

## TuffPac nonrotational high-performance service packer

Suitable for severe load conditions

**Tensile strength:**  
400,000 lbf [1,779 kN]

### How it improves wells

The TuffPac\* nonrotational high-performance service packer is a fullbore, cased hole, retrievable compression-set packer designed for testing and tubing-conveyed perforating operations. It is designed to withstand severe shock, high flow rates, and high pressures when the appropriate slacked-off weight has been applied to the packer. The sealing elements effectively isolate annulus fluids from the perforated interval.

### Applications

- Horizontal and highly deviated wells
- Single-trip tubing-conveyed perforating and gravel-pack operations
- Deepwater testing operations
- Deep well perforating (special design for gun shock resistance)
- Multizone, single-run well testing

### Benefits

- Setting achieved by string reciprocation instead of string rotation
- Minimized set and unset time
- High set and unset reliability regardless of deviation
- Durability in harsh environments
- Suitability for high-heave floating rig operation

### Features

- Upgraded engineered element design
- Specifically sized gauge rings to reduce extrusion gap for the sealing element
- Integral and internal bypass to minimize surge and swab effects
- Fullbore mandrel
- Tungsten-carbide slip inserts to grip the hardest casings

- Built-in slip lock module to prevent premature setting during run in hole (RIH)
- High-strength material and robust design suitable for severe load conditions

### What it replaces

The TuffPac packer replaces conventional turn-to-the-right packers and mechanical-set packers.

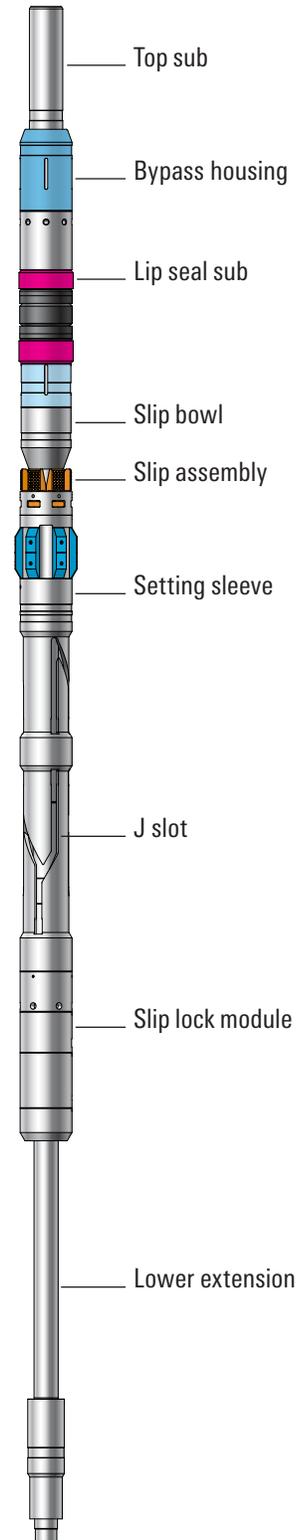
### How it works

The TuffPac packer consists of a slip lock module, continuous-indexing J slot, slip assembly, and elements assembly. The high-strength material and robust design makes it suitable for severe load conditions normally seen during perforation of deep wells as a result of gun shock.

To prevent the TuffPac packer from being pumped uphole during stimulation operations, the hydraulic hold-down should be installed in the tubing string above the packer. The packer has a rugged, simple design that is easily redressed between operations and can be quickly converted to run in a different casing weight.

The TuffPac packer is locked in safety position by the slip lock module to prevent premature setting during RIH. When the desired packer setting depth is reached, a rupture disc is ruptured by hydrostatic or applied pressure from the surface to disengage the slip lock module.

The packer can be cycled simply by string reciprocation from the safety position to the set position and back to the safety position. This feature is particularly advantageous in highly deviated wells, where applying rotation down to the rotation-set packers might be difficult. The reciprocation setting also eliminates rotation of subsea umbilicals during the setting process. A simple straight pull will unset the packer, and the J pin will be in the safety position during pull out of hole.

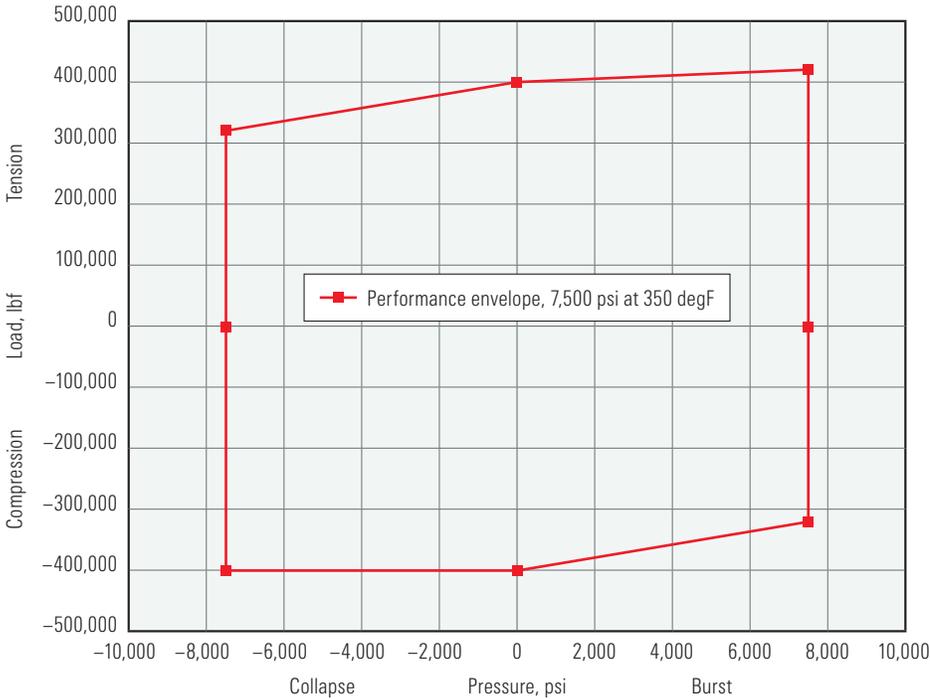


*TuffPac nonrotational high-performance service packer.*

## Specifications

Casing size, in	9 $\frac{5}{8}$
Casing weight, lbm/ft	47–53.5
Tool ID, in [mm]	2.25 [57.2]
Pressure ratings	
Differential pressure, psi [MPa]	15,000 [103]
Across the elements, psi [MPa]	12,500 [86]
ID test pressure (packer not set at surface), psi [MPa]	15,000 [103]
Absolute pressure, psi [MPa]	21,000 [145]
Temperature rating, degF [degC]	350 [177]
NACE MR0175/ISO 15156 certification	Yes
Tensile strength minimum yield, lbf [kN]	400,000 [1,779]
Compressive strength minimum yield, lbf [kN]	400,000 [1,779]
Tensile strength at maximum working pressure, lbf [kN]	400,000 [1,779]

All specifications are subject to change without notice.  
Fully qualified per drillstem test (DST) Standard API 19TT V2.



TuffPac nonrotational packer performance envelope at 350 degF.