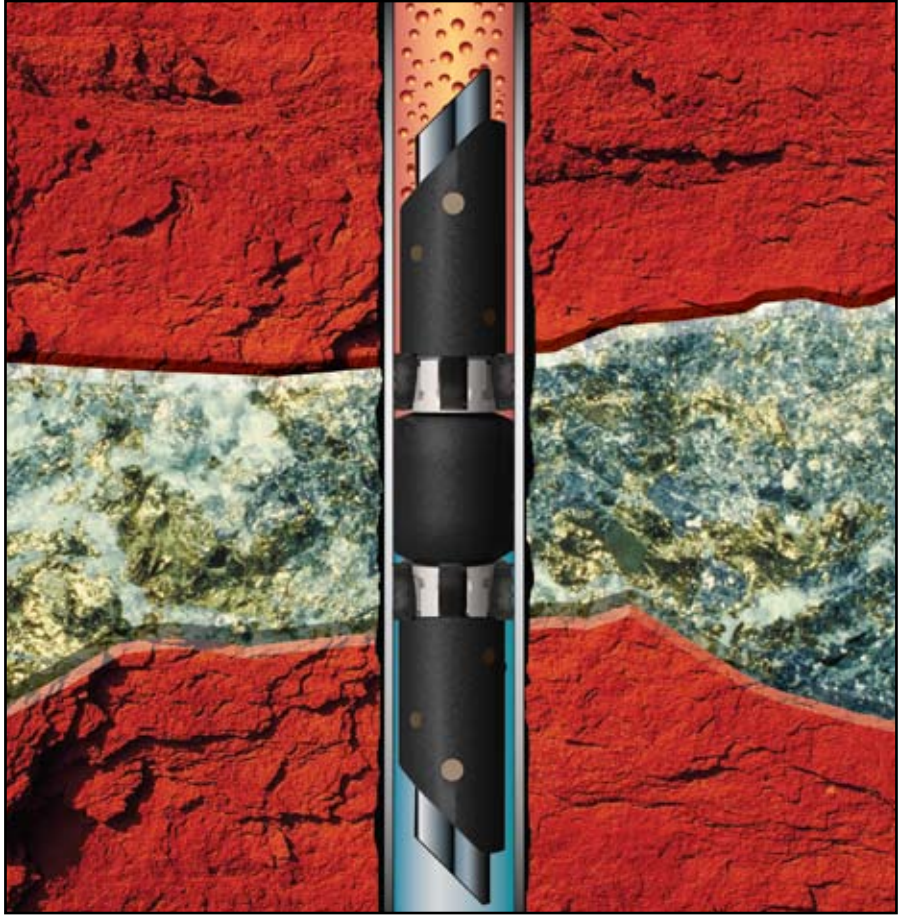


# Python™ Composite Plugs



*The Python™ composite bridge plug provides effective zonal isolation.*



# Specially Engineered For High Pressure and Temperature Requirements

## Reliable zonal isolation and predictable mill-out

BJ Services' Python™ composite plugs combine proven, reliable performance in a range of applications with predictable mill-out characteristics to enhance your range of zonal isolation options.

While composite plugs can reduce rig time and personnel costs, a plug that is unproven or mismatched to well conditions can create problems whose remediation will outstrip any savings it may have offered.

When composite plug failure leads to incomplete isolation, the effectiveness of the entire well stimulation program can be compromised. Extreme wellbore conditions can cause some plugs to swell during run in, causing them to preset in the wellbore prematurely and requiring unplanned mill-out work. These plugs can also rotate in the wellbore while being milled, increasing rig time. If the plug does not mill down sufficiently, the resulting large cuttings can foul surface equipment.

## Python™ bridge plugs

Python composite bridge plugs are engineered for the most challenging high-pressure, high-temperature (HP/HT) wells. By combining design innovations with nonmetallic materials, the Python bridge plug can operate at temperatures beyond 350°F (177°C) and pressure differentials exceeding 12,500 psi (86.2 MPa).

Python bridge plugs incorporate a number of performance features to ensure a successful well intervention including a noncircular mandrel that rotationally locks all plug components, providing an intrinsic lock among the plug parts. A unique hollow slip system combines reliable casing bite characteristics with quick millability so the plug holds where it is set, significantly reducing mill-out time when it is no longer needed.

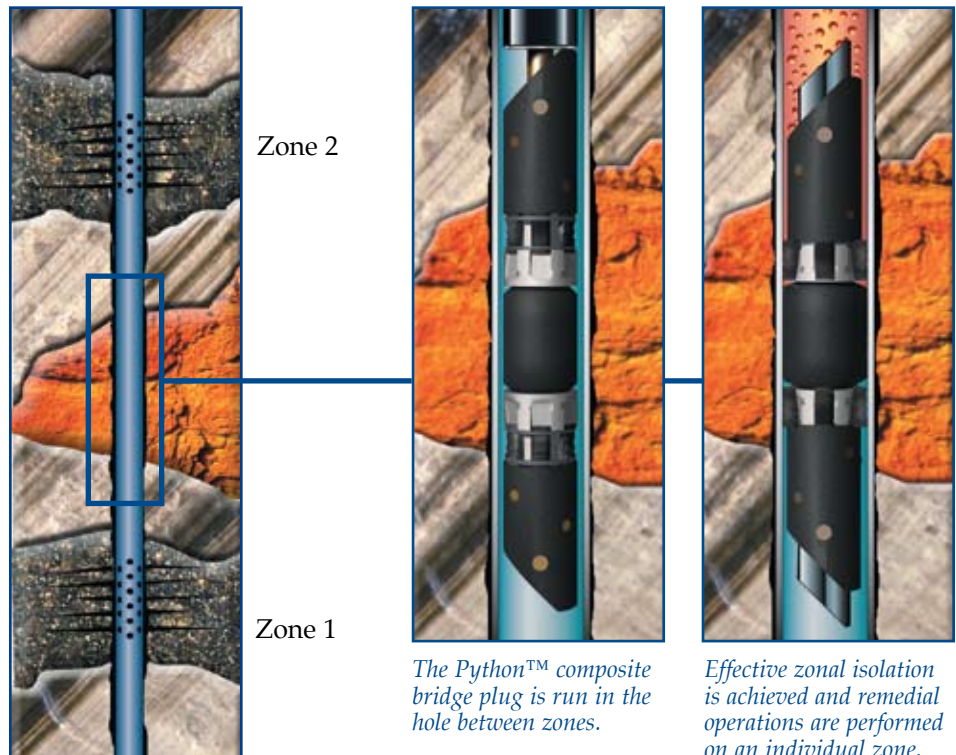
The Python plug also equalizes pressure before the mill contacts the upper slips, preventing damage to the upper slips, preventing damage to the bottomhole assembly (BHA) and eliminating buckling of coiled tubing (CT) during milling.

The bridge plug's composite construction allows milling with a CT unit while producing fine cuttings to protect surface equipment. Tapered mating ends at the top and bottom of the plug prevent rotation during milling to further ensure quick removal of multiple plugs from the same well.

## Python™ flow-through frac plugs

The Python composite plug is also available in a frac plug configuration, featuring a large-ID bore to permit high gas flow rates from beneath the plug. The frac plug is ideal for temporary isolation of pressure in gas wells before or during a fracturing operation.

The flow-through feature of the Python frac plug also serves to equalize pressure across the plug before the upper slips are milled, preventing damage to the BHA and eliminating buckling of CT during milling. BJ Services' Python frac plug includes the same strength and millability features as the composite bridge plug, and is available in the same pressure and temperature ratings for tailored performance.



**Reliable  
Operation, Often  
Exceeding  
Normal  
Operating  
Parameters**

### Case history

Python plugs can save rig time and reduce rig costs not only because they drill out faster than competitive composite plugs, but because their peerless track record means rig time and well area isn't wasted by adding cement above the plug to maintain its integrity.

A customer requested BJ Services' Python plug because they wanted to set the plug, test and perforate in one day, eliminating the cost of cement bailing and a second day of rig-up and personnel charges.

The Python composite bridge plug exceeded all the customer's requirements: holding 12,000 psi (82.7 MPa) differential pressure, enduring 290°F (143°C) downhole temperatures for 12 days, and was easily milled out with CT, while saving additional rig-up expense.

### Case history

Hostile well conditions can include almost anything: high pressures, high temperatures, or extreme downhole pressure and temperature differentials. Whatever the definition of hostile, Python plugs excel in downhole environments that stop competing plugs in their tracks.

Extreme well conditions in a customer's well proved too much for competitive composite plugs, swelling and jamming in the wellbore before reaching target depth and requiring them to be set and milled out. BJ Services' Python composite bridge plug was run to

a depth of 13,880 ft (4230 m) at a BHT of 340°F to 350°F (171°C to 177°C), at 5,500 psi (37.9 MPa). Once the plug was set, surface pressure was increased to 12,000 psi (82.7 MPa), and then bled down to 0 psi. Through it all, the Python plug held its position and maintained integrity.

### Case history

An operator used a number of 4 1/2-in. Python HT bridge plugs for zonal isolation in a multiple zone gas well. While perforating one of the upper zones, the perforating gun ruptured, causing the casing to part. The operator was only able to re-enter the well after 21 months to remove the plug, at which time the Python plug was found exactly where it had been originally set, holding 4,000 psi (27.6 MPa) of gas pressure below it. Temperature at depth was 340°F (171°C). Mill-out was accomplished in less than 45 minutes.

### Composite plugs to suit any well

BJ Services offers a variety of plugs specially engineered for multiple pressure and temperature requirements, making the Python line of composite plugs the natural choice for temporary plugging and multizone stimulation projects. To ensure complete isolation and high milling performance, contact your BJ representative.



*The Python™ plug's high-tech composite construction allows milling with a CT unit.*



*The Python™ plug's noncircular mandrel rotationally locks all plug components, providing an intrinsic rotational lock among plug parts.*



*BJ Services Company operates in more than 50 countries around the world.  
For more information, click on the  icon at [www.bjservices.com](http://www.bjservices.com).*



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