

PressureNET

Fiber- and solids-based lost circulation solution

APPLICATIONS

- Circulation losses during drilling or cementing operations
- Natural fractures
- Shale, dolomite, and carbonate zones
- Spacers ahead of cement slurries

BENEFITS

- Prevents lost circulation during primary cementing jobs
- Enhances effectiveness of remedial cementing
- Reduces volume and costs of lost drilling fluid and cement due to fissures and natural fractures

FEATURES

- High resistance to differential pressure
- Reliable, reinforced composite barrier through a combination of fiber bridging and solids plugging
- Effective fissure plugging delivered via cement slurry
- Efficiency with both low and high solid volume fraction slurries
- Compatibility with nonaqueous fluids, such as oil-based and synthetic muds
- Simple field preparation in batch mixer or mud pit

Reduce risk of lost circulation and NPT during drilling and cementing

Lost circulation, one of the main causes of nonproductive time during drilling or cementing operations, can result in ineffective mud removal and poor zonal isolation.

To mitigate the risk of losses while drilling and cementing, PressureNET* lost circulation solution combines dispersible CemNET* fibers and high-strength particulate solids to form a reinforced composite barrier across the loss zone. When losses stem from fissures, fibers alone are unable to support fluid pressure differentials across the fracture opening, especially when employed in conjunction with low-solids-content slurries. Synergistic interactions of the custom-designed fibers and solids in PressureNET lost circulation system effectively bridge and plug fractures, preventing partial or total losses while drilling or cementing. The impermeable 3D network created by the PressureNET system is strong enough to support the hydrostatic pressure of a cement slurry column and withstand additional pressure from subsequent primary or remedial operations. The PressureNET system reduces drilling downtime caused by circulation losses and saves thousands of barrels of mud potentially lost during cementing operations.

Withstand dynamic pressures in unconventional wells

The vitrified shale used in PressureNET is a broad spectrum of hard, low-porosity particles with angular shapes and ceramic-like properties. Chemically inert in most well fluids, these particles may be reliably employed in cement slurries, spacers, and drilling fluids—with only slight solubility in mud acid and hydrochloric acid. The distribution of aggregate sizes and shapes enable the PressureNET particles to build up behind and throughout the CemNET fiber network, creating a base for smaller cement slurry solids to pack off the loss zone, while providing enhanced support to withstand higher differential pressures across the fracture. PressureNET particles that penetrate the fracture become an anchor for the fiber matrix, preventing sloughing when the differential pressure dissipates or reverses after treatment.



PressureNET lost circulation system combines the strength of vitrified shale (left) with a 3D network of CemNET engineered fibers (right)—effectively plugging lost circulation across a spectrum of fissure types.