

STEELSEAL[®] 50

LOST CIRCULATION MATERIAL

Product Description

STEELSEAL[®] 50 lost circulation material is a highly resilient, angular, dual-composition carbon-based material that allows tightly packed particles under compression in fractures and pores to expand or contract without being dislodged or collapsed due to changes in differential pressures. This property is termed "resiliency" and results during manufacture by a proprietary furnace process. This process raises the carbon content as high as 99.9 and significantly reduces most heavy metals, such as iron, nickel and antimony, to very low levels – less than 10, 5 and 0.05 parts per million, respectively. During the high temperature purification process, graphitic properties are imparted to the petroleum coke feed stock. Resiliency, ranging from 80-95% at 10,000 p.s.i., is achieved in this process.

Applications/Functions

- » Lost circulation treatments for pore plugging and small induced and natural fractures
- » Aids in preventing seepage losses, wellbore breathing and stuck pipe in porous and/or depleted formations
- » STEELSEAL 50 highly resilient lost circulation material is utilized in water-based, synthetic-based and oil-based drilling fluids
- » In water-based fluids, it also performs as a solid lubricant for torque and drag reduction

Advantages

- » Designed for lost circulation prevention in all fluids
- » Minimal effect on viscosity
- » High loadings without detrimental effect on Equivalent Circulating Density
- » Minimal effect on Equivalent Circulation Density when used as a background material
- » Enhances fluid loss control and provides pore plugging for depleted porous formations
- » Smaller size allows greater retention within fluids even with fine mesh screens
- » Exhibits a resiliency that allows it to remain closely packed within a fracture or pore throat

Typical Properties

- » Appearance: Solid black, angular material
- » Specific gravity: 1.88
- » Particle size d50: 50 +/- 10 microns
- » Composition minimum: 99 to 99.9% carbon
- » Solubility: Not soluble

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Recommended Treatment

1. As a background concentration for seepage and lost circulation control, 15-25 lb/bbl (40-70 kg/m³).
2. For lubricity in water-based fluids, 4-10 lb/bbl (10-30 kg/m³).
3. WellSET[®] treatments use 10-30 lb/bbl (60-140 kg/m³) STEELSEAL 50 highly resilient lost circulation material with BARACARB[®] ground marble and other sized resilient graphitic carbon materials.

Packaging

STEELSEAL 50 highly resilient lost circulation material is packaged in 50-lb (22.7-kg) and 55.1-lb (25-kg) sacks and in 2000-lb (907-kg) bulk bags.

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