

PROPPFIX™

BRIDGING BLEND

PRODUCT DESCRIPTION

ProppFIX™ bridging blend is a composition of fine to medium cellulosic, graphitic and elastomeric granules for use in mechanical wellbore stabilization (MWS) applications. ProppFIX blend is sized to bridge fracture widths up to 1mm to form a seal. ProppFIX blend performance is maximized when used with PreFIX™ seepage control blend.

BENEFITS

With a combination of material types and sizes, ProppFIX blend:

- Bridges, plugs and halts the propagation of induced fractures up to 1mm
- Initiates the formation of an impermeable plug to isolate the frac-tip from wellbore pressure
- Props the fracture open to create the dynamic of hoop stress
- Is non-toxic and compatible in all types of drilling fluids
- Is stable at temperatures up to 300°F (149°C)

APPLICATION

Mechanical Wellbore Stabilization

ProppFIX blend is most effective when applied as a whole-system treatment. When a fracture is induced by a critical surge in wellbore pressure, it can propagate under pressure into the weaker formation away from the wellbore, often creating an extended network of fractures into which massive volumes of drilling fluid can escape. A continuous supply of bridging and sealing materials moving past a

fracture at the instant it occurs increases the probability of prompt sealing, frac-tip isolation and impeding propagation. Maintenance of an effective concentration of these materials throughout the entire circulating system requires solids control equipment specifically dedicated to separating the desirable blend from drill cuttings and returning them to the active fluid. Another option for maintaining a system concentration is to dress the shale shakers with very coarse screens (20+ mesh) to prevent the discharge of desired solids.

Concentrated Sweeps

Proper drilling practices and regulation of the volume and frequency of sweeps are often adequate to minimize the risk of uncontrolled propagation of an induced fracture.

TREATMENT RECOMMENDATION

Ideally, the MWS product suite would be used as a whole-system treatment so fractures can be plugged and sealed as they are induced. As a whole-system treatment, ProppFIX granular blend is applied at a concentration of 5-15 lb/bbl. However, the coarser granular blends are readily discharged over the shale shakers, so it is often more practical to use the materials in sweeps or spots at concentrations of 25-40 lb/bbl. The total concentration of MWS products should not exceed the limitations of the downhole tools. Sweep volume and frequency are contingent on hole size, pump rate and rate of penetration.

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PARTICLE SIZE DISTRIBUTION (SIEVE ANALYSIS)

Retained on 30 Mesh	12%
Retained on 40 Mesh	21%
Retained on 60 Mesh	29%
Retained on 80 Mesh	20%
Retained on 100 Mesh	7%
Retained on 200 Mesh	7%
Passing 200 Mesh	4%

TYPICAL PHYSICAL PROPERTIES

Appearance..... Blended, tan and black particles

Specific Gravity..... 1.4-1.6

Water Solubility..... Negligible

HANDLING AND STORAGE

Minimize exposure to dust. Store in a cool, dry, well-ventilated area away from sources of ignition and strong oxidizing agents. Use appropriate hygiene, clothing and personal protective equipment suitable for work being performed. Review the SDS thoroughly before using this product.

PACKAGING

ProppFIX bridging blend is packaged in 50-pound (22.7 kilogram) multi-walled bags.