Technical Data Sheet

Oilfield Solutions

RadiLock 3mm Fiber

Polyacrylonitrile (PAN) Acrylic Fiber

General Description

RadiLock 3mm Fiber is a next generation fiber technology based on Polyacrylonitrile (PAN) acrylic. This fiber is proven to effectively seal formation fractures improving fluid loss, loss of circulation, and return to surface properties, while significantly increasing the mechanical properties through ionic bonding with cement.

This fiber is enhanced by its combination of fiber count, strength, and fine denier size. RadiLock 3mm interlocks in the cement slurry matrix creating a mechanical stabilization to control losses, prevent all forms of shrinkage, and also eliminates the micro-crack formation which causes permanent weakening in the cement. It further decreases the cement's permeability and improves the life of the well for greater zonal isolation, protection from corrosion, contaminates and drilling shock. These features work synergistically to stabilize the cementing process to produce a more durable, better bonding cement sheath, maximizing casing support and helping to eliminate secondary cementing.

Features / Benefits

RadiLock 3mm offers the following:

- Enhances Return to Surface properties and need for remedial cementing operations
- Dramatic improvements for areas of lost circulation in porous formations, by bridging gaps as well as aiding in support/suspension of the slurry design
- When run in spacers, this product offers improved sealing of the formation.
- Elimination of the micro-crack formation which cause permanent weakening to cement
- Fluid Loss Control Properties and Improvement to Bond Logs
- Improved filter cake stability and consistent slurry fluidity.
- Improved mechanical properties providing more durable, longer lasting cement for the Life of the Well.

Applications and Usage Informaton

RadiLock 3mm can be dry blended in the bulk plant for the most consistent dosing techniques, although can also be dosed by hand into the fill tank or through batch mixers. These fibers offer improved dispersion (both in dry and liquid phases) into the cement matrix for improved results over other fibers in the industry. These fibers are compatible with cementing systems and all water, oil and synthetic based fluids. They will not affect the thickening time and do not require extra mixing water.

Recommended Loading Levels

For Lost Circulation Additive Properties

For Lead and Tail Slurries: 0.125-0.25 lbs. per sack of cement

For spacers to enhance sealing and LCM properties: 0.5-1.0 lbs. per barrel (or as high as 2.0 lbs. per barrel).

For Mechanical Additive Properties

0.25-.50 lbs. per sack of cement

This will allow improvements in mechanical properties including tensile, flexural, shrinkage control, and stress/strain relationship on the cement.

Typical Properties

Material: Polyacrylonitrile (PAN) Acrylic Fiber
Fiber Length: 3mm
Fiber Count per pound: 1,360,791,073 fibers
Diameter: <11 microns (1.0 denier)
Specific Gravity: 1.17 g/m3
Decomposition Temperature: 626oF / 330oC
Acid & Alkali Resistance: Excellent
Tenacity: >600 MPa

Typical properties given do not constitute a supply specification.

Packaging/Storage

50 lb. Boxes
Store in a dry area protected from moisture.

Health and Environmental Data

Before handling or using this product please refer to the Safety Data Sheet for complete health, safety and environmental information. Dispose of waste in accordance with local, state and federal regulations.

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