



Construction drilling using slurry and cold weather don't mix that well. In the drilling industry when using slurry a number of things can go wrong when the temperature drops below 32°F. The polymer slurry will freeze. Taking a few simple precautions easily prevents damage and equipment failure due to expanding from freezing.

RU Anti-Freeze

NOT RECOMMENDED as the mix ratios for protection from freezing should be 20 to 1. As extreme cold periods and wind chill temperatures decline the mix ratios can be even higher. This equals 1000-1500-gallons required per a 19,000-gallon slurry tank to just slow the freezing. Propylene Glycol is not a permanent anti-freeze. It must be mixed into the water for the best results. This is usually not possible as the slurry is actively being used. It should only be used for inactive equipment where the water or slurry is not drained from the systems. The propylene glycol can be applied onto the Kelly bar to keep it from freezing. Propylene Glycol is red colored and is used for deicing airplanes.



Temperature at 32°F Overnight

Be sure to install air lines within the slurry tanks to bubble the polymer slurry. This keeps the slurry moving and is very effective at preventing the slurry from freezing. Bubblers = 1-inch PVC placed into the tank with slots along the pipe and a closed end. The PVC pipe is weighted down on the bottom of the tank using sections of rebar. An air compressor is hooked into the 1-inch line.

Severe Freezing Temperatures and Wind Chill Protection

A very effective method at preventing polymer slurry from freezing in extreme freezing temperatures within the Frac tanks is an innovative portable heat distribution system that circulates heated fluid through a series of hoses connected to the Thawzall heat zone TCH 250 unit.



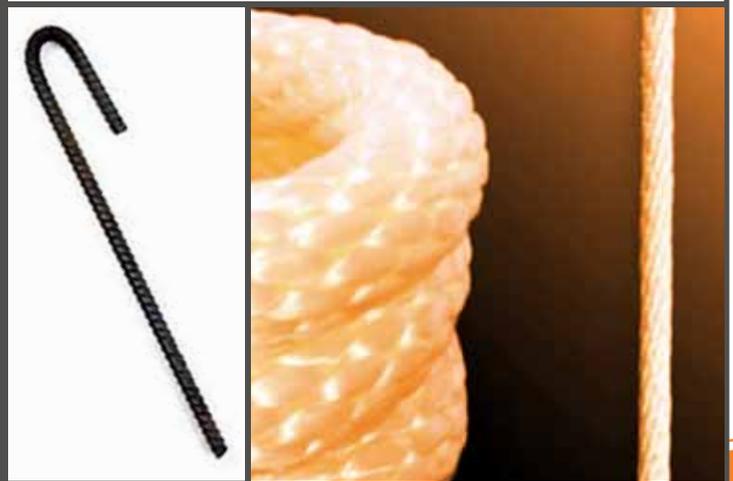
Hoses & Valves

The slurry supply lines, and valves can be wrapped with a PowerBlanket to heat with electricity and prevent freezing. Powerblanket can be obtained from farm & Fleet or Northern Tool. Briskheat is another source of thermostat controlled heat tape.



Tarp to Protect BIG-FOOT® Polymer Slurry in Mixing Tank

1. Torpedo Heater. Frostfighter.com Oil/diesel industrial grade 300,000 btu's. With a 40-gallon tank that will run for 10-hours.
2. 12-inch canvas duct pin-lock. To blow heat from the Heater into the covered tarp.
3. Power source to run the torpedo heater. A good solution is to utilize a light tower.
4. Stakes to hold down the tarp secured with the guy lines. Make the tarp stakes from #7 rebar.
5. 3/16" nylon rope solid braid to be the guy lines securing the tarp to the stakes.



Build Enclosure Walls Around Slurry Tanks

Another option on projects is to fully enclose the slurry tanks with a wood and insulated walled structure made from 2x4 wood plywood and panels of insulation. Portable gas heaters are then used within to maintain a warm temperature.



Portable Gas Heater

The use of portable gas heaters can be used to heat the covered valves and fittings on the ends of the slurry tanks.

MATRIX CONSTRUCTION PRODUCTS has over 30 years of experience in drilling fluids and proprietary approaches to drilling issues that offer significant value and operational insight to our clients. **BIG-FOOT®** slurry technology is the result of 15+ years of research and development by industry experts.



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