P-LFS/HT

CEMENTING SERVICE BULLETIN

10/04/14

P-LFS/HT (PETROCHEM – LAMINAR FLOW SPACER/HIGH TEMP – ON THE FLY)

TECHNICAL DATA

P-LFS/HT is a water based laminar flow spacer designed for use at bottom-hole temperatures above 302°F (150°C) and up to ~ 500^{0}F that can be pumped ahead of the cement slurry. The unique feature of the P-LFS/HT is that it can be pre-blended and pumped On-The-Fly at a very low cost.

P-LFS "ON-THE-FLY" COMPOSITION (BY WEIGHT):

1 %	P-F50	(PETROCHEM - LAMINAR FLOW SPACER/HIGH TEMP).
1 %	P-AFA	(PETROCHEM - ANTI FOAM POWDER).
1 GAL.	P-NSL2	(SURFACTANT FOR COMPATIBILITY WITH OIL BASE MUD).
19 %	100 MESH SAND	(WEIGHTING AGENT).
78 %	*CLASS "F" POZ*	(FILLER AND VISCOSITY BUILDER).

*If Class "C" POZ is used, reduce the sand to 10% (by weight) and lower the concentration of P-LFS/HT.

The normal concentration range of P-F50 is between ~ one to two (1-2) pounds per barrel, from a 12 lb/gal to 22 lb/gal spacer respectfully. P-F50 can be used in fresh water or salt/seawater spacers. When P-F50 is pre-hydrated in salt water systems, the salt must be added after the complete hydration of the P-F50.

After hydration, add the weighting agent and/or loss circulation material if needed. Ideally, the spacer is designed to be of a higher density and viscosity than the drilling mud and conversely, a lower density and viscosity than the cement slurry. The spacer is easily moved in laminar flow effectively displacing the drilling fluid.

P-F50 is compatible with most water based muds. However, compatibility tests with the mud and cement are recommended prior to the job. If the P-F50 is to be used with *oil base mud*, the addition of P-NSL2 (Petrochem non-ionic surfactant) is required at a concentration between one (1) to two (2) gallons per barrel of spacer, to render the spacer compatible with the oil base mud.

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A minimum of 500 feet of annular fill or 10 barrels of spacer, whichever is greater is recommended. A good guideline to use is 2 barrels per foot of depth. Increased temperature will thin the spacer fluid but will not cause the gel structure to break subsequently the system will continue to support solids at elevated temperatures.

When weighting up the spacer use a course grind material to avoid excess viscosity, but at densities above 18ppg consider using Hematite or a mixture of Barite and Ilmenite.

P-F50 may be dry blended with the weighting agent and/or loss circulating material (if needed) or pre-hydrated in the mix water. The mixing equipment used for pre-hydrating must be clean, in particular from mud contamination. Use P-DFL (Petrochem De-Foamer Liquid). If salt is to be used, it must be added after the complete hydration of the P-F50.

Field mixing procedures:

Circulate the P-F50 at a high rate for 20 to 30 minutes (more in sea/salt water) to complete the additive hydration. The sequence of the addition of the additives should be the same as that used in the laboratory.

The data given is to be used only as a guide. Subsequently, each job is to be designed and tested in the laboratory prior to the job.

PROPERTIES

PRODUCT	FORM	SP.GR.	PACKAGING
P-F50	WHITE POWDER	1.44	50 LB/SACK.
P-DFL	WHITE LIQUID	1.00	55 GAL/DRUM.
P-NSL2	CLEAR LIQUID	1.06	55 GAL/DRUM

SAFETY

Please consult all SDS before using these materials.

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