

IsoGuard™ Cement Additive

MITIGATING ANNULAR FLOW THROUGH UNSET CEMENT BY PROVIDING EXCELLENT FLUID LOSS CONTROL AND SHORTENING TRANSITION TIME

OVERVIEW

The IsoGuard™ cement additive works to mitigate annular flow through unset cement by imparting excellent fluid loss control and shortening the transition time of the cement slurry. When utilized at the optimum concentration, IsoGuard cement additive provides fluid loss control in applications up to 250°F and is especially efficient at a lower temperature range (70°–90°F). Required concentrations of the IsoGuard cement additive range from 0.1% to 2.0% based on the application temperature and desired properties. The IsoGuard additive is compatible with most additives and cement systems, and has a wide range of uses from primary to remedial cementing applications.

MINIMIZE FLUID LOSS TO THE FORMATION

IsoGuard cement additive provides excellent fluid loss control of less than 50 cc in 30 minutes. Proper fluid loss control helps to ensure the successful placement of the cement slurry across challenging formations – and to also mitigate annular flow through unset cement by reducing the volume of losses created by the loss of filtrate from the cement slurry. Many slurries are designed to mitigate against fluid loss, but fluid loss is just one of the considerations for mitigating flow through unset cement.

IsoGuard™ Additive Fluid-Loss Performance

16.4-lbm/gal Premium H Cement, 4.57 gal/sk Water (0.3% Retarder + 0.015% Suspension Aid)			14.5-lbm/gal 50% Premium H Cement / 50% Poz, 7.91 gal/sk Water (1% Bentonite Gel)		
IsoGuard™ Additive Concentration (% BWOC)	Temperature (°F)	API Fluid Loss (cc/30 min)	IsoGuard™ Additive Concentration (% BWOC)	Temperature (°F)	API Fluid Loss (cc/30 min)
0	80	499	0	80	1183
0.3	80	30	0.3	80	56
0.3	125	34	0.3	125	38
0.5	80	22	0.5	80	36
0.5	125	30	0.5	125	24
0.5	165	60	0.8	80	16
0.5	190	38	0.8	125	26
0.8	125	10	0.8	125	10
0.8	165	20	0.8	165	20
0.8	190	41	0.8	190	41

FEATURES

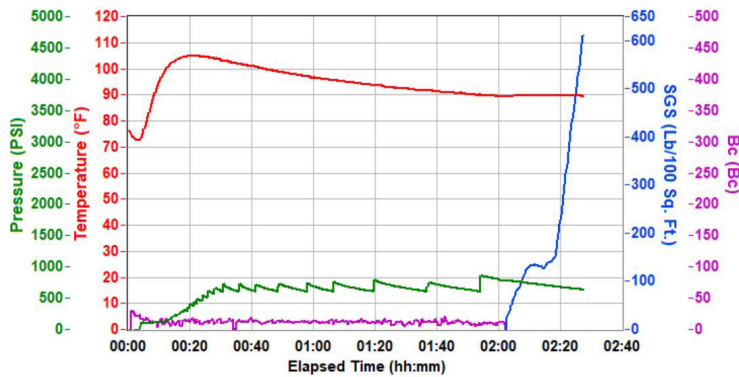
- » Provides excellent fluid loss control
- » Shortens the transition time of the cement slurry
- » Rapid gel strength development
- » Operationally efficient dry-blended additive that is effective up to 250°F

SHORTEN TRANSITION TIME OF CEMENT SLURRY

The inability of the cement column to maintain overbalance during the transition time, combined with fluid loss, is the most widely accepted cause for annular gas or fluid migration through unset cement. IsoGuard cement additive can help shorten the transition time of the slurry to less than 30 minutes, which helps to mitigate the potential for gas or fluid flow through the cement slurry. After placement, the cement starts to build gel strength until it is no longer transmitting hydrostatic pressure to the annulus below, which often leads to a loss of overbalance pressure. This loss in overbalance pressure leaves the unset cement susceptible to gas and fluid flow through the unset cement. Cement designs with the IsoGuard cement additive build gel strength rapidly and have a short transition time, thus reducing the risk of gas or fluid influx. The rapid gel strength development can also help create effective zonal isolation across challenging formations.

MACS II® Cement Analyzer Static Gel Strength (SGS) Testing		
15.8-lbm/gal Premium G Cement, 7.91 gal/sk water		
IsoGuard™ Additive Concentration (% BWOC)	Temperature (°F)	SGS (100-500 lb/sq ft)
0.55	80	18 min

MACS II Cement Analyzer Static Gel Strength (SGS) Transition Time



OPERATIONALLY EFFICIENT

The IsoGuard cement additive is a dry-blended material that can be efficiently added and blended into the cement design, eliminating the additional equipment and requirements that liquid additives demand. When utilized at the optimum concentration, the IsoGuard cement additive provides many of the same benefits of a liquid latex additive. Due to the excellent fluid loss control and short transition time, IsoGuard cement additive can be evaluated as a replacement for latex or other liquid additives in certain applications. By eliminating the need for liquid additive equipment and capabilities on location, IsoGuard helps improve operational efficiency, as well as cement properties and barrier dependability, over conventional designs.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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