

# EcoShield

Geopolymer cement-free system



## Applications

→ Land operations

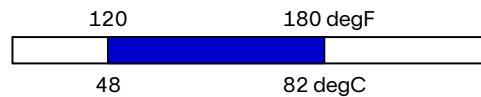
## How it improves performance

EcoShield™ geopolymer cement-free system provides an alternative to portland cement while delivering comparable performance.

### Slurry density



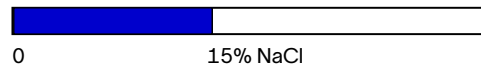
### Bottomhole circulating temperature



### Fluid loss



### Salinity

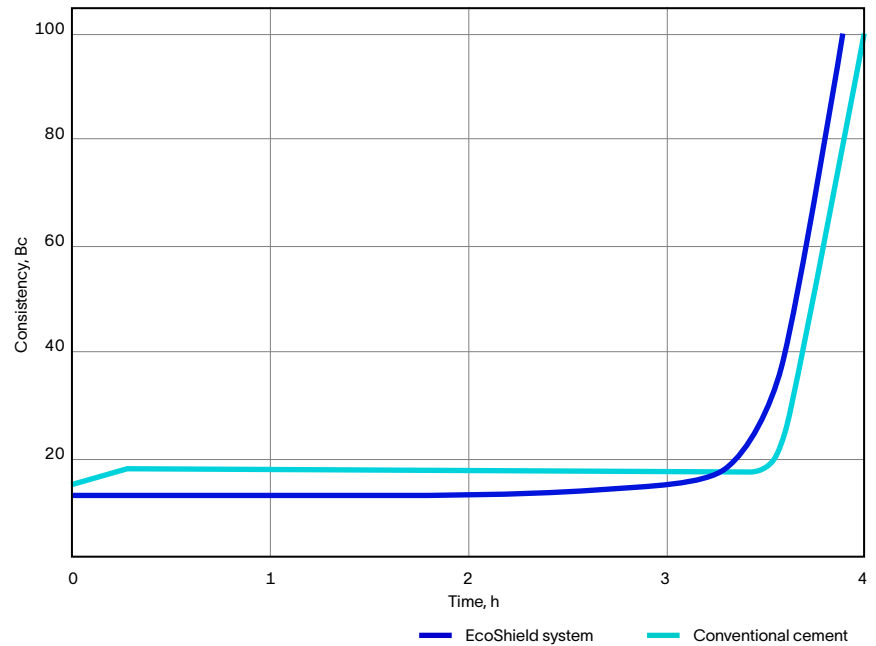


Operational range for EcoShield system.

## How it works

EcoShield system matches the rheology, thickening time, and compressive strength properties of portland cement-based systems. The technology fits within standard oilfield cementing workflows without major changes to the design process, onsite execution, or postjob evaluation.

Thickening Time



EcoShield system matches the thickening time of conventional cement system.

## Comparison of Rheological Parameters for 14.8 lbm/galUS EcoShield System with Similar Conventional Cement System

Parameter	Conventional cement	EcoShield system
Plastic viscosity, cP (Bingham)	36	35
Ty, lbf/100 ft <sup>2</sup> (Bingham)	23	8
Ty, lbf/100 ft <sup>2</sup> (Herschel-Bulkley)	9	8

## Comparison of Compressive Strength for EcoShield System with Similar Conventional Cement System at 142 degF

	Density—11.6 lbm/galUS		Density—14.8 lbm/galUS	
	Conventional Cement	Ecoshield System	Conventional Cement	Ecoshield System
Compressive strength—50 psi, h:min	8:45	8:27	1:42	1:45
Compressive strength—24 h, psi	480	240	2,180	1,060
Ultimate compressive strength, psi	500	750	3,000	3,500

All specifications are subject to change without notice.