CemFIT Shield
Mud-sealing cement system

APPLICATIONS
- Horizontal wells drilled with nonaqueous fluid (NAF)
- Cementing with mud removal challenges such as poor centralization or inability to rotate and reciprocate casing
- Wells that will be completed with multistage fracturing

BENEFITS
- Improves zonal isolation and cement bonding in wells drilled with oil-based mud (OBM) and synthetic oil-based mud (SOBM)
- Limits detrimental effects of poor mud removal
- Reduces behind-casing fracture communication by reacting with NAF in channels to reduce mobility and limit channel permeability

FEATURES
- Density from 12 to 18 lbm/galUS [1.44 to 2.16 g/cm³]
- Temperature up to 340 degF [171 degC]
- Compatibility with conventional engineering designs, cementing additives, and testing
- Blending at conventional bulk plants
- Mixing and pumping in real time with conventional equipment
- Slurry and mechanical properties that match those of conventional cement systems
- Immediate reaction upon setting, with mud mobility changes developing after several days

CemFIT Shield* mud-sealing cement system improves zonal isolation in wells drilled with NAF, especially in long horizontal wells where poor centralization or inability to move casing impedes complete mud removal. The system is particularly useful for improving cement bond logs (CBLs) and limiting the effects of channeling in long horizontal wells that are scheduled for completion with multistage stimulation.

![Graph showing dynamic rheometry results](image)

CemFIT Shield system improves zonal isolation by reacting with NAF left in the well after cementing to limit its mobility and improve resistance to fluid flow in channel: Top, dynamic rheometry results indicate minimal change of yield point in the mud channel with conventional cement; bottom, CemFIT Shield system significantly increases the yield point in the mud channel.

Plug channels to improve hydraulic fracturing
During stimulation, channels behind the casing can act as nonproductive communication pathways between stages, enabling fracturing fluids to reenter previously fractured stages, leaving some reservoir sections untreated. Communication through channels can also result in high fracture initiation pressures and early screenouts from tortuosity.

To avoid these problems, the CemFIT Shield system interacts with any remaining mud to reduce mud mobility and communication along channels. The system is compatible with conventional equipment, blending processes, additives, laboratory testing, and design considerations, making it easy to use in the field.

### CemFIT Shield System Specifications

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Temperature, degF [degC]</td>
<td>340 degF [171 degC]</td>
</tr>
<tr>
<td>Density, lbm/galUS [g/cm³]</td>
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