

# SandSet sand consolidation technology

Prevents sand production and proppant flowback for wells in unconsolidated formations

## Applications

- Wells producing or likely to produce formation sand
- Vertical or deviated cased hole completions
- New or remedial wells

## How it improves wells

SandSet\* sand consolidation technology chemically consolidates loose formation sand to prevent sand production. In hydraulically fractured wells, SandSet technology prevents proppant flowback. Treated wells may be returned to production within one day after treatment. Treatment can be pumped down tubing into the formation, requiring no lifting equipment to manipulate tubulars, or it can be placed through coiled tubing. SandSet technology components are nontoxic and noncombustible, giving the technology an environmentally benign profile compared with conventional resin consolidation technologies. Additionally, SandSet technology eliminates production equipment erosion and produced solids management at surface.

## How it works

SandSet technology treatment comprises three components that react downhole to precipitate calcium carbonate on sand grain surfaces, binding them to one another and increasing formation unconfined compressive strength (UCS) to >1,000 psi. Sequential treatments increase consolidation but may result in <50% of initial permeability. Once placed, treatment requires a 20-hour shut-in time to properly cure. Reaction occurs most efficiently from 104 to 140 degF [40 to 60 degC], but treatment is thermally stable up to 175 degF [80 degC]. Higher temperatures reduce the treatment effectiveness.

## What it replaces

Conventional resin consolidation approaches.

## Additional information

Treatments need thorough planning, such as detailed well history, prejob lab testing, job execution, and well bean-up. Important parameters include mixing fluid chemistry (iron should be less than 5 mg/L), appropriate downhole temperature range for efficient precipitation, and pumping time to reach treatment target area. Preparatory lab testing with sand samples helps tailor the treatment to the formation. Operational logistics for mixing fluids at the optimal time in proper containers also contributes to treatment success. Treatment with SandSet technology is easily reversed if required.