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RodPROP

High-aspect-ratio proppant

APPLICATIONS

- Hydraulic fracturing applications in oil and gas wells
- Tail-in treatment for oil and gas wells with proppant flowback issues
- Tail-in treatment for HiWAY* flow-channel hydraulic fracturing treatments

BENEFITS

- Provides significantly higher proppant pack conductivity than conventional proppants
- Uses an interlocking mechanism for exceptional flowback protection
- Eliminates special shut-in time or flowback considerations

FEATURES

- Compatibility with
  - HiWAY flow-channel hydraulic fracturing service
  - natural and ceramic proppants (including resin-coated proppant)
  - any fracturing fluid formulations
- Nonstandard packing of inert proppant
- Proppant pack stability during the life of the well
- Improved proppant pack cleanup for longer effective fracture length

RodPROP high-aspect-ratio proppant enlarged approximately 200% to show detail. Its unconventional shape enables significantly higher fracture conductivity than conventional ceramic proppant while reducing risk of proppant flowback.

Create up to three times higher fracture conductivity

For more than 30 years, spherical proppant has been used in hydraulic fracturing treatments to provide conductivity contrast and enhance productivity in tight formations.

RodPROP* high-aspect-ratio proppant, a revolutionary new proppant technology, is made of high-strength material. RodPROP proppant provides up to three times higher fracture conductivity than conventional, commercially available spherical proppants, improving well performance.

Prevent flowback without sacrificing conductivity

RodPROP proppant consists of rod-like particles with engineered distribution of aspect ratios. Its unconventional shape enables the creation of a unique, consolidated proppant pack. This pack is highly resistant to the driving forces that cause proppant flowback. With less pressure drop inside the fracture length, RopPROP proppant provides better cleanup after hydraulic treatments. It results in higher retained propped fracture conductivity compared with conventional spherical proppant.

Unlike resin-coated proppant (RCP), RodPROP proppant relies on mechanical interference of the particles instead of chemical bonding, so it is chemically inert and compatible with all proppants and fracturing fluid formulations. In addition, it does not require special shut-in time or flowback considerations.

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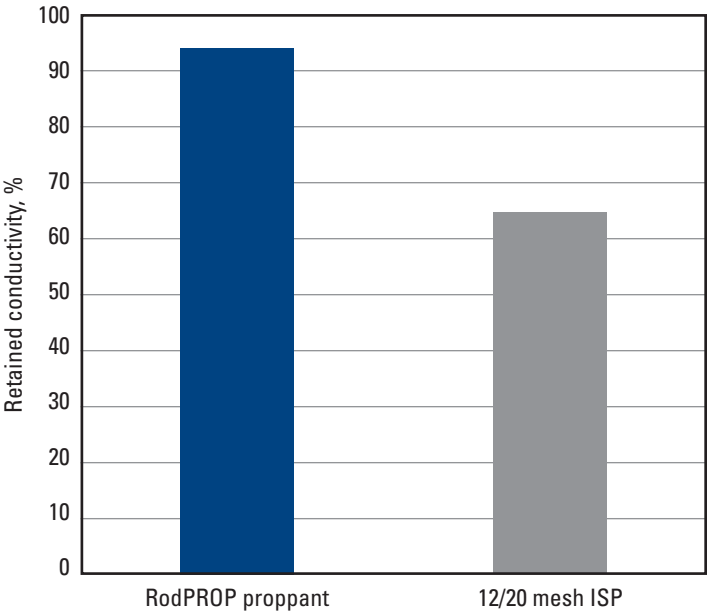
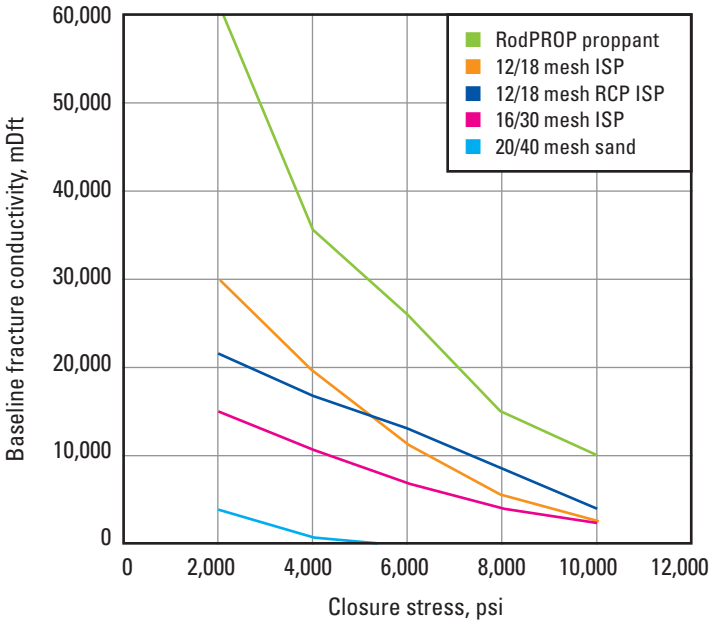


Conductivity comparison between RodPROP proppant and 12/20 mesh intermediate strength (ISP) ceramic proppant. The retained conductivity of RodPROP proppant was approximately 95% using fluid with 30 lbm/1,000 galUS guar polymer loading (no breaker added) and borate crosslinker at 4,000 psi closure stress.



Comparison of long-term conductivity between RodPROP rod-shaped proppant and conventional spherical proppant at 2 lbm/ft^2 at 250 degF.

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