

Stabilis reinforced cutter technology

Drill farther in challenging applications

The new **Stabilis™ reinforced cutter technology** from Baker Hughes, a GE company (BHGE), amplifies cutter durability and delivers longer runs in challenging formations. Where traditional PDC cutters fail, the Stabilis cutter's novel geometrical design protects the cutters while improving performance.

Stabilis cutters introduce a secondary chamfer on the diamond face of the cutter that enables a higher loading to be applied without breakage. Compared to traditional cutter geometry, Stabilis cutters have nearly triple the impact strength.

The ability to withstand a wear flat is also improved with Stabilis cutters. The additional bevel on the diamond face of the cutter enables compression to spread across more area, leading to a lower stress gradient across the cutting edge. The wear flat tends to stay within the area of the first chamfer, with the second chamfer providing extended

protection against chipping and spalling. This extends the life of the diamond face, the cutter, and the bit, so that efficient drilling can continue for longer periods.

Stabilis cutters also generate less torque fluctuations compared to the standard geometry. For changing cut depths, Stabilis cutters have a consistent coefficient of friction, whereas standard cutters have a fluctuating torque response. Controlling these oscillations leads to smoother, more stable drilling resulting in higher rates of penetration (ROP) and improved overall run performance.

With its ability to maintain an efficient cutting edge and mitigate chipping and spalling, the Stabilis reinforced cutter can effectively cut through hard formations at the same or higher speed as traditional cutters for longer periods, while creating less torque and finer cuttings for a cleaner borehole.

Applications

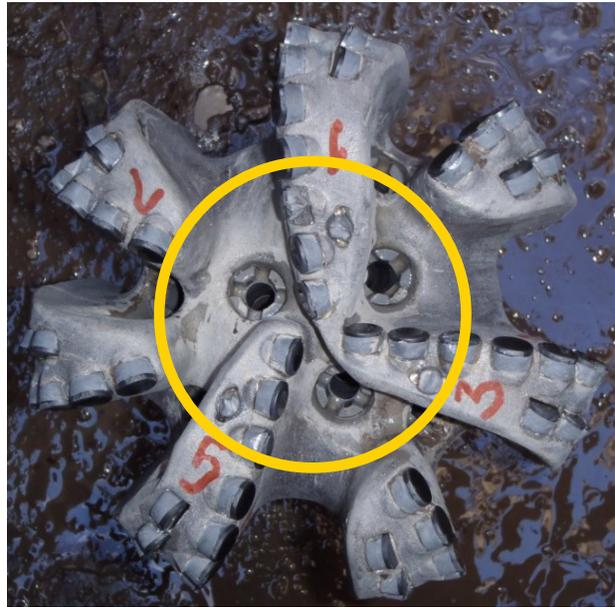
- Wide range of challenging formations where PDC cutter breakage is a concern
- Interbedded or directional intervals where improved torsional stability is required

Benefits

- New secondary chamfer design profile
 - Protect the cutter for increased durability and longer run life
 - Reduce spalling and chipping of the diamond face
 - Generate less torque fluctuations with a consistent response across changing cut depths
- Premium polished cutters
 - Decrease friction on the cutter face to reduce heat buildup
 - Reduce cuttings size for easier transport to surface and improved borehole quality



Talon PDC bit with standard chamfer was cored out after drilling 4,272 ft (1,302 m).



Talon Force bit with Stabilis cutters drilled 4,983 ft (1,519 m), with minimal damage to the bit.

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