



Old adage, modern innovation: the right tool for the job.

Reduce costs and eliminate headaches by calling us to help solve your challenges. If your current process doesn't seem to be providing the results you want, you might be using the wrong tooling. Our customer was using a diamond-coated end mill to machine guide pads on frac pocket plugs used in down-hole oil drilling. The guide pads were made from fiberglass and glass wound filament material, which is very abrasive and shortens the life of cutting tools.



When the diamond coating wore off the end mill, the carbide substrate was exposed directly to the abrasive material, and the tool would quickly fail. The customer needed an optimized tool to extend tool life in this abrasive material and to solidify the repeatability of the process.

The customer tested the **Superion™ PCD Flat Bottom Drill** in this application. The PCD substrate is more wear-resistant in the fiberglass material and provided more even wear of the tool throughout the process. Much to the customer's delight, the Superion drill ran at a higher penetration rate, which shortened cycle time. Most importantly, the Superion drill increased the customer's tool life from 7,500 holes to 50,000 holes (a 567% increase).

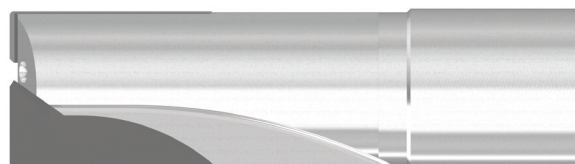
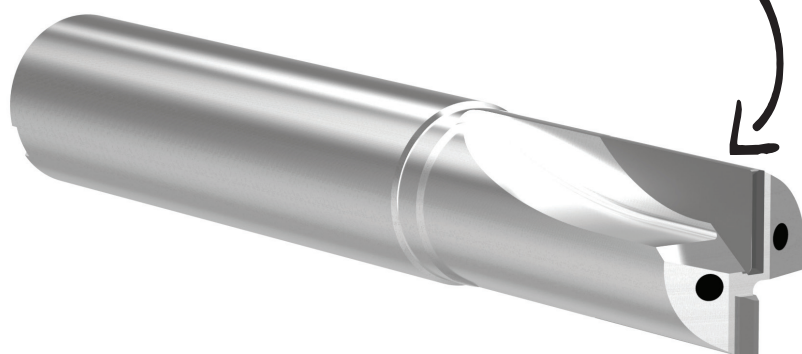
A costly application became effective and worry-free by finding the right tooling. The Superion drill didn't just increase the customer's tool life; it provided a repeatable, reliable process so the customer could "set it and forget it."

Don't tolerate unnecessary hassle and stress in your production. **Call us to help you find the right tool for the job.**

Product: Superion™ PCD Flat Bottom Drill Objectives: Increase tool life Industry: Oil & gas/petrochemical Part: Frac pocket plug guide pads Material: Fiberglass and glass wound filament Hole Ø: 0.380" Hole Depth: 0.275"	Measure	Diamond Coated End Mill	Superion™ PCD Flat Bottom Drill
	RPM	4500	7500
	Speed	448 SFM	746 SFM
	Feed Rate	0.008 IPR	0.008 IPR
	Penetration Rate	36 IPM	60 IPM
	Cycle Time	0.46 sec	0.28 sec
	Tool Life	7,500 holes	50,000 holes

► Superion PCD solid carbide flat bottom drill

567% tool life increase



The PCD substrate for wear-resistance in abrasive materials provided:

- ✓ Increased tool life
- ✓ Increased penetration rate
- ✓ Repeatable/reliable machining process