



Typical Applications

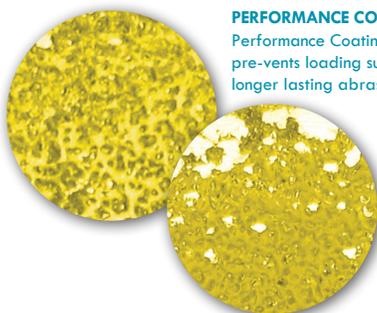
Titanium, High Nickel Alloy, Stainless, 6061 and 7075 are several of the metals used in aerospace manufacturing.

Aircraft manufacturers machine and fabricate a variety of titanium, stainless and aluminum parts. Common abrasive applications include light material removal, blending or removal of machining marks from titanium and aluminum. Surface finishing of aluminum wing and fuselage components are also commonplace.

Aerospace Abrasives

Coated quick-lok discs and belts are used in combination with coarse grit ceramic grains, finer aluminum oxide grains on aluminum, and silicon carbide grains on titanium and high nickel alloys.

Surface conditioning and cleaning & finishing non-wovens are also used in quick-lok, belt, disc and handpad form.



PERFORMANCE COATING

Performance Coating reduces heat while grinding and pre-vents loading substantially. Reduced loading creates a longer lasting abrasive with a high-performance cut.

UNTREATED

Heat resistance is an important factor for product performance. Without treatment, material loads quickly on products, reducing cutting life and performance.

THE DIFFERENCE

In both field testing and lab studies, PERFORMANCE COATING produces results with a cut ratio factor of 10 or even 15 to 1, with life expectancy increasing by 250%.

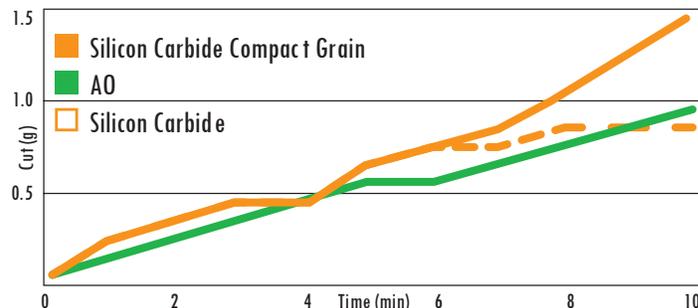
In addition to traditional products, PERFORMANCE COATING is used on softer metals, such as aluminum. The proprietary coating is integrated into the grain structure to provide a dramatic increase in cut and life. Major factors include a reduction of heat build-up during grinding, which results in less loading throughout the life of the product.



COMPACT GRAINS have an advantage on hard metals. The structure of compact grains have multiple layers of the same grit, compared to only one layers of a conventional coated abrasive product. As one layer of abrasive grain is worn away, another layer is exposed. The compact grain construction results in less loading, much longer life, and a consistent finish.

EXOTIC ALLOY

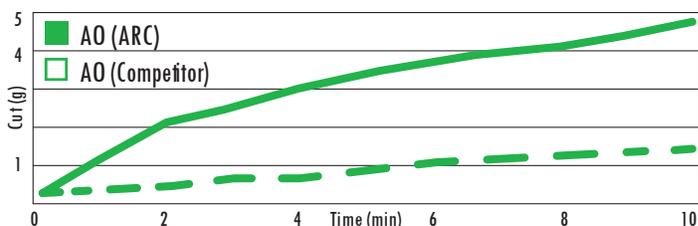
Forming silicon carbide into a compact grain structure alleviates the heat generated from hard or dense metals. The manner in which compact grains breakdown during use is also beneficial to the harder exotic alloys. The layered construction of silicon carbide compact grains can provide life up to 5X longer than that of conventional abrasive grains.



ALUMINUM

For versatility, quick-lok discs offer several backing options from contoured conformability to speed and aggression. Single-ply, MAXBAK™, and resin fiber backings are all available for ARC PREDATOR™ material.

PERFORMANCE COATING is integrated to ensure a cooler cut, able to reduce or completely stop loading of soft metals. The coating is baked into the PREDATOR™ material and is especially effective when using a high speed product like quick-lok discs.



Field Case Study

Operators in an aerospace manufacturing facility had been using a competitive product for over 15 years. They were challenged to uncover process improvements while lowering their product costs. ARC was able to deliver 2 to 1 performance in many cases while saving nearly \$40,000 by providing a lower total cost of ownership.

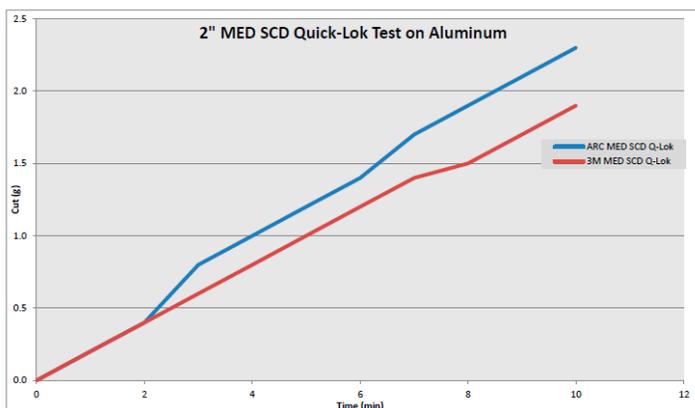
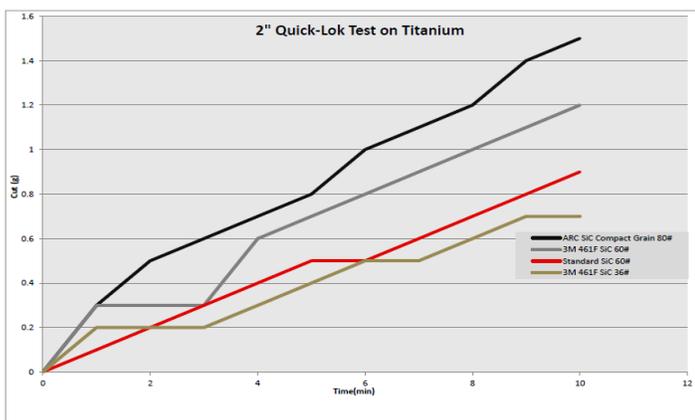
Analysis

An audit facilities, processes, and applications quickly showed that multiple abrasive products were being used for corrosion control operations, titanium and nickel alloy weld removal, and general aluminum repair and fabrication. All of which contributed to the overall efficiency and bottom line of the company.

Corrosion control was performed in many areas of the plant using a competitor's non-woven quick-loks, as well as coated products, depending upon the depth of corrosion. The belief was that the current product was thinner and would load more quickly than the equivalent ARC solution. After testing our VFN, MED, CRS and XCRS surface conditioning quick-loks, all grades of ARC material performed faster and lasted longer than the incumbent competitive product

Internal Testing

After initial review, ARC was able to replicate specific operations and working conditions in our lab. Tooling with the same specifications as the customer's were used to provide accurate results. We tested and compared our solution to currently used products in order to factor performance and efficiency increases. These findings were presented to the Operations Manager.



Operator Feedback

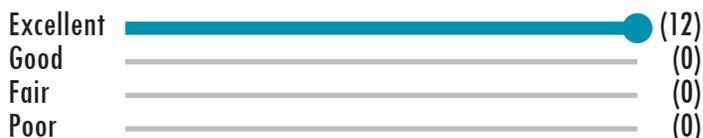
First-hand feedback was documented to be sure all involved operators approved the new product and processes.

"...able to finish more parts than our current discs..."

Did the product work as you intended?



How would you rate the performance of the product?



Do you approve of the product?



Cost Savings

By leveraging ARC abrasive solutions, the end user was able to capture substantial cost savings. The figures below note head to head performance cost savings. In addition, the aerospace firm will also benefit from process savings over the course of time.

Item	Usage	Savings
QLOK-R 1-1/2" 40	17,500	\$6,018.25
QLOK-R 1-1/2" 80	22,050	\$8,063.69
QLOK-R 2" 40	9,800	\$3,731.84
QLOK-R 2" 80	10,850	\$4,224.99
QLOK-R 3" 40	2,800	\$885.92
QLOK-R 3" 80	4,900	\$1,893.85
QLOK-R 1-1/2" CRS	7,700	\$1,776.39
QLOK-R 1-1/2" MED	8,400	\$1,995.84
QLOK-R 1-1/2" VFN	4,550	\$1,103.83
QLOK-R 2" CRS	4,550	\$1,592.50
QLOK-R 2" MED	7,700	\$2,823.59
QLOK-R 2" VFN	1,400	\$539.00
QLOK-R 3" CRS	3,850	\$904.75
QLOK-R 3" MED	8,053	\$2,026.94
QLOK-R 3" VFN	4,900	\$1,323.00
Total		\$38,904.38