



# **ROCTEC**<sup>™</sup> Abrasive Waterjet Nozzles

Our exclusive ROCTEC ™ line of abrasive waterjet nozzles is made from a unique carbide material and proprietary manufacturing process.

## ROCTEC<sup>™</sup> Composite Carbide: The Ultimate Wear Material

ROCTEC™ abrasive water jet (AWJ) nozzles are made from unique materials that have literally changed the definition of wear resistance.
ROCTEC™ composite carbide is a tungsten carbide based material made using the proprietary Rapid Omnidirectional Compaction (ROC) process.

#### ROCTEC™ 100

Industry workhorse, fit-for-use performance

#### ROCTEC<sup>™</sup> 500

Most trusted abrasive waterjet nozzle for consistent, accurate cutting

# ROCTEC™ APX

Newest ROCTEC technology delivers peak precision and life





The preferred option when waterjet nozzles need to be:

Consistent.

Reliable.

Predictable.

**ROCTEC™ Waterjet Nozzles** 

The ROCTEC™ process enables the combination of these advanced ceramic materials without the need for a soft metal binder, as is the case with tungsten carbide/cobalt using traditional sintering technology. The ROC process enables nozzles to be formed using very short consolidation cycles to minimize the natural tendency of ceramic particles to grow in size when exposed to high heat for long periods. Eliminating a metallic binder and maintaining extra-fine grain size both contribute to optimum nozzle performance. The result is an extremely durable material that fiercely resists abrasive and erosive wear.

- · Lowest total cost per hour used
- Up to 120 hours of precision cutting
- Up to 250 hours of rough cutting
- Faster cutting speeds
- Greater dimensional accuracy
- Longer uninterrupted cuts
- Greater performance and service life
- Predictability-nozzles perform the same every time



**ROCTEC™** Abrasive Waterjet Nozzles



## The Industry Leader at Every Performance Level



# ROCTEC. APX

- Performance improvement of 20% or more above ROCTEC 500
- Longest, most reliable operating life in the industry
- Ideal for:
  - High Pressure Cutting
  - Precise, Uninterrupted Cuts •
  - High Piercing Volume
  - Faster Cutting Speeds
- Edge Quality Critical
- Multiple Cutting Heads
- · Critical Components



# ROCTEC.500

- Unparalleled performance for consistent and accurate cutting
- Long trusted industry standard for premium performance
- Ideal for:
  - · High Pressure Cutting
- · Edge Quality Critical
- Precise, Uninterrupted Cuts 

   Multiple Cutting Heads



# ROCTEC 100

- Fit-for-use performance
- Industry workhorse used in general applications
- Ideal for:

  - Rough Cutting
  - Moderate to High Pressure Cutting
- Non-Metallic Materials
- Pure Waterjet

#### Resolute Performance for Over 30 Years

Focusing tubes, tubes, waterjet nozzles...However you describe them, ROCTEC Abrasive Waterjet nozzles have been the industry leader since the early days of waterjet cutting.









**ROCTEC™** Abrasive Waterjet Nozzles











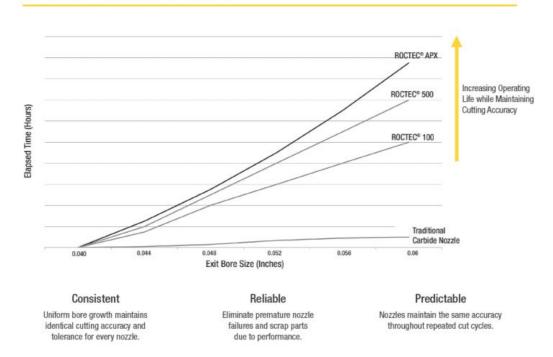




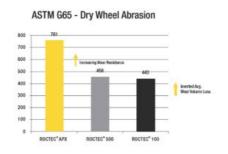
**ROCTEC™** Composite Carbide

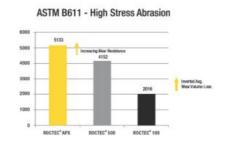


#### The Proof is in the Performance



Wear Resistance - The Critical Factor in Nozzle Performance

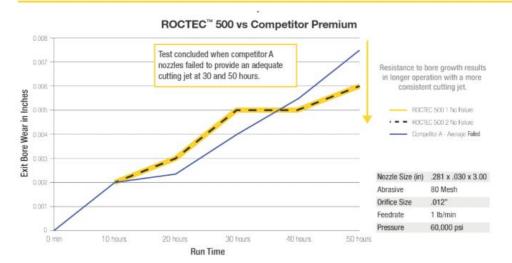


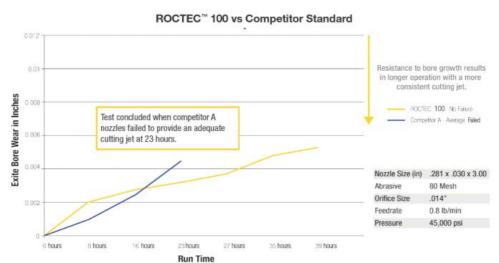




ROCTEC™ Composite Carbide

### Exit Bore Growth Results of ROCTEC Abrasive Waterjet Nozzles vs. Competitors





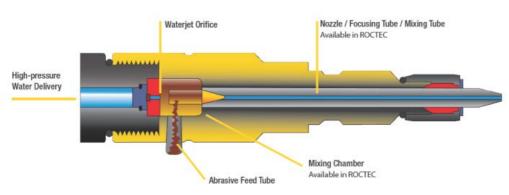


**ROCTEC™** Composite Carbide



# **Abrasive Waterjet Nozzles: The Mechanics**





# **Best Practices to Achieve Optimal Life from ROCTEC Nozzles**

- · Inspect orifice for chipping, wear and/or buildup of dirt or abrasive
- · Use mixing chamber components made from carbide or ROCTEC
- · Verify water orifice alignment prior to abrasive selection
- · Precise alignment of the orifice and focusing tube ensures the jet is focused directly down the center of tube
- · ROCTEC focusing tubes with precise alignment will allow the longest life and highest level of cutting quality



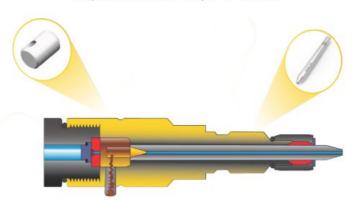


**ROCTEC™** Composite Carbide

# Applications Where ROCTEC™ Excels

## **Waterjet Cutting Applications**

Any component in your system exposed to abrasive material and pressure can affect performance. ROCTEC material systems are the solution.



# Other Applications:

- Sandblast Nozzles
- Descaling Nozzles
- Slurry Nozzles
- · Centrifuge Nozzles
- Downhole Tools in Oil & Gas
- . Separation Cups for Fluids & Solids

#### **Kennametal Abrasive Blast Nozzles**



Speak to a Kennametal representative today to learn more about our line of products for Abrasive Blasting.







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