

NORTON

SAINT-GOBAIN

IDEAL
PRIME

Transforming
surfaces
...and beyond

THE **IDEAL** SOLUTION FOR INTERNAL DIAMETER GRINDING

- IMPROVED CUTTING EFFICIENCY
- IMPROVED WORKPIECE QUALITY
- INCREASED WHEEL LIFE
- SIGNIFICANTLY LOWER GRINDING POWER

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The IDEal Solution for Internal Diameter Grinding

Norton, a pioneer in providing abrasive solution to complex grinding challenges, is proud to introduce **Norton IDEal-Prime** - a unique solution to Internal grinding application. **Norton IDEal-Prime** comes with new nano crystalline ceramic grains from Saint-Gobain embedded in an optimized bond matrix. Thanks to this unique combination of a new ceramic grain with engineered micro-fracture properties & superior retention capability of the bond, **Norton IDEal-Prime** delivers excellent grinding efficiency at significantly low power, while controlling work piece geometry and ensuring outstanding part quality through the wheel life.

IDEal-Prime Advantages:

REDUCED CYCLE TIMES

Our self-sharpening grain technology increases Material Removal Rates and reduces the need for dressing, cutting down on overall cycle times and effective cost per part.

IMPROVED WHEEL LIFE

The new grain micro-structure allows longer, cooler cuts and more stable profiles and shapes. Lowering dress requirement, significantly improves the wheel life of IDEal-Prime without sacrificing work piece quality.

IMPROVED GEOMETRIC CONSISTENCY

The innovative grain technology creates a product with unparalleled sharpness and cutting efficiency that reduces spindle power requirements even at increased Material Removal Rates. This means less mechanical stress and improved part geometry.

IMPROVED SURFACE FINISH

Norton IDEal-Prime utilizes latest bond technology and advances in manufacturing processes achieving unparalleled product consistency and thus stable surface finish over time.

REDUCED ENVIRONMENTAL IMPACT

From reduced carbon footprint in our production process and removal of artificial pore inducers, to longer product life reducing the number of abrasive tools consumed, choosing IDEal-Prime allows you to reduce environmental impact linked to your process.

IDEal-Prime Product Availability:

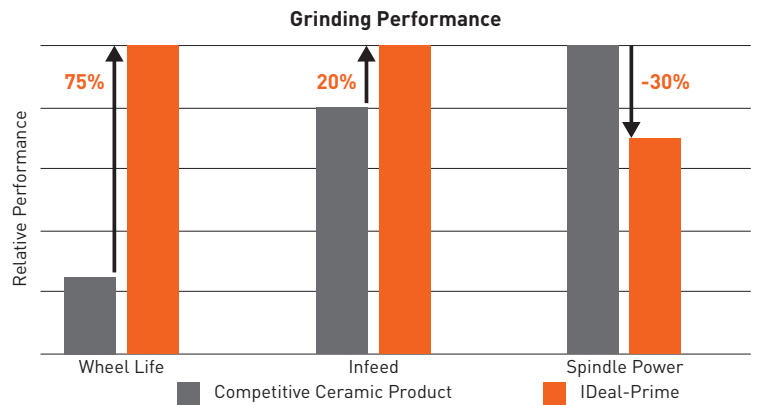
Abrasive Type	New Innovative Ceramic grain for extreme free cutting. With Option of blending with "partner grains" for combination of free cut and improved profile hold.	
Grain Size (FEPA F)	46 ————— 150 Coarse Grain for aggressive cutting action Finer Grain for improved surface finish	
Grade	H ————— N Softer wheel hardness for easier grain refresh and free cutting ability. Harder grade wheel for less aggressive cutting and improved form hold and wheel life.	
Structure	6 ————— 10 Less open structure for improved form hold and wheel wear. More open structure for higher MRR and heat sensitive parts.	
Bonds	Latest Vitrified bonds for precision engineered grain holding.	
Speed	80m/s max.	

CASE STUDY 1

Application: ID Grinding with Oscillation (Bore)
Part type / material: DGBB Inner ring
Part dimensions (mm): 12x12
Wheel dimensions (mm): 8.8x11xM4
Specification: NQN10008VT3
Compared with: Competitive Ceramic Product
Coolant: Emulsion
Dressing: Rotary Traverse

RESULTS:

Infeed: x1.2
Dressing: x1.75
Spindle power: -30%

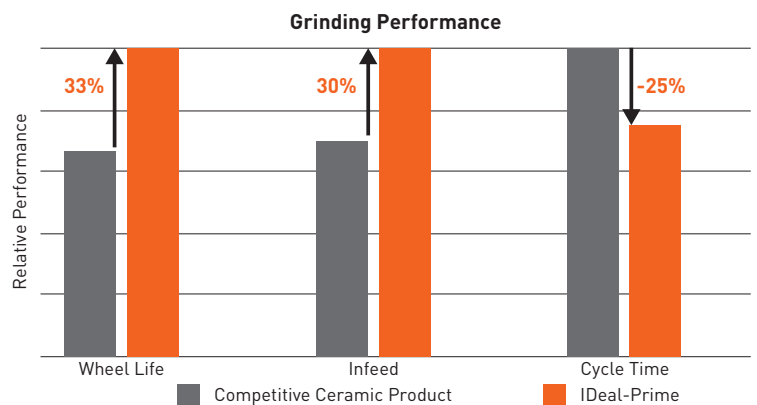


CASE STUDY 2

Application: ID Grinding with Oscillation (Bore)
Part type / material: TRB cone
Part dimensions (mm): 35x38
Wheel dimensions (mm): 25x35x12.7
Specification: NQN120K8VT3
Compared with: Competitive Ceramic Product
Coolant: Emulsion
Dressing: Single Point

RESULTS:

Infeed: x1.3
Dressing: -25%
Spindle power: -25%



A RANGE OF PROFILES
 AND SHAPES CAN
 BE MADE TO SUIT
 YOUR APPLICATION



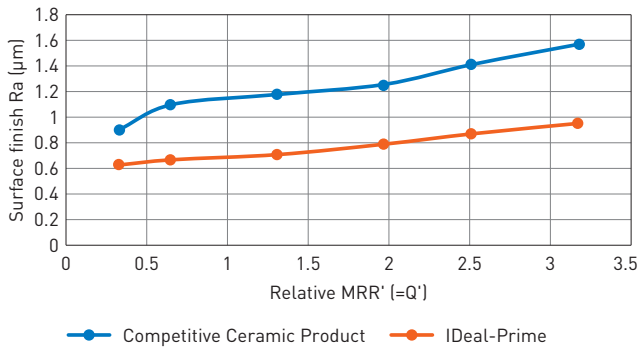
Grinding Test Benefits:

APPLICATION: INTERNAL DIAMETER GRINDING

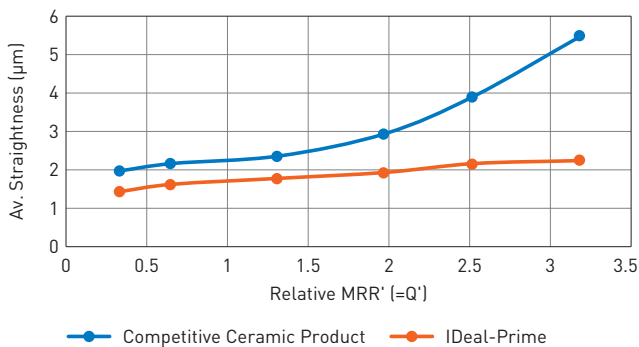
TEST METHOD 1 - WORKPIECE QUALITY:

- Increasing Material Removal Rate (MRR) in Internal Diameter grinding application
- Benchmarked against a competitive ceramic product
- Measured workpiece quality including:
 - Workpiece Surface Finish
 - Workpiece Straightness.

Surface finish Ra (μm) vs. relative MRR' (=Q')



Av. Straightness (μm) vs. relative MRR' (=Q')



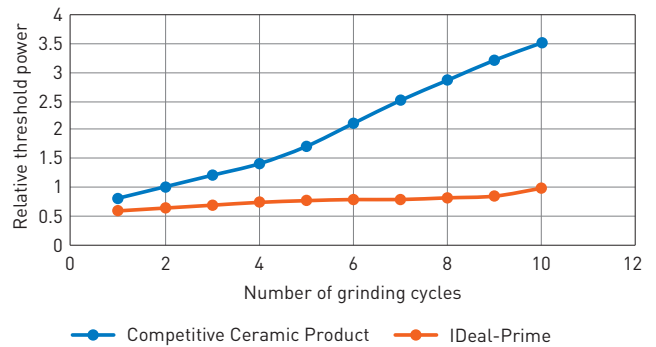
IMPROVED GEOMETRIC CONSISTENCY

Workpiece quality remains stable without dressing due to improved shape hold of product.

TEST METHOD 2 - THRESHOLD POWER:

- Performing repeated grinding cycles without dressing in between cycles
- Benchmarked against a competitive ceramic product
- Measured grinding parameter, Threshold Power (Minimum power required for grain to start cutting).

Threshold power vs. number of grinding cycles.



LOWER THRESHOLD POWER THAN THE COMPETITION

Threshold power does not increase regardless of the number of cycles thanks to an easier and more stable cut



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