

**NORTON**

SAINT-GOBAIN®

## TQ AND TQX SHAPED CERAMIC GRAINS

New Norton TQ and TQX ceramic abrasive grains are the newest and longest-shaped ceramic grains in the industry, optimized to achieve highest MRR and coolest cut.

Norton has long been known for its history of developing and supplying state-of-the-art grinding technology to all industries. The Norton TG ceramic grain, developed in 1995, was the first shaped ceramic grain on the market. Later, this technology was modified to create the longest shaped ceramic grain, TG2 (Targa). These grains offered unprecedented material removal rates in even the most demanding applications. Now new TQ and TQX next generation shaped ceramic grains have taken grinding performance to the next level, offering the highest material removal rates, longest wheel life, and the coolest cut.

### KEY MARKET SEGMENTS

GEAR | AEROSPACE | AUTOMOTIVE

### KEY APPLICATIONS

GEAR GRINDING | CREEPFEEED | OD GRINDING | SURFACE GRINDING

[www.nortonabrasives.com](http://www.nortonabrasives.com)

**FEATURES & BENEFITS**

- Latest generation shaped grain technology
- Highest material removal rates
- Low power draw – sharper and cooler cutting
- Increased parts per dress
- Improved form holding
- Combine with Vortex and Vitrium3 bond technologies for optimized performance



**Case Study #1**

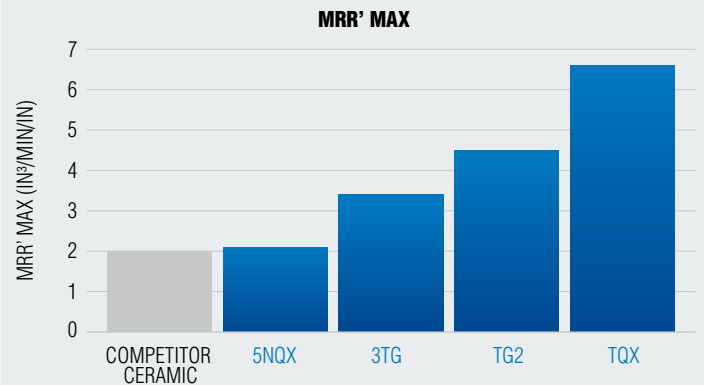
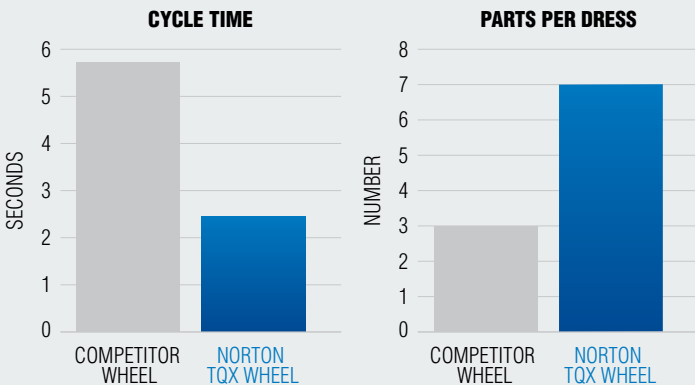
**APPLICATION:** Creepfeed Grinding  
**MACHINE:** Meccanadora V-1293  
**POWER:** 18kw, 3819 Max RPM  
**COOLANT:** Oil  
**MATERIAL:** Steel (20MgCr5)  
**PARAMETERS:** Feed Rate: 1000 mm/min  
 Wheel Rate: 3342 rpm, wheel speed/dress=1432 rpm  
 Wheel Speed: 15 (R)/35 (F) m/sec  
 Radial Stock Removed: 0.83 mm  
 Norton TQX Wheel: TQX80-F20VT2, 200 x 23 x 40 mm  
 Incumbent Wheel: Previous generation wheel 80 Grit, 200 x 23 x 40 mm  
**RESULTS:** TQX wheel showed 2X wheel life, more than 2X parts per dress, and reduced cycle time compared to the incumbent wheel.

**Case Study #2**

**APPLICATION:** Profile Gear Grinding  
**MACHINE:** Hofler Helix 400  
**COOLANT:** Oil  
**GEAR:** Description: Planetary Pinion  
 Material: 8620, 58-63 Rc, Case Hardened  
 Number of Teeth: 30  
 Module: 5.5  
 Pressure Angle: 25 degrees  
**PARAMETERS:** Wheel Speed: 22 m/s  
 Dress: 2 parts, 60 gaps  
 Achieved 0.68 – 0.69 um Ra  
 Norton TQ Wheel: 3TQK 120/2 (30% TQ Blend)  
 Incumbent Wheel: Previous Generation wheel (50% TG Blend)  
**RESULTS:** 3TQ wheel (30% TQ blend) met or exceeded the performance of the 5TG wheel.

**Case Study #3**

**APPLICATION:** Profile Gear Grinding  
**MACHINE:** Gleason Pfauter P600/800  
**MATERIAL:** 18MnCr6 58-62HRc  
**GEAR SIZE:** Module = 9  
**RESULTS:** The new TQX grain showed significantly improved MRR compared to a leading competitive ceramic product as well as previous generation Norton grains.



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