



SAINT-GOBAIN



CONTROL THE ELEMENTS

Reshaping
your
world.



NORTON

SAINT-GOBAIN

ALTOSX



MaXimum control in your industrial grinding operations

Whenever the industry requirements for high performance grinding tools increase, AltosX exceeds expectations.

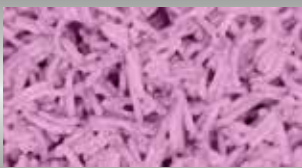
Designed in 1999, the original Norton Altos precision shaped grain revolutionized high stock removal grinding. Today, Saint-Gobain Abrasives R&D has gone one step further introducing AltosX, the next generation of grinding wheels. The latest combination of shaped grain and new microstructure offers extremely high material removal rates at lower power, resulting in extraordinary cost savings.

Extra features for extreme benefits

- New microstructure
- Long extruded shaped grain
- Natural porosity

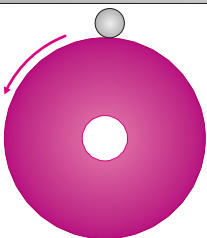
- Lower power and grinding forces
- Fast feed rate
- Optimized coolant distribution
- High versatility to grind a wide range of materials
- Longer wheel life

- Higher material removal rate (MRR)
- Better workpiece quality & surface finish
- Reduced Cycle Times
- Maximized productivity and cost savings

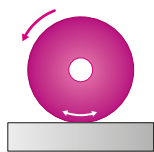


Engineered micro-structured ceramic grain combined with Norton Quantum™ chemistry, provides **excellent free cutting action** and **durability** to **maximize performance** and **quality**.

GREATER SURFACE CONTACT AREA



OD Grinding



Surface Grinding



ID Grinding

LOWER FORCE PER GRAIN

SHARPER, MORE FRIABLE GRAIN REQUIRED

KEY APPLICATIONS:

- Creep feed grinding
- Gear grinding
- Tool grinding
- Large OD and ID operations

CASE STUDY #1 WIND ENERGY MARKET

APPLICATION: ID and OD grinding (large bearing-windmill)

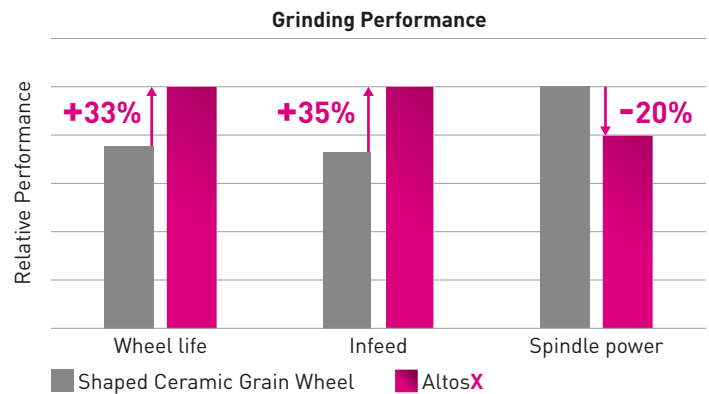
Material:	N/A
Workpiece:	Inner & outer rings - Ø 2500mm
Hardness:	>58Rc
Stock removal:	>1,5m on radius
Required roughness:	Ra 0.5µm
Fixed part speed:	60m/min

TEST WHEEL

Dimensions:	500x65x203.2mm
Specification:	TQX80F12VCF5
MOS:	32m/s

MACHINE

Characteristics:	100kW, vertical spindle, two wheels
Coolant:	Emulsion
Dresser:	Roller (sequential)



DRESSING: **-33%**
 INFEED: **+35%**
 SPINDLE POWER: **-20%**

Exceptional product consistency and thus stable surface finish even at increased MRR and with lower dressing.

CASE STUDY #2 AUTOMOTIVE MARKET

APPLICATION: Creepfeed grinding (surface)

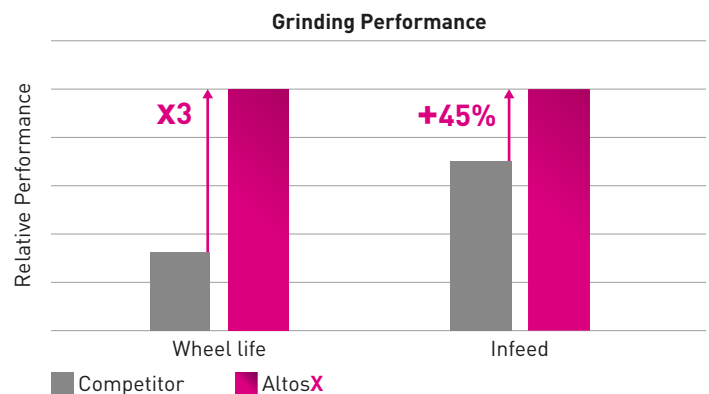
Material:	STD auto steel
Workpiece:	CV joint
Hardness:	57-62 HRc
Stock removal:	1 to 2mm
Required roughness:	Rz 18µm (no burn is the key criteria)

TEST WHEEL

Dimensions:	20.05x24.7xY1mm (glued on screw shaft)
Specification:	TQX80J12VCF5
MOS:	42m/s down to 33m/s

MACHINE

OEM:	Nova
Coolant:	Oil
Dresser:	Single point



DRESSING: **Up to 3 times less dressing per part**
 PART SPEED: **+45%**
 SURFACE FINISH: **Better than with CBN**
 REJECT: **5-10% down to 0%**

All Norton AltosX wheels are custom made to your exact requirements.

Contact your Norton representative to find out how you can benefit, today.



GRINDING TEST

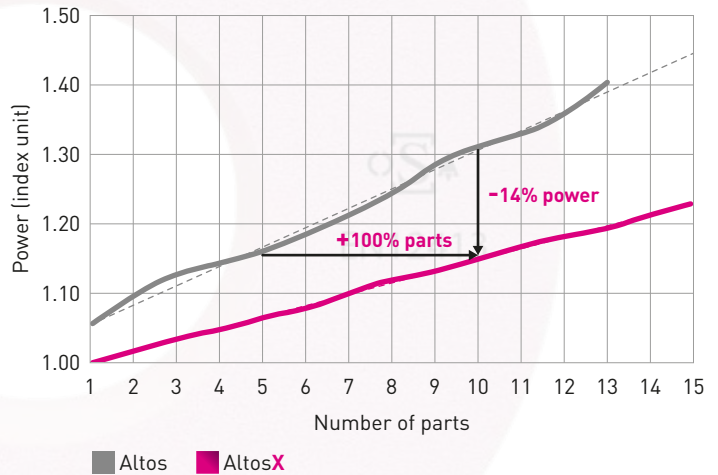
Direct comparison **Altos vs. AltosX** at fixed Q' 13 mm²/min
 CreepFeed grinding, no dressing between parts

RESULTS:

Lower threshold power and slower power increase

The graph example shows:

- +100% ground parts for the same power limit
- 14% power consumption after 10 parts
- ✓ **AltosX** allows high speed cut rates thanks to its unique micro-fracturing properties
- ✓ Lower threshold power and slow power increase are key for quality at high Q'



Naphthalene Free



Artificial pore inducers used by the Abrasives industry in the manufacturing of vitrified bonded abrasives bring negative health and environmental impacts.

At Saint-Gobain, we are working hard to help create an economy with as little environmental footprint as possible.

Therefore we are proud to offer AltosX, our next 'naphthalene free' grinding wheel designed to provide the highest performance while reducing the environmental impact linked to your process.



Saint-Gobain Abrasifs
 European Headquarters
 251 rue de l'Ambassadeur
 78700 Conflans
 France

Tel: +33 (0)1 34 90 40 00
 Fax: +33 (0)1 34 90 43 97

www.nortonabrasives.com
www.youtube.com/NortonAbrasiveEMEA

Norton is a registered trademark of Saint-Gobain.
 Form # 3939

