

BEYOND THE LIMITS OF PERFORMANCE GRINDING



FAST OPERATIONS

LOW FORCE CUTTING

COMPETITIVE PRICE

NORTON

SAINT-GOBAIN

QUANTUM X
VITRIUM³



NEXT GENERATION INNOVATION

NORTON QUANTUM X
IS A **REVOLUTIONARY**
WHEEL – BEYOND THE
RECOGNISED LIMITS
OF PERFORMANCE
GRINDING.

By combining three of the very best Norton technologies we have created Norton Quantum X to bring you unrivalled value and performance, creating the ultimate grinding experience.

Norton Quantum X is created with patented Norton Quantum and Vortex2 3D engineered grain spacing, combined with the revolutionary Vitrium³ bond innovation; resulting in a grinding wheel that provides **maximum performance, raised productivity** and **reduced process costs**.

NORTON QUANTUM X COMBINED TECHNOLOGY.



Vortex2 is a 3D engineered grain spacing, highly porous and permeable structure that maximises coolant access to the grinding zone.

PROVIDING A COOL AND LOW STRESS CUT.



Norton Quantum ceramic grain was developed from Norton patented Seeded-Gel technology. The revolutionary ceramic grain multiplied the cutting efficiency by controlling the grain breakdown at micrometric level.

PROVIDING A PERFECT BLEND OF SHARPNESS AND TOUGHNESS.



Vitrium³ is a new generation revolutionary bond featuring exclusive Norton chemistry that delivers an entirely new grain adhesion science.

HIGH PRECISION AND VERSATILITY ACROSS MANY APPLICATIONS.

GROUND BREAKING BENEFITS.

FAST OPERATIONS –

Highly permeable ceramic spacing offers cutting efficiency and cycle time reduction.

LOW FORCE CUTTING –

Low threshold power of Norton Quantum in a homogeneous Vortex structure reduces the cutting forces – resulting in lower stress and friction for better part quality, consistent cut and less dresser wear.

COMPETITIVE PRICE –

Norton Quantum X is positioned at a **competitive price** compared to other products in the market, providing **valuable cost savings**.

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SAINT-GOBAIN

QUANTUM X
VITRIUM³

**A HIGHLY POROUS WHEEL WITH
HIGHER MATERIAL REMOVAL,
EXCEPTIONAL COOL GRINDING
AND REDUCED CYCLE TIMES
IN HEAT AND STRESS
SENSITIVE PROCESSES.**



MULTIPLE INDUSTRIES.

- Gear
- Aerospace and land turbine components
- Bearing
- Tools
- General engineering

SPECIALISED APPLICATIONS.

- Areas of high material removal
- Heat sensitive and difficult to grind alloys
- Thin wall parts sensitive to deformation



NORTON QUANTUM X PRODUCT AVAILABILITY.

	DESIGNATION	DESCRIPTION	
ABRASIVE TYPE	3NQX / 5NQX	30 or 50% Norton Quantum ceramic grain	
GRAIN SIZE FEPA	30/36/46/60/80/100/120		
GRADE	C to L		
STRUCTURE	16 20 24 28	 Less open structure for improved form holding and wheel wear	More open structure for higher MRR and heat sensitive parts 
BOND TYPE	VS3X	Latest generation Vitrium ³ bond	
COLOUR	White		

NORTON QUANTUM X CASE STUDIES.

CASE STUDY 1

Application:	Creepfeed grinding
Part:	Engine component: root and platform blade
Material:	Rene Ni alloy
Coolant:	8% emulsion
Dresser:	Roller dresser
Wheel dimensions:	508x115x203.2
Wheel specification:	3NQX60D28VS3X vs. 30% sintered alumina (ceramic grain) competition wheel

RESULTS vs. COMPETITOR

WHEEL LIFE:	+40%
DRESS COMPENSATION:	-20%
TOTAL COST PER PART:	-20%

CASE STUDY 2

Application:	Creepfeed grinding
Part:	Engine component: blade
Material:	Rene Ni alloy
Coolant:	8% emulsion
Dresser:	Roller dresser
Wheel dimensions:	400x60x127
Wheel specification:	5NQX80E28VS3X vs. 50% sintered alumina (ceramic grain) competition wheel

RESULTS vs. COMPETITOR

CYCLE TIME:	-50%
WHEEL LIFE:	+40%
TOTAL COST PER PART:	-25%

CASE STUDY 3

Application:	Surface grinding (segments)
Part:	Circular blade
Material:	Tool steel (non treated)
Coolant:	4% emulsion
Segments dimensions:	38X127X152
Wheel specification:	5NQX30F20VS3X vs. 50% sintered alumina (ceramic grain) competition wheel

RESULTS vs. COMPETITOR

POWER CONSUMPTION:	-20%
WHEEL LIFE:	+30%
TOTAL COST PER PART:	-20%

MINIMAL ENVIRONMENTAL IMPACT & GUARANTEED COMPLIANCE.

NO MORE CHEMICAL PORE INDUCERS

- Norton Quantum X wheels require no artificial pore inducers (such as naphthalene) to achieve a high level of permeability, unlike other porous vitrified wheel technologies.

REDUCED CARBON FOOTPRINT

- Norton Quantum X products are manufactured using a low firing temperature, reducing energy consumption.

SUSTAINABLE SOLUTION

- Norton Quantum X eliminates costly revalidation of processes associated with using harmful artificial pores inducers.



OUR COMMITMENT: SAFETY, QUALITY AND ENVIRONMENT PRESERVATION

SAFETY

The personal safety of workers using abrasive cutting and grinding wheels is our primary concern. All Norton abrasive wheels are developed, manufactured and safety tested in accordance with the European standard EN12413, safety requirements for bonded abrasive products. In addition, all Norton products meet stringent requirements of the Organization for the Safety of Abrasives (oSa). Saint-Gobain Abrasives is a founding member of the oSa organisation.



QUALITY

Saint-Gobain Abrasives is fully ISO accredited:

ISO 9001: certifies Quality Management system is in accordance with requirements of quality standards.

ISO 14001: certifies Environmental Management system is in accordance with requirements of environmental standards.

OHSAS 18001: health and safety at work certification.

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