

The Norton logo is displayed in white, italicized, sans-serif capital letters within a blue parallelogram shape. The background of the top half of the page is a photograph of a large industrial grinding wheel in motion, with a metal workpiece being ground and sparks flying. The wheel has a dark, multi-spoke hub.

NORTON

®

SAINT-GOBAIN

BONDED
ABRASIVES

BONDED ABRASIVES

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INTRODUCTION BONDED ABRASIVES

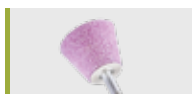
From standard aluminium oxide bench wheels to premium ceramic abrasive surface grinding wheels, Norton offers high performance abrasive solutions that can maximise productivity in virtually all industrial applications.

The extensive product range is designed to meet all your precision grinding and roughing application needs, with all the most appropriate abrasive specifications, including grinding wheels, segments, mounted points, dressing sticks and sharpening stones.

Norton, the industry's most comprehensive Bonded abrasive product line.

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MOUNTED POINTS



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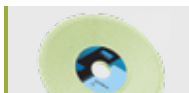


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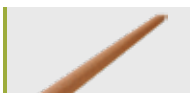
STICKS, FILES & SPECIALTIES



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NON-REINFORCED & REINFORCED CUT-OFF WHEELS



NON-REINFORCED
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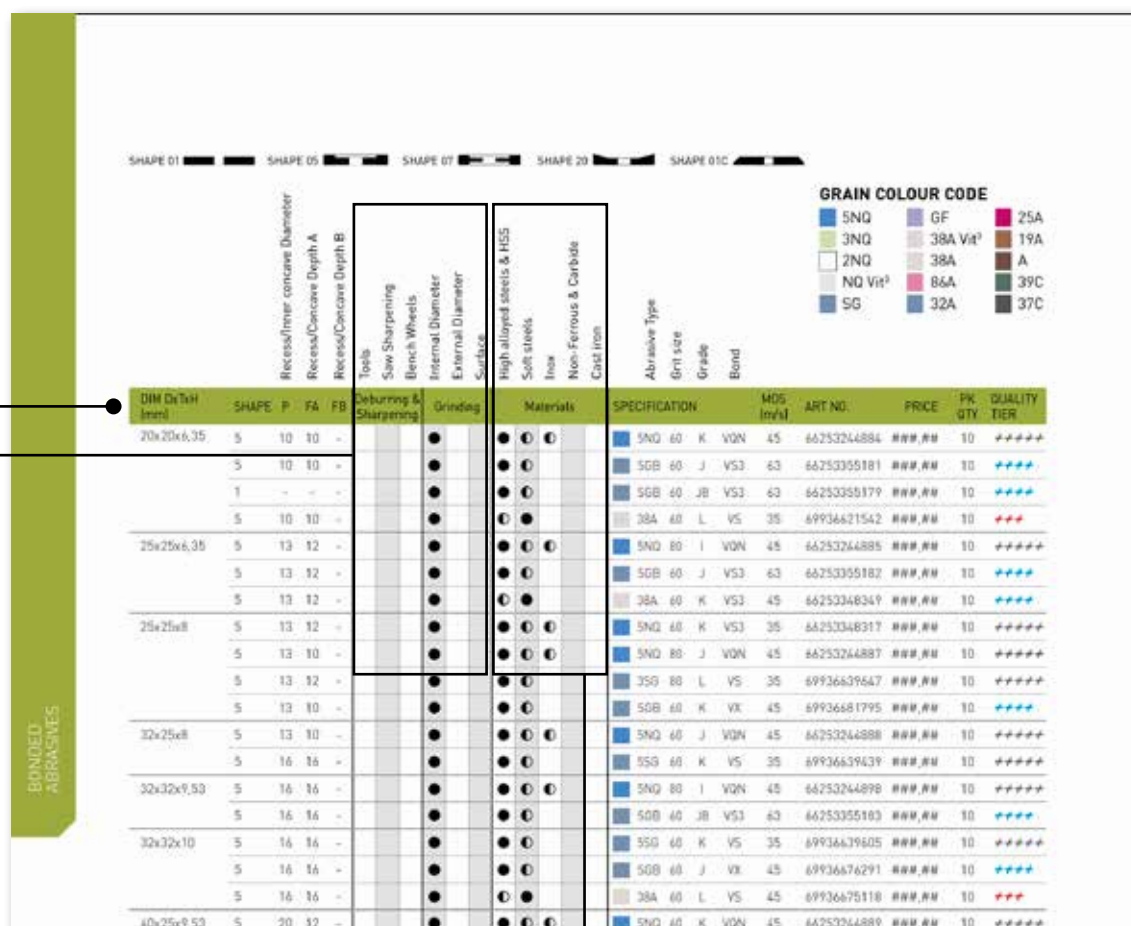


REINFORCED
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HOW TO READ THE GRINDING WHEEL SECTION

1. SELECT YOUR DIMENSION

20 x 20 x 6,35mm



DIM D x H (mm)	SHAPE	P	FA	FB	Deburring & Sharpening	Grinding	Materials	SPECIFICATION	MGS (m/s)	ART NO.	PRICE	PK QTY	QUALITY TIER
20x20x6,35	5	10	10	-	●	●	●	5NQ 60 K VQV 45	66253244884	66253244884	10	10	★★★★
	5	10	10	-	●	●	●	5GB 60 J VS3 63	66253355181	66253355181	10	10	★★★★
	1	-	-	-	●	●	●	5GB 60 JB VS3 63	66253355179	66253355179	10	10	★★★★
	5	10	10	-	●	●	●	38A 60 L VS 35	69936621542	69936621542	10	10	★★★
25x25x6,35	5	13	12	-	●	●	●	5NQ 80 I VQV 45	66253244885	66253244885	10	10	★★★★
	5	13	12	-	●	●	●	5GB 60 J VS3 63	66253355182	66253355182	10	10	★★★★
	5	13	12	-	●	●	●	38A 60 K VS3 45	66253348349	66253348349	10	10	★★★★
25x25x8	5	13	12	-	●	●	●	5NQ 60 K VS3 35	66253348317	66253348317	10	10	★★★★
	5	13	10	-	●	●	●	5NQ 80 J VQV 45	66253244887	66253244887	10	10	★★★★
	5	13	12	-	●	●	●	35G 80 L VS 35	69936639647	69936639647	10	10	★★★★
	5	13	10	-	●	●	●	5GB 60 K VK 45	69936681795	69936681795	10	10	★★★★
32x25x8	5	13	10	-	●	●	●	5NQ 60 J VQV 45	66253244888	66253244888	10	10	★★★★
	5	16	16	-	●	●	●	35G 60 K VS 35	69936639439	69936639439	10	10	★★★★
32x32x9,53	5	16	16	-	●	●	●	5NQ 80 I VQV 45	66253244898	66253244898	10	10	★★★★
	5	16	16	-	●	●	●	5GB 60 JB VS3 63	66253355183	66253355183	10	10	★★★★
32x32x10	5	16	16	-	●	●	●	35G 60 K VS 35	69936639605	69936639605	10	10	★★★★
	5	16	16	-	●	●	●	5GB 60 J VK 45	69936676291	69936676291	10	10	★★★★
	5	16	16	-	●	●	●	38A 60 L VS 45	69936675118	69936675118	10	10	★★★
40x25x9,53	5	20	12	-	●	●	●	5NQ 60 K VQV 45	66253244889	66253244889	10	10	★★★★

2. CHOOSE YOUR APPLICATION

DEBURRING & SHARPENING

- Tools
- Saw sharpening
- Bench grinding

GRINDING

- Internal
- External
- Surface

3. IDENTIFY SURFACE TYPE / MATERIAL

- High alloyed steels and HSS
- Soft steels
- Non-ferrous and carbide
- Cast Iron



ARTICLE IDENTIFIED

Please contact your Norton representative if you need assistance or advice.

WHAT IS A GRINDING WHEEL?

A grinding wheel is a precision tool with thousands of cutting points. It consists of abrasive grains held in a matrix of bond and separated by pores. The abrasive grains are the cutting points while the purpose of the bond is to hold the individual grains together. The pores (hollow spaces between adjacent abrasive grains and the bond) serve to provide clearance for coolant penetration and metal chips removed in the grinding process.

When the wheel is rotated at grinding speed and applied to the workpiece, the abrasive grains cut the material that is being ground, removing the material in small chips.

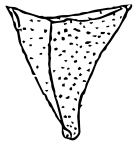
Under the action of the forces imposed during grinding, the abrasive cutting points are worn flat, resulting in the points becoming blunt. This causes an increase in friction, and a build-up of heat.

The increase in grinding forces causes either the abrasive to fracture, exposing new cutting edges, or fractures the bond bridges holding the abrasive grains. In the latter case fresh abrasive grains are exposed to cut the workpiece.

In normal vitrified grinding applications, the wheel has to be dressed.

By varying the properties of the abrasive, the type of bond, the make-up of the wheel, it is possible to produce grinding wheels with a vast range of different grinding characteristics.

ABRASIVE TYPES



CERAMIC ALUMINIUM OXIDE

Norton SG, Norton Quantum are patented ceramic forms of aluminium oxide that are harder and sharper than conventional abrasive grains.

The ceramic grain has a unique microcrystalline structure and when used in a grinding operation this microstructure becomes self-sharpening.

This leads to a reduction in the need for wheel dressing and a considerably cooler cutting action.



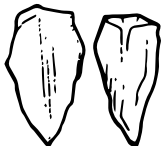
SILICON CARBIDE

Harder than aluminium oxide with a very sharp abrasive grain shape. It is recommended for grinding relatively soft materials such as aluminium or cast iron as well as grinding extremely hard materials such as cemented carbide.



ZIRCONIA ALUMINA

For use in rough grinding applications where high stock removal is required. Associated with high tech resin bonds.



ALUMINIUM OXIDE

Generally recommended for grinding materials of high tensile strength, such as stainless steel and tool steels, but it can also be used on some high tensile aluminium and bronze alloys. It is manufactured in varying qualities.



GRAIN SPECIFICATIONS

A This is a particularly tough form of aluminium oxide. Its toughness is due to the presence of 3% of titanium oxide in the abrasive. Fired at low temperature the abrasive retains its natural brown colour. Fired at high temperature further oxidation of the titanium oxide takes place which changes the normal brown colour to a grey-blue. Because of its toughness, regular brown alumina is suitable for grinding high tensile strength materials, specifically off-hand grinding (bench grinding wheels) and sharpening stones.

19A A blend of A and 38A abrasives. This abrasive gives a grinding action that can be compared to the average of its components. It is supplied in some standard tool room wheels, used for surface, cylindrical, centreless and miscellaneous grinding on less heat sensitive steels.

38A White fused aluminium oxide (99,8% pure). The most friable and cool cutting of the aluminium oxides. This abrasive is supplied in all types of standard range wheels ideal for use on hard and heat sensitive steels and alloys. It has traditionally been used for sharpening high-speed steel and cast alloy tools and cutters. 38A is used for cylindrical, surface and internal grinding of tools, dies and gauges.

57A Semi-pure brown fused aluminium oxide (98% pure). The higher purity of 57A makes it a good general purpose abrasive. Its versatility enables it to be used for grinding steel parts in both soft and hard states, especially on large cylindrical and centreless operations. U Treatment (U57A) is a ceramic coating applied to this abrasive to increase its durability in resin bonded cutting-off wheels. It is used in the advanced range resinoid cut-off wheels.

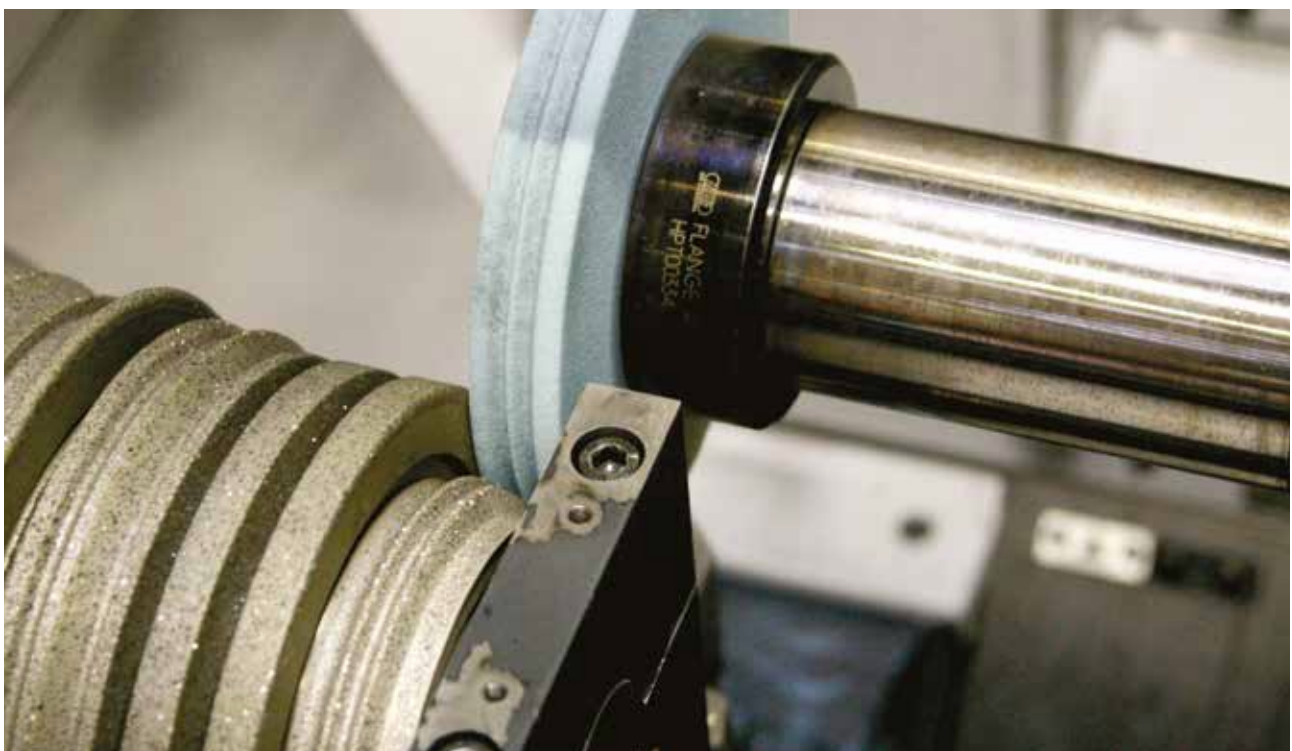
86A Pink aluminium oxide is a highly refined form of alumina containing a small proportion of chromium oxide. This addition makes 86A a little tougher than pure white, increasing the strength along the shear planes. This abrasive is available in a range of mounted points and wheels.

SGB A blend of premium abrasives that include a medium, high, very high concentration of premium abrasive SG. **3SG** SG has a unique microcrystalline structure allowing self-sharpening. **5SG**

2NQ Blends that include medium, high, very high concentrations of premium abrasive NQ. NQ has improved self-sharpening properties allowing even cooler grinding action vs. SG. NQ blends are specially suited for low to medium pressure applications. **3NQ** **5NQ**

37C Crystolon silicon carbide abrasive. Supplied mainly in the resin bonds of advanced wheels used for grinding grey iron, non-ferrous metals and in vitrified bonds for grinding non-metallic materials, such as rubber and stone.

39C Crystolon is the highest purity silicon carbide abrasive. It is ideal for grinding cemented carbide cutting tools, fired ceramics and glass, where it provides advanced performance.



GRIT SIZE

The number in the grinding wheel, marking designating grit size, represents the approximate number of openings per linear inch in the final screen size used to size the grain. The following rules should be followed:

USE COARSE GRIT

- For soft, ductile, stringy materials such as soft steel or aluminium
- For rapid stock removal
- Where finish is not important
- For large areas of contact

USE FINE GRIT

- For hard, brittle materials such as hard tool steels, cemented carbides and glass
- For fine finishes
- For small areas of contact
- For holding small corner radii

WHEEL GRADE

The grade indicates the relative holding power of the bond, which holds abrasive grains in a wheel. This is represented in the specification by letters running through the alphabet from softest to hardest. The following rules should be followed with regard to grade:

USE SOFT GRADE

- For hard materials such as hard tool steels and carbides
- For large areas of contact
- For rapid stock removal

USE HARD GRADE

- For soft materials
- For small or narrow areas on contact
- For longer wheel life

COMMON RANGE OF GRADES

F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
				CYLINDRICAL/CENTRELESS											
SURFACE GRINDING															
				ID GRINDING											
			TOOL GRINDING												
					THREAD GRINDING										
NON-REINFORCED ORGANIC															
										REINFORCED ORGANIC					

BOND TYPES-VITRIFIED

Vitrified bonds are the most common precision grinding bond. Porosity and strength of the wheels made with this bond give high stock removal along with their rigidity helping to attain high precision. Not affected by water, acid, oils or ordinary temperature variations.

THE MOST COMMON VITRIFIED BONDS ARE:



VITRIUM³ REVOLUTIONARY BOND TECHNOLOGY

The Vitrium³ bond platform features an exclusive chemistry that delivers an entirely new grain adhesion science, resulting in improved product versatility across a wide range of precision grinding applications. Provides cool cutting, precise profile, high speed and versatility across all precision grinding applications.

VS	VS is a versatile, low temperature, vitrified bond system used in most precision applications.
VX / VXP	Equivalent to VS bond, for ceramic only.
VQN / VQNP	These bonds are associated with Norton Quantum technology - a versatile technology for low, medium and high force applications.

BOND TYPES-ORGANIC

These bonds are used in two types of wheels. Firstly, wheels used on portable or fixed machines for the rapid removal of metal. Secondly, cutting-off wheels either non-reinforced or reinforced, for use on portable or fixed machines. The most common organic bonds are:

SNAGGING WHEELS & CUPS

B & B3 Foundry wheels: multi-purpose bond that gives satisfactory results on most applications

B28 Foundry wheels: high level bond suitable for most technical applications requiring high powered machines

CUTTING-OFF WHEELS

BFX Foundry X bond technology designed to increase cut rate and wheel life in all cut-off applications on a wide range of tough materials

BF1 Specific bond ensuring the best quality of cut in dry or wet conditions

BF3 New generation bond assuring the best wheel life in dry cutting operations; versatile and long wheel life. Ideal for heavy duty operations

B24 New generation bond used on silicon carbide cut-off wheels that gives the best performance and the ultimate cut quality on non-ferrous metals in wet conditions

B25 Standard multi-purpose bond that offers durability and freeness of cut in a wide variety of materials and applications. Can also be used in wet cutting on softer grades

B26 New generation bond used on aluminium oxide cut-off wheels that gives the best performance and the ultimate cut quality on ferrous metals in wet conditions

B65 Traditional bond gives good performance and long wheel life in dry cutting conditions

SELECTING THE RIGHT PRODUCT

THERE ARE NINE MAIN FACTORS TO BE CONSIDERED WHEN SELECTING A GRINDING WHEEL FOR ANY APPLICATION:

- The material to be ground – its type and hardness
- The stock to be removed
- The workpiece geometry and surface finishes required
- The grinding machine, the type of machine, the power available and its conditions
- Wheel speeds and feeds
- Grinding contact area
- Grinding fluid – whether the operation is wet or dry
- The severity of the grinding operation
- The dressing method

MATERIAL TO BE GROUND

The type of material affects the selection of abrasive, grit size and grade. Alumina type abrasives are the most suitable for grinding high tensile materials such as steel and ferritic cast iron. The more friable types of alumina are preferred on harder steels and applications having large arcs of contact.

Low tensile strength materials and non-metallic materials are most efficiently ground or cut with silicon carbide abrasive.

The hardness of the material governs the amount of penetration that can be achieved by the abrasive. For this reason, finer grit size wheels are required to grind hard materials and soft materials are best ground with medium to coarse grit size wheels.

For most efficient operation, the grade must be adjusted to suit the hardness of the material. As a general guide, the harder the material, the softer the grade of wheel required.

STOCK TO BE REMOVED

This affects the choice of abrasive size and bond type.

High stock removal rates, as in fettling operations, require coarse grit wheels, typically 12 to 24 mesh.

Fine finishes and tight limits on finished workpiece geometry require finer grit sizes.

Final surface finish is often achieved by 'spark out'. No further infeed is applied and the wheel is allowed to grind until the majority of the grinding sparks cease.

SURFACE FINISH

		GRIT SIZE								Recommended ●
SURFACE	FINISH	46	60	80	100	120	150	180	220	
42	1,10	●								
32	0,80	●								
26	0,70	●								
21	0,50		●							
16	0,40		●							
14	0,35		●	●						
11	0,25		●	●						
8	0,20			●	●					
7	0,17			●	●	●				
6	0,14				●	●	●			
5	0,12					●	●	●		
4	0,10						●	●	●	
3	0,08							●	●	
2	0,05								●	
MIN FORM RADIUS	METIC (mm)	0,75	0,50	0,40	0,25	0,20	0,18	0,13	0,10	
	IMP INS	,030	,020	,015	,010	,008	,007	,005	,004	

The achievable surface finish in any grinding operation is highly dependent upon the grit size of the grinding wheel. The following chart shows the range of surface finishes achievable when using grinding wheels of different grit sizes on conventional precision grinding applications, together with the minimum form radius that can be ground using each grit size.

ACHIEVING IMPROVED SURFACE FINISHES

By changing the wheel dressing technique, it is possible to achieve finer surface finishes than those shown. As well as reducing the dresser infeed per revolution of the grinding wheel, it is also possible to reduce the infeed and traverse rate when grinding, thus reducing the stock removal rate. Obviously this approach will have limited application in production grinding but it can be very useful in tool room work.

Other factors can affect the surface finish achieved. In particular:

- Production grinding applications, with higher stock removal ranges, will give surface finishes at the coarser end of the range
- Plunge grinding applications will often require the selection of a grit size one size finer than shown
- Dressing techniques and the type of material can also affect the surface finish achieved

READING THE PRODUCT

- 1 Safety pictograms
- 2 Strong Norton branding
- 3 Product dimensions (mm)
- 4 Product specification
- 5 Maximum operating speed
- 6 Article number; for use when re-ordering
- 7 oSa certified
The Organisation for Safety of Abrasives
- 8 European safety standard EN 12413



The Norton logo is displayed in white, bold, italicized capital letters within a blue parallelogram shape. A small registered trademark symbol (®) is located to the right of the logo.

NORTON

SAINT-GOBAIN

BONDED
ABRASIVES

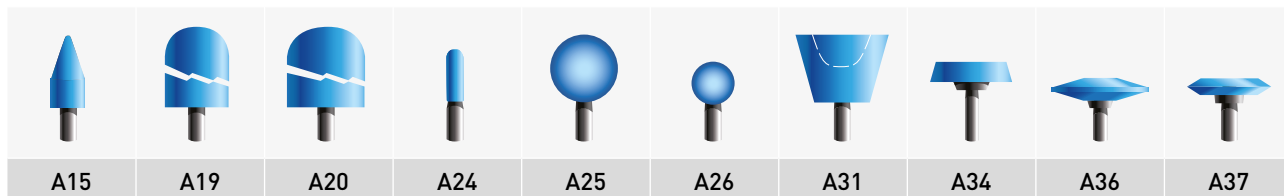
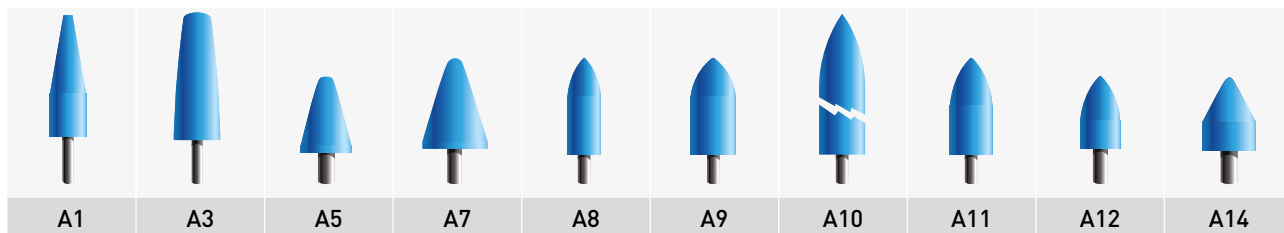
MOUNTED POINTS

Quantum® 5NQ blue
Vitrified mounted points
Organic mounted points

226
234
239

BONDED ABRASIVES MOUNTED POINTS & WHEELS

CONICAL SHAPE / A



CONICAL SHAPE / B



CYLINDRICAL SHAPE / W



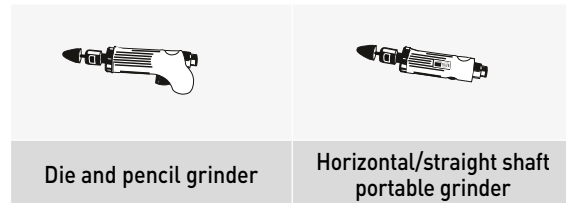
CYLINDRICAL SHAPE / C



MEASUREMENT GUIDE



MACHINE PICTOGRAMS



PERSONAL PROTECTION

Wear a mask (ISO 7010)	Wear protective gloves (ISO 7010)	Wear eye protection (ISO 7010)	Wear ear protection (ISO 7010)	Refer to instruction manual/booklet (ISO 7010)

In rotating abrasives, the maximum permissible rotational speed is a factor of key importance that results from the maximum operating speed specified in the applicable standards as a function of the tool diameter and is given in revolutions per minute (1/min. or min.⁻¹). Maximum safe operating speeds of all mounted points is 33 m/sec. Max RPM is shown for each shape codes in the table. Max RPM is based on the shape and spindle combination with a maximum 25mm overhang.



- For best mounted point performance, always run the mounted point at the maximum allowable speed according to ANSI B7.1. Refer to the speed chart included in each shipment for proper operating speeds.
- Use "A" shapes for medium to heavy-duty blending.
- Use "B" shapes for light deburring and finishing/polishing.
- Use "W" shapes for offhand and precision grinding of medium to heavy stock.
- Use 36 grit and coarser for rough grinding.
- Use 60 and 90 grits for imparting fine finishes or when grinding on narrow surfaces.





VITRIFIED MOUNTED POINTS

NEW NORTON QUANTUM WITH VITRIUM³ TECHNOLOGY

WHY CHOOSE A MOUNTED POINT?

In many industries, grinding needs can be very specific. The work piece might be small, intricate, curved or the metal might not lend itself to other abrasive use. Mounted points excel where others can't, and the following industries are no exception:



YouTube

 **Norton Quantum Mounted Points**



FOUNDRY

Mounted points are hard wearing in industries where grinding volumes are high.



AEROSPACE

On tricky shapes of turbine blade components, nozzle guide vanes, inconel, titanium and stainless steel.



METAL FABRICATION

Weld repair in corners and tight spaces, pipe work and mouldings, intersections and risers.



TOOL ROOM

Burr removal, bevelling, sharpening, preparation of ID and OD grinding.

THE RANGE

Never before has there been such a comprehensive range of sizes, with 200 stock sizes, and 80 different shapes starting from 36 grit for high material removal to 120 for a perfect finish. Mounted points are available with shaft dimensions 3mm, 6mm and 8mm; there's a solution available for any application.



NORTON QUANTUM® MOUNTED POINTS TAKE A **GIANT LEAP IN PERFORMANCE,** RANGE AND LIFE.

Utilising Norton's proven ceramic Quantum grain and Vitrium3® bond technology, this new range of vitrified mounted points offers higher material removal and longer product life than competitors when tested in a controlled environment.



LIFE

BUT NOT AS WE KNOW IT

up to 30% more grinding time

Reduce wasted downtime with less product changeover, increasing productivity ratio saving total abrasive cost.



STELLAR PERFORMANCE

finish faster with higher throughput

Higher metal removal rate and a smooth grinding experience thanks to reduced vibrations through the machine.



TECHNOLOGICALLY ADVANCED

reduces total abrasive cost

Self-sharpening grain prevents loading, for free cutting action with no glazing.
No need for costly, time consuming rework.
The coolest cut, maintains metallurgic integrity.



A RANGE FOR ALL MATERIALS

200 sizes available

Fast grinding on heat sensitive alloys (Fe and Ni based) hard and medium steels, a full range of shapes and sizes available.

A COMBINATION THAT'S **OUT OF THIS WORLD**



NORTON
SAINT-GOBAIN

VITRIUM³

Norton Vitrium3 is a revolutionary bond which facilitates exceptionally cool cutting, profile holding and high speed for increased throughput.

PROVIDING A PERFECT BLEND OF SHARPNESS AND TOUGHNESS.

NORTON
SAINT-GOBAIN

QUANTUM

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

HIGH PRECISION AND VERSABILITY ACROSS MANY APPLICATIONS.

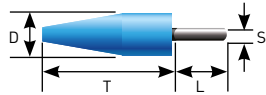
BONDED ABRASIVES MOUNTED POINTS & WHEELS

GRAIN COLOUR CODE

5NQ Vit3

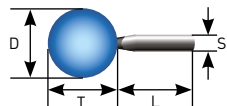


SHAPE OGIVE (A)



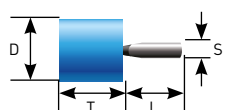
SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
A1	20x65	6x40	5NQ	46	R	VS3	69078663903	15000	10	+++++
A1	20x65	6x40	5NQ	60	R	VS3	69078664021	15000	10	+++++
A3	22x70	6x40	5NQ	46	R	VS3	69078664025	14000	10	+++++
A3	22x70	6x40	5NQ	60	R	VS3	69078663919	14000	10	+++++
A5	20x28	6x40	5NQ	46	R	VS3	69078664027	30000	10	+++++
A5	20x28	6x40	5NQ	60	R	VS3	69078663924	30000	10	+++++
A7	30x50	6x40	5NQ	36	R	VS3	69078664028	13000	10	+++++
A7	30x50	6x40	5NQ	60	R	VS3	69078664029	13000	10	+++++
A11	22x45	6x40	5NQ	46	R	VS3	69078664030	18000	10	+++++
A11	22x45	6x40	5NQ	60	R	VS3	69078663906	18000	10	+++++
A12	20x32	6x40	5NQ	60	R	VS3	69078663913	30000	10	+++++
A15	6x25	6x40	5NQ	80	R	VS3	69078663914	30000	10	+++++
A24	6x20	6x40	5NQ	60	R	VS3	69078663915	30000	10	+++++
A25	Ø25	6x40	5NQ	46	R	VS3	69078664031	25000	10	+++++
A25	Ø25	6x40	5NQ	60	R	VS3	69078663917	25000	10	+++++
A31	35x25	6x40	5NQ	60	R	VS3	69078663921	25000	10	+++++
A36	40x10	6x40	5NQ	46	R	VS3	69078664037	25000	10	+++++
A38	25x25	6x40	5NQ	60	R	VS3	69078663923	25000	10	+++++

SHAPE BALL (B)



B44	6x10	3x40	5NQ	80	R	VS3	69078663934	61000	10	+++++
B45	5x8	3x40	5NQ	80	R	VS3	69078663936	90000	10	+++++
B46	4x8	3x40	5NQ	90	R	VS3	69078664039	90000	10	+++++
B52	10x20	3x40	5NQ	46	R	VS3	69078664032	58000	10	+++++
B52	10x20	3x40	5NQ	60	R	VS3	69078664033	58000	10	+++++
B53	8x16	3x40	5NQ	80	R	VS3	69078663940	61000	10	+++++
B97	4x10	3x40	5NQ	90	R	VS3	69078663941	54000	10	+++++
B121	Ø13	3x40	5NQ	80	R	VS3	69078663925	58000	10	+++++
B122	Ø10	3x40	5NQ	90	R	VS3	69078663926	61000	10	+++++
B123	Ø5	3x40	5NQ	80	R	VS3	69078663928	73000	10	+++++
B124	Ø3	3x40	5NQ	80	R	VS3	69078663929	73000	10	+++++

CYLINDRICAL (W)



W144	3x6	3x40	5NQ	60	R	VS3	66253478595	105000	10	+++++
W144	3x6	3x40	5NQ	80	R	VS3	66253478592	105000	10	+++++
W144	3x6	3x40	5NQ	100	R	VS3	66253478593	105000	10	+++++
W144	3x6	3x40	5NQ	120	R	VS3	66253478594	105000	10	+++++

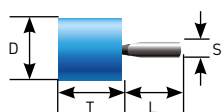
*Shape not available in the US ANSI code

GRAIN COLOUR CODE

5NQ Vit3



CYLINDRICAL (W)



SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
W144	3x6	6x40	5NQ	100	R	VS3	66253480442	105000	10	+++++
W144	3x6	6x40	5NQ	120	R	VS3	66253480444	105000	10	+++++
-*	3x8	6x40	5NQ	100	R	VS3	66253480445	105000	10	+++++
W145	3x10	3x40	5NQ	100	R	VS3	66253478596	105000	10	+++++
W146	3x13	3x40	5NQ	100	R	VS3	66253478597	105000	10	+++++
W149	4x6	3x40	5NQ	60	R	VS3	66253478599	105000	10	+++++
W149	4x6	3x40	5NQ	100	R	VS3	66253478598	105000	10	+++++
W155	4x8	3x40	5NQ	60	R	VS3	66253478600	105000	10	+++++
W155	4x8	3x40	5NQ	100	R	VS3	66253478602	105000	10	+++++
-*	4x8	6x40	5NQ	60	R	VS3	66253478997	65000	10	+++++
-*	4x8	6x40	5NQ	80	R	VS3	66253478998	65000	10	+++++
-*	4x8	6x40	5NQ	100	R	VS3	66253478999	65000	10	+++++
W15-*	5x6	3x40	5NQ	100	R	VS3	66253477241	105000	10	+++++
W15-*	5x8	6x40	5NQ	80	R	VS3	66253479000	65000	10	+++++
W153	5x10	3x40	5NQ	60	R	VS3	66253477243	80000	10	+++++
W153	5x10	3x40	5NQ	100	R	VS3	66253477246	80000	10	+++++
W153	5x10	6x40	5NQ	60	R	VS3	66253479001	62000	10	+++++
W153	5x10	6x40	5NQ	80	R	VS3	66253479002	62000	10	+++++
W153	5x10	6x40	5NQ	100	R	VS3	66253479003	62000	10	+++++
W154	5x13	3x40	5NQ	60	R	VS3	66253477248	70500	10	+++++
W154	5x13	3x40	5NQ	100	R	VS3	66253477249	70500	10	+++++
W15-*	5x15	3x40	5NQ	60	R	VS3	66253477251	70500	10	+++++
W158	6x3	3x40	5NQ	100	R	VS3	66253480308	85000	10	+++++
W162	6x10	3x40	5NQ	80	R	VS3	66253478605	68400	10	+++++
W162	6x10	3x40	5NQ	100	R	VS3	66253477259	68400	10	+++++
W162	6x10	6x40	5NQ	60	R	VS3	66253479004	62000	10	+++++
W162	6x10	6x40	5NQ	80	R	VS3	66253479005	62000	10	+++++
W163	6x13	3x40	5NQ	60	R	VS3	66253477264	60000	10	+++++
W163	6x13	3x40	5NQ	80	R	VS3	66253477265	60000	10	+++++
W163	6x13	3x40	5NQ	100	R	VS3	66253477266	60000	10	+++++
W163	6x13	6x40	5NQ	100	R	VS3	66253479006	62000	10	+++++
W164	6x20	3x40	5NQ	60	R	VS3	66253477267	45900	10	+++++
W164	6x20	3x40	5NQ	100	R	VS3	66253477268	45900	10	+++++
W16-*	6x25	3x40	5NQ	60	R	VS3	66253479396	45900	10	+++++
W16-*	6x13	6x40	5NQ	100	R	VS3	66253479007	62000	10	+++++
W165	8x3	3x40	5NQ	100	R	VS3	66253480309	61500	10	+++++
W169	8x10	3x40	5NQ	46	R	VS3	66253477269	61500	10	+++++
W169	8x10	3x40	5NQ	80	R	VS3	66253478607	61500	10	+++++
W169	8x10	3x40	5NQ	100	R	VS3	66253477271	61500	10	+++++
W169	8x10	6x40	5NQ	60	R	VS3	66253479008	57500	10	+++++
W169	8x10	6x40	5NQ	80	R	VS3	66253479009	57500	10	+++++
W16-*	8x12	6x40	5NQ	80	R	VS3	66253479010	57500	10	+++++

*Shape not available in the US ANSI code

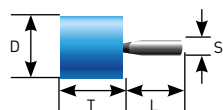
BONDED ABRASIVES MOUNTED POINTS & WHEELS

GRAIN COLOUR CODE

5NQ Vit3



CYLINDRICAL (W)



SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
W170	8x13	3x40	5NQ	46	R	VS3	66253477392	52500	10	+++++
W170	8x13	3x40	5NQ	80	R	VS3	66253477272	52500	10	+++++
W17-*	8x16	3x40	5NQ	46	R	VS3	66253477393	52500	10	+++++
W17-*	8x16	3x40	5NQ	60	R	VS3	66253477394	52500	10	+++++
W17-*	8x16	3x40	5NQ	80	R	VS3	66253477395	52500	10	+++++
W17-*	8x16	6x40	5NQ	46	R	VS3	66253477396	57500	10	+++++
W17-*	8x16	6x40	5NQ	60	R	VS3	66253477397	57500	10	+++++
W17-*	8x16	6x40	5NQ	80	R	VS3	66253477398	57500	10	+++++
W171	8x20	6x40	5NQ	60	R	VS3	66253477399	57500	10	+++++
W17-*	9x12	6x40	5NQ	80	R	VS3	66253477400	54000	10	+++++
W172	10x2	3x40	5NQ	60	R	VS3	66253480311	35000	10	+++++
W172	10x2	3x40	5NQ	100	R	VS3	66253480314	35000	10	+++++
W173	10x3	3x40	5NQ	60	R	VS3	66253480318	33000	10	+++++
W173	10x3	3x40	5NQ	100	R	VS3	66253480315	33000	10	+++++
W175	10x10	3x40	5NQ	46	R	VS3	66253477401	54000	10	+++++
W175	10x10	3x40	5NQ	60	R	VS3	66253477402	54000	10	+++++
W175	10x10	3x40	5NQ	80	R	VS3	66253478609	54000	10	+++++
W175	10x10	6x40	5NQ	60	R	VS3	66253477404	54000	10	+++++
W175	10x10	6x40	5NQ	80	R	VS3	66253477405	54000	10	+++++
W17-*	10x12	6x40	5NQ	80	R	VS3	66253477406	54000	10	+++++
W176	10x13	3x40	5NQ	46	R	VS3	66253477408	45370	10	+++++
W176	10x13	3x40	5NQ	80	R	VS3	66253480919	45370	10	+++++
W176	10x13	3x40	5NQ	100	R	VS3	66253477410	45370	10	+++++
W176	10x13	6x40	5NQ	46	R	VS3	66253477412	45370	10	+++++
W176	10x13	6x40	5NQ	80	R	VS3	66253477413	45370	10	+++++
W177	10x20	6x40	5NQ	46	R	VS3	66253477415	46500	10	+++++
W177	10x20	6x40	5NQ	80	R	VS3	66253478612	46500	10	+++++
W178	10x25	6x40	5NQ	46	R	VS3	66253477417	40500	10	+++++
W178	10x25	6x40	5NQ	80	R	VS3	66253477418	40500	10	+++++
W179	10x32	6x40	5NQ	46	R	VS3	66253477419	33750	10	+++++
W179	10x32	6x40	5NQ	80	R	VS3	66253477420	33750	10	+++++
W17-*	10x40	6x40	5NQ	46	R	VS3	66253477421	33750	10	+++++
W17-*	10x40	6x40	5NQ	60	R	VS3	66253477422	33750	10	+++++
W17-*	12x15	6x40	5NQ	80	R	VS3	66253477423	33750	10	+++++
W17-*	13x3	3x40	5NQ	60	R	VS3	66253480327	28000	10	+++++
W17-*	13x3	3x40	5NQ	100	R	VS3	66253480329	28000	10	+++++
W185	13x13	3x40	5NQ	46	R	VS3	66253478224	34500	10	+++++
W185	13x13	3x40	5NQ	60	R	VS3	66253478225	34500	10	+++++
W185	13x13	3x40	5NQ	80	R	VS3	66253478226	34500	10	+++++
W185	13x13	6x40	5NQ	46	R	VS3	66253478237	42000	10	+++++
W185	13x13	6x40	5NQ	60	R	VS3	66253478238	42000	10	+++++
W186	13x20	6x40	5NQ	60	R	VS3	66253478240	36000	10	+++++

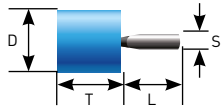
*Shape not available in the US ANSI code

GRAIN COLOUR CODE

5NQ Vit3



CYLINDRICAL (W)



SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
W187	13x25	6x40	5NQ	46	R	VS3	66253478244	30000	10	+++++
W187	13x25	6x40	5NQ	60	R	VS3	66253478246	30000	10	+++++
W187	13x25	6x40	5NQ	80	R	VS3	66253478248	30000	10	+++++
W188	13x32	6x40	5NQ	36	R	VS3	66253478255	30000	10	+++++
W188	13x32	6x40	5NQ	46	R	VS3	66253478256	30000	10	+++++
W188	13x32	6x40	5NQ	80	R	VS3	66253480917	30000	10	+++++
W188	13x40	6x40	5NQ	46	R	VS3	66253478257	30000	10	+++++
W18-*	16x3	3x40	5NQ	60	R	VS3	66253480331	25000	10	+++++
W18-*	16x3	3x40	5NQ	100	R	VS3	66253480338	25000	10	+++++
W18-*	16x5	3x40	5NQ	46	R	VS3	66253479397	34500	10	+++++
W18-*	16x5	3x40	5NQ	80	R	VS3	66253479399	34500	10	+++++
W18-*	16x6	6x40	5NQ	80	R	VS3	66253479401	30000	10	+++++
W194	16x16	6x40	5NQ	36	R	VS3	66253478259	35000	10	+++++
W194	16x16	6x40	5NQ	46	R	VS3	66253478260	35000	10	+++++
W194	16x16	6x40	5NQ	80	R	VS3	66253480915	35000	10	+++++
W195	16x20	6x40	5NQ	36	R	VS3	66253479402	32000	10	+++++
W195	16x20	6x40	5NQ	36	R	VS3	66253478261	32000	10	+++++
W195	16x20	6x40	5NQ	80	R	VS3	66253480913	32000	10	+++++
W19-*	16x32	6x40	5NQ	36	R	VS3	66253479403	23000	10	+++++
W19-*	16x32	6x40	5NQ	36	R	VS3	66253478616	23000	10	+++++
W19-*	16x32	6x40	5NQ	46	R	VS3	66253478264	23000	10	+++++
W19-*	16x32	6x40	5NQ	60	R	VS3	66253478265	23000	10	+++++
W19-*	16x32	6x40	5NQ	80	R	VS3	66253478618	23000	10	+++++
-*	16x40	6x40	5NQ	36	R	VS3	66253478267	23000	10	+++++
W19-*	16x40	6x40	5NQ	46	R	VS3	66253478268	23000	10	+++++
W19-*	16x40	6x40	5NQ	60	R	VS3	66253478266	23000	10	+++++
W197	16x50	6x40	5NQ	36	R	VS3	66253478269	20000	10	+++++
W197	16x50	6x40	5NQ	60	R	VS3	66253478270	20000	10	+++++
W19-*	19x3	3x40	5NQ	60	R	VS3	66253480339	38250	10	+++++
W201	20x6	3x40	5NQ	46	R	VS3	66253478271	38250	10	+++++
W201	20x6	3x40	5NQ	80	R	VS3	66253478272	38250	10	+++++
W201	20x6	6x40	5NQ	46	R	VS3	66253478273	50000	10	+++++
W201	20x6	6x40	5NQ	80	R	VS3	66253478274	50000	10	+++++
W202	20x10	6x40	5NQ	36	R	VS3	66253478275	44000	10	+++++
W202	20x10	6x40	5NQ	60	R	VS3	66253478276	44000	10	+++++
W203	20x13	6x40	5NQ	36	R	VS3	66253478277	35000	10	+++++
W204	20x20	6x40	5NQ	36	R	VS3	66253478278	30000	10	+++++
W204	20x20	6x40	5NQ	80	R	VS3	66253480909	30000	10	+++++
W205	20x25	6x40	5NQ	46	R	VS3	66253478279	25000	10	+++++
W205	20x25	6x40	5NQ	60	R	VS3	66253478280	25000	10	+++++
W205	20x25	6x40	5NQ	80	R	VS3	66253480911	25000	10	+++++
W206	20x32	6x40	5NQ	36	R	VS3	66253478402	21000	10	+++++

*Shape not available in the US ANSI code

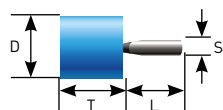
BONDED ABRASIVES MOUNTED POINTS & WHEELS

GRAIN COLOUR CODE

5NQ Vit3



CYLINDRICAL (W)



SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
W206	20x32	6x40	5NQ	80	R	VS3	66253478620	21000	10	+++++
W207	20x40	6x40	5NQ	36	R	VS3	66253478404	20000	10	+++++
W207	20x40	6x40	5NQ	46	R	VS3	66253478406	20000	10	+++++
W207	20x40	6x40	5NQ	60	R	VS3	66253478407	20000	10	+++++
W207	20x40	6x40	5NQ	80	R	VS3	66253480907	20000	10	+++++
W215	25x3	3x40	5NQ	100	R	VS3	66253480343	35000	10	+++++
W216	25x6	6x40	5NQ	46	R	VS3	66253479404	35000	10	+++++
W216	25x6	6x40	5NQ	80	R	VS3	66253479405	35000	10	+++++
W217	25x10	6x40	5NQ	36	R	VS3	66253478409	35000	10	+++++
W217	25x10	6x40	5NQ	60	R	VS3	66253478410	35000	10	+++++
W218	25x13	6x40	5NQ	36	R	VS3	66253478412	30000	10	+++++
-*	25x16	6x40	5NQ	60	R	VS3	66253478415	30000	10	+++++
W220	25x25	6x40	5NQ	36	R	VS3	66253478419	30000	10	+++++
W***	25x32	6x40	5NQ	36	R	VS3	66253478423	30000	10	+++++
-*	25x32	6x40	5NQ	60	R	VS3	66253478431	30000	10	+++++
W225	32x6	6x40	5NQ	46	R	VS3	66253479395	25000	10	+++++
W226	32x8	6x40	5NQ	36	R	VS3	66253478433	25000	10	+++++
W226	32x8	6x40	5NQ	60	R	VS3	66253478435	25000	10	+++++
-*	32x16	6x40	5NQ	36	R	VS3	66253478437	25000	10	+++++
-*	32x16	6x40	5NQ	46	R	VS3	66253478438	25000	10	+++++
W228	32x20	6x40	5NQ	36	R	VS3	66253478440	20000	10	+++++
W228	32x20	6x40	5NQ	46	R	VS3	66253478441	20000	10	+++++
W230	32x32	6x40	5NQ	36	R	VS3	66253478626	15000	10	+++++
W230	32x32	6x40	5NQ	46	R	VS3	66253478443	15000	10	+++++
W230	32x32	6x40	5NQ	80	R	VS3	66253480906	15000	10	+++++
W231	32x40	6x40	5NQ	36	R	VS3	66253478444	13000	10	+++++
W231	32x40	6x40	5NQ	46	R	VS3	66253478447	13000	10	+++++
W235	40x6	6x40	5NQ	46	R	VS3	66253479392	25000	10	+++++
W236	40x10	6x40	5NQ	36	R	VS3	66253478449	25000	10	+++++
W236	40x10	6x40	5NQ	60	R	VS3	66253478450	25000	10	+++++
-*	40x15	6x40	5NQ	36	R	VS3	66253478451	25000	10	+++++
-*	40x15	6x40	5NQ	60	R	VS3	66253478454	25000	10	+++++
W237	40x20	6x40	5NQ	36	R	VS3	66253478457	17000	10	+++++
W237	40x20	6x40	5NQ	46	R	VS3	66253478458	17000	10	+++++
W237	40x20	6x40	5NQ	80	R	VS3	66253480904	17000	10	+++++
W237	40x20	8x40	5NQ	36	R	VS3	66253479394	18000	10	+++++
W238	40x40	6x40	5NQ	36	R	VS3	66253478464	12000	10	+++++
W238	40x40	6x40	5NQ	46	R	VS3	66253478465	12000	10	+++++
W23_*	50x8	6x40	5NQ	36	R	VS3	66253478466	15000	10	+++++
W238	40x40	6x40	5NQ	36	R	VS3	66253480903	15000	10	+++++
-*	50x13	6x40	5NQ	36	R	VS3	66253478467	15000	10	+++++
-*	50x13	6x40	5NQ	60	R	VS3	66253478468	15000	10	+++++

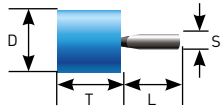
*Shape not available in the US ANSI code

GRAIN COLOUR CODE

5NQ Vit3



CYLINDRICAL (W)



SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
- *	50x13	8x40	5NQ	36	R	VS3	66253479382	18000	10	+++++
W242	50x20	6x40	5NQ	36	R	VS3	66253478469	15000	10	+++++
W242	50x20	8x40	5NQ	36	R	VS3	66253479381	15000	10	+++++
W242	50x25	6x40	5NQ	36	R	VS3	66253478470	15000	10	+++++
W242	50x25	6x40	5NQ	46	R	VS3	66253478471	15000	10	+++++
W242	50x25	8x40	5NQ	36	R	VS3	66253479380	15000	10	+++++
W243	50x40	8x40	5NQ	36	R	VS3	66253479379	15000	10	+++++
KIT	6mm SPDL		5NQ	80	R	VS3	69078667181	-	-	+++++
KIT	3mm SPDL		5NQ	80	R	VS3	69078667182	-	-	+++++

*Shape not available in the US ANSI code

NORTON QUANTUM MOUNTED POINTS KIT

- Norton Quantum grain and Vitrium3 technology combine to provide the ultimate performance in grinding speed and life
- Contains 10 of the most common shapes and size mounted points

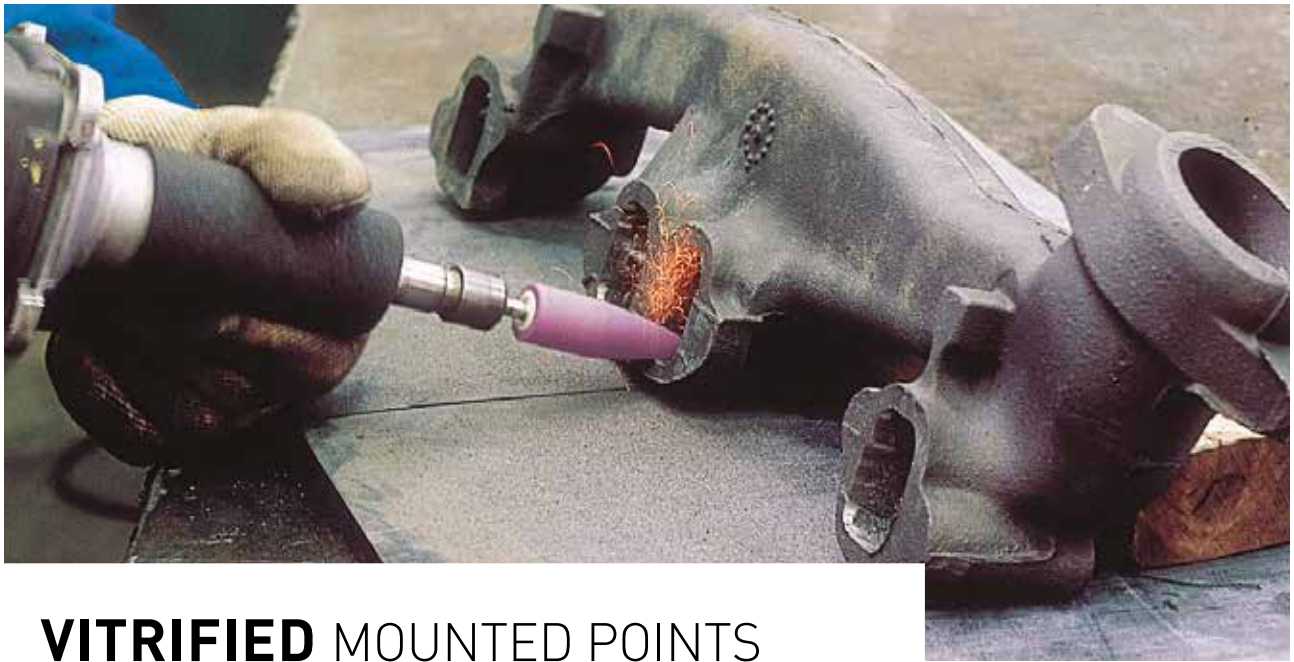


KIT CONTENTS - 3mm SPINDLE

SHAPE	DIM DxT (mm)	GRIT SIZE	GRADE	BOND	ART NO.	KIT ART NO.
B42M	13x20	80	R	VS3	61463634063	69078667182
B52M	10x20	80	R	VS3	61463634066	
B97M	4x10	80	R	VS3	61463634067	
B131M	13x13	80	R	VS3	61463634068	
B122M	10xBALL	80	R	VS3	61463634069	
W154M	5x13	80	R	VS3	61463634070	
W164M	6x20	80	R	VS3	61463634071	
W185M	13x13	80	R	VS3	61463634072	
W215M	25x3	80	R	VS3	61463634073	
W163M	6x13	80	H	BF3	61463691062	

KIT CONTENTS - 6mm SPINDLE

SHAPE	DIM DxT (mm)	GRIT SIZE	GRADE	BOND	ART NO.	KIT ART NO.
A1M	20x65	80	R	VS3	61463634074	69078667181
A5M	20x28	80	R	VS3	61463634076	
A11M	22x45	80	R	VS3	61463634078	
A23M	20x25	80	R	VS3	61463634086	
A21M	25x25	80	R	VS3	61463634087	
A26M	16xBALL	80	R	VS3	61463634088	
A36M	40x10	80	R	VS3	61463634089	
A39M	20x20	80	R	VS3	61463634090	
W218M	25x13	80	R	VS3	61463634093	
W220M	25x25	80	H	BF3	61463691058	



VITRIFIED MOUNTED POINTS

The Norton vitrified mounted points range provides quality and efficiency in grinding operations. The high quality grain ensures a perfect surface finish with metallographic integrity. For small jobs or high volume foundry and casting operations, or for tool room or aerospace industry applications, Norton vitrified mounted points cut cooler, and provide up to 30% higher metal removal rates.



86A VITRIFIED



Highly refined pink aluminium oxide abrasive

- Friable grain for good cutting performance
- Long lasting profile tool
- Versatile for large variety of steels
- Reduced dress frequency



38A VITRIFIED



Pure white aluminium oxide abrasive

- Most friable alumina grain for easy and cool cut
- Good value for general purpose, small applications
- Compatible with most of the steel alloys
- Cool cutting, less burn
- Excellent price vs performance ratio



39C VITRIFIED



Highest purity green silicon carbide abrasive

- Suitable for use on castings for heavy-duty edge grinding
- Very hard and durable with excellent edge-holding capability
- Low wear rate for long product life



37C VITRIFIED



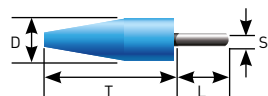
High purity black silicon carbide abrasive

- Harder and more friable than aluminium oxide abrasive
- Suitable for roughing operations in coarse grit and resinoid wheels
- Ideal for grinding and sharpening applications on non-ferrous metals

GRAIN COLOUR CODE

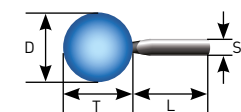
86A 37C 38A 39C

SHAPE OGIVE (A)



SHAPE	DIM DxD (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
A1	20x65	6x40	86A	36	P	VS	66253055235	15000	10	***
A1	20x65	6x40	38A	60	R	VM	69936635216	15000	10	***
A1	20x65	6x40	86A	60	O	VS	66253055218	15000	10	***
A3	22x70	6x40	38A	36	T	VM	69936623827	14000	10	***
A3	22x70	6x40	86A	36	O	VS	66253055021	14000	10	***
A3	22x70	6x40	38A	60	R	VM	69936643931	14000	10	***
A3	22x70	6x40	86A	60	O	VS	66253055212	14000	10	***
A5	19x29	6x40	38A	60	R	VM	69936613862	30000	10	***
A5	20x28	6x40	86A	60	O	VS	66253055094	30000	10	***
A7	30x50	6x40	86A	36	O	VS	66253055022	13000	10	***
A8	20x50	6x40	86A	36	O	VS	66253055308	18000	10	***
A9	30x50	6x40	86A	36	O	VS	66253055395	13000	10	***
A10	22x70	6x40	86A	36	O	VS	66253055237	14000	10	***
A11	22x45	6x40	38A	36	T	VM	69936623830	18000	10	***
A11	22x45	6x40	86A	36	O	VS	66253055095	18000	10	***
A11	22x45	6x40	86A	36	O	VS	66253055307	18000	10	***
A11	22x45	6x40	38A	60	R	VM	69936643935	18000	10	***
A11	22x45	6x40	86A	60	O	VS	66253055214	18000	10	***
A12	20x32	6x40	86A	60	O	VS	66253055096	30000	10	***
A15	6x25	6x40	86A	90	O	VS	66253055126	30000	10	***
A19	30x50	6x40	86A	60	O	VS	66253054961	13000	10	***
A24	6x20	6x40	86A	60	O	VS	66253055127	41000	10	***
A25	25x25	6x40	86A	60	O	VS	66253055128	25000	10	***
A26	16x16	6x40	86A	46	O	VS	66253055204	54000	10	***
A36	40x10	6x40	86A	60	O	VS	66253055129	25000	10	***
A37	30x6	6x40	86A	90	O	VS	66253055313	30000	10	***
A26	Ø16	6x40	38A	90	R	VM	63642561043	54000	10	***
A38	25x25	6x40	86A	60	O	VS	66253054946	25000	10	***

SHAPE BALL (B)



B44	6x10	3x40	38A	90	S	VM	69936626239	61000	10	***
B44	6x10	3x40	86A	90	O	VS	66253055183	61000	10	***
B46	4x8	6x40	38A	90	S	VM	69936626240	90000	10	***
B52	10x20	3x40	38A	90	S	VM	69936643938	41000	10	***
B52	10x20	3x40	86A	90	O	VS	66253055232	41000	10	***
B53	8x16	3x40	38A	90	S	VM	69936690891	54000	10	***
B53	8x16	3x40	86A	90	O	VS	66253055305	54000	10	***
B54	6x13	6x40	86A	90	O	VS	66253055139	54000	10	***
B91	13x16	3x40	86A	90	O	VS	66253055199	58000	10	***
B97	4x10	3x40	38A	90	Q	VM	69936623856	90000	10	***
B97	4x10	3x40	86A	90	O	VS	66253055141	90000	10	***
B121	13x13	3x40	38A	90	S	VM	69936623857	58000	10	***
B122	10x10	3x40	38A	90	Q	VM	69936623858	58000	10	***
B123	5x5	3x40	38A	90	R	VM	69936630653	73000	10	***
B123	5x5	3x40	86A	90	O	VS	66253055207	73000	10	***

BONDED ABRASIVES MOUNTED POINTS & WHEELS

SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
CYLINDRICAL (C)										
C262	16x32	3x40	38A	90	S	VM	69936634345	25000	10	+++
CYLINDRICAL (W)										
W121	13x13	3x40	86A	90	O	VS	66253055143	58000	10	+++
W144	3x6	6x40	38A	90	S	VM	69936623859	90000	10	+++
W144	3x6	6x40	86A	90	O	VS	66253055147	90000	10	+++
W146	3x13	6x40	38A	90	R	VM	69936623861	80000	10	+++
W149	4x6	3x40	86A	90	P	VS	66253055150	80000	10	+++
W149	4x6	6x40	38A	90	S	VM	69936623862	80000	10	+++
W153	5x10	6x40	38A	90	Q	VM	69936623863	73000	10	+++
W153	5x10	6x40	86A	90	O	VS	66253055160	73000	10	+++
W154	5x13	6x40	38A	90	Q	VM	69936623864	70000	10	+++
W154	5x13	6x40	86A	90	O	VS	66253055162	70000	10	+++
W162	6x10	3x40	86A	60	P	VS	66253055166	61000	10	+++
W162	6x10	6x40	38A	60	R	VM	69936623866	61000	10	+++
W162	6x10	6x40	86A	90	P	VS	66253055206	61000	10	+++
W162	6x10	M4M	38A	90	S	VM	69936637877	61000	10	+++
W163	6x13	6x40	86A	60	O	VS	66253055210	54000	10	+++
W163	6x13	6x40	86A	90	O	VS	66253055167	54000	10	+++
W164	6x20	6x40	38A	90	S	VM	69936623869	41000	10	+++
W169	8x10	6x40	86A	60	O	VS	66253055398	61000	10	+++
W170	8x13	3x40	86A	60	O	VS	66253055248	54000	10	+++
W171	8x20	3x40	86A	60	O	VS	66253055171	41000	10	+++
W171	8x20	6x40	38A	90	S	VM	69936630875	41000	10	+++
W171	8x20	6x40	38A	90	S	VM	69936637878	41000	10	+++
W175	10x10	3x40	86A	90	O	VS	66253055173	61000	10	+++
W175	10x10	6x40	38A	90	S	VM	69936631248	61000	10	+++
W176	10x13	6x40	38A	60	R	VM	69936623872	54000	10	+++
W176	10x13	6x40	86A	60	P	VS	66253055315	54000	10	+++
W176	10x13	6x40	39C	80	S	VM	66253480899	45370	10	+++
W176	10x13	6x40	38A	90	R	VM	69936623873	54000	10	+++
W176	10x13	6x40	38A	90	S	VM	69936637874	54000	10	+++
W177	10x20	3x40	86A	60	Q	VBEM	66253055092	41000	10	+++
W177	10x20	6x40	38A	60	R	VM	69936637149	41000	10	+++
W177	10x20	6x40	38A	90	S	VM	69936626743	41000	10	+++
W179	10x32	3x40	86A	60	O	VS	66253055223	25000	10	+++
W179	10x32	6x40	38A	60	R	VM	69936637875	25000	10	+++
W186	13x20	3x40	39C	80	R	VM	66253478614	36000	10	+++
W***	13x32	6x40	39C	80	S	VM	66253480918	30000	10	+++
W***	13x40	3x40	38A	46	S	VM	66243451690	20000	10	+++
W***	13x40	3x40	86A	90	P	VS	66253055131	20000	10	+++
W194	16x16	6x40	39C	80	S	VM	66253480916	35000	10	+++

GRAIN COLOUR CODE

86A
 37C
 38A
 39C

SHAPE	DIM DxT (mm)	SPINDLE SxL (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
W195	16x20	3x40	 86A	60	O	VS	66253055091	47000	10	+++
W195	16x20	6x40	 39C	80	S	VM	66253480914	32000	10	+++
W195	16x20	6x40	 38A	90	S	VM	69936623840	47000	10	+++
W196	16x25	6x40	 86A	46	M	VBEM	69210449262	35000	20	+++
W196	16x25	6x40	 86A	90	O	VS	66253054973	35000	10	+++
W197	16x50	6x40	 38A	46	S	VM	69936631541	18000	10	+++
W204	20x20	6x40	 38A	36	T	VM	69936626238	42000	10	+++
W204	20x20	6x40	 38A	60	R	VM	69936623841	42000	10	+++
W204	20x20	6x40	 86A	60	O	VS	66253055134	42000	10	+++
W204	20x20	6x40	 39C	80	S	VM	66253480910	30000	10	+++
W205	20x25	6x40	 86A	36	O	VS	66253054948	32000	10	+++
W205	20x25	6x40	 86A	46	P	VM	66243538896	32000	-	+++
W205	20x25	6x40	 86A	60	O	VS	66253055135	32000	10	+++
W205	20x25	6x40	 39C	80	S	VM	66253480912	25000	10	+++
W206	20x30	6x40	 86A	60	O	VS	66253055013	30000	10	+++
W208	20x50	6x40	 39C	36	S	VM	66253478622	35000	10	+++
W220	25x25	6x40	 38A	36	T	V	69936643936	25000	10	+++
W220	25x25	6x40	 86A	36	O	VS	66253055231	25000	10	+++
W220	25x25	6x40	 86A	60	O	VS	66253055136	25000	10	+++
W220	25x25	6x40	 38A	60	R	VM	69936623845	25000	10	+++
W221	25x40	6x40	 86A	36	O	VS	66253055016	19000	10	+++
W230	30x30	6x40	 86A	36	O	VS	66253055221	17000	10	+++
W230	30x30	6x40	 38A	36	T	VM	69936635225	17000	10	+++
W230	30x30	6x40	 38A	60	R	VM	69936623849	17000	10	+++
W230	30x30	6x40	 86A	60	O	VS	66253055138	17000	10	+++
W231	32x40	6x40	 39C	36	R	VM	66253479390	13000	10	+++
W232	30x50	6x40	 86A	60	O	VS	66253055300	11000	10	+++
W236	40x12	6x40	 38A	46	S	VM	69936637876	25000	10	+++
W236	40x12	6x40	 86A	60	O	VS	66253055304	25000	10	+++
W238	40x40	6x40	 86A	36	P	VS	66253055019	12000	10	+++
W238	40x40	6x40	 39C	46	S	VM	66253481165	12000	10	+++
W238	40x40	6x40	 38A	60	R	VM	69936623850	12000	10	+++
W238	40x40	6x40	 86A	60	O	VS	66253055065	12000	10	+++
W237	40x20	6x40	 39C	80	S	VM	66253481164	17000	10	+++
KIT	6mm SPDL		 86A	36	O	VS	69078667184	-	-	+++
KIT	3mm SPDL		 86A	36	O	VS	69078667188	-	-	+++

NORTON 86A MOUNTED POINTS KIT

- Vitrified pink aluminium oxide with good cutting performance and long profile holding
- Contains 10 of the most common shapes and sizes



KIT CONTENTS - 3mm SPINDLE

SHAPE	DIM DxT (mm)	GRIT SIZE	GRADE	BOND	ART NO.	KIT ART NO.
B42M	13x20	60	P	VBEM	61463634024	69078667188
B52M	10x20	60	P	VBEM	61463634025	
B97M	4x10	60	P	VBEM	61463634027	
B131M	13x13	60	P	VBEM	61463634029	
B122M	10xBALL	60	P	VBEM	61463634030	
W154M	5x13	60	P	VBEM	61463634031	
W164M	6x20	60	P	VBEM	61463634039	
W185M	13x13	60	P	VBEM	61463634040	
W215M	25x3	60	P	VBEM	66253472364	
W163M	6x13	80	H	BF3	61463691062	

KIT CONTENTS - 6mm SPINDLE

SHAPE	DIM DxT (mm)	GRIT SIZE	GRADE	BOND	ART NO.	KIT ART NO.
A1	20x65	60	P	VBEM	61463634041	69078667184
A5M	20x28	60	P	VBEM	61463634042	
A11M	22x45	60	P	VBEM	61463634049	
A23M	20x25	60	P	VBEM	61463634050	
A21M	25x25	60	P	VBEM	61463634051	
A26M	16xBALL	60	P	VBEM	61463634052	
A36M	40x10	60	P	VBEM	61463634058	
A39M	20x20	60	P	VBEM	61463634059	
W218M	25x13	60	P	VBEM	61463634061	
W220M	25x25	80	H	BF3	61463691058	





ORGANIC MOUNTED POINTS

Produced specifically for demanding applications, Norton organic mounted points work harder for you. With stock removal that's twice as fast and product life that's up to four times longer than their conventional aluminium oxide counterparts, organic mounted points increase productivity and clean more parts in less time, reducing your overall process cost.



NZ ORGANIC ++++

Zirconia alumina self-sharpening abrasive and durable organic bond

- Up to 4x faster stock removal than aluminium oxide products for heavy duty operations
- Stable under high cutting pressure
- Designed for large scale removal
- Super long cutting action / long lasting



Use "A" shapes for medium to heavy duty blending.
Use "W" shapes for off hand and precision grinding of medium to heavy stock.



A ORGANIC ++++

Brown aluminium oxide, tougher than pure white aluminium oxide abrasive

- Good cutting performance on medium to soft steels
- Suitable for carbon steel, HSS and alloyed steel

BONDED ABRASIVES MOUNTED POINTS & WHEELS

GRAIN COLOUR CODE

■ NZ ■ A

SHAPE	DIM DxT (mm)	SPINDLE DxT (mm)	ABRASIVE TYPE	GRIT SIZE	GRADE	BOND	ART NO.	MOS (RPM)	PK QTY	QUALITY TIER
A1	20x65	6x40	■ NZ	24	U	BXR1	61463689077	15000	10	++++
A3	22x70	6x40	■ NZ	24	U	BXR1	61463689079	14000	10	++++
A5	20x28	6x40	■ NZ	24	U	BXR1	61463689081	30000	10	++++
A11	21x45	6x40	■ NZ	24	U	BXR1	61463689082	18000	10	++++
W177	10x20	6x40	■ NZ	24	U	BXR1	61463689084	66000	10	++++
W178	10x25	6x40	■ NZ	24	U	BXR1	61463689085	55200	10	++++
W188	13x40	6x40	■ A	36	Q	B	66253053225	30370	20	+++
W188	13x40	6x40	■ NZ	24	U	BXR1	61463689090	30370	10	++++
W189	13x50	6x40	■ NZ	24	U	BXR1	61463689089	30370	10	++++
W204	20x20	6x40	■ NZ	24	U	BXR1	61463689091	42750	10	++++
W205	20x25	6x40	■ NZ	24	U	BXR1	61463689093	34500	10	++++
W207	20x40	6x40	■ NZ	24	U	BXR1	61463689095	24000	10	++++
W220	25x25	6x40	■ A	46	Q	B	66253053237	25500	20	+++
W220	25x25	6x40	■ NZ	24	U	BXR1	61463689097	25500	10	++++
W221	25x40	6x40	■ A	46	Q	B	66253053243	19120	20	+++
W230	30x30	6x40	■ A	36	Q	B	66253053250	24000	20	+++
W230	30x30	6x40	■ NZ	24	U	BXR1	61463689099	24000	10	++++
W236	40x13	6x40	■ A	46	Q	B	66253053251	25130	20	+++
W236	40x12	6x40	■ NZ	24	U	BXR1	61463689100	25130	10	++++
KIT	6mm METRIC	NZ	■ NZ	24	U	BXR1	66253145961	-	-	+++++



The Norton logo is displayed in white, italicized, sans-serif capital letters within a blue parallelogram. A small registered trademark symbol (®) is located to the right of the logo.

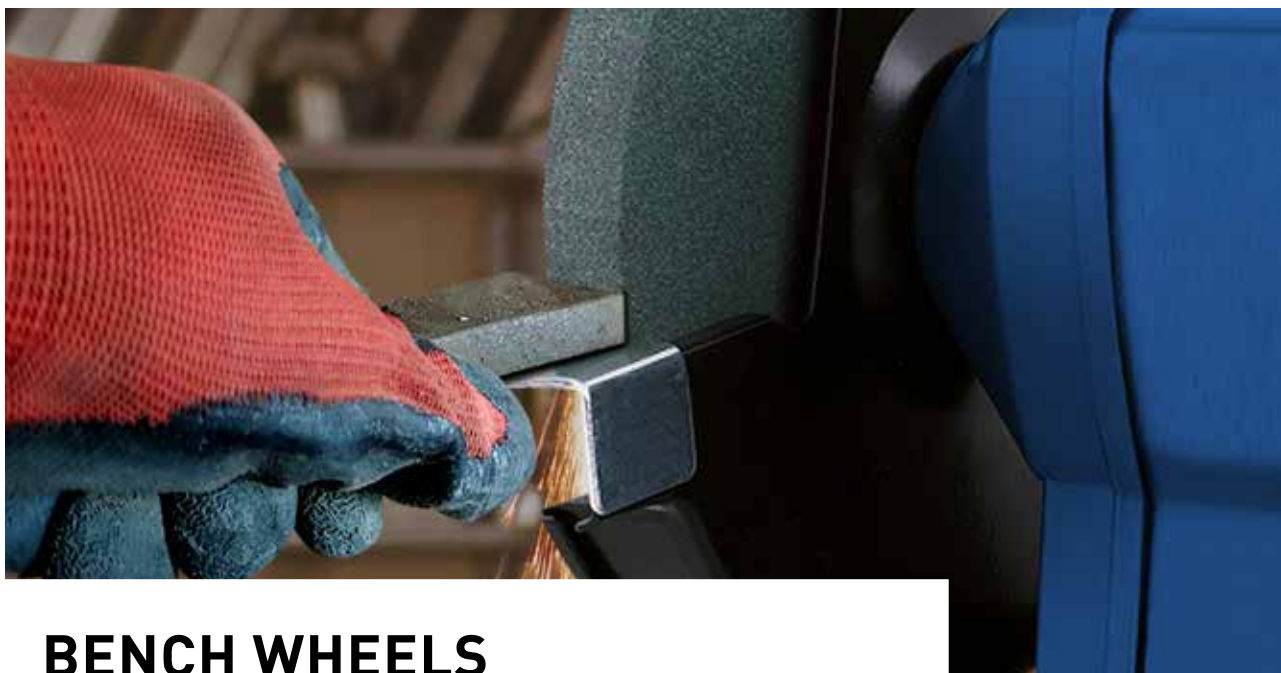
NORTON®

SAINT-GOBAIN

BONDED
ABRASIVES

BENCH WHEELS

Why choose Norton Starline	242
Bench wheel recommendation guide	243
The Starline range	244
Hand dressers	246



BENCH WHEELS FOR BENCH & PEDESTAL MACHINES

Bench and pedestal wheels are commonly used in tool rooms for all metal removal, deburring, shaping and sharpening applications in the maintenance and repair industry. Norton offers a simple, easily identifiable range of wheels for use on bench and pedestal grinders and on all metal types.

WHY CHOOSE NORTON STARLINE

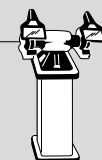
Starline offers a good quality range with a wide range of sizes at a competitive price.

STARLINE IS AVAILABLE IN THREE GRAIN TYPES

MACHINES USED:



BENCH
GRINDER



PEDESTAL
GRINDER



BROWN ALUMINIUM OXIDE (A)



- High quality aluminium oxide with premium vitrified bond
- Precision engineered grit size and hardness for maximum cut rate, finish and wheel life.



WHITE ALUMINIUM OXIDE (38A)



- White aluminium oxide with premium vitrified bond
- Precision engineered grit size and hardness for maximum cut rate and cool grinding action on hardened or high-speed tool steels.



GREEN SILICON CARBIDE (39C)



- Sharp green silicon carbide
- Precision engineered grit size and hardness for high cut range and finish on non-ferrous metals.

BENCH WHEEL RECOMMENDATION GUIDE

Use the application guide below to identify the right abrasive for the metal type and removal rate.

	COARSER (GRINDING)				FINER (FINISHING)	
	36	46	60	80	120	
High Stock Removal						
Medium Stock Removal						
Light Stock Removal						
Deburring / Shaping						
Sharpening						
Metal	Brown Aluminium oxide					
High Speed Tool Steels		White Aluminium oxide				
Non-Ferrous Metals & Carbide Tooling		Green Silicon carbide				

STARLINE RANGE AVAILABILITY

SIZE RANGE: 125 - 350mm **GRIT RANGE:** 36 - 120

All wheels with a 32mm bore are supplied with reduction rings 32/20mm to adapt the product to different spindle sizes.



- For wheels diameter 200mm and smaller.
- Before using the wheel for the first time, the face of the wheel needs to be 'opened' using a used wheel of a dressing stick
- All bench and pedestal wheels must be dressed to prevent loading. Loading can cause excessive heat, damage to the workpiece, and wheel breakage. Dressing exposes new cutting edges and provides chip clearance.

- Do not grind wood, plastic or any other non-metallic material on a bench or pedestal grinder
- Unsecured machines can move, causing grinding breakage and injury. Fixed-based bench and pedestal grinders **MUST** be secured

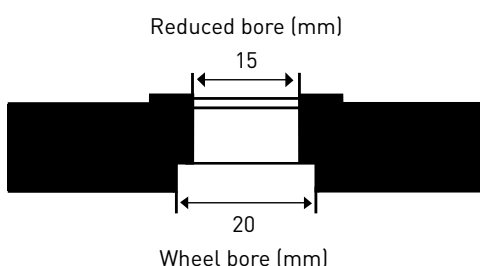


It is the user's responsibility to refer to and comply with ANSI B7.1

REDUCTION RINGS

Plastic reduction rings may be used to adapt grinding wheels to fit on various spindle sizes. These rings reduce the bore hole size, allowing the wheel to be safely mounted on a spindle with a smaller diameter.

- Reduction rings should never come in contact with the flange
- Reduction rings should not be used on wheels of thicknesses less than 6mm, nor greater than 50mm
- Always use one reduction ring on each side of the wheel when the wheel is thick enough to allow correct seating
- Never use reduction rings to reduce the hole below the minimum specified in the FEPA safety code.



WHEEL BORE (mm)	REDUCED TO (mm)	ART NO.
50,8	35	7660704766
32	25	7660717540
32	20	7660717538
31,75	15,88	7660704757
31,75	12,7	7660704755
20	16	7660717530
20	15	7660717529
20	13	7660717527
20	12	7660717525
20	10	7660717524
16	6	510008919

BONDED ABRASIVES BENCH WHEELS

STARLINE

- High quality brown aluminium oxide (A) bonded with premium vitrified bond for a good metal removal rate.
- Precision engineered grit sizes and hardness for maximum cut rate, finish and wheel life.
- Sharp green silicon carbide (39C) is precision engineered for high cut range and finish on non-ferrous metals.

GRAIN COLOUR CODE



MACHINE TYPE	DIM DxDxH (mm)	ABRASIVE TYPE	GRIT	GRADE	BOND	MOS (m/s)	ART NO.	PK QTY
BENCH / PEDESTAL WHEELS	125x20x32	 A	46	N	VS	45	66253289859	1
		 A	60	N	VS	45	66253289860	1
		 38A	46	N	VS	45	66253289920	1
		 38A	60	N	VS	45	66253338189	1
		 39C	60	K	VS	45	66253338039	1
		 39C	80	K	VS	45	66253338040	1
	150x20x31.75	 A	46	N	VS	45	61463626365	1
		 A	60	N	VS	45	61463626363	1
		 39C	60	K	VS	45	61463626364	1
		 39C	80	K	VS	45	61463626163	1
	150x20x32	 A	36	O	VS	45	66253338141	1
		 A	46	N	VS	45	66253289863	1
		 A	60	N	VS	45	66253290208	1
		 38A	60	N	VS	45	66253338090	1
		 39C	60	K	VS	45	66253338041	1
		 39C	80	K	VS	45	66253338042	1
		 39C	120	K	VS	45	66253338191	1
	150x25x32	 A	60	N	VS	45	66253290209	1
		 38A	60	N	VS	45	66253338092	1
		 39C	60	K	VS	45	66253338044	1
	180x20x31.75	 A	60	N	VS	45	61463637178	1
		 39C	60	K	VS	45	61463626389	1
	180x20x32	 A	46	N	VS	45	66253338021	1
		 A	60	N	VS	45	66253338022	1
		 38A	46	N	VS	45	66253338093	1
		 38A	60	N	VS	45	66253338094	1
		 39C	60	K	VS	45	66253338045	1
		 39C	80	K	VS	45	66253338050	1
		 39C	120	K	VS	45	66253338184	1
	200x20x31.75	 A	46	N	VS	45	69083111873	1
		 A	60	N	VS	45	61463626369	1
		 39C	60	K	VS	45	61463626366	1
		 39C	80	K	VS	45	61463626362	1
	200x20x32	 A	36	O	VS	45	66253338192	1
		 A	46	N	VS	45	66253338023	1
		 A	60	N	VS	45	66253338024	1
		 38A	46	N	VS	45	66253338096	1
		 38A	60	N	VS	45	66253338099	1
		 39C	46	K	VS	45	66253338051	1
		 39C	60	K	VS	45	66253338052	1
		 39C	80	K	VS	45	66253338053	1
		 39C	120	K	VS	45	66253338185	1

MACHINE TYPE	DIM DxDxH (mm)	ABRASIVE TYPE	GRIT	GRADE	BOND	MOS (m/s)	ART NO.	PK QTY
BENCH / PEDESTAL WHEELS	200x25x31.75	 A	46	N	VS	45	66253386224	1
		 A	60	N	VS	45	66253386226	1
		 A	60	N	VS	45	69083111867	1
		 39C	60	K	VS	45	61463626370	1
		 39C	80	K	VS	45	69083113038	1
		 39C	100	K	VS	45	61463626372	1
	200x25x32	 A	36	O	VS	45	66253338025	1
		 A	46	N	VS	45	66253338026	1
		 A	46	N	VS	45	69083111874	1
		 A	60	N	VS	45	66253195830	1
		 38A	46	N	VS	45	66253338142	1
		 38A	60	N	VS	45	66253338065	1
		 38A	80	N	VS	45	66253338066	1
		 39C	46	K	VS	45	66253338054	1
		 39C	60	K	VS	45	66253338055	1
		 39C	80	K	VS	45	66253338056	1
	250x25x31.75	 A	46	N	VS	45	61463637179	1
		 A	60	N	VS	45	66253386231	1
		 A	60	N	VS	45	69083111877	1
		 39C	60	K	VS	45	69083112183	1
		 39C	60	K	VS	45	61463626373	1
		 39C	80	K	VS	45	69083112184	1
	250x32x32	 A	36	O	VS	45	66253289887	1
		 A	60	N	VS	45	66253338027	1
		 38A	46	N	VS	45	66253338067	1
		 38A	60	N	VS	45	66253338068	1
		 39C	46	K	VS	45	66253338057	1
		 39C	60	K	VS	45	66253338059	1
		 39C	80	K	VS	45	66253338060	1
		 39C	60	K	VS	45	61463626374	1
	300x25x127	 39C	60	K	VS	45	61463626374	1
	300x32x127	 A	60	N	VS	45	66253338188	1
		 38A	46	N	VS	45	66253338070	1
	300x32x32	 A	36	O	VS	45	66253289888	1
		 A	46	N	VS	45	66253338029	1
		 38A	46	N	VS	45	66253381592	1
		 38A	60	N	VS	45	66253338069	1
		 39C	60	K	VS	45	66253338074	1
		 39C	80	K	VS	45	66253338075	1
	300x40x127	 A	36	O	VS	45	66253338031	1
		 A	46	N	VS	45	66253289892	1
		 A	60	N	VS	45	66253338032	1
		 39C	60	K	VS	45	66253338077	1
		 39C	60	K	VS	45	66253338077	1
		 39C	60	K	VS	45	69083112186	1
		 39C	80	K	VS	45	69083112185	1
	300x40x31.75	 A	36	O	VS	45	66253386235	1
		 A	46	N	VS	45	69083117124	1
		 A	60	N	VS	45	69083117125	1

BONDED ABRASIVES BENCH WHEELS

MACHINE TYPE	DIM DxDxH (mm)	ABRASIVE TYPE	GRIT	GRADE	BOND	MOS (m/s)	ART NO.	PK QTY
	350x50x127	 A	36	O	VS	45	66253338102	1
		 A	46	N	VS	45	66253338037	1
		 A	60	N	VS	45	66253338038	1
		 38A	46	N	VS	45	66253338072	1
		 38A	60	N	VS	45	66253338073	1
		 39C	46	K	VS	45	66253338079	1
		 39C	60	K	VS	45	66253338080	1
		 39C	80	K	VS	45	61463626361	1



Before using the wheel for the first time, the face of the wheel needs to be 'opened' using a used wheel of a dressing stick.

HAND DRESSER



- High diamond concentration
- Grit 18/25 SPC
- High wear resistance and long product lifetime
- Suitable for face and side dressing



SPECIFICATION	PK QTY	ART NO.
HD-150	1	60157682852

The Norton logo is displayed in white, italicized, sans-serif capital letters within a blue parallelogram. A small registered trademark symbol (®) is located to the right of the logo.

NORTON®

SAINT-GOBAIN

BONDED
ABRASIVES

PRECISION GRINDING

Straight wheels	255
Straight & tapered cups	271
Dishes	274
Cylinders	275
Segments	276

PRECISION GRINDING APPLICATIONS

Thanks to Norton's technical expertise, bond and abrasive grain formulations are optimised to best suit the technical request of all precision operations. Our vitrified wheels are available in a variety of shapes, diameters and arbor

sizes available from stock or on request. They are intended to maximise your productivity by improving your grinding efficiency and part quality in surface, tool and cutter, ID and cylindrical grinding as well as sharpening applications.



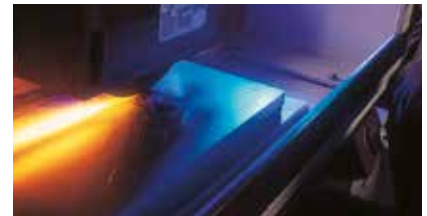
TOOL GRINDING

Tool grinding refers to the maintenance and repair of the cutting tools used in manufacturing operations. Wheels of all sizes and shapes are used in tool and cutter applications. Most wheels used are vitrified, in grit sizes 36 to 220, and in grades H through to N.



SAW SHARPENING

Saw sharpening refers to the maintenance and repair of saw blades. Vitrified flat wheels and cups are used in grit sizes 54 to 60. Resin treatment reinforces the wheel and helps reduce wheel face deformation.



SURFACE GRINDING

The term surface grinding is used to describe the grinding of flat surfaces in which the wheel moves past the workpiece in a flat plane, or vice versa. Surface grinding applications range can vary from heavy rapid stock removal, to precision contour grinding.



EXTERNAL CYLINDRICAL GRINDING

Norton's leading technology, provides you with the best precision, form holding vitrified wheels to maximise productivity, increase grinding efficiency and improve part quality in all your external cylindrical grinding operations.



INTERNAL CYLINDRICAL GRINDING

Internal grinding refers to the grinding of bores or holes and is probably one of the most difficult types of grinding. Internal grinding applications range from very rapid stock removal to more controlled processes capable of generating sizes and concentricity measured in microns.



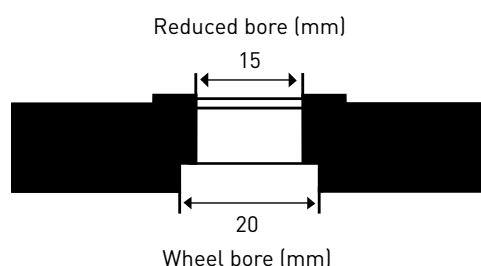
BENCH AND PEDESTAL GRINDING

Bench and pedestal grinding application refers to off-hand deburring and sharpening of parts and tools. The wheels are mounted on bench grinders or pedestal grinders and covers three types of abrasives to answer all deburring, shaping and sharpening needs: aluminium oxide for high speed tool steels and other metals, and silicon carbide for non-ferrous metals.

REDUCTION RINGS

Plastic reduction rings may be used to adapt grinding wheels to fit on various spindle sizes. These rings reduce the bore hole size, allowing the wheel to be safely mounted on a spindle with a smaller diameter.

- Reduction rings should never come in contact with the flange
- Reduction rings should not be used on wheels of thicknesses less than 6mm, nor greater than 50mm
- Always use one reduction ring on each side of the wheel when the wheel is thick enough to allow correct seating
- Never use reduction rings to reduce the hole below the minimum specified in the FEPA safety code



WHEEL BORE (mm)	REDUCED TO (mm)	ART NO.
50,8	35	7660704766
32	25	7660717540
32	20	7660717538
31,75	15,88	7660704757
31,75	12,7	7660704755
20	16	7660717530
20	15	7660717529
20	13	7660717527
20	12	7660717525
20	10	7660717524
16	6	510008919

HOW TO READ THE GRINDING WHEEL SECTION

1. SELECT YOUR DIMENSION

20 x 20 x 6,35mm

SHAPE 01  SHAPE 05  SHAPE 07  SHAPE 20  SHAPE 01C 

Recess/Inner concave Diameter
Recess/Concave Depth A
Recess/Concave Depth B

Tools
Saw Sharpening
Bench Wheels
Internal Diameter
External Diameter
Surface

High alloyed steels & HSS
Soft steels
Inox
Non-Ferrous & Carbide
Cast Iron

GRAIN COLOUR CODE

5NQ GF 25A
3NQ 38A Vit³ 19A
2NQ 38A A
NQ Vit³ B6A 39C
SG 32A 37C

DIM D x H (mm)	SHAPE	P	FA	FB	Deburring & Sharpening	Grinding	Materials	SPECIFICATION	MOS (m/s)	ART NO.	PRICE	PK QTY	QUALITY TIER
20x20x6,35	5	10	10	-	●	●	●	5NQ 60 K VQV 45	66253244884	66253244884	10	++++	
	5	10	10	-	●	●	●	5GB 60 J VS3 63	66253355181	66253355181	10	++++	
	1	-	-	-	●	●	●	5GB 60 JB VS3 63	66253355179	66253355179	10	++++	
	5	10	10	-	●	●	●	38A 60 L VS 35	69936621542	69936621542	10	+++	
25x25x6,35	5	13	12	-	●	●	●	5NQ 80 I VQV 45	66253244885	66253244885	10	++++	
	5	13	12	-	●	●	●	5GB 60 J VS3 63	66253355182	66253355182	10	++++	
	5	13	12	-	●	●	●	38A 60 K VS3 45	66253348349	66253348349	10	++++	
25x25x8	5	13	12	-	●	●	●	5NQ 60 K VS3 35	66253348317	66253348317	10	++++	
	5	13	10	-	●	●	●	5NQ 80 J VQV 45	66253244887	66253244887	10	++++	
	5	13	12	-	●	●	●	35G 80 L VS 35	69936639647	69936639647	10	++++	
	5	13	10	-	●	●	●	5GB 60 K VK 45	69936681795	69936681795	10	++++	
32x25x8	5	13	10	-	●	●	●	5NQ 60 J VQV 45	66253244888	66253244888	10	++++	
	5	16	16	-	●	●	●	35G 60 K VS 35	69936639439	69936639439	10	++++	
32x32x9,53	5	16	16	-	●	●	●	5NQ 80 I VQV 45	66253244898	66253244898	10	++++	
	5	16	16	-	●	●	●	5GB 60 JB VS3 63	66253355183	66253355183	10	++++	
32x32x10	5	16	16	-	●	●	●	35G 60 K VS 35	69936639605	69936639605	10	++++	
	5	16	16	-	●	●	●	5GB 60 J VK 45	69936676291	69936676291	10	++++	
	5	16	16	-	●	●	●	38A 60 L VS 45	69936675118	69936675118	10	+++	
40x25x9,53	5	20	12	-	●	●	●	5NQ 60 K VQV 45	66253244889	66253244889	10	++++	

BONDED ABRASIVES

2. CHOOSE YOUR APPLICATION

DEBURRING & SHARPENING

- Tools
- Saw sharpening
- Bench grinding

GRINDING

- Internal
- External
- Surface

3. IDENTIFY SURFACE TYPE / MATERIAL

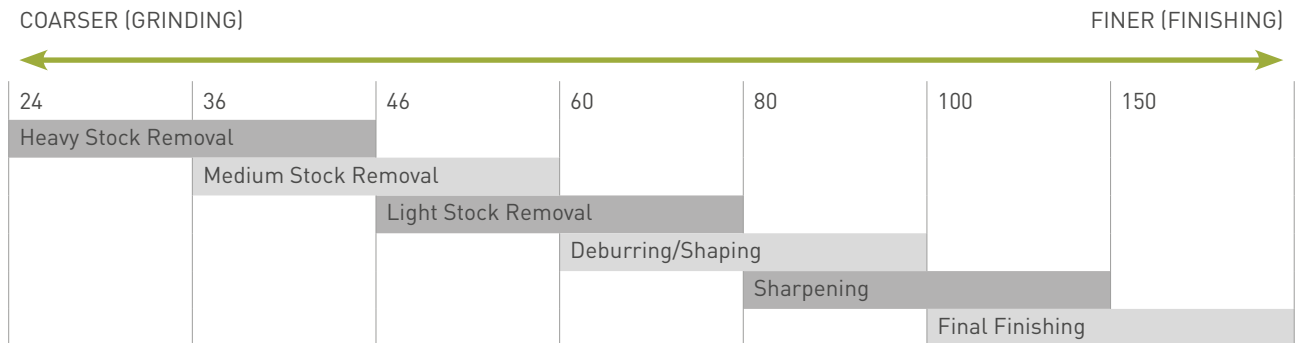
- High alloyed steels & HSS
- Soft steels
- Non-ferrous & carbide
- Cast Iron



ARTICLE IDENTIFIED

Please contact your Norton representative if you need assistance or advice.

APPLICATION/GRIT RECOMMENDATION GUIDE



- Unsecured machines can move, causing grinding breakage and injury. Fixed-based bench and pedestal grinders **MUST** be secured.
- Do not grind wood, plastic, or any other non-metallic material on a bench or pedestal grinder.
- All bench and pedestal wheels must be dressed to prevent loading. Loading can cause excessive heat, damage to the workpiece, and wheel breakage. Dressing exposes new cutting edges and provides chip clearance.
- Recommended starting dressing stick: 1" x 1" x 6" 37C24-SVK Part # 61463610462



WHEEL DRESSING

Single Point Diamond Tools

- Rigidly mount Single Point tools at a 10°-15° angle to the wheel centerline with a line drawn through the centre of the wheel, pointing in the direction of wheel travel
- Point of contact should be slightly below centreline of wheel
- Use coolant whenever possible
- Normal infeed is .001" per pass
- Lead selections range from .002" - .010" per wheel revolution
- Rotate the tool 1/4 turn periodically to maintain a sharp point
- Use VBE, V, VS, VK bonds for general purpose applications or medium contact areas
- Use VBEP, VSP, VS3P, VCP, VP2 bonds on wide contact areas where heat is an issue



It is the user's responsibility to refer to and comply with ANSI B7.1

Multi-Point Diamond Tools

- Most multi-point tools are used for straight face dressing
- Tool should have full face contact with the wheel
- With new tool, 3 to 5 passes at .005" per pass should be taken to expose diamonds
- Infeed per pass .001" - .002"
- Use coolant whenever possible
- Use appropriate lead (and traverse rate)
- Contact your Norton representative for proper tool selection for Targa (TG) wheels

Dressing Ceramic Wheels

- Use our specially designed Norton SG diamond tools when dressing ceramic wheels
- When first using a Norton SG tool, make 3 to 5 passes at .005" infeed to ensure full face contact between the dressing tool and wheel face
- Reduce normal dressing infeed by half. Do not exceed infeed of .002" per pass
- The lead selection should be between .006" - .030" per wheel revolution. Faster traverse with Norton SG tools generally provides an open wheel face that can maximise productivity of the ceramic abrasive
- To optimise applications using ceramic abrasives and/or tools, normal dressing parameters must change. Reduce infeed by 25%. Significant reductions in the amount of infeed and frequency of dress will result in substantially lower cost per part ground
- See the Fliesen Tool section for Furioso tools, engineered specifically for Quantum vitrified wheel dressing

TROUBLESHOOTING GUIDE

Check the obvious first. Before changing the grinding wheel specification, investigate the following most common causes for most grinding problems:

1. Diamond dressing tool condition (check if worn or dull, rotate tool or replace if necessary)
2. Coolant direction, volume and filtration
3. Wheel dressing procedures (dress more open to free up cut rate, dress more closed to improve finish)

PROBLEM	POSSIBLE CAUSE	CORRECTION
Workpiece burn	Poor coolant direction	Redirect coolant into grinding zone
	Restricted or low coolant volume	Increase coolant volume
	Wheel too hard	Use one grade softer wheel
	Wheel structure too closed	Use porous bond wheel
	Wheel dressed too fine	Dress wheel coarser, more "open"
	Worn dressing tool	Inspect, rotate or replace dressing tool
	Work speed too slow	Increase work speed
	Infeed too fast	Reduce stock removed per pass or upgrade to 5SG or 5NQ
Wheel loading and glazing	Wheel too fine	Use coarser grit or softer grade wheel
	Wheel too hard	Use one grade softer wheel
	Too durable abrasive	Use a sharper, more friable abrasive
	Poor coolant quality	Change coolant or use high detergent type
	Wheel structure too closed	Use a porous bond wheel
	Wheel too finely dressed	Dress wheel very open
	Diamond dressing tool worn	Replace diamond and dress coarse (open)
	Depth of cut too small	Increase feed and traverse speed
Chatter	Unsupported work	Increase work support
	Machine vibration	Check for worn bearings
	Too heavy cut rate	Reduce cut rate
	Wheel too hard	Use one grade softer wheel
	Wheel structure too closed	Use a porous bond wheel
	Wheel out of balance	Check wheel balance or try new wheel
Chatter marks on workpiece	Worn spindle bearings	Check and correct for truth and end play
	Wheel out of truth	Redress wheel and check mounting
	Poorly clamped wheel	Check tightness of mounting nuts
	Glazed face of wheel	Redress wheel with sharp dressing tool
Poor surface finish	Incorrect wheel dress	Dress wheel finer (slow down dressing tool traverse)
	Worn dressing tool	Inspect, rotate, or replace dressing tool
	Too coarse grit size	Use a finer grit size
	Wheel too hard	Use softer grade
Not holding form	Wheel too soft	Use one grade harder wheel
	Wheel structure too open	Use a more closed wheel structure
Not holding corner	Incorrect wheel dress	Dress wheel finer. Face and side true wheel.
	Too large grit size	Use smaller grit size (maximum grit diameter less than 1,5 times corner radius)
	Wheel too soft	Use harder grade wheel
	Wheel structure too open	Use more closed structure wheel



NQ VS3

Engineered microcrystalline ceramic grain combined with our latest innovative bond

- A perfect blend of sharp grains for the ultimate free cutting action
- Enhanced bond adhesion and chemistry for a cooler cut and high speed material removal
- Unique, microcrystalline structure is self-sharpening for long product life
- High profile accuracy and reduced dressing frequency



NQ

+++++

Engineered microcrystalline ceramic grain

- A perfect blend of sharp grains for the ultimate free cutting action
- Unique, microcrystalline structure is self-sharpening for long product life
- Can be used in all low, medium and high force applications
- Reduces the need for dressing

SG VS3

+++++

An excellent ceramic grain with the latest bond innovation

- High concentration of SG ceramic aluminium oxide abrasive combined with our Vitrium³ enhanced bond adhesion and chemistry
- Unique, microcrystalline structure is self-sharpening for long product life
- Ultimate cutting capability
- High material removal rate whilst maintaining a high profile accuracy for reduced dressing

3SG / 5SG

+++++

Traditional ceramic microstructure grain

- Very high concentration of SG ceramic aluminium oxide abrasive for high removal rate and extended wheel life
- Unique, microcrystalline structure is self-sharpening for long product life
- Very good cutting capabilities on very hard steels
- Perfect for technical applications where grinding parameters can be adjusted to optimise performance



SGA / SGB



A blend with a low concentration of ceramic grain for good performance in a number of applications

- Harder and sharper than conventional abrasive grains for good cutting capabilities
- Very versatile for use on a number of steels
- Suitable for low to medium power machines



38A VS3



The latest bond innovation with conventional alumina grain

- High purity aluminium oxide abrasive for cool and burn free cutting
- Highly friable abrasive, versatile on hard metals (HRC >50)
- Ideal for heat sensitive applications with light to moderate feed rates
- Improved profile accuracy and wheel life



GF



A low concentration of ceramic grain with durable aluminium oxide grain

- Good performance on common soft and medium steels



38A



High purity aluminium oxide abrasive

- Friable grain renews sharp cutting edges for good product life
- Good cut rate and reduced heat generation on hardened or high-speed tool steels
- Ideal for heat-sensitive applications ideally in low/medium pressure applications
- Ideal for use on all steel hardnesses



19A



A blend of brown and white aluminium oxides for good price vs. performance ratio

- Combines cutting efficiency and wheel life
- Very versatile, can be used on a wide variety of steels
- Good yield, good removal rate
- Good balance between cut rate and form holding ability



32A



Semi-friable brown aluminium oxide

- Tough grain maintains sharp edges for good wheel life
- Good profile holding reduces dressing needs
- For use on the most common soft/medium steels

BONDED ABRASIVES FOR PRECISION GRINDING



A



Brown aluminium oxide

- For soft steel removal, shaping and deburring
- Very tough, suitable for grinding most types of soft steels
- Good wheel life and hard wearing for general purpose cylindrical off-hand bench and pedestal grinding applications
- Good price vs. performance ratio



39C



Highest purity green silicon carbide abrasive

- The most friable conventional abrasive grain. Harder and more friable than aluminium oxide abrasive
- For all general purpose bench and pedestal applications on non-ferrous materials and carbide tools
- Ideal for high precision grinding and sharpening applications
- Good cut rate and finish on metal carbide and non-ferrous hard or heat sensitive materials



37C



High purity black silicon carbide abrasive

- Harder and more friable than aluminium oxide abrasive
- Suitable for roughing operations in coarse grit and resinoid wheels
- Ideal for grinding and sharpening applications on non-ferrous metals





STRAIGHT WHEELS FOR PRECISION GRINDING

SHAPE 01 SHAPE 05 SHAPE 07 SHAPE 20 SHAPE 01C

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM DxDxH (mm)	SHAPE	P	FA	FB	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
10x10x3,18	01	-	-	-							●	○				SGB	60	J	VS3	63	66253355175	10	+++++
13x13x4	01	-	-	-							●	○	○			5NQ	80	K	VS3	35	66253348357	10	+++++
13x13x4,76	01	-	-	-							●	○				SGB	60	J	VS3	63	66253355176	10	+++++
	05	6	6	-							●	○				SGB	60	J	VS3	63	66253355177	10	+++++
16x16x6	05	10	8	-							●	○	○			5NQ	60	K8	VS3	35	66253348333	10	+++++
	01	-	-	-							●	○	○			5NQ	80	J	VQN	45	66253244881	10	+++++
	01	-	-	-							●	○	○			3NQ	60	K	VS3	35	66253348360	10	+++++
	01	-	-	-							●	○	○			3NQ	60	L	VQN	45	66253261880	10	+++++
20x20x6	05	13	10	-							●	○	○			5NQ	80	J	VQN	45	66253244883	10	+++++
	05	13	10	-							●	○	○			5NQ	60	K	VS3	35	66253348335	10	+++++
	01	-	-	-							●	○	○			3NQ	60	L	VQN	45	66253261903	10	+++++
	05	13	10	-							●	○				SGB	60	K	VX	45	69936681793	10	+++++
	01	13	10	-							○	●				38A	60	K	VS3	45	66253348355	10	+++++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01  SHAPE 05  SHAPE 07  SHAPE 20  SHAPE 01C 

GRAIN COLOUR CODE

 5NQ	 GF	 25A
 3NQ	 38A Vit³	 19A
 2NQ	 38A	 A
 NQ Vit³	 86A	 39C
 SG	 32A	 37C

																							GRAIN COLOUR CODE					
																							5NQ	GF	25A			
																							3NQ	38A Vit ³	19A			
																							2NQ	38A	A			
																							NQ Vit ³	86A	39C			
																							SG	32A	37C			

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM D×T×H (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter			Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloy Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
					Recess/Concave Depth A	Recess/Concave Depth B	Recess/Concave Depth C																			
100x10x20	1	-	-	-				●						○	●				38A	60	M	VS	35	69936640015	1	+++
100x10x32	1	-	-	-				●								●	●		39C	80	L	VS	45	66253050380	2	+++
100x13x32	1	-	-	-				●						○	●				38A	60	L	VS	45	66253050409	1	+++
100x20x32	1	-	-	-				●						○	●				38A	60	L	VS	45	66253050413	1	+++
125x6x32	1	-	-	-				●						○	●				38A	60	L	VS	45	66253050440	2	+++
125x10x32	1	-	-	-				●						○	●				38A	60	L	VS	45	69936675731	1	+++
125x13x32	1	-	-	-				●						○	○				3SG	60	J	VX	45	66253050290	2	+++++
125x16x32	1	-	-	-				●						○	●				38A	60	M	VS	45	66253050237	1	+++
	1	-	-	-				●								●	●		39C	80	L	VS	45	66253050393	2	+++
	1	-	-	-				●						○	●				38A	60	L	VS	45	69936675736	1	+++
	1	-	-	-				●						○	●				38A	60	K	VS	45	66253050620	1	+++
	1	-	-	-				●								●	●		39C	80	L	VS	45	69936667443	2	+++
	1	-	-	-					●						●				A	46	N	VS	45	69936675558	1	+++
	1	-	-	-						●					●				A	60	N	VS	45	69936666909	1	+++
150x3x30	1	-	-	-				●						○	●				38A	80	L	VS3	50	66243541074	5	+++++
150x3x32	1	-	-	-				●						○	●				38A	80	L	VS3	50	66243541080	5	+++++
150x3,2x32	1	-	-	-				●							●				19A	60	M	VS	63	69936675941	2	+++
150x4x20	1	-	-	-				●						○	●				38A	60	L	VS	45	69936675591	1	+++
	1	-	-	-				●						○	●				38A	80	N	VS	45	69936676720	1	+++
	1	-	-	-				●						○	●				38A	80	L	VS3	63	66243541077	5	+++++
	1	-	-	-				●						○	●				38A	100	M	VS	45	69936640219	1	+++
	1	-	-	-				●						○	●				38A	80	N	VS	45	69936639730	1	+++
150x4x30	1	-	-	-				●						○	●				38A	80	N	VS	45	69936639730	1	+++
	1	-	-	-				●						○	○				SGB	80	K	VS3	63	66243541066	5	+++++
	1	-	-	-				●						○	●				38A	80	L	VS3	63	66243541079	5	+++++
	1	-	-	-				●							●				19A	60	O	VS	63	69936675946	2	+++
	1	-	-	-				●							●				19A	60	M	VS	63	69936674920	2	+++
	1	-	-	-				●								●	●		39C	120	K	VS	45	66253050248	2	+++
150x6x31,75	1	-	-	-					●					○	●		○		38A	80	L	VS	35	69936621582	1	+++
150x6x32	1	-	-	-				●						○	○				3SG	60	L	VX	45	66253055040	2	+++++
	1	-	-	-				●						○	○				3SG	80	L	VX	45	66253054873	2	+++++
	1	-	-	-				●						○	○				SGB	60	K	VS3	63	66243541070	5	+++++
	1	-	-	-				●						○	○				SGB	80	K	VS3	63	66243541083	5	+++++
	1	-	-	-				●						○	●				38A	60	L	VS	35	69936675741	2	+++
	1	-	-	-				●							●				19A	60	M	VS	63	69936675964	2	+++
	1	-	-	-				●								●			39C	120	K	VS	45	69936675617	2	+++
	1	-	-	-				●						○	○				3SG	60	J	VX	45	66253055041	2	+++++
150x6x38	1	-	-	-				●						○	○				SGB	60	K	VS3	63	66243541082	5	+++++
150x8x32	1	-	-	-				●						○	●				38A	60	L	VS	45	69936675743	1	+++
	1	-	-	-				●						○	●				38A	120	J	VS	45	69936675748	1	+++
150x10x32	1	-	-	-				●						○	○				3SG	60	L	VX	45	66253050280	2	+++++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxTxH (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter	Recess/Concave Depth A	Recess/Concave Depth B	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
	1	-	-	-	●									●	●				SG	60	K	VS3	63	66243541072	5	+++++
	1	-	-	-	●									●	●				38A	46	M	VS	45	66253050261	1	+++
	1	-	-	-	●									●	●				38A	60	M	VS	45	69936641112	1	+++
	1	-	-	-	●									●	●				38A	60	L	VS	45	69936675744	1	+++
	1	-	-	-	●									●	●				38A	60	K	VS	45	66253051070	1	+++
	1	-	-	-	●									●	●				38A	80	M	VS	45	66253050373	1	+++
	1	-	-	-	●									●	●				38A	100	M	VS	45	66253050371	1	+++
	1	-	-	-	●									●	●				38A	120	J	VS	45	69936675749	1	+++
	1	-	-	-	●											●	●		39C	80	K	VS	45	66253050357	2	+++
	1	-	-	-	●											●	●		39C	120	K	VS	45	69936675629	2	+++
150x13x31,75	1	-	-	-	●				●					●	●	●			3SG	60	K	VS	50	69936622862	1	+++++
	1	-	-	-	●									●	●				38A	60	K	VS3	63	66253353664	1	+++++
	1	-	-	-	●					●						●	●		39C	60	K	VS	35	69936621564	1	+++
150x13x32	1	-	-	-	●									●	●				3SG	46	H	VX	45	66253054863	2	+++++
	1	-	-	-	●									●	●				3SG	60	L	VX	45	66253050142	2	+++++
	1	-	-	-	●									●	●				38A	46	L	VS	45	69936675754	1	+++
	1	-	-	-	●									●	●				38A	60	L	VS	35	69936675757	1	+++
	1	-	-	-	●									●	●				38A	60	N	VS	45	69936675758	1	+++
	1	-	-	-	●									●	●				38A	60	L	VS	35	69936639340	1	+++
	1	-	-	-	●									●	●				38A	80	L	VS	45	69936675759	1	+++
	1	-	-	-	●									●	●				38A	120	J	VS	45	69936675760	1	+++
150x16x32	1	-	-	-	●									●	●				3SG	60	L	VX	45	66253050367	2	+++++
	1	-	-	-	●									●	●				3SG	60	H12	VXP	45	69936677177	2	+++++
	1	-	-	-	●									●	●				38A	46	L	VS	45	69936675763	1	+++
	1	-	-	-	●									●	●				38A	60	L	VS	45	69936675764	1	+++
	1	-	-	-	●									●	●				38A	80	L	VS	45	69936675767	1	+++
	1	-	-	-	●				●							●			A	46	N	VS	45	69936675560	1	+++
	1	-	-	-	●											●	●		39C	80	L	VS	45	69936675657	2	+++
	1	-	-	-	●											●	●		39C	120	K	VS	45	69936675659	2	+++
150x20x31,75	1	-	-	-	●									●	●				38A	60	K	VS3	63	66253353966	1	+++++
	1	-	-	-					●						●				A	46	N	VS	35	69936623469	1	+++
150x20x31,75	1	-	-	-					●						●				A	60	N	VS	35	69936623470	1	+++
	1	-	-	-					●						●				A	60	N	VS	35	69936623302	1	+++
	1	-	-	-					●							●	●		39C	60	K	VS	35	69936623474	1	+++
	1	-	-	-					●							●	●		39C	100	K	VS	35	69936623221	1	+++
150x20x32	1	-	-	-	●									●	●				3SG	60	K	VX	45	66253050155	2	+++++
	1	-	-	-	●									●	●				SG	100	J	VX	45	66253049895	2	+++++
	1	-	-	-	●									●	●				38A	46	M	VS	45	66253050372	1	+++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

																							PRODUCT RECOMMENDATION			
																							Highly recommended		●	
																							Recommended		○	

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

																				GRAIN COLOUR CODE																	
																				5NQ	3NQ	2NQ	NQ Vit ³	SG	GF	38A Vit ³	38A	86A	32A	25A	19A	A	39C	37C			
																				Recess/Inner Concave Diameter	Recess/Concave Depth A	Recess/Concave Depth B	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond
DIM DxDxH (mm)	SHAPE	P	FA	FB	Deburring & Sharpening		Grinding				Materials												MOS (m/s)	ART NO.	PK QTY	QUALITY TIER											
180x13x32	1	-	-	-							●	●			●								38A	46	J	VS	35	69936623274	1	+++							
	1	-	-	-							●	●			●								38A	60	J	VS	35	69936623266	1	+++							
	1	-	-	-							●	●			●								38A	80	L	VS	35	69936623239	1	+++							
	1	-	-	-							●	●			●								38A	100	L	VS	35	69936623220	1	+++							
	1	-	-	-													●	●					39C	100	J	VS	35	69936623248	1	+++							
	1	-	-	-								●	●			●	●						3NQ	60	I	VS3	35	66253348361	2	++++							
	1	-	-	-	●							●	●		●								2NQ	46	I	VS3	45	66253348363	2	++++							
	1	-	-	-	●							●	●		●	●							3SG	80	J	VX	45	66253054892	2	++++							
	1	-	-	-	●							●	●		●	●							3SG	120	J	VX	45	66253054874	2	++++							
	1	-	-	-	●							●	●		●	●							SGB	60	J	VX	45	69936639148	2	++++							
180x16x32	1	-	-	-	●						●	●		●	●								38A	60	L	VS	45	69936675797	1	+++							
	1	-	-	-	●						●	●		●	●								38A	80	L	VS	45	69936675801	1	+++							
	1	-	-	-	●						●	●		●	●								38A	120	J	VS	45	69936675802	1	+++							
	1	-	-	-	●						●	●		●	●								3SG	60	H12	VXP	35	69936677179	1	++++							
	1	-	-	-	●						●	●		●	●								SGB	70	G12	VXP	45	69936639169	2	++++							
	1	-	-	-							●	●		●	●				●				38A	46	J	VS	35	69936675806	1	+++							
	1	-	-	-	●						●	●		●	●								38A	60	K	VS	45	66253050453	1	+++							
	1	-	-	-							●	●		●	●								3SG	46	K	VS	50	69936623242	1	++++							
180x20x31,75	5	100	6	-							●	●		●	●								3SG	60	J	VS	35	69936639808	1	++++							
	1	-	-	-							●	●		●	●								SGB	60	K	VX	50	69936623480	1	++++							
	1	-	-	-							●	●		●	●					●			38A	46	L	VS	35	69936623312	1	+++							
	1	-	-	-							●	●		●	●					●			38A	60	L	VS	35	69936623472	1	+++							
	5	100	6	-							●	●		●	●					●			38A	60	J	VS	35	69936640226	1	+++							
	1	-	-	-							●						●	●					39C	60	K	VS	35	69936623477	1	+++							
	1	-	-	-							●	●		●	●								3SG	60	H12	VXP	35	66243593654	1	++++							
	1	-	-	-	●						●	●		●	●								SGB	46	H10	VXP	45	69936638723	2	++++							
180x20x32	1	-	-	-	●						●	●		●	●								SGB	60	K	VX	45	66253049878	2	++++							
	1	-	-	-	●						●	●		●	●								SGB	60	H10	VXP	45	69936639170	2	++++							
	1	-	-	-							●	●			●								A	46	N	VS	45	69936641372	1	+++							
	1	-	-	-							●	●			●								A	60	N	VS	45	66253352810	2	+++							
	1	-	-	-	●												●	●					39C	60	K	VS	45	69936641415	2	+++							
	1	-	-	-	●												●	●					39C	80	L	VS	45	69936676582	2	+++							
	1	-	-	-	●												●	●					39C	120	K	VS	45	69936675666	2	+++							
	5	105	13	-							●	●		●	●								3SG	46	K	VS	50	69936621519	1	++++							
	5	105	13	-							●	●		●	●								3SG	60	K	VS	50	69936621570	1	++++							
180x25x31,75	5	105	13	-							●	●		●	●								SGB	46	K	VX	50	69936621605	1	++++							
	5	105	12	-	●						●	●		●	●								38A	46	K6	VS3	63	66253354036	1	++++							
	5	105	12	-	●						●	●		●	●								38A	60	K6	VS3	63	66253354035	1	++++							
	5	105	12	-							●	●		●	●								38A	46	J	VS	35	69936621529	2	+++							
	5	105	12	-							●	●		●	●								38A	46	J	VS	35	69936621529	2	+++							
	5	105	12	-							●	●		●	●								38A	46	J	VS	35	69936621529	2	+++							

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

																							PRODUCT RECOMMENDATION			
																							Highly recommended	Recommended		
																							●	◐		
																							</			

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

																							GRAIN COLOUR CODE																						
																							5NQ	3NQ	2NQ	NQ Vit ³	SG	GF	38A Vit ³	38A	86A	32A	25A	19A	A	39C	37C								
																							Recess/Inner Concave Diameter	Recess/Concave Depth A	Recess/Concave Depth B	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond					
DIM DxTxH (mm)	SHAPE	P	FA	FB	Deburring & Sharpening		Grinding				Materials						SPECIFICATION	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER																								
200x13x32	1	-	-	-	●					●	●						38A 120 I VS 35	69936641286	4	+++																									
	1	-	-	-	●					●	●						SGB 60 J VX 45	69936639160	2	++++																									
	1	-	-	-	●					●	●						SGB 120 J VX 45	69936676608	2	++++																									
	1	-	-	-	●					●	●						38A 60 L VS3 63	66253348352	1	++++																									
	1	-	-	-	●					●	●						38A 60 L VS 45	69936675823	1	+++																									
	1	-	-	-	●					●	●						38A 60 J VS 45	69936675821	1	+++																									
	1	-	-	-	●						●						19A 60 M VS 63	69936675994	6	+++																									
	1	-	-	-	●							●	●				39C 80 J VS 45	69936676152	2	+++																									
200x16x76,2	1	-	-	-	●					●	●						38A 60 L VS 45	69936675827	1	+++																									
200x20x20	1	-	-	-	●							●	●				39C 80 K VS 45	69936641417	2	+++																									
	1	-	-	-	●							●	●				39C 80 M VS 45	69936640220	2	+++																									
200x20x31,75	1	-	-	-		●				●	●	●					3SG 46 K VX 50	69936623774	1	+++++																									
	1	-	-	-		●				●	●						SGB 70 H12 VXP 50	69936623902	1	++++																									
	1	-	-	-	●					●	●						38A 46 K VS3 63	66253354039	1	++++																									
	1	-	-	-	●					●	●						38A 60 K VS3 63	66253354038	1	++++																									
	1	-	-	-		●					●						A 46 N VS 35	69936623592	1	+++																									
	1	-	-	-		●					●						A 60 N VS 35	69936623591	1	+++																									
200x20x32	1	-	-	-	●					●	●	●					3NQ 46 J VQN 45	66253261995	2	+++++																									
	1	-	-	-	●					●	●	●					2NQ 60 I8 VS3 45	66253357059	2	+++++																									
	1	-	-	-	●					●	●						3SG 60 H12 VXP 45	69936677181	2	+++++																									
	1	-	-	-	●					●	●						SGB 60 H10 VXP 45	69936639172	2	++++																									
	1	-	-	-	●					●	●						SGB 46 H VX 45	69936639171	2	++++																									
	1	-	-	-	●					●	●						SGB 60 K VX 45	66253049887	5	++++																									
	1	-	-	-	●					●	●						38A 46 N VS 45	69936641400	1	+++																									
	1	-	-	-	●					●	●						38A 46 K VS 45	66253051075	1	+++																									
	1	-	-	-	●					●	●						38A 46 H VS 45	69936675551	1	+++																									
	1	-	-	-	●					●	●						38A 60 N VS 45	69936667154	1	+++																									
	1	-	-	-		●				●	●			●			38A 60 L VS 35	69936641402	1	+++																									
	1	-	-	-	●					●	●						38A 60 K VS 45	66253051077	1	+++																									
	1	-	-	-	●					●	●						38A 80 K VS 45	66253051080	1	+++																									
	1	-	-	-		●					●						A 30 P VS 45	69936675566	1	+++																									
	1	-	-	-		●					●						A 46 N VS 45	69936641375	1	+++																									
	1	-	-	-		●					●						A 60 N VS 45	69936666929	1	+++																									
	1	-	-	-		●						●	●				39C 60 K VS 45	66253349667	2	+++																									
	1	-	-	-	●							●	●				39C 60 K VS 45	69936641418	2	+++																									
	1	-	-	-	●							●	●				39C 80 K VS 45	69936676351	2	+++																									
	1	-	-	-		●						●	●				39C 80 K VS 45	66253349681	2	+++																									
	1	-	-	-	●							●	●				39C 120 K VS 45	69936641421	2	+++																									
	1	-	-	-	●									●			37C 60 K6 VK 35	69210431674	5	+++																									
200x20x50	1	-	-	-	●					●	●						3SG 60 J VX 45	66253050362	2	+++++																									

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

																							PRODUCT RECOMMENDATION			
																							Highly recommended		●	
																							Recommended		○	

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01  SHAPE 05  SHAPE 07  SHAPE 20  SHAPE 01C 

GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxDxH (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter	Recess/Concave Depth A	Recess/Concave Depth B	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
	1	-	-	-				●							●	●			39C	80	K	VS	45	66253050276	2	+++
	1	-	-	-				●						●	●				38A	100	J	VS	45	66243570496	1	+++
	1	-	-	-				●							●	●			39C	100	J	VS	45	66253050375	2	+++
	1	-	-	-				●							●	●			39C	120	K	VS	45	69936641428	2	+++
200x25x50	5	110	10	-									●	●	●				3SG	60	I	VS	35	69936639454	2	+++++
200x25x50,8	1	-	-	-				●						●	●				SGB	46	K	VX	45	66253050183	2	+++++
200x25x51	1	-	-	-				●						●	●				38A	46	K	VS	45	66253051086	1	+++
	1	-	-	-				●						●	●				38A	60	L	VS	45	69936640125	1	+++
200x25x76,2	1	-	-	-				●						●	●				38A	46	N	VS	45	69936675841	1	+++
	1	-	-	-				●						●	●				38A	46	L	VS	35	69936675842	1	+++
	1	-	-	-				●						●	●				38A	60	L	VS	35	69936675845	1	+++
	1	-	-	-					●						●				A	46	N	VS	45	69936675568	1	+++
	1	-	-	-				●						●	●				38A	60	N	VS	45	69936675846	1	+++
	1	-	-	-				●							●	●			39C	60	K	VS	45	69936675672	2	+++
	1	-	-	-				●							●	●			39C	80	L	VS	45	69936675673	2	+++
	1	-	-	-				●							●	●			39C	80	K	VS	35	69936675641	2	+++
	1	-	-	-				●							●	●			39C	120	K	VS	45	69936675674	2	+++
200x32x32	1	-	-	-				●						●	●				SGB	60	K	VX	45	66253049892	2	+++++
	1	-	-	-				●						●	●				38A	46	M	VS	45	66253052712	1	+++
	1	-	-	-				●						●	●				38A	60	L	VS	45	69936675855	1	+++
	1	-	-	-					●						●				A	36	P	VS	45	69936666932	1	+++
200x32x32	1	-	-	-					●						●				A	46	N	VS	45	69936640814	1	+++
	1	-	-	-					●						●				A	60	N	VS	45	69936690246	1	+++
	1	-	-	-				●							●	●			39C	60	K	VS	45	69936640293	2	+++
	1	-	-	-				●							●	●			39C	80	K	VS	45	69936667106	2	+++
	1	-	-	-				●							●	●			39C	120	K	VS	45	69936675677	2	+++
200x32x51	1	-	-	-				●						●	●				38A	60	L	VS	45	69936640245	1	+++
200x32x76,2	1	-	-	-				●						●	●				38A	46	N	VS	45	69936675849	1	+++
	1	-	-	-				●						●	●				38A	60	N	VS	45	69936675854	1	+++
	1	-	-	-					●						●				A	46	N6	VS	45	66243593707	1	+++
	1	-	-	-				●							●	●			39C	60	K	VS	45	69936675643	2	+++
	1	-	-	-				●							●	●			39C	80	K	VS	45	69936675644	2	+++
200x40x20	5	110	25	-					●						●	●			39C	80	J	VS	35	69936640285	1	+++
200x40x50,8	1	-	-	-				●						●	●				38A	46	I	VS	45	69936681707	1	+++
225x5x60	1	-	-	-				●						●	●				38A	54	J	VS	45	69936675859	1	+++
225x20x51	1	-	-	-				●						●	●				3SG	60	H12	VXP	45	69936676452	2	+++++
	1	-	-	-				●						●	●				SGB	60	H	VX	45	69936640943	2	+++++
	1	-	-	-				●						●	●				38A	46	I	VS	45	69936640871	1	+++
225x25x76,2	1	-	-	-				●						●	●				3SG	46	H	VX	45	66243570377	2	+++++
	1	-	-	-				●						●	●				3SG	46	H	VX	45	66253055043	2	+++++
	1	-	-	-				●						●	●				3SG	60	H12	VXP	45	66243593705	2	+++++

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM DxDxH (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter	Recess/Concave Depth A	Recess/Concave Depth B	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
230x5x31,75	1	-	-	-	●									●					19A	54	J	VS	40	69936623905	2	+++
230x10x32	1	-	-	-	●									○	●				38A	60	M	VS	63	69936675929	1	+++
230x25x32	1	-	-	-				●								●	●		39C	80	K	VS	35	69936639374	1	+++
230x25x50,8	1	-	-	-	●									○	●				38A	60	H	VS	45	69936639829	1	+++
250x3x32	1	-	-	-				●						●	○				SGB	80	K	VS3	50	66243541097	5	+++++
250x10x20	1	-	-	-				●						○	●				38A	60	L	VS3	63	66243541093	5	+++++
250x10x32	1	-	-	-	●									○	●				38A	60	M	VS	63	69936675931	1	+++
	01C	-	-	-				●						○	●				38A	60	L6	VS3	35	69210431945	5	+++++
250x13x32	1	-	-	-	●									○	●				38A	60	L	VS3	63	66253348353	1	+++++
250x20x76,2	1	-	-	-	●									○	●				38A	60	L	VS	45	69936675862	1	+++
250x25x31,75	1	-	-	-				●						●					A	36	O	VS	35	69936623907	1	+++
	1	-	-	-				●						●					A	46	N	VS	35	69936623914	1	+++
	1	-	-	-				●						●					A	60	N	VS	35	69936623918	1	+++
	1	-	-	-				●								●	●		39C	60	K	VS	35	69936623664	1	+++
250x25x32	1	-	-	-	●									○	●				38A	60	L5	VS	45	66253049927	1	+++
	1	-	-	-				●						●					A	36	P	VS	45	69936666940	1	+++
	1	-	-	-				●						●					A	46	N	VS	45	69936641386	1	+++
	1	-	-	-	●											●	●		39C	80	L	VS	45	69936675679	1	+++
250x25x76	1	-	-	-									○	●	●	○			2NQ	60	G	VS3	35	66253348365	1	+++++
	1	-	-	-									○	●	●				32A	60	I	VS	35	69936639898	2	+++
250x25x76,2	1	-	-	-									○	●	●	○			2NQ	46	G	VS3	35	66253348371	1	+++++
	1	-	-	-	●									●	○				3SG	46	K	VS	45	69936623668	1	+++++
	1	-	-	-	●									●	○				3SG	54	F11	VXP	45	69936676054	1	+++++
	1	-	-	-	●									●	○				3SG	60	K	VX	45	66253055045	1	+++++
	1	-	-	-									○	●	○				SGA	46	K	VX	50	61463693965	1	+++++
	1	-	-	-	●									●	○				SGB	46	K	VX	45	66253050124	1	+++++
	1	-	-	-	●									●	○				SGB	60	K	VX	45	66253050126	1	+++++
	1	-	-	-	●									●	○				SGB	70	H12	VXP	45	69936623901	1	+++++
	1	-	-	-	●									○	●				38A	46	L	VS	45	69936623691	1	+++
	1	-	-	-	●									○	●				38A	46	K	VS3	63	66253354041	1	+++++
	1	-	-	-	●									○	●				38A	60	K	VS3	63	66253354040	1	+++++
	1	-	-	-	●									○	●				38A	60	L	VS	45	69936623733	1	+++
	1	-	-	-	●									○	●				38A	60	I	VS	45	66253050101	1	+++
	1	-	-	-	●									○	●				38A	80	L	VS	45	69936623651	1	+++
250x32x32	1	-	-	-	●									●	○				SGB	60	K	VX	45	66253050162	1	+++++
	1	-	-	-	●									○	●				38A	60	N	VS	45	69936667158	1	+++
	1	-	-	-				●						●					A	24	Q	VS	45	69936666942	1	+++
	1	-	-	-				●						●					A	36	P	VS	45	69936666943	1	+++
	1	-	-	-				●						●					A	60	M	VS	45	69936642130	1	+++
	1	-	-	-	●											●	●		39C	60	K	VS	45	69936639837	1	+++
	1	-	-	-	●											●	●		39C	80	K	VS	45	69936640845	1	+++

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxDxH (mm)	SHAPE	P	FA	FB	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
250x32x76,2	1	-	-	-	●						●	●				3SG	46	H	VX	45	66253055046	1	+++++
250x40x32	1	-	-	-		●					●					A	36	Q	VS	45	69936666945	1	+++
	1	-	-	-		●					●					A	60	N	VS	45	69936666946	1	+++
250x40x51	1	-	-	-				●	●						●	37C	60	K6	VK	35	69210431004	3	+++
250x40x76	1	-	-	-				●	●	●	●					38A	46	L6	VS3	35	69210432025	3	+++++
	1	-	-	-				●	●	●	●					38A	60	L6	VS3	35	69210431657	3	+++++
250x40x76,2	1	-	-	-	●						●	●				3SG	46	I	VX	45	66253050259	1	+++++
	1	-	-	-	●						●	●				3SG	46	G12	VXPC	45	69936676056	1	+++++
300x25x127	1	-	-	-						●	●	●	●			3NQ	60	K	VQN	45	66253262040	1	+++++
	1	-	-	-						●	●	●	●			2NQ	60	J	VS3	45	66253348372	1	+++++
	1	-	-	-						●	●	●				3SG	46	K	VX	45	66253055050	1	+++++
	1	-	-	-						●	●	●				3SG	60	H12	VXP	45	69936677184	1	+++++
	1	-	-	-						●	●	●				SGA	46	K	VS	50	61463699584	1	+++++
	1	-	-	-						●	●	●				SGA	60	K	VX	50	61463693967	1	+++++
	1	-	-	-						●	●	●				SGB	60	K	VX	45	66253050132	1	+++++
	1	-	-	-						●	●	●				SGA	80	L	VX	50	61463693973	1	+++++
	1	-	-	-						●	●	●				SGB	80	K	VX	35	69936678987	1	+++++
	1	-	-	-						●	●	●				SGB	80	I10	VXP	45	66253050121	1	+++++
	1	-	-	-						●	●	●				38A	46	J	VS	35	69936623662	1	+++
	1	-	-	-						●	●	●				38A	60	K	VS3	63	66253354042	2	+++++
	1	-	-	-						●	●	●				38A	60	K	VS	45	66253050105	1	+++
	1	-	-	-						●	●	●				38A	80	L	VS	45	69936623648	1	+++
	1	-	-	-						●		●				19A	60	M	VS	35	69936623719	1	+++
	1	-	-	-						●			●	●		39C	60	K	VS	45	69936623687	1	+++
	1	-	-	-						●			●	●		39C	80	J	VS	45	69936640343	1	+++
	1	-	-	-						●			●	●		39C	120	K	VS	35	69936675646	1	+++
300x32x127	1	-	-	-						●	●	●				3SG	60	K	VX	45	66253055872	1	+++++
	1	-	-	-						●	●	●				SGB	46	F12	VXP	45	69936676705	1	+++++
	1	-	-	-						●	●	●				SGB	60	K	VX	45	69936676386	1	+++++
	1	-	-	-						●	●	●				38A	46	H	VS	45	69936675883	1	+++
	1	-	-	-						●	●	●				38A	60	L	VS	45	69936675884	1	+++
	1	-	-	-		●					●					A	24	Q	VS	45	69936675579	1	+++
	1	-	-	-		●					●					A	36	O	VS	45	69936675580	1	+++
	1	-	-	-		●					●					A	46	N	VS	45	69936675581	1	+++
300x32x32	1	-	-	-		●				●	●			●		38A	60	N	VS	45	69936639618	1	+++
	1	-	-	-	●					●	●					38A	60	K	VS	45	66253051100	1	+++
	1	-	-	-		●					●					A	36	O	VS	45	69936675575	1	+++
300x32x50,8	1	-	-	-		●					●					A	46	N	VS	45	69936675578	1	+++
300x32x76,2	1	-	-	-				●	●	●	●					38A	46	H	VS	45	69936675880	1	+++
300x40x30	1	-	-	-		●					●					A	36	P	VS	45	69936681734	1	+++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM DxDxH (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter Recess/Concave Depth A Recess/Concave Depth B			Tools Saw Sharpening Bench Wheels	Internal Diameter External Diameter Surface	High Alloy Steels & HSS Soft Steels Inox Non-Ferrous & Carbide Cast Iron	Abrasive Type Grit Size Grade Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
300x40x31,75	1	-	-	-				●			●	35	69936623686	1	+++
	1	-	-	-				●			●	35	69936623703	1	+++
	1	-	-	-				●			●	35	69936623724	1	+++
	1	-	-	-				●		●	●	35	69936623682	1	+++
300x40x32	1	-	-	-				●			●	35	69936640222	1	+++
	1	-	-	-				●			●	45	69936639682	1	+++
	1	-	-	-				●			●	45	69936640221	1	+++
	1	-	-	-	●					●	●	45	69936639362	1	+++
	1	-	-	-	●					●	●	45	69936676387	1	+++
300x40x76	1	-	-	-					○	●	●	45	66253049953	1	+++
300x40x76,2	1	-	-	-				●			●	45	69936675607	1	+++
300x40x127	1	-	-	-					●	●	○	45	66253055893	1	+++++
	5	190	12	-					●	●	○	50	69936621533	1	+++++
	1	-	-	-					●	●	○	45	66253055053	1	+++++
	1	-	-	-					●	●	○	45	69936639946	1	+++++
	1	-	-	-					●	●	○	45	66253050179	1	+++++
	5	190	12	-					●	○	●	50	61463699585	1	+++++
	1	-	-	-					●	○	●	35	69936675889	1	+++
	1	-	-	-					●	○	●	45	69936675891	1	+++
	5	190	12	-					●	○	●	35	69936621532	1	+++
	5	190	12	-					●	●		35	69936621518	1	+++
	1	-	-	-				●			●	45	69936675583	1	+++
	1	-	-	-				●			●	45	69936675584	1	+++
	1	-	-	-				●			●	45	69936675585	1	+++
	1	-	-	-					●		●	45	69936675684	1	+++
	1	-	-	-					●		●	45	69936675649	1	+++
300x50x32	1	-	-	-				●			●	45	69936681823	1	+++
	1	-	-	-				●			●	45	66243570484	1	+++
300x50x76,2	7	160	10	10					●	●	○	35	69936672033	1	+++++
	1	-	-	-					○	●	○	45	66253050251	1	+++
300x50x127	1	-	-	-					●	●	○	45	66253054500	1	+++++
	1	-	-	-					●	●	○	45	66243570384	1	+++++
	1	-	-	-					●	○	●	45	69936623649	1	+++
350x50x127	1	-	-	-					○	●	○	35	69210431072	2	+++++
	1	-	-	-					○	●		35	69210431686	2	+++
355x25x127	1	-	-	-					○	●	○	45	66253055895	1	+++++
	1	-	-	-					○	●	○	50	69936623716	1	+++++
	1	-	-	-					○	●	○	50	61463699586	1	+++++
	1	-	-	-					○	●	○	45	66253050135	1	+++++
	1	-	-	-					○	●	○	45	69936675901	1	+++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxDxH (mm)	SHAPE	P	FA	FB	Deburring & Sharpening	Grinding	Materials				SPECIFICATION	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
355x32x127	1	-	-	-			●	●	●	●	●		□ 2NQ 60 J VS3 45 66253348373	1	+++++
	1	-	-	-				●	●	●		■ SGB 54 E12 VXP 45 69936676713	1	+++++	
	1	-	-	-			●	●	●	●		■ 38A 60 L VS 45 69936675903	1	+++	
355x40x127	1	-	-	-			●	●	●	●	●		□ 2NQ 46 G VS3 45 66253348367	1	+++++
	1	-	-	-			●	●	●	●		■ 3SG 60 L VX 45 66253055057	1	+++++	
	5	215	13	-			●	●	●	●		■ 3SG 60 K VS 35 69936640371	1	+++++	
	1	-	-	-			●	●	●	●		■ 3SG 60 K VS 50 69936623611	1	+++++	
	1	-	-	-			●	●	●	●		■ SGB 46 J VX 45 66253050117	1	+++++	
	1	-	-	-				●	●	●		■ SGB 46 G10 VXP 45 66253049901	1	+++++	
	1	-	-	-				●	●	●		■ SGA 80 I10 VXP 50 61463699589	1	+++++	
	5	215	13	-			●	●	●	●		■ 38A 60 L VS 35 69936675909	1	+++	
	1	-	-	-			●	●	●	●		■ 38A 46 J VS 45 69936623753	1	+++	
	1	-	-	-			●	●	●	●		■ 38A 60 L VS 45 69936675908	1	+++	
	1	-	-	-		●			●			■ A 24 Q VS 45 69936675586	1	+++	
	1	-	-	-		●			●			■ A 46 N VS 45 69936675587	1	+++	
	1	-	-	-			●	●			●	●	■ 39C 60 K VS 45 69936675685	1	+++
355x50x31,75	1	-	-	-		●			●			■ A 60 N VS 35 69936623742	1	+++	
355x50x127	1	-	-	-			●	●	●	●	●		■ 3NQ 46 H VQN 45 66253262049	1	+++++
	1	-	-	-			●	●	●	●	●		□ 2NQ 46 G VS3 45 66253348366	1	+++++
	1	-	-	-			●	●	●	●		■ 3SG 46 J VX 45 66253055063	1	+++++	
	1	-	-	-				●	●	●		■ 3SG 46 F12 VXP 45 69936623900	1	+++++	
	1	-	-	-			●	●	●	●		■ SGB 46 J VX 45 69936623781	2	+++++	
	1	-	-	-				●	●	●		■ SGA 54 G12 VXP 50 61463693982	1	+++++	
	1	-	-	-				●	●	●		■ SGB 54 G10 VXP 45 66253049857	1	+++++	
	1	-	-	-			●	●	●	●		■ SGB 60 K VX 45 66253050138	1	+++++	
	1	-	-	-			●	●	●	●		■ 38A 46 K VS 45 66253051108	1	+++	
	1	-	-	-			●	●	●	●		■ 38A 46 I VS 45 69936675913	1	+++	
	1	-	-	-			●	●	●	●		■ 38A 60 L VS 35 69936675914	1	+++	
	7	190	12	13			●	●	●	●		■ 38A 60 L VS 35 69936675899	1	+++	
	1	-	-	-			●	●	●	●		■ 38A 60 K5 VS 45 66253049951	1	+++	
1	-	-	-		●			●			■ A 36 O VS 45 69936675589	1	+++		
400x25x127	1	-	-	-			●	●	●	●		■ SGB 60 K VX 45 69936644046	1	+++++	
400x50x127	1	-	-	-			●	●	●	●		■ 38A 60 L6 VS3 45 69210431108	1	+++++	
	1	-	-	-			●	●				●	■ 37C 60 K6 VK 45 69210431098	1	+++
400x50x203	1	-	-	-			●		●	●		■ 38A 60 L6 VS3 45 69210431757	1	+++++	
406x25x127	1	-	-	-			●	●	●	●		■ 3SG 60 L VX 45 66253055083	1	+++++	
	1	-	-	-				●	●	●		■ SGA 80 I10 VXP 50 61463694555	1	+++++	
	1	-	-	-			●	●	●	●		■ 38A 60 L VS 45 69936694018	1	+++	
406x32x127	1	-	-	-			●	●	●	●		■ 38A 60 L VS 45 66253049841	1	+++	

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM DxTxH (mm)	SHAPE	P	FA	FB	Recess/Inner Concave Diameter Recess/Concave Depth A Recess/Concave Depth B	Tools Saw Sharpening Bench Wheels	Internal Diameter External Diameter Surface	High Alloyed Steels & HSS Soft Steels	Inox	Non-Ferrous & Carbide Cast Iron	Abrasive Type Grit Size Grade Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
406x40x127	1	-	-	-			●	●	●	○	3SG 60 L VX	45	66253055086	1	+++++
	1	-	-	-			●	●	●	○	SGB 60 K VX	45	66253049843	1	+++++
	20	215	8	-			●	●	○	●	GF 60 K VX	50	66243469015	1	+++++
	1	-	-	-			●	●	○	●	38A 60 J VS3	45	66253348356	1	+++++
	20	215	13	-			●	●	○	●	38A 60 N VS	35	66243448167	1	+++
	5	215	13	-			●	●	○	●	38A 60 M VS	35	66243448163	1	+++
	5	215	13	-			●	●	○	●	32A 60 K VS	35	66243448202	1	+++
	5	215	13	-			●	●	○	●	39C 60 J VS	50	66243468572	1	+++
	1	-	-	-			●	●	○	●	39C 80 K VS	45	66243466414	1	+++
406x50x50	1	-	-	-		●		●			A 24 Q VS	45	66243448177	1	+++
406x50x127	1	-	-	-			●	●	○		3SG 46 H VX	45	66253055912	1	+++++
	1	-	-	-			●	●	○		5SG 46 G12 VXP	45	66243468188	1	+++++
	5	215	13	-			●	●	○		3SG 46 I VS	35	66243448179	1	+++++
	5	215	13	-			●	●	○		3SG 46 F12 VXP	35	66243448690	1	+++++
	1	-	-	-			●	●	○		3SG 54 F12 VXP	45	66253054506	1	+++++
	5	215	13	-			●	●	○		3SG 54 E12 VXP	35	66243448671	1	+++++
	5	215	13	-			●	●	○		3SG 54 D12 VXP	35	66243467861	1	+++++
	20	215	13	-			●	●	○		3SG 60 K VS	35	66243448204	1	+++++
	5	215	13	-			●	○	●		GF 54 E12 VXP	35	66243469022	1	+++++
	1	-	-	-			●	●	○		SGA 46 K VS	50	61463699644	1	+++++
	1	-	-	-			●	●	○		SGB 46 G10 VXP	45	66243468401	1	+++++
	1	-	-	-			●	●	○		SGB 46 H VX	45	66243448363	1	+++++
	5	215	13	-			●	●	○		SGB 46 F12 VXP	35	66243448824	1	+++++
	1	-	-	-			●	●	○		SGB 60 K VX	45	66253055072	1	+++++
	1	-	-	-			●	○	●		SGA 80 I10 VXP	50	61463694556	1	+++++
	5	215	13	-			●	○	●		GF 46 I VX	35	66243469004	1	+++++
	5	215	13	-			●	○	●		GF 46 F12 VXP	35	66243469021	1	+++++
	5	215	13	-			●	○	●		GF 60 L VX	50	66243468990	1	+++++
	20	215	8	-			●	○	●		GF 60 L VX	50	66243468989	1	+++++
	20	215	8	-			●	○	●		GF 60 K VX	50	66243468991	1	+++++
	1	-	-	-			●	○	●		38A 46 I11 VXP	45	66253054508	1	+++
	5	215	13	-			●	○	●		38A 46 I VS	35	66243448178	1	+++
	1	-	-	-			●	○	●		38A 46 H VS	35	69936694574	1	+++
	5	215	13	-			●	○	●		38A 46 F12 VXP	35	66243448705	1	+++
	20	215	13	-			●	○	●		38A 60 K VS	35	66243448201	1	+++
	20	215	13	-			●	○	●		38A 60 M VS	35	66243448116	1	+++
	5	215	13	-			●	○	●		32A 46 J VS	35	66243448205	1	+++
	5	215	13	-			●	○	●		32A 46 I VS	35	66243448172	1	+++
	5	215	13	-			●	○	●		32A 46 F12 VXP	35	66243448726	1	+++
	5	215	13	-			●	○	●		32A 60 F12 VBEP	32	66243448133	1	+++
	1	-	-	-		●		●			A 24 Q VS	45	66243467496	1	+++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

BONDED ABRASIVES FOR PRECISION GRINDING

SHAPE 01



SHAPE 05



SHAPE 07



SHAPE 20



SHAPE 01C



GRAIN COLOUR CODE

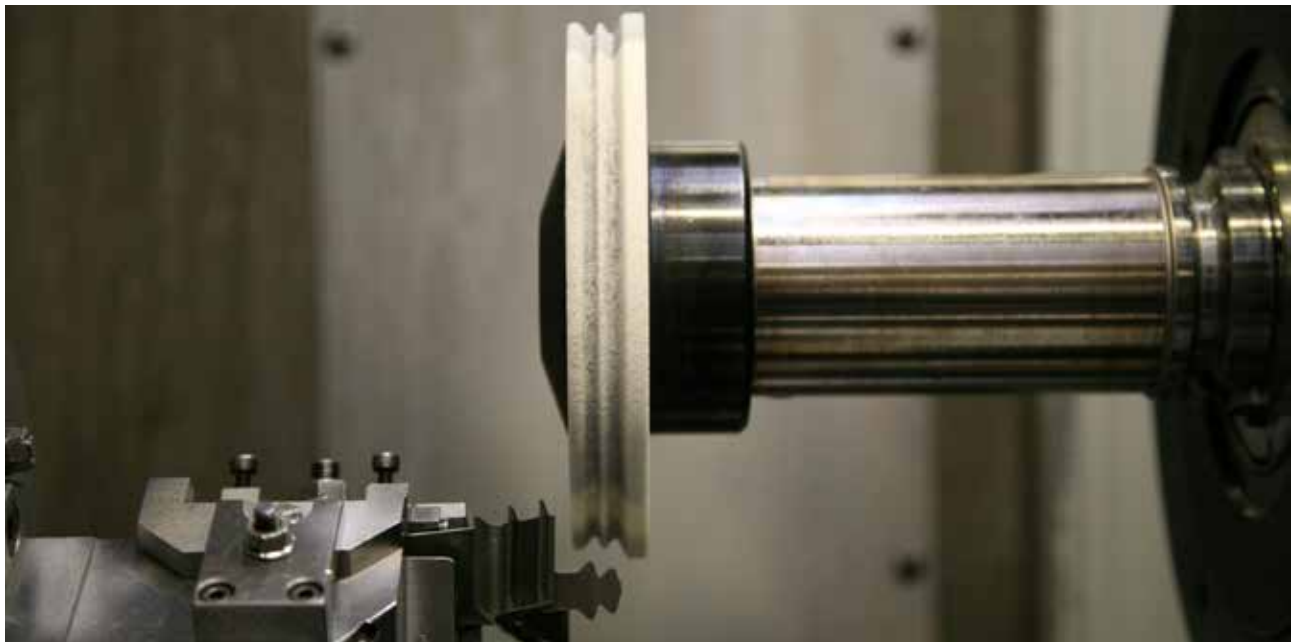
5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

																				GRAIN COLOUR CODE																															
																				 5NQ	 3NQ	 2NQ	 NQ Vit³	 SG	 GF	 38A Vit³	 38A	 86A	 32A	 25A	 19A	 A	 39C	 37C																	
																				Recess/Inner Concave Diameter	Recess/Concave Depth A			Recess/Concave Depth B			Tools		Saw Sharpening	Bench Wheels		Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS			Soft Steels	Inox	Non-Ferrous & Carbide		Cast Iron	Abrasive Type		Grit Size	Grade	Bond				
DIM DxDxH (mm)	SHAPE	P	FA	FB	Deburring & Sharpening		Grinding		Materials				SPECIFICATION				MOS (m/s)	ART NO.		PK QTY	QUALITY TIER																														
406x63x127	1	-	-	-			●					●						 A	36	O	VS	45	66243467497		1	+++																									
	7	215	12	12					●	●	●	●						 GF	46	F12	VXP	35	66243449251		1	++++																									
	20	215	13	-					●	●	●	●						 GF	60	L	VX	50	66243468993		1	++++																									
406x76x127	7	215	12	25					●	●	●	●						 3SG	54	E12	VXP	35	66243448665		1	+++++																									
	7	215	12	25					●	●	●	●						 SGB	46	F1	VXP	35	66243448691		1	++++																									
	7	215	13	25					●	●	●	●						 GF	46	I	VX	35	66243469001		1	++++																									
	7	215	13	25					●	●	●	●						 GF	46	F1	VXP	35	66243469016		1	++++																									
	7	215	12	25					●	●	●	●						 38A	46	F1	VBEP	35	66243448206		1	+++																									
	7	215	12	25					●	●		●						 32A	46	I	VS	35	66243448354		1	+++																									
	406x100x152,4	7	220	15	15					●	●	●	●						 3SG	54	E12	VXP	35	66243449287		1	+++++																								
		7	220	15	15					●	●	●	●						 GF	46	I	VX	35	66243449285		1	++++																								
457x50x127	20	215	8	-					●	●	●	●						 GF	60	L	VX	50	66243468995		1	++++																									
	1	-	-	-					●	●	●	●						 38A	60	L	VS	45	66243466558		1	+++																									
	20	215	13	-					●	●	●	●						 38A	60	M	VS	50	66243448676		1	+++																									
457x50x203,2	1	-	-	-					●		●	●						 SGA	60	K	VX	50	61463694560		1	++++																									
	1	-	-	-					●		●	●						 38A	46	J	VS	35	66243466557		1	+++																									
457x63x127	20	215	13	-					●	●	●	●						 GF	60	L	VX	50	66243468996		1	++++																									
457x80x203,2	7	290	13	13					●	●	●	●						 SGB	46	F12	VXP	35	66243468578		1	++++																									
	7	280	13	13					●	●	●	●						 GF	46	F12	VXP	35	66243469018		1	++++																									
508x50x203,2	1	-	-	-					●		●	●						 3SG	60	K	VX	45	66253055088		1	+++++																									
	1	-	-	-					●		●	●						 SGA	80	I10	VXP	50	61463699663		1	++++																									
	1	-	-	-					●		●	●						 38A	60	L	VS	35	66243466565		1	+++																									
500x60x203	20	290	10	-					●		●	●						 SGB	60	K	VX	50	66243468575		1	++++																									

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc





STRAIGHT & TAPERED CUPS FOR PRECISION GRINDING

SHAPE KEY

SHAPE 06	SHAPE 11

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM DxDxH (mm)	SHAPE	W	E	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
63x40x20	6	10	10	●					○	○	●				38A	60	J	VS3	45	66253348322	10	+++++
80x32x20	11	6	8	●						●	○				3GB	60	L	VX	45	66253050137	6	+++++
80x40x20	6	10	10	●					○	●	○				3GB	60	L	VX	45	66253050098	10	+++++
	6	6	10	●					○	●	○				3GB	60	J	VX	45	66243570391	10	+++++
	6	6	8	●					○	○	●				38A	60	L	VS3	63	66253348323	6	+++++
	6	8	8	●					○	○	●				38A	60	J	VS3	63	66253348289	6	+++++
80x40x32	6	10	10	●					○	○	●				38A	46	J	VS3	45	66253348326	10	+++++
100x40x20	11	8	10	●						●	○				3SG	60	K	VX	45	66253050110	2	+++++
	11	8	10	●						○	●				38A	60	K	VS	45	69936686170	2	+++
	11	8	10	●						○	●				38A	60	L	VS	45	69936688495	2	+++
100x40x31,75	11	6	13	●						●	○				3SG	54	K	VS	32	69936624036	2	+++++
	11	6	13	●						●	○				3SG	60	K	VS	32	69936624043	2	+++++
	11	6	13	●						○	●				38A	46	J6	VS3	35	66253358217	2	+++++
	11	6	13	●						○	●				38A	54	K	VS	32	69936624609	2	+++
	11	6	13	●						○	●				38A	60	J6	VS3	35	66253358216	2	+++++
	11	6	13	●						○	●				38A	60	J	VS3	32	66253348630	2	+++++
100x40x32	11	13	13	●						●	○	○			2NQ	46	J	VS3	45	66253348633	2	+++++
	11	8	10	●						●	○				3SG	60	K	VX	45	66253050114	2	+++++
	6	8	10	●					○	○	●				38A	60	K	VS	45	69936674854	2	+++
	11	8	10	●						○	●				38A	60	K	VS	45	69936686169	2	+++

BONDED ABRASIVES FOR PRECISION GRINDING

GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxDxH (mm)	SHAPE	W	E	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
100x50x20	6	10	10	●					○	●	○				3SG	60	K	VX	45	66253049965	2	+++++
	6	10	13	●					○	●	○				3SG	60	L	VX	45	66253049960	2	+++++
	6	10	13	●					○	●	○				3SG	80	L	VX	45	66253049966	2	+++++
	6	10	10	●					○	●	○				3SG	60	J	VX	45	66253050069	2	+++++
	6	8	10	●					○	●	○				SGB	60	K	VX	45	69936641284	2	+++++
	6	10	10	●					○	○	●				38A	60	J	VS3	45	66253348327	2	+++++
	6	10	10	●					○	○	●				38A	60	I	VS3	45	66253348629	2	+++++
	6	10	13	●					○	○	●				38A	80	J	VS3	45	66253348324	2	+++++
	6	10	10	●					○	○	●				38A	120	I8	VS3	45	66253358793	2	+++++
	6	10	10	●					○	○	●				38A	46	K	VS	45	69936644193	2	+++
	6	10	13	●					○	○	●				38A	60	L	VS	45	69936639450	2	+++
	6	10	13	●					○	○	●				38A	60	M	VS	45	69936639460	2	+++
	6	10	10	●					○	○	●				38A	80	J	VS	45	69936639600	2	+++
	6	10	13	●					○			●	●		39C	80	J	VS	45	69936640131	2	+++
100x50x32	6	10	10	●					○	●	○				3SG	60	K	VX	45	66253050073	2	+++++
	6	10	10	●					○	○	●				38A	60	K	VS	45	69936674859	2	+++
125x40x31,75	6	13	13	●					○	○	●				38A	46	J8	VS3	45	66253358794	2	+++++
	6	13	13	●					○	○	●				38A	60	J8	VS3	45	66253358795	2	+++++
	11	8	10	●					○	○	●				38A	60	J6	VS3	35	66253358219	2	+++++
	11	10	10	●					○	○	●				38A	54	K	VS	35	69936625578	2	+++
	6	8	10	●					○	○	●				38A	60	K	VS	32	69936623645	2	+++
	11	8	10	●					○	○	●				SGB	46	J	VX	45	69936682429	2	+++++
125x40x32	11	8	10	●					○	○	●				38A	46	K	VS	45	69936686175	2	+++
	11	8	10	●					○	○	●				38A	60	K	VS	45	69936686176	2	+++
	11	8	10	●					○	○	●				3SG	46	K	VX	45	66253055954	2	+++++
125x45x20	11	6	13	●					○	○	●				SGB	60	K	VX	45	69936686736	2	+++++
	11	6	13	●					○	○	●				SGB	60	K	VX	45	69936686736	2	+++++
125x50x32	6	13	13	●					○	○	○				SGB	60	J	VX	45	66253050075	2	+++++
	6	13	13	●					○	○	●				38A	46	K	VS	45	69936674867	2	+++
	6	10	13	●					○	○	●				38A	60	L	VS	45	69936639992	2	+++
125x63x32	6	10	13	●					○	○	○				SGB	60	K	VX	45	69936640579	2	+++++
	6	25	16	●					○			●	●		39C	60	J	V	45	69936668305	2	+++
150x40x32	6	16	13	●					○	○	●				38A	46	H	VS	45	69936674872	2	+++
	6	16	13	●					○	○	●				38A	60	K	VS	45	69936674875	2	+++
150x50x32	6	16	16	●					○	○	○				3SG	46	K	VX	45	66253050068	2	+++++
	11	10	13	●					○	○	○				SGB	46	J	VX	45	66253050133	2	+++++
	6	16	16	●					○	○	○				SGB	60	K	VX	45	66253050076	2	+++++
	11	10	13	●					○	○	○				SGB	60	K	VX	45	66253050134	2	+++++
	11	10	13	●					○	○	○				38A	46	K	VS	45	69936686177	2	+++
	6	16	16	●					○	○	○				38A	60	K	VS	45	69936674879	2	+++
	11	10	13	●					○	○	○				38A	60	K	VS	45	69936682576	2	+++
	11	10	13	●					○	○	○				38A	60	K	VS	45	69936682576	2	+++
150x50x65	6	20	16	●					○	○	○				38A	60	L	VS	45	69936639480	2	+++
	6	20	16	●					○			●	●		39C	80	J	VS	32	69936639798	2	+++

PRODUCT RECOMMENDATION

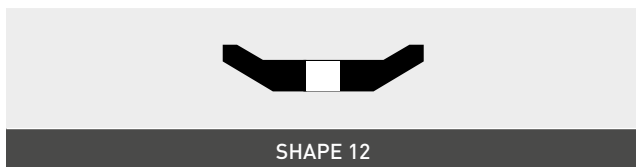
Highly recommended ●
Recommended ○

																				PRODUCT RECOMMENDATION			
																				Highly recommended	●		
																				Recommended	●		



DISHES FOR PRECISION GRINDING

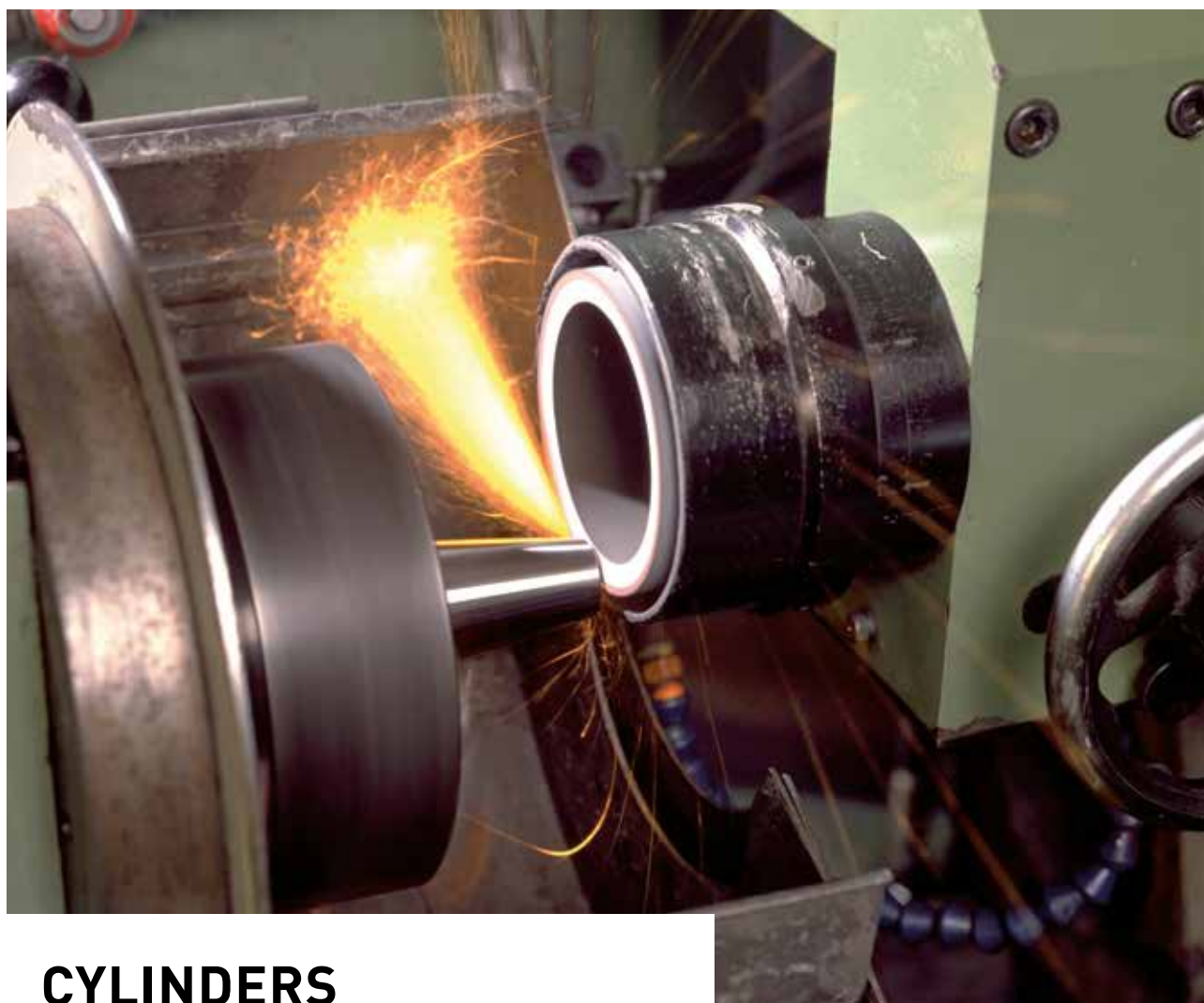
SHAPE KEY



GRAIN COLOUR CODE

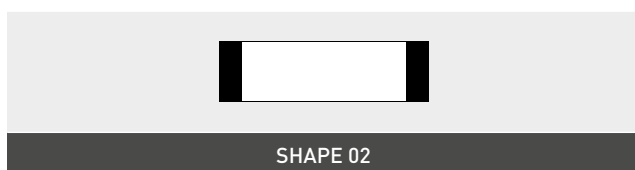
5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

DIM DxDxH (mm)	W	E	J	K	U	Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron	Abrasive Type	Grit Size	Grade	Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
100x13x12,7	5	7	45	50	2,5	●						●	●					38A 60	K	VS	45	69936624605	2	+++
100x13x20	5	7	41	41	3,2	●						●	●					3SG 60	K	VX	45	66253050236	2	+++++
	5	7	41	41	3,2	●						●	●					38A 60	J	VS3	45	66253348382	2	++++
125x13x20	6	7	61	61	3,2	●						●	●	●				2NQ60	J	VS3	45	66253348378	2	+++++
	6	7	61	61	3,2	●						●	●					3SG 60	J	VX	45	69936686768	2	+++++
	6	7	61	61	3,2	●						●	●					38A 60	J	VS3	45	66253348488	2	++++
150x13x20	8	9	56	56	3,2	●						●	●					3SG 60	L	VX	45	66253050231	2	+++++
	8	9	56	56	3,2	●						●	●					SGB46	K	VS3	45	66253348384	2	++++
	8	9	56	56	3,2	●						●	●					SGB60	K	VS3	45	66253348379	2	++++
	7	9	86	86	3,2	●						●	●					38A 60	K	VS	45	69936686199	2	+++
150x13x31,75	9,5	8	76	76	3,2	●						●	●					3SG 60	K	VS	35	69936624608	2	+++++
150x13x32	7	9	86	86	3,2	●						●	●					3SG 60	K	VX	45	66253050239	2	+++++
	7	9	86	86	3,2	●						●	●					38A 46	K	VS	45	69936686194	2	+++
	7	9	86	86	3,2	●						●	●					38A 60	J	VS3	45	66253348380	2	++++
150x20x32	8	9	87	87	3,2	●						●	●					SGB60	K	VX	45	66253050245	2	++++
180x20x32	9	11	70	70	3,2	●						●	●					SGB54	K	VX	45	66253050260	2	++++
200x20x32	10	12	90	90	3,2	●						●	●					38A 60	K	VS	45	69936686215	2	+++
200x32x32	10	12	92	92	3,2	●						●	●					SGB46	I	VX	45	66253050253	2	++++



CYLINDERS FOR PRECISION GRINDING

SHAPE KEY



PRODUCT RECOMMENDATION

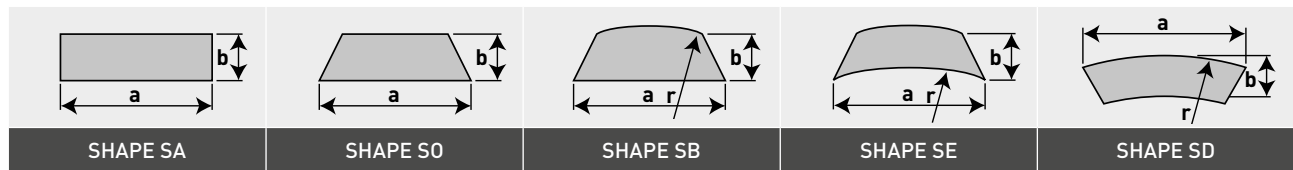
Highly recommended ●
Recommended ○

DIM DxDxH (mm)	Tools Saw Sharpening Bench Wheels	Grinding Internal Diameter External Diameter	Surface High Alloyed Steels & HSS Soft Steels Inox Non-Ferrous & Carbide Cast Iron	Abrasive Type Grit Size Grade Bond	MOS (m/s)	ART NO.	PK QTY	QUALITY TIER
200x100x160			●●○	SGB46 H VX	45	69936686693	1	++++
			●○●	38A 46 G VS3	45	66253348386	1	++++
254x100x204			●○●	38A 46 G VS3	45	66253348387	1	++++



SEGMENTS FOR PRECISION GRINDING

SHAPE KEY



GRAIN COLOUR CODE

5NQ	GF	25A
3NQ	38A Vit ³	19A
2NQ	38A	A
NQ Vit ³	86A	39C
SG	32A	37C

Tools	Saw Sharpening	Bench Wheels	Internal Diameter	External Diameter	Surface	High Alloyed Steels & HSS	Soft Steels	Inox	Non-Ferrous & Carbide	Cast Iron
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Abrasive Type	Grit Size	Grade	Bond
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PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

DIM AxBxR	TYPE	Deburring & Sharpening	Grinding	Materials	SPECIFICATION	ART NO.	PK QTY	QUALITY TIER
16x50x90	SE			● ● ○ ○	3NQ 46 H VQN	69083141440	4	+++++
	SE			● ● ○ ○	2NQ 36 H VS3	66253348492	4	+++++
	SE			● ○ ●	38A 36 H VS3	66253348785	4	++++
	SE			● ○ ●	38A 46 G VS3	66253348493	4	++++
16x53,5x110	SE			● ○ ●	38A 36 I VS	69936688485	4	+++
	SE			● ○ ●	38A 46 H VS	69936688614	4	+++
20x42x90	SO			● ○ ●	38A 60 G VS	69936686264	4	+++
21x59,5x121	SO			● ○ ●	38A 30 H VS	69936624796	4	+++
	SO			● ○ ●	38A 36 H VS3	66253348638	4	++++
22x60x110	SO			● ● ○ ○	2NQ 36 G VS3	66253348778	4	+++++
	SO			● ○ ●	38A 36 G VS3	66253348665	4	++++
25x50x110	SO			● ● ○	3SG 60 G VX	66253050282	4	+++++
	SO			● ○ ●	38A 46 G VS3	66253348779	4	++++
	SO			● ○ ●	38A 60 G VS3	66253348786	4	++++
	SO			●	19A 54 I VS	69936686249	4	+++
25x65x100	SB			●	37C 30 H8 V	69936688426	4	+++
25x70x110	SO			● ● ○	3SG 36 E12 VXP	69936688295	4	+++++
	SO			● ○ ●	38A 30 I VS	69936682296	4	+++
	SO			● ○ ●	38A 36 I VS	69936682640	4	+++
	SO			● ○ ●	38A 36 H VS3	66253348783	4	++++
25x80x150	SA			● ● ○	3SG 36 E12 VXP	69936688321	4	+++++
	SA			● ○ ●	38A 30 I VS	69936686253	4	+++
38x103x180	SO			● ● ○ ○	3NQ 36 H VQN	69083141453	4	+++++
	SO			● ● ○	3SG 36 H VX	66253050287	4	+++++
	SO			● ○ ●	38A 30 H VS3	66253348780	4	++++

HSS = High Speed Steel

Steel hardened = Over 50Rc

Steel soft = Up to 50Rc

A collection of Norton Saint-Gobain dressing sticks and sharpening stones. The items are rectangular blocks of varying sizes and colors, including light blue, dark blue, orange, and grey. They are arranged in a dynamic, overlapping composition on a light-colored surface. The Norton logo is prominently displayed in the top right corner, and the Saint-Gobain name is just below it. A vertical green bar on the right edge contains the text 'BONDED ABRASIVES'.

NORTON

SAINT-GOBAIN

BONDED
ABRASIVES

DRESSING STICKS & SHARPENING STONES

Dressing sticks	278
Bench & combination oil stones	280
Abrasive & precision files	282
Abrasive slips & specialties	285



DRESSING STICKS

Norton dressing sticks are designed to help you achieve maximum performance from your vitrified wheels. Use for truing, cleaning, and dressing diamond, CBN and conventional abrasive wheels.

NORBIDE

- Manufactured from sintered boron carbide
- Extremely hard and very dense
- Excellent chemical and wear resistance
- Long product life, reduced maintenance and less downtime
- Suitable also for dressing tool and cutter wheels 200mm and smaller, especially cup and dish shapes

SHAPE	DIM WxHxL (mm)	SPECIFICATION	PK QTY	ART NO.
RECTANGULAR	5x12,7x76,2	NORBIDE	1	61463610148



39C

- Highest purity green silicon carbide abrasive
- Harder and more friable than aluminium oxide abrasive
- Ideal for dressing conventional vitrified grinding wheels
- Outperforms 37C for better cutting efficiency and longer life

SHAPE	DIM WxHxL (mm)	SPECIFICATION	PK QTY	ART NO.
RECTANGULAR	25x50x200	39C 60 KV	1	69936685066



37C

- High purity black silicon carbide abrasive
- Harder and more friable than aluminium oxide abrasive
- Ideal for dressing conventional vitrified grinding wheels

SHAPE	DIM WxHxL/DIAxL (mm)	SPECIFICATION	PK QTY	ART NO.
DRESSING STICKS FOR SUPER ABRASIVE GRINDING WHEELS				
SQUARE	13x13x150	37C 80 MV	10	69936685063
		37C 320 HV	10	66243453547
DRESSING STICKS FOR BONDED ABRASIVE GRINDING WHEELS				
RECTANGULAR	25x50x200	37C 24 TV	10	69936685072
SQUARE	25x25x150	37C 30 UV	10	69936624620
ROUND	25,4x203,2	37C 30 TV	10	61463625024



38A

- High purity white aluminium oxide abrasive
- Friable abrasive
- Ideal for dressing CBN Super Abrasive wheels

SHAPE	DIM WxHxL (mm)	SPECIFICATION	PK QTY	ART NO.
DRESSING STICKS FOR SUPER ABRASIVE GRINDING WHEELS				
RECTANGULAR	13x25x150	38A 150 HVBE	10	61463605565
		38A 220 HVBE	10	61463605066
		38A 320 HVBE	10	69936684889
SQUARE	13x13x150	38A 220 HVS	10	69936682631
		38A 150 IVBE	10	69936682314
	20x20x200	38A 150 HVBE	10	69936685064
		38A 220 IVBE	10	61463603606
GENERAL PURPOSE DRESSING STICKS				
RECTANGULAR	13x25x150	38A 220 KV	10	66243460886



Use 38A dressing sticks to dress CBN wheels.
Use 37C dressing sticks to dress Diamond wheels.



BENCH & COMBINATION OIL STONES

Since 1823, Norton has been the leading supplier of benchstones, files, slips and rubbing bricks. Our comprehensive line of sharpening and finishing stones delivers superior performance solutions.

PRODUCT SELECTION

APPLICATION	COARSE / MEDIUM SHARPENING	FINE STONING
Carbide tool	Medium and coarse, Crystolon Bench	Fine Crystolon Bench
	Coarse/fine Crystolon, Combination	Coarse/fine Crystolon Combination
Steel tool	Medium and coarse India Bench	Fine India Bench
	Coarse/fine India Combination	Coarse/fine India Combination

CRYSTOLON

- Premium silicon carbide abrasive
- Pre-filled with oil
- Fast cutting stone; ideal for general sharpening of cutting tools
- Fast stock removal for quick edge shaping with minimal loading
- Saves time by eliminating the need for pre-soaking prior to use

DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
BENCH STONES				
102x25x13	MJB24	Medium Crystolon	5	61463685480
152x51x25	MJB6	Medium Crystolon	5	61463685505
	FJB6	Fine Crystolon	5	61463685500
COMBINATION OIL STONES				
102x44x16	JB134	Coarse/Fine Crystolon	5	61463685440
127x51x19	JB45	Coarse/Fine Crystolon	5	61463685445
152x51x25	JB6	Coarse/Fine Crystolon	5	61463685450
203x51x25	JB8	Coarse/Fine Crystolon	5	61463685455



INDIA +++

- Smooth cutting aluminium oxide abrasive
- Norton's trademark for a fine finish
- Pre-filled with oil
- Long lasting cutting edge
- Ideal for cleaning, deburring and good quality finishes
- Saves time by eliminating the need for pre-soaking prior to use

DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
BENCH STONES				
102x25x6	MB14	Medium India	5	61463685575
	FB14	Fine India	5	61463685570
102x25x13	CB24	Coarse India	5	61463685595
	MB24	Medium India	5	61463685590
	FB24	Fine India	5	61463685585
102x44x13	MB124	Medium India	5	61463626048
152x38x13	MB26	Medium India	5	61463626034
152x51x19	UPB6	Medium India	5	61463690694
152x51x25	CB6	Coarse India	5	61463685620
	MB6	Medium India	5	61463685615
	FB6	Fine India	5	61463685610
203x51x25	CB8	Coarse India	5	61463685635
	UPB8	Medium India	5	61463685755
	MB8	Medium India	5	61463685630
	FB8	Fine India	5	61463685625

COMBINATION OIL STONES				
102x25x13	IB24	Coarse/Fine India	5	61463626001
102x44x16	IB134	Coarse/Fine India	5	61463685550
127x51x19	IB45	Coarse/Fine India	5	61463685555
152x51x25	IB6	Coarse/Fine India	5	61463685560
152x64x25	IB20	Coarse/Fine India	5	61463626103
178x51x25	IB7	Coarse/Fine India	5	61463690647
203x51x25	IB8	Coarse/Fine India	5	61463625078



ARKANSAS +++

- Natural premium Novaculite quarried in Arkansas and available in soft and hard
- Dense construction
- Sharpest possible razor edges
- Near mirror finishes
- Use for finer honing after India stone
- Absorbs oil at a slower rate, hence does not require pre-filling

DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
BENCH STONES				
102x25x10	HB14	Hard Arkansas	5	61463687555
	SB14	Soft Arkansas	5	61463687565
152x51x19	HB6	Hard Arkansas	5	61463685660





ABRASIVE & PRECISION FILES

Norton abrasive files hold their shape while imparting the finest, most uniform finish on precision machine parts, and in tool and die making.

PRODUCT SELECTION

APPLICATION	COARSE / MEDIUM SHARPENING	FINE STONING	FINISH HONING
Carbide tool	Medium Crystolon square	-	-
Centre punches	Medium India triangle	Fine India triangle	-
Countersinks	Coarse/medium India triangle	Fine India triangle	Hard Arkansas triangle
Form cutter	Coarse/medium India knife blade	Fine India knife blade	Hard Arkansas knife blade
Keyways	Coarse/medium India square	Fine India square	Hard Arkansas square
Lathe bits	-	Fine India square	Hard Arkansas square
Machine knife stone	Coarse Crystolon machine knife	-	-
Magnetic chucks	-	India round	-
Pointed	Medium India pointed	-	Hard Arkansas pointed
Precision machine knife	Medium India half round	Fine India half round	-
Radius tools	Medium India round	Fine India round	Hard Arkansas round
Router bits	-	Fine India square	-
Silversmith	Medium India Silversmith	Fine India Silversmith	-
Tap threads	-	Fine India triangle	-

CRYSTOLON

- Premium silicon carbide abrasive
- Fast cutting
- Ideal for general sharpening

SHAPE	DIM LxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
SQUARE	152x25	MJF76	Medium Crystolon	5	61463625039
TRIANGLE	152x13	MJF146	Medium Crystolon	5	61463625043



INDIA +++

- Smooth cutting aluminium oxide abrasive
- Ideal when a close tolerance is more important than the speed of cut

DIM LxDIA (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
ABRASIVE FILES				
ROUND				
102x3	FF212	Fine India	5	61463626076
102x6	MF214	Medium India	5	61463686475
	FF214	Fine India	5	61463686470
102x10	MF234	Medium India	5	61463686490
	FF234	Fine India	5	61463686485
102x13	MF244	Medium India	5	61463686505
	FF244	Fine India	5	61463686500
152x10	FF236	Fine India	5	61463626106
152x13	MF246	Medium India	5	61463686520
152x16	MF256	Medium India	5	61463686535
	FF256	Fine India	5	61463686530
152x19	MF266	Medium India	5	61463686550
HALF ROUND				
102x10	MF334	Medium India	5	61463686385
102x13	MF344	Medium India	5	61463686400
	FF344	Fine India	5	61463686395
SQUARE				
102x6	FF14	Fine India	5	61463686065
	MF14	Medium India	5	61463686070
102x10	FF34	Fine India	5	61463686080
	MF34	Medium India	5	61463686085
	CF34	Coarse India	5	61463686090
102x13	CF44	Coarse India	5	61463686105
	FF44	Fine India	5	61463686095
	MF44	Medium India	5	61463686100
152x10	FF36	Fine India	5	61463626037
	MF36	Medium India	5	61463626038
152x13	FF46	Fine India	5	61463686110
	MF46	Medium India	5	61463686115
152x16	FF56	Fine India	5	61463686125
	MF56	Medium India	5	61463686130
152x19	CF66	Coarse India	5	61463686150
	FF66	Fine India	5	61463686140
	MF66	Medium India	5	61463686145
152x25	FF76	Fine India	5	61463686155



BONDED ABRASIVES DRESSING STICKS & SHARPENING STONES

DIM LxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
TRIANGLE				
102x6	MF114	Medium India	5	61463686235
	FF114	Fine India	5	61463686230
102x8	MF124	Medium India	5	61463626027
	FF124	Fine India	5	61463626028
102x10	MF134	Medium India	5	61463686250
	FF134	Fine India	5	61463686245
102x13	CF144	Coarse India	5	61463686270
	MF144	Medium India	5	61463686265
	FF144	Fine India	5	61463686260
152x10	MF136	Medium India	5	61463626090
	FF136	Fine India	5	61463626054
152x13	MF146	Medium India	5	61463686280
	FF146	Fine India	5	61463686275
152x16	MF156	Medium India	5	61463686295
	FF156	Fine India	5	61463686290
152x19	MF166	Medium India	5	61463686310
	FF166	Fine India	5	61463686305
152x25	MF176	Medium India	5	61463686325
203x19	MF180	Medium India	5	61463626130
	FF180	Fine India	5	61463626082
PRECISION FILES				
KNIFE BLADE FILES				
102x25x3	MF724	Medium India	5	61463686775
	FF724	Fine India	5	61463686770
SILVERSMITH FILES				
102x13x2	FF444	Fine India	5	61463686955
	MF444	Medium India	5	61463686960

ARKANSAS ABRASIVE FILES

- Hard Novaculite abrasive quarried in Arkansas
- Produces the finest edge possible while maintaining tolerances unequalled by any other abrasive
- Produces a highly polished finish

DIM LxDIA/LxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
HALF ROUND				
76x6	HB14	Hard Arkansas	5	61463686800
SQUARE				
76x6	HF13	Hard Arkansas	5	61463686590
76x10	HF33	Hard Arkansas	5	61463686595
76x13	HF43	Hard Arkansas	5	61463686600
TRIANGLE				
76x6	HF113	Hard Arkansas	5	61463686620
76x10	HF133	Hard Arkansas	5	61463686625
76x13	HF143	Hard Arkansas	5	61463686630





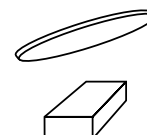
ABRASIVE SLIPS & SPECIALTIES

Norton abrasive slips and specialty stones impart the finest, most uniform finish on a wide range of tools. These fast acting slips hold their shape and are long lasting.

PRODUCT SELECTION

APPLICATION	COARSE / MEDIUM SHARPENING	FINE STONING	FINISH HONING
Carbide tools	Medium and Crystolon round edge slip	Fine Crystolon round edge slip	-
	Coarse or medium Crystolon carbide tool slip	Fine Crystolon carbide tool slip	-
Gouges (wood)	-	Fine India gouge Sharpening stone	-
Leather	Medium Crystolon Tradesmen	-	-
Milling cutter	Medium India round edge slip	Fine India round edge slip	Hard Arkansas round edge slip
Pen knife	-	-	Arkansas pen knife
Reamers	Medium India reamer stone	Fine India reamer stone	-
Scythe stone	Scythe stone	-	-
Steel tool	-	-	Rubber stick

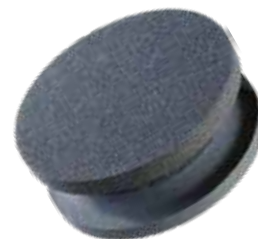
SHAPE	DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
SPECIALTY STONES					
SCYTHE STONE	240x35x13	TJ4	Scythe Stone	10	69936693133
	254x32x19	JT930	Scythe Stone	5	61463687675
RUBBER STICK	200x10x20	-	A240FR96	5	69936625667



CRYSTOLON

- Premium silicon carbide abrasive
- Fast cutting stone; ideal for general sharpening of cutting tools
- Fast stock removal for quick edge shaping with minimal loading

SHAPE		DIM LxWxH/DIAxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
SLIP STONES						
CARBIDE TOOL		89x19x13	FJT63	Fine Crystolon	5	61463687285
ROUND EDGE		114x44x6	FJS24	Fine Crystolon	5	61463687075
SPECIALTY STONES						
RUBBING BRICK		203x51x51	BF28	Hand Crystolon	5	61463687845
		203x89x38	235	Fluted Crystolon	5	61463687795
MACHINE KNIFE STONE		102x38	JB74	Coarse Crystolon	5	61463687570



INDIA

- Smooth cutting aluminium oxide abrasive
- Norton's trademark for a fine finish
- Ideal when a close tolerance is more important than the speed of cut

SHAPE	DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
SLIP STONES					
ROUND EDGE	102x25x11	MS14	Medium India	5	61463687140
		FS14	Fine India	5	61463687135
	114x44x6	MS24	Medium India	5	61463687150
		FS24	Fine India	5	61463687145
	114x44x10	MS34	Medium India	5	61463687165
		FS34	Fine India	5	61463687160
	114x44x13	MS44	Medium India	5	61463687180
		FS44	Fine India	5	61463687175
SPECIALTY STONES					
REAMER STONES	127x25x5	MT125	Medium India	5	61463687430

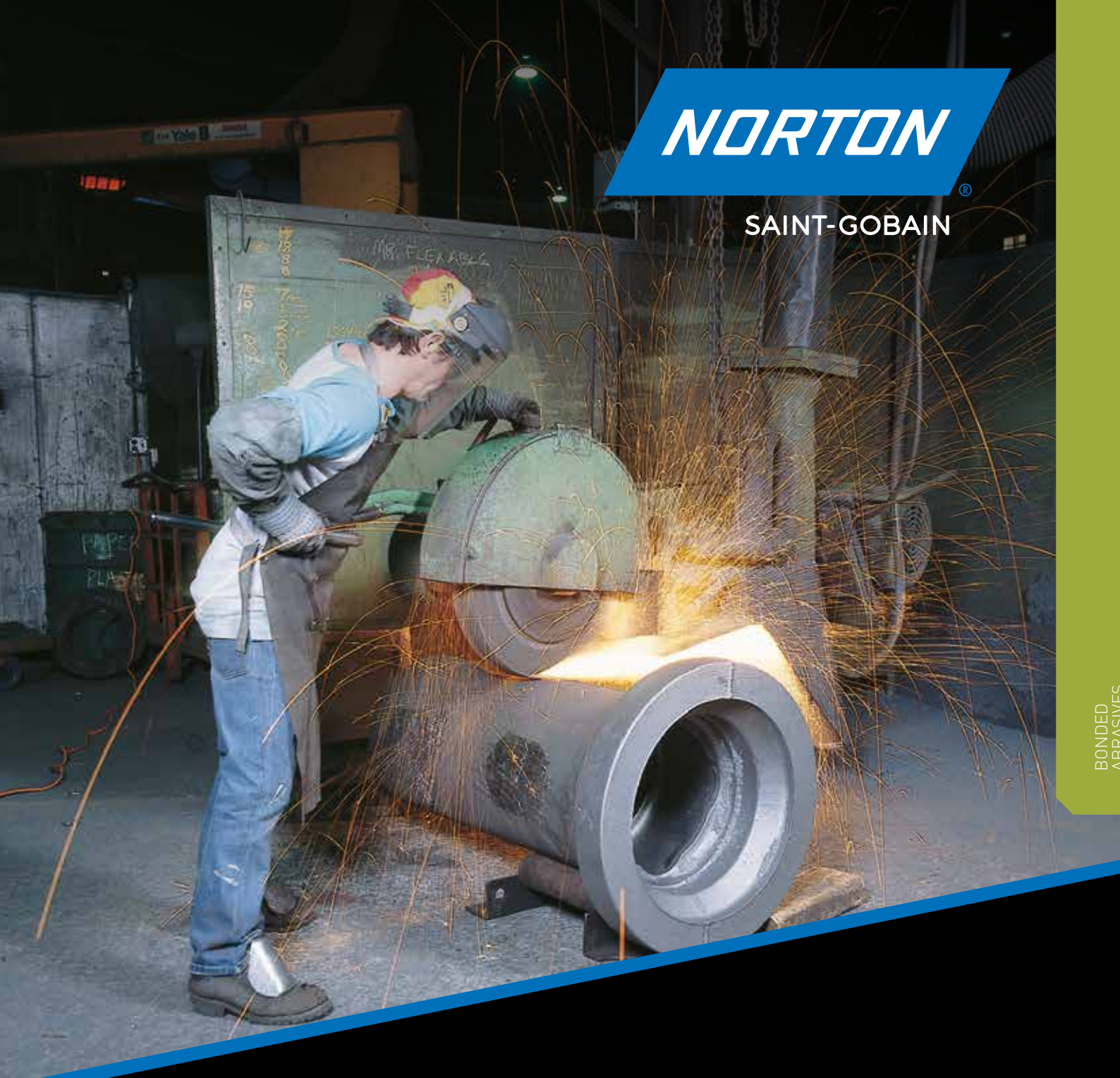


ARKANSAS

- Natural premium Novaculite quarried in Arkansas and available in soft and hard
- Sharpest possible razor edges
- Near mirror finishes
- Use for finer honing after India stone

SHAPE		DIM LxWxH (mm)	TYPE	SPECIFICATION	PK QTY	ART NO.
SLIP STONES						
ROUND EDGE		102x32x6	HS14	Hard Arkansas	5	61463687050





NORTON

SAINT-GOBAIN

BONDED
ABRASIVES

ORGANIC WHEELS & CUPS FOR SNAGGING

Snagging wheels
Snagging cups

289
289

ORGANIC WHEELS & CUPS FOR SNAGGING

Norton offers a range of products for portable snagging foundry applications. Type 01 straight wheels are used on portable machines and Type 06 and 11 cup wheels on vertical grinders. Since finish tolerances are not usually critical, coarse, durable wheels are used with grit sizes ranging from 16 to 24.



ZF7A / 25ZF



Special design of abrasive blends

- Very durable for heavy duty grinding
- Excellent wheel life and metal removal rates
- Ideal for all steels and non-ferrous metals



A



Tougher than pure white aluminium oxide abrasive

- General purpose abrasive ideal for most operations
- Good wheel life, limited metal removal rate
- Good for cutting medium to soft steels
- Suitable price/performance ratio
- First choice for less technical applications



37C



Low purity black silicon carbide abrasive

- Harder and more friable than aluminium type abrasives
- Suitable for roughing operations in coarse grit and resinoid wheels
- Ideal for grinding and sharpening applications on metal carbide and non-ferrous metals
- Ideal for applications with no technical requirement



39C



Highest purity green silicon carbide abrasive

- High cut rate/power on special alloys and titanium
- Extremely friable abrasive for better cutting efficiency and cut quality



Rim Width
Back Thickness
Steels
Non-Ferrous Metals
Cast Iron
Abrasive type
Grit Size
Grade
Structure
Bond

PRODUCT RECOMMENDATION

Highly recommended ●
Recommended ○

WHEELS															
SHAPE	DIM DxDxH (mm)	W	E	Materials			SPECIFICATION				MOS (m/s)	PK QTY	ART NO.	QUALITY TIER	
01	50x13x10			●		●	A	24	T	-	B28	50	10	66253057649	+++
01	80x13x10			●		●	A	24	T	-	B28	50	10	66243448964	+++
01	80x20x20			●		●	A	24	Q	5	B3	50	10	69210431625	+++
01	100x20x20	-	-	●		●	A	24	R	-	B28	50	10	66253057660	+++
01	100x20x20	-	-	●		●	A	24	Q	5	B3	50	5	69210432101	+++
01	100x25x20			●		●	A	24	Q	5	B3	50	5	69210432376	+++
01	125x20x20	-	-	●		●	A	24	Q	5	B3	50	5	69210431521	+++
01	125x25x20	-	-	●		●	A	24	Q	5	B3	50	5	69210432071	+++
01	150x20x20	-	-	●		●	A	24	Q	5	B3	50	5	69210431509	+++
01	150x25x20	-	-	●		●	A	24	Q	5	B3	50	5	69210432717	+++
01	150x32x20	-	-	●		●	A	24	Q	5	B3	50	5	69210433145	+++
01	200x20x32	-	-	●		●	A	24	Q	5	B3	50	5	69210431516	+++
01	200x25x32	-	-	●		●	A	24	Q	5	B3	50	5	69210431515	+++
01	300x30x32	-	-	●		●	A	24	Q	5	B3	50	1	69210433807	+++
01	300x40x51			●		●	A	24	Q	5	B3	50	1	69210432428	+++
01	350x40x51			●		●	A	24	Q	5	B3	50	1	69210432772	+++
01	350x50x51			●		●	A	24	Q	5	B3	50	1	69210433808	+++
01	400x50x127	-	-	●		●	A	24	Q	5	B3	50	1	69210431446	+++
01	500x50x127	-	-	●		●	A	24	Q	5	B3	50	1	69210435391	+++
01	508x50x50	-	-	●		●	ZF7A	16	R	5	B3	50	1	66253057670	+++++
01	508x60x127	-	-	●		●	ZF7A	16	Q	5	B3	50	1	66243453103	+++++
01	508x60x127	-	-	●		●	ZF7A	16	R	5	B3	50	1	66253057671	+++++
01	508x60x127	-	-	●		●	ZF7A	20	Q	-	B3	50	1	66253057673	+++++
01	600x60x203			●		●	ZF7A	16	Q	-	B38	63	1	66243570264	+++++
01	760x80x304,8			●		●	ZF7A	14	R	-	B38	50	1	66253057675	+++++
CUPS															
SHAPE	DIM DxDxH (mm)	W	E	Materials			SPECIFICATION				MOS (m/s)	PK QTY	ART NO.	QUALITY TIER	
11	125x50x14	25	20		●		37C	20	Q		B5	50	1	69210436678	+++
11	125x50x5/8"	25	19	●		●	A		P	5	B5	50	1	66253065737	+++
11	125x50x5/8"	25	19		●		39C	16	P	5	B5	50	4	69083141415	+++++
11	125x50xM14	25	20		●		37C	16	N	5	B5	50	1	69210432282	+++
11	150x50xM14	40	20		●		37C	16	N	5	B5	50	1	69210432287	+++



NORTON

SAINT-GOBAIN

STRAIGHT CUT-OFF WHEELS

Non-Reinforced wheels

294

Reinforced wheels

294

BONDED ABRASIVES STRAIGHT NON-REINFORCED & REINFORCED CUT-OFF WHEELS

STRAIGHT NON-REINFORCED & REINFORCED CUT-OFF WHEELS

Reinforced cut-off wheels contain fiberglass to increase mechanical resistance when in use. The reinforcements increase the lateral stress capacity, resulting in higher resistance to breakage.

Non-reinforced cut-off wheels are only designed for use on fixed base machines, where the work is securely clamped, the wheel is adequately guarded and operating on a controlled cutting plane. They are suitable for use in dry or wet conditions, depending on bond type.



XGP



Special combination of abrasive blends

- High durability with good cutting capability
- Very long wheel life and high metal removal rate
- Perfect for lab applications
- Suitable for use on all types of steel

4NZ



High concentration of zirconia oxide abrasive

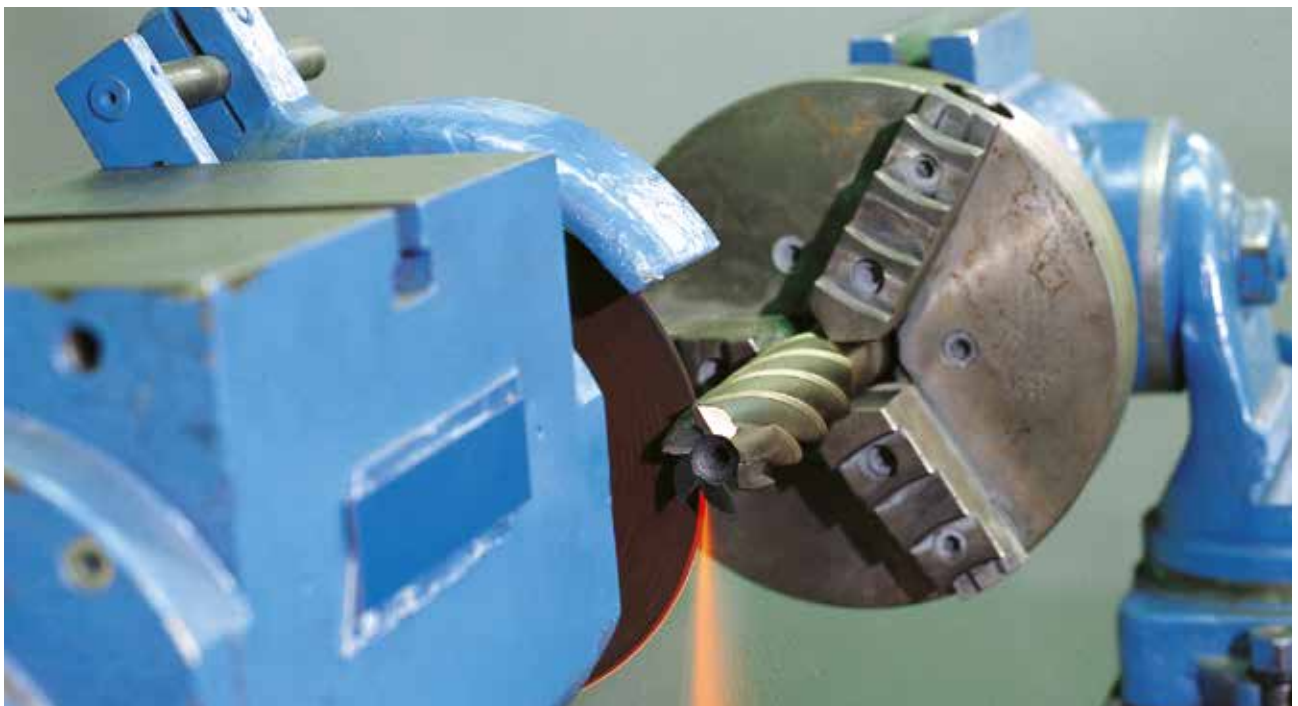
- Extremely tough aluminium oxide abrasive
- Very long wheel life
- Very high cutting capability and high metal removal rate if high pressure is applied
- Perfect for technical applications

39C



Highest purity green silicon carbide abrasive

- Harder and more friable than aluminium oxide abrasive
- Excellent to cut all non-metals (titanium, aluminium, bronze)
- Extremely friable abrasive for better cutting efficiency and cut quality





NZ



Latest generation of Norzon grain with finer structure and sharper shape combined with Foundry X bond technology

- Excellent micro-fracturing properties
- Greater heat resistance
- Longer wheel life. Lower total abrasive cost
- Improved cut rate
- Reduced cycle time



U57A



Specially treated brown aluminium oxide abrasive

- Tough and hard aluminium oxide abrasive
- Not suitable for use on extremely hard materials
- Long wheel life
- Ideal for heavy duty applications



57A



Semi-friable aluminium oxide abrasive

- Less tough than type A abrasive but offers better cutting quality with a pointed shape
- Cool and burn free cutting
- Ideal for heat-sensitive applications with light to moderate feed rates
- Good compromise between cut quality and wheel life
- Very versatile: suitable for all steels



23A



An abrasive blend of semi-friable 57A aluminium oxide and white monocrystalline 32A aluminium oxide

- Cool and burn free cutting
- Suitable for all steels
- Improved metal removal rate compared to 57A pure semi-friable aluminium oxide abrasive



A

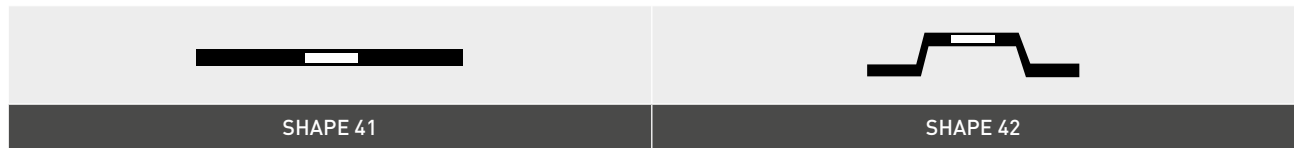


Pure brown aluminium oxide abrasive

- The toughest aluminium oxide abrasive
- Long wheel life, limited metal removal rate
- Good for cutting medium to soft steels
- Suitable price/performance position
- First choice for less technical applications

BONDED ABRASIVES STRAIGHT NON-REINFORCED & REINFORCED CUT-OFF WHEELS

SHAPE KEY



														PRODUCT RECOMMENDATION	
														Highly recommended	●
														Recommended	○
		High Alloyed Steels & HSS													
						</									