

### NON-WOVEN ABRASIVES QUICK-CHANGE DISCS



**A** Norton and Merit non-woven quick-change discs are a combination of strong synthetic mesh and quality abrasives, bonded together by a smear-resistant adhesive. The open construction of the non-woven material enables aggressive cutting action and improved surface finish while maintaining its non-loading feature.

**B** Applications: Medium-light stock removal, beveling, deburring/deflashing, rust removal, blending, cleaning and finishing, polishing, and decorative finishing

**C** Size Range: 3/4" - 4" diameter  
Grit Range: X-Coarse, Coarse, Medium, Fine, Very Fine, Super Fine  
Abrasive Grain: Ceramic-Alumina, Engineered Aluminum Oxide, Aluminum Oxide, Silicon Carbide  
Attachment: Quick-Change Type TR (Type II), Type TS (Type I), and Type TP (Type I)  
Back-up Pad: Rubber with hardness variations for different applications  
Machine Used: 

**D**

#### QUICK-CHANGE ATTACHMENT SYSTEMS AND CROSS REFERENCE GUIDE

Each system enables quick, tool-free, safe disc changes, reducing downtime and operating expenses.

**E**

Type TS (Type II)	Type TR (Type II)	Type TP (Type I)
<ul style="list-style-type: none"> <li>Features a turn-on/roll-off style fastener</li> <li>Fastener is made of metal</li> <li>Equivalent to Standard Abrasives SocAtt® locking system</li> </ul>	<ul style="list-style-type: none"> <li>Features a roll-on/roll-off style fastener</li> <li>Fastener is made of plastic</li> <li>Equivalent to 3M™ Roloc™ fastening system</li> </ul>	<ul style="list-style-type: none"> <li>Features a snap-on/snap-off style fastener</li> <li>Fastener is made of nylon</li> </ul>

NORTON	Type TS	Type TR	Type TP
3M	Roloc TS/TSM	Roloc TR	Roloc TP
Standard	TS (SocAtt)	TR (LockIt)	TP (ClickOn)
Superior	Type S	Type R	-
Arc	Type S	Type R	Type P
Pferd	Type CD	Type CDR	-
Sait	SAIT-LOK	SAIT-LOK-R	-
Carvel	Tum On	Roll On	-
Klingspor	OMC	ORC	-
Garryson	Type S	Type R	-

#### APPLICATION/GRIT RECOMMENDATION GUIDE

	MOST AGGRESSIVE		LEAST AGGRESSIVE
NORTON	Rapid Strip	Vortex Rapid Blend	Rapid Prep
MERIT	Scale Removal	Deburring & Blending	HS Buffing, Buffing
	Best Choice	Second Choice	
	Best Choice	Best Choice	
	Second Choice	Best Choice	
		Best Choice	
		Best Choice	
		Second Choice	
		Best Choice	
		Second Choice	

**F** **G**

**BEAR-TEX** **MERIT**

Full Line Industrial Market 290

## Easy to Follow Page Guide

Key Questions to Simplify Product Selection

Am I in the Right Section?

- A** Product
- B** Category overview
- C** General attributes
- D** Correct machine use

How Do I Narrow my Choices?

- E** Product design variations

How Do I Match My End-User Needs?

- F** Application recommendations
- G** Best / Better / Good performance color coding
- H** Full application / grit guide

How Do I Match or Upgrade from a Competitive Product?

- I** Cross reference guide

### COATED ABRASIVES FLAP DISCS

#### MATERIAL-TO-PRODUCT RECOMMENDATION GUIDE

	BEST Highest Productivity; Lowest Total Cost	BETTER Excellent Blend of Performance & Price	GOOD Consistent Performance; Low Initial Price
<b>TYPE 29 FOR STOCK REMOVAL</b>			
Stainless Steel / Titanium / Super Alloys	Norton Blaze F80P	Norton BlueFire R884P	Norton Metal R828
Mild Carbon Steel / Welds	Norton Red Heat R983	Norton BlueFire R884P	Norton Metal R828
Ferrous Metals / Cast Iron	Norton Red Heat R983	Norton BlueFire R884P	Norton Metal R828
Brass / Bronze / Aluminum	-	Norton BlueFire R884P	-
<b>TYPE 27 FOR BLENDING AND FINISHING</b>			
Stainless Steel / Titanium / Super Alloys	Norton Blaze F80P	Norton BlueFire R884P	Norton Metal R828
Mild Carbon Steel / Welds	Norton Red Heat R983	Norton BlueFire R884P	Norton Metal R828
Ferrous Metals / Cast Iron	Norton Red Heat R983	Norton BlueFire R884P	Norton Metal R828
Brass / Bronze / Aluminum	-	Norton BlueFire R884P	Norton Metal R828

#### APPLICATION/GRIT RECOMMENDATION GUIDE

	COARSER (GRINDING)		FINER (FINISHING)
24	36	40	50
60	80	100	120
Heavy Stock Removal	Edge Chamfering/Beveling	Weld Blending	Deburring/Deflashing
			Rust Removal/Blending
			Cleaning and Finishing

STANDARD DENSITY HIGH DENSITY

#### CROSS REFERENCE GUIDE

	BEST TOTAL PERFORMANCE	BETTER	GOOD INITIAL PRICE
NORTON	Blaze R80P	Red Heat R983	BlueFire R884P
3M	Cubitron II 967A, 947D	747D	563D, 546D
DeWalt	-	-	-
Carvel	-	CS	Z-Stainless
Flexovit	-	-	Zircotec Premium, Zircotex HP
Garryson	-	Zirc+, Zirconium	-
GemTex	-	Ceramic	Zirconia
Hermes	-	-	-
Klingspor	SMT 996	-	SMT 630
Metabo	-	-	SMT 618, 619, 624, 626, 627, 628, 640
Pferd	Red Line CB	Stainless Max	Z/A
Pferd	OO-Cool	Ceramic	Z/A Silver Line
Sait	-	-	Cool Zirconia, CO-00GL
SIA	-	-	Z
Standard	-	Ceramic Oxide	Z/A
Tyroit	-	-	Zirconia Pro
Walter	Enduro-Flex Stainless	-	Zirconia
Weiler	-	Saber Tooth Ceramic	Z/A
Weiler	-	-	Enduro Flex
			Tiger Zirconium, Vortec

#### When You Want Fast and Tough, You Want Norton

Whether you want maximum productivity or simply the lowest initial cost solution, Norton products are the solution for all your right angle grinding and blending applications.

<b>BEST</b> Norton Blaze Highest Productivity - Lowest Total Cost	<b>BETTER</b> Norton BlueFire Exceptional Blend of Performance and Price	<b>GOOD</b> Norton Metal Good Performance - Low Initial Price
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Full Line Industrial Market 86 www.nortonabrasives.com



## Coated Abrasives

A coated abrasive product is made up of three basic raw materials: an abrasive mineral, the backing onto which the abrasive is applied, and an adhesive bond.

### Abrasive Types

#### Emery (6)

Emery is a dark gray, round-shaped grain which tends to polish rather than abrade a work surface.

- For polishing and cleaning metal only

#### Garnet (5)

Garnet is reddish brown in color. This natural abrasive is medium hard and relatively sharp, but not as durable as synthetic abrasives.

- For use on wood only
- Particularly good for soft woods such as pine
- Produces an excellent finish

#### Silicon Carbide (4)

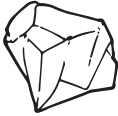
Silicon carbide is the hardest and sharpest of the manufactured abrasives. Because of its extreme sharpness, this bluish-black abrasive grain permits fast stock removal and cool cut.

- Cast iron
- Non-ferrous metals, i.e. brass, aluminum and bronze
- Non-metallics, i.e. glass, rubber, plastic and stone
- Final finish on wood and stainless steel
- Abrasive planing particleboard

#### Light Brown Aluminum Oxide (2)

Light brown aluminum oxide is a tough, yet sharp synthetic abrasive characterized by cool cut, long life and the ability to break down under pressure, producing new cutting edges.

- Production wood sanding
- Non-ferrous metal finishing



#### Brown Aluminum Oxide (2, 7)

Brown aluminum oxide is a tough, durable, synthetic abrasive characterized by the long life and wear resistance of its cutting edges. It offers enormous penetrating strength, even at high speeds.

- Ferrous metals
- Aluminum
- Hardwood



#### Heat-treated Aluminum Oxide (2)

Heat-treated aluminum oxide is a tough but cool cutting abrasive which gives both long life and freeness of cut on a wide range of materials.

- Ferrous metals
- Wood sanding



#### Zirconia Alumina (8)

Zirconia alumina is an ultra-tough, synthetic abrasive which provides a free, cool cut for high stock removal applications. It is tougher and sharper than aluminum oxide. It has a micro-crystalline structure which allows for controlled breakdown and self-sharpening.

- Heavy-duty snagging and grinding of all ferrous and non-ferrous metals
- Abrasive planing of wood, plywood and particleboard
- Grinding fiberglass, rubber and plastics



#### Ceramic Alumina (9)

The sub-micron structure of ceramic alumina allows each grain to continually expose sharp cutting points, resulting in a cooler cutting action and an extended life.

- All ferrous/non-ferrous metals, carbon steel and exotic alloys



Used on surface, cylindrical, and tool and cutter grinders, Norton precision, form-holding vitrified toolroom wheels maximize your productivity. Available in latest-generation ceramic alumina, aluminum oxide, and silicon carbide – for every ferrous and nonferrous MRO, small job shop, and production operation.

Applications: Surface grinding, tool and cutter grinding, and reshaping  
 Shapes: Type 01 Straight, Type 02 Cylinder, Type 05 and 07 Recessed 1 and 2 Sides, Type 06 and 11 Straight and Flaring Cups, Type 12 Dish, Type 20 Concaved 1 Side, and Type 35 Plate Mounted Disc  
 Size Range: 3/4" – 18" diameter  
 Grit Range: 46 – 220  
 Abrasive Grain: Ceramic Alumina, Aluminum Oxide, Silicon Carbide

## MATERIAL-TO-PRODUCT RECOMMENDATION GUIDE

APPLICATION / MATERIAL	PERFORMANCE/PRODUCTIVITY								
	Narrow Contact Area			Medium Contact Area			Wide Contact Area		
	BEST	BETTER	GOOD	BEST	BETTER	GOOD	BEST	BETTER	GOOD
Tool Reshaping									
• Heavy Stock Removal (> .004)									
HSS & Tool Steel RC 50-68	5SG46-KVS	32A46-KVBE	38A46-KVBE	5SG46-JVS	32A46-JVBE	38A46-JVBE	5SG46-GVSP 3SGR46-GVP2	32A46-GVBEP 48A46-GVP2	38A46-GVBEP 38A46-GVP2
• Moderate Stock Removal (.002-.004)									
HSS & Tool Steel RC 50-68	5SG60-KVS	32A60-KVBE	38A60-KVBE	5SG60-JVS	32A60-JVBE	38A60-JVBE	5SG60-GVSP 3SGR60-GVP2	32A60-GVBEP 48A60-GVP2	38A60-GVBEP 38A60-GVP2
Carbide			39C60-JVK			39C60-JVK			
Surface Grinding									
• Heavy Stock Removal (> .004)									
HSS & Tool Steel RC 50-68	5NQ46-JVS	32A46-JVBE	38A46-JVBE	5SG46-IVS	32A46-IVBE	38A46-IVBE	5SG46-GVSP 3SGR46-GVP2	32A46-GVBEP 48A46-GVP2	38A46-GVBEP 38A46-GVP2
400 Series Stainless									
Soft Steels RC 30-45	5SG46-KVS	32A46-KVBE	38A46-KVBE	5SG46-JVS	32A46-JVBE	38A46-JVBE	5SG46-HVSP 3SGR46-HVP2	32A46-HVBEP 48A46-HVP2	38A46-HVBEP 38A46-HVP2
300 Series Stainless									
Cast Iron: Ductile & Gray	5SG46-KVS	32A46-KVBE	38A46-KVBE	5SG46-JVS	32A46-JVBE	38A46-JVBE	5SG46-HVSP 3SGR46-GVP2	32A46-HVBEP 48A46-HVP2	38A46-HVBEP 38A46-HVP2
Nonferrous Alloys			39C46-JVK			39C46-IVK			
• Moderate Stock Removal (.002-.004)									
HSS & Tool Steel RC 50-68	5NQ60-JVS	32A60-JVBE	38A60-JVBE	5SG60-IVS	32A60-IVBE	38A60-IVBE	5SG60-GVSP 3SGR60-GVP2	32A60-GVBEP 48A60-GVP2	38A60-GVBEP 38A60-HVBEP
400 Series Stainless									38A60-HVP2
Soft Steels RC 30-45	5SG60-KVS	32A60-KVBE	38A60-KVBE	5SG60-JVS	32A60-JVBE	38A60-JVBE	5SG60-HVSP 3SGR60-HVP2	32A60-HVBEP 48A60-HVP2	38A60-HVBEP 38A60-HVP2
300 Series Stainless									
Cast Iron: Ductile & Gray	5SG60-KVS	32A60-KVBE	38A60-KVBE	5SG60-JVS	32A60-JVBE	38A60-JVBE	5SG60-HVSP 3SGR60-HVP2	32A60-HVBEP 48A60-HVP2	38A60-HVBEP 38A60-HVP2
Nonferrous Alloys			39C60-JVK			39C60-IVK			
• Light Stock Removal and Finishing (<.001)									
HSS & Tool Steel RC 50-68		32A80-JVBE	38A80-JVBE		32A80-IVBE	38A80-IVBE		32A80-HVBE	38A80-HVBE
400 Series Stainless									
Soft Steels RC 30-45		32A80-KVBE	38A80-KVBE		32A80-JVBE	38A80-JVBE		32A80-IVBE	38A80-IVBE
300 Series Stainless									
Cast Iron: Ductile & Gray		32A80-KVBE	38A80-KVBE		32A80-JVBE	38A80-JVBE		32A80-IVBE	38A80-IVBE
Nonferrous Alloys			39C80-JVK			39C80-IVK			39C80-HVK

## Upgrade to Vitrium<sup>3</sup> to improve your process and productivity in 3 ways

Vitrium3 bond (VS3) wheels for enhanced-performance are available with these abrasives: NQ, SG, 32A, and 48A

<p><b>1. COOL CUTTING</b></p> <p>VITRIUM<sup>3</sup> BOND   BOND-PART INTERACTION</p> <p>Improved holding power (using less bond-to-abrasive ratio) exposes a larger grain surface area, improving freer cut rate.</p>	<p><b>2. PRECISE PROFILE</b></p> <p>Vitrium<sup>3</sup> wheel After 5 grinding cycles</p> <p>Superior grain-holding properties significantly improve wheel form and corner holding vs. other bond systems – reducing dressing time and dresser wear.</p>	<p><b>3. HIGH SPEED</b></p> <p>High Speed – Norton Vitrium<sup>3</sup> bond provides the ultimate wheel strength. This allows for high speed operation on equipment designed and rated for high speed.</p>
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## How to Read an Abrasive Product Specification

Conventional Grinding Wheels

**32A 46 I 8 V BE**

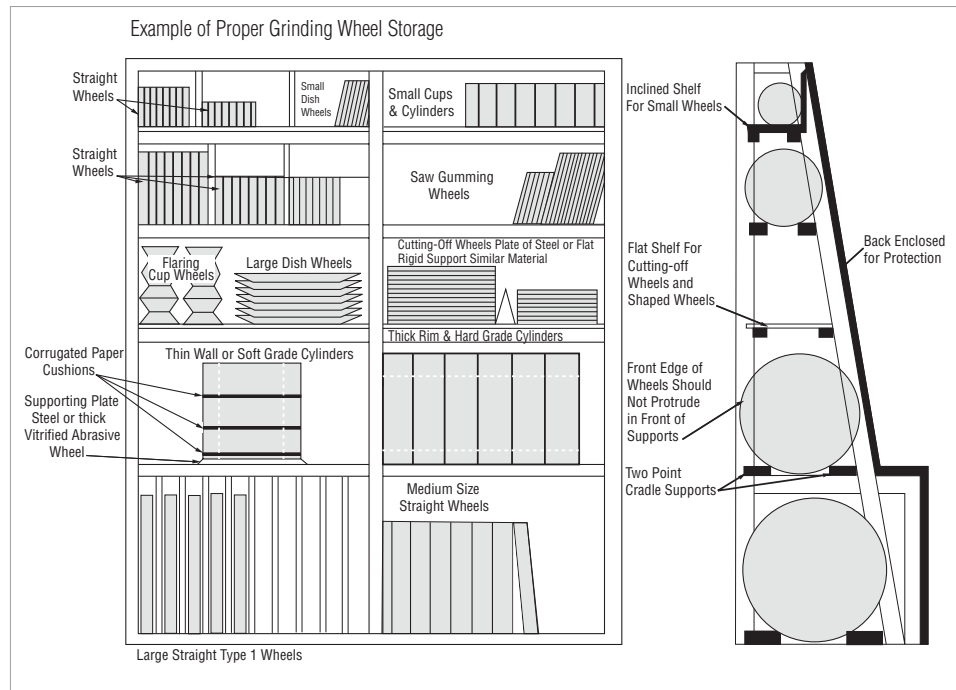
Abrasive		Grit Size			Grade			Structure	Bond Type	Norton Symbol
Aluminum Oxide	Ceramic	Coarse	Medium	Fine	Soft	Medium	Hard	Resin = B	Designates a variation or modification to bond.	
23A	Aluminum Oxide	12	30	80	D	I	Q	Shellac = E		
25A	3SGP	14	36	90	E	J	R	Plastic = P		
32A	3SGR	16	46	100	F	K	S	Rubber = R		
32AC (blend)	5SG	20	54	120	G	L	T	Vitrified = V		
38A	BRG	24	60	150	H	M	u			
48A	SG	70	220		N	V				
53A	SXG				O	Y				
55A	NorZon Plus (blend)				P	Z				
57A	NQ									
U57A	Quantum									
64A	Targa									
86A										
90A										
Alundum										
FabCut										
India										
Gemini										
Metal										
Vortex										

Structure: ↑ 2, 4, 5, 6, 8, 12, 16, 19, 25, 28 ↓ Open

## Shelf Life and Proper Storage of Grinding Wheels

It has always been Saint-Gobain Abrasives recommendation that resinoid bonded grinding wheels be used within 2 years from the date of manufacture. This recommendation assumes that resinoid bonded grinding wheels have been stored under ideal storage conditions. It might be true that under ideal storage conditions resinoid bonded grinding wheels can survive without any degradation in strength for well over two years. However, it is always wise to suspect any wheels over two years old and have them reinspected or re-speed tested to determine if there has been any degradation in strength. If the wheels are stored under less than ideal conditions, they might have a much shorter shelf life depending upon the severity of storage conditions. These same comments also apply to rubber and shellac bonded grinding wheels.

As for vitrified grinding wheels, the shelf life is less influenced by humidity and adverse storage conditions as compared to resinoid, rubber or shellac, but even vitrified grinding wheels do not have an infinite shelf life. The best procedure and the best rule of thumb is to have any wheel that is two years old or older re-speed tested and reinspected to ensure it is fit for use. The procedure for having this done and the charges will be explained by our Customer Service Department, but the cost of shipping as well as the cost of re-inspection is the customer's responsibility. Also, any wheels rejected or otherwise lost in the re-inspection process will also be the responsibility of the customer.



Keep in mind, however, that this procedure is good to verify the reliability of a product but must not be performed until you are ready to consume the wheel. If wheels are sent back after the two year time frame for re-inspection and re-testing and then put back on the shelf, there is no telling how long they will be fit for use after that last inspection. Therefore, these wheels must be consumed as soon as is practical.

## Introduction

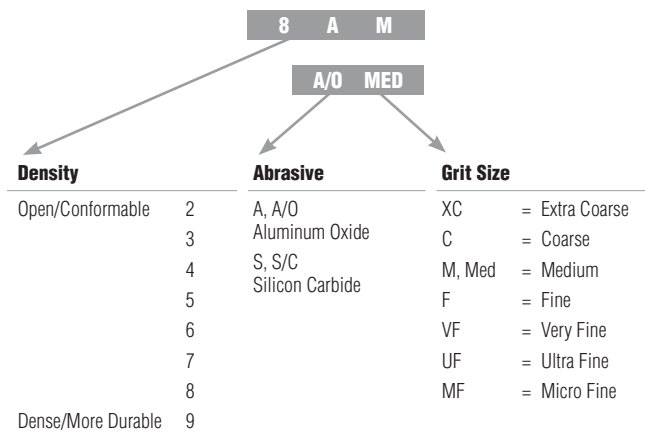
Most Norton Bear-Text and Merit products consist of a non-woven web of nylon fibers impregnated throughout with abrasive grain and bonded with synthetic resins. This design produces a cushioned, three-dimensional material that is extremely pliable and long lasting. The uniform dispersion of abrasive throughout the web provides a continuous supply of new grain as the old grain and fibers wear away during use.

Norton Bear-Text and Merit products, with their open mesh construction, are waterproof, washable, resilient, conformable, non-loading, non-conductive, non-metallic and non-rusting. Non-woven wheels are easily pre-formed to conform to special-shaped work pieces.

Since non-woven products are designed for use where stock removal is not required, they begin where other abrasives leave off. The relatively non-aggressive nature of nylon and grit inherent in the material makes it ideal as a finishing tool. While 60 to 80 grits are considered intermediate sizes in other products, they are considered coarse for non-woven items.

Used wet or dry, Norton Bear-Text and Merit non-woven products offer the following advantages: controlled cut (with little or no stock removal) allows for increased productivity, consistent, uniform finish, ability to automate operations, minimized smearing and reduced operator training. These advantages make our non-woven products an excellent alternative to bristle brushes, set-up wheels, greaseless compounds and steel wool.

## Product Identification System



## Abrasives

Ceramic alumina, silicon carbide and aluminum oxide abrasives are offered. Ceramic alumina cuts the fastest and is the most cost effective on large-volume applications. Silicon carbide is sharper, cuts faster than aluminum oxide, and produces finer scratch patterns on most surfaces. Aluminum oxide is more durable and tends to last longer. It causes less discoloration on aluminum, and is more aggressive on certain applications such as hardened steel parts. Norton Bear-Text hand pads are also available in a non-abrasive material.

## Grits

Grit refers to the size of the abrasive grain impregnated into the nylon web. The coarser the grit, the more aggressive the cut, the rougher the finish. The finer the grit, the less aggressive the cut and the resulting surface finish will be finer, if all other conditions are equal.

GRIT DESIGNATIONS	GRIT SIZE
Extra Coarse (XC)	24 – 36
Coarse (C)	50 – 80
Medium (M)	100 – 150
Fine (F)	180 – 220
Very Fine (VF)	240 – 360
Super Fine (SF)	400
Ultra Fine (UF)	600
Micro Fine (MF)	800 – 1200

## Densities

The product “density” refers to the number of fibers which have been compressed into the nylon web material. Under identical conditions, harder density wheels cut faster, last longer and produce finer finishes than softer density wheels. Softer density wheels offer greater conformability and have less tendency to load or burn the work piece.

## Fiber Sizing

Several nylon fiber sizes are used in the manufacture of Norton Bear-Text and Merit web material because the fiber size is a significant factor in the coating process, as each produces distinct cutting characteristics.

## Bonding Agents

Waterproof resins are used in the manufacture of Norton Bear-Text and Merit web material to bond the nylon fibers together and to firmly anchor the abrasive grains throughout the web.

## Conventional Finishing Methods Versus Norton Bear-Text and Merit Non-Woven Products

The following chart outlines the advantages achievable when using our products as alternatives to other cleaning, blending, deburring and finishing methods. These products are listed in the sequence of normal preference for the application stated. However, because of the numerous variables, only testing can ensure selection of the most cost-effective product.

CONVENTIONAL FINISHING METHOD	KEY APPLICATION	NORTON/MERIT PRODUCT ALTERNATIVES	ADVANTAGES OF NORTON/MERIT PRODUCT VERSUS ALTERNATE FINISHING METHODS
Bristle Brushes	Cleaning	Clean & Finish Wheels Metal Finishing Wheels Flap Wheels	Superior cleaning performance Higher productivity No slurry or compound required More consistent finish Eliminate compound dust
Greaseless Compounds	Finishing	Flap Wheels Convolute Wheels Unified Wheels	Reduced maintenance No compound, instant set-up Elimination of compound dust More uniform finish More consistent work rate
Set-up Wheels	Blending/ Deburring	Convolute Wheels Unified Wheels	No break-in time required More consistent cut More uniform finish Maintain geometry Safer, no flying wheel pieces
Steel Wool	Cleaning	Rolls Discs Hand Pads	Faster, longer life Less pressure required Non-rusting, cleaner Safer, no splinters

# NORTON DIAMOND / CBN STOCK WHEELS

## NORTON DIAMOND PRODUCT IDENTIFICATION SYSTEM / USAGE INFORMATION

ASD 120 – R 75 B99 1/8

Abrasive Type	Grit Size	Grade	Concentration	Bond	Abrasive Depth
<b>ASD</b> <ul style="list-style-type: none"> <li>Used with B99 and B105 bonds</li> <li>Armored</li> <li>Durable</li> <li>Versatile</li> <li>Use wet or dry</li> <li>Carbide/steel operations</li> </ul>	<ul style="list-style-type: none"> <li>100S – Roughing</li> <li>120 – Roughing/cutting-off</li> <li>150 – Combined roughing and finishing</li> <li>180 – Improving finish</li> <li>220, 320 &amp; 400 – Finishing only</li> <li>10/20 mic</li> <li>6/12 mic</li> </ul>	<b>Resin Bond</b> R – Norton standard N – Free cutting <b>Metal Bond</b> N – Norton standard <b>Vitrified Bond</b> P – Norton standard R – Most durable	<b>50</b> <ul style="list-style-type: none"> <li>Most economical</li> <li>For broad area of contact</li> </ul> <b>75</b> <ul style="list-style-type: none"> <li>Norton standard</li> <li>Freer cutting than 100</li> <li>Dry grinding with ASD</li> </ul> <b>100</b> <ul style="list-style-type: none"> <li>Very durable</li> <li>For flood coolants</li> <li>Use with 220 grit or finer</li> <li>Use for cutting-off</li> </ul> <b>115</b> <ul style="list-style-type: none"> <li>For CNC grinding machines</li> </ul> <b>125</b> <ul style="list-style-type: none"> <li>Form holding</li> <li>For high volume, high pressure coolant, precision applications on high-speed tool steels</li> </ul>	<b>B99</b> <ul style="list-style-type: none"> <li>Resin bond</li> <li>Use wet or dry</li> <li>Tool making; resharpening</li> </ul> <b>B105</b> <ul style="list-style-type: none"> <li>Premium resin bond</li> <li>Advanced heat-reducing bond</li> <li>Use dry; reconditioning</li> </ul> <b>B610 and B80</b> <ul style="list-style-type: none"> <li>For CNC grinding machines</li> </ul> <b>M99</b> <ul style="list-style-type: none"> <li>Metal bond</li> <li>1A1R cut-off</li> <li>Glass and ceramics</li> </ul> <b>MSL</b> <ul style="list-style-type: none"> <li>Metal single layer</li> <li>Type 6A2C only</li> <li>Use dry</li> <li>Offhand reconditioning/finishing carbide</li> </ul> <b>V99</b> <ul style="list-style-type: none"> <li>Vitrified bond</li> <li>Offhand finishing of carbide tools</li> <li>Plunge grinding</li> </ul>	1/16" 1/8" 1/4" 9/32" 3/8" 1/2" 3/4" Solid
<b>CD</b> <ul style="list-style-type: none"> <li>Used with B99 bond</li> </ul>					
<b>D</b> <ul style="list-style-type: none"> <li>Used with B99 bond</li> <li>Micron-sized diamond; finishing</li> </ul>					
<b>M3D</b> <ul style="list-style-type: none"> <li>Used with M99 bond</li> </ul>					
<b>M4D</b> <ul style="list-style-type: none"> <li>Used with M99 bond</li> <li>Armored</li> <li>Durable; for non-metallics</li> </ul>					
<b>RMD</b> <ul style="list-style-type: none"> <li>Used with V99 bond</li> </ul>					
<b>SD</b> <ul style="list-style-type: none"> <li>Used with B99 and V99 bonds</li> <li>Norton standard</li> <li>Use wet or dry</li> <li>Free cutting</li> <li>Low horsepower (3/4 hp or less)</li> </ul>					

## NORTON CBN PRODUCT IDENTIFICATION SYSTEM / USAGE INFORMATION

CB 120 – T B99 1/8

Abrasive Type	Grit Size	Grade	Bond	Abrasive Depth
<b>CB – cubic Boron Nitride</b> <ul style="list-style-type: none"> <li>Used with B99 bond</li> <li>Armored</li> <li>Use wet or dry</li> </ul>	<ul style="list-style-type: none"> <li>100 – Roughing</li> <li>120 – Roughing/cutting-off</li> <li>150 – Combined roughing and finishing</li> <li>180 – Improving finish</li> <li>220, 320, 400 – For finishing only</li> </ul>	<b>Q</b> <ul style="list-style-type: none"> <li>Approx. 50 concentration</li> <li>Type 6A2</li> <li>Broad area of contact</li> </ul> <b>T</b> <ul style="list-style-type: none"> <li>Approx. 75 concentration</li> <li>Norton standard</li> <li>First choice</li> <li>Lower horsepower</li> <li>Broad area of contact</li> <li>Dry grinding</li> <li>Resharpening applications</li> </ul> <b>W</b> <ul style="list-style-type: none"> <li>Approx. 100 concentration</li> <li>Most durable</li> <li>High volume coolant</li> <li>Flute polishing</li> <li>Surface grinding</li> <li>Cylindrical grinding</li> </ul>	<b>B99</b> <ul style="list-style-type: none"> <li>Resin bond</li> <li>Use wet or dry</li> </ul> <b>Aztec III</b> <ul style="list-style-type: none"> <li>Premium resin bond</li> <li>Use dry</li> <li>Tool resharpening</li> </ul> <b>Aztec .007</b> <ul style="list-style-type: none"> <li>Premium resin bond</li> <li>Use dry</li> <li>Increased feed rates</li> <li>Heavy stock removal</li> <li>Heavier cuts</li> </ul>	1/16" 1/8" 1/4" 1/2" Solid

**⚠ WARNING**

**Improper use of abrasive products might cause grinding wheel breakage and serious injury. Comply with ANSI B7.1, OSHA and Safety Guide furnished with package. Don't overspeed, abuse, or drop wheel. Always use a guard, personal protective equipment and proper mounting procedures.**



**Speeds**

Check machine spindle speed and speed listed on machine against safe maximum operating speed marked on the grinding wheel. Do not overspeed the wheel. Refer to the "Proper Grinding Wheel Operating Speeds and Safety" article on page 336 for more information.



**Flanges**

When mounting most grinding wheels, use flanges of equal diameter and bearing surface. For exceptions, see ANSI B7.1.



**Safety Gloves**

Grinding applications are conducted in harsh environments. The use of proper fitting gloves is recommended.



**Wheel Guard**

Always use the wheel guard as supplied by the machine manufacturer, in the proper position.



**Do Not Use Damaged Wheel**

Always check each wheel for cracks or damage before use. Never use a damaged wheel.



**Eye/Face Protection**

Always wear government-approved face and eye protection when using abrasive products.



**Hearing Protection**

Use of abrasive products can create elevated sound levels. Hearing protection must be worn where required.



**Safety Guides, SDS and Wheel Warning Messages**

Before using any abrasive materials, READ:

- The Safety Guides
- Wheel Warning Messages
- Safety Data Sheets (SDS)

All Norton products provide information pertaining to safe use. Please take the time to read it carefully. Contact suppliers of the workpiece and abrasive materials for copies of the SDS if one is not readily available. Norton abrasives SDS can be obtained on [www.nortonabrasives.com](http://www.nortonabrasives.com)



**Dust Protection**

Exposure to dust generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury.

Use dust capture or local exhaust as stated in the SDS. Wear government-approved respiratory protection and eye and skin protection. Failure to follow this warning can result in serious lung damage and/or physical injury.

This is a general dust warning and does not cover specific situations. For more information, refer to the SDS dust warning provided with your products, and workpiece.

## Product Warranty

WARRANTY – Norton | Saint-Gobain warrants the products in this catalog to be free from defects in material or workmanship for a period of one year from the date of purchase. Norton | Saint-Gobain's sole obligation under this warranty shall be to repair or replace, at Norton | Saint-Gobain's option, any product which is non-conforming provided any such product failure was not caused by a subsequent modification of the product, misuse or a failure to follow any applicable instructions for the product.

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Alundum®	FastTrack™	NorPor®	Sand-O-Flex™
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Amplex®	FlexEdge™	Norton Clipper™	Screen-Bak®
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Bear-Tex®	Furioso™	Norton Ice™	SoftTouch®
Because Right Choices Matter™	Gemini®	Norton SG®	Speed-Change™
Black Ice®	G-Force™	NorZon®	Speed-Grip®
Blaze®	Greenlyte™	NorZon BlueFire®	Speed-Lok®
Block Buster®	Grind-O-Flex™	NorZon Plus®	Stick & Sand®
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Century45™	Metalite®	Power Strip™	Univel®
Charger™	Millinium™	ProSand™	USB™
Classic™	Mini-Dex™	Pure Ice™	Vitrium3®
Clean Bond®	MSL®	PureSand®	Vortex®
Clear Creek™	Multi-Air®	Quadro-Fit Pro™	Winter®
Clipper®	Multi-Air Cyclonic®	QuadroFlex™	WoodSand™
Crystolon®	Multi-Air® Plus™	Quantum™	ZF®
DiaLast™	Multi-Oilstone®	Rail Cut™	ZS®
Dry Ice®	MultiSand™	Rapid Blend®	ZX®
Duo®	The Muscle Behind The Machine®	Rapid Cut™	and others
Duo Evo™	Nanozyte™	Rapid Finish®	
Durite®	Neon®	Rapid Prep™	
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Norton | Saint-Gobain is so confident of the superior performance of our abrasive products, as recommended for specific applications, that we invite in-plant tests against any other brand of abrasive product on the market.

1. The test will be conducted in the user's own plant, on their own machines, using their own workpieces
2. Even if the user purchases only a minimum quantity of Norton abrasive products, the user will receive the same quantity discount as would apply to their normal production orders
3. If the Norton product tested proves completely unsatisfactory, the user will receive a full refund
4. If the Norton product tested performs at a lower level than the product presently in production, the user will receive an adjustment to make up the difference in performance
5. The user is the final judge of performance!

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To place an order, contact our customer service support center with:

- Customer number and contact name
- Any special shipping needs
- Complete product information:
  - » 11-digit Part Number
  - » Product description
  - » Quantity and unit of measure
  - » Price by unit of measure

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This printed catalog is a great starting resource for Norton and Merit product selection. Our website is the ideal resource for a more comprehensive outline of product, safety, and application information. It is continually updated with all our most current information and offers more electronic queries for deeper detail, at a click of a button.

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