



CATEGORY DEFINITION

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, drill sharpening
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" – 14" diameter
GRIT RANGE:	46 – 220
ABRASIVE GRAIN:	Ceramic Alumina, Aluminum Oxide, Silicon Carbide

MATERIAL-TO-PRODUCT RECOMMENDATION GUIDE

PERFORMANCE/PRODUCTIVITY	NARROW CONTACT AREA			MEDIUM CONTACT AREA			WIDE CONTACT AREA		
	BEST	BETTER	GOOD	BEST	BETTER	GOOD	BEST	BETTER	GOOD
APPLICATION / MATERIAL									
Tool Resharpener									
• 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
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
400 Series Stainless									
Soft Steels RC 30-45	5SG60-KVS	32A60-KVBE	38A60-KVBE	5SG60-JVS	32A60-JVBE	38A60-JVBE	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	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

VITRIFIED WHEELS

VITRIFIED WHEEL BONDS

BOND	DESCRIPTION
VS	Quantum (green) and Norton SG (blue): High stock removal; narrow/medium contact area; roughing/finishing; less burn; cool cutting.
VSP	Quantum (green) and Norton SG (blue): Porous bond; high stock removal; medium/wide contact area; cool cutting; less burn than VS; high chip clearance.
VBE	32A (purple), 38A (white) and 57A (brown): General purpose; narrow/medium contact area; versatile; economical.
VBEP	32A (purple) and 38A (white): Porous bond; medium/wide contact area; cool cutting; less burn than VBE; high chip clearance; high stock removal.
V	38A (orange): For fine grit, form/corner holding applications; narrow contact area.
VK	37C (black) and 39C (green): Designed specifically for silicon carbide abrasives; medium to narrow area of contact.
VCP	32A (purple) and 23A (blue/grey): Induced-pore, wide contact area, surface/creepfeed grinding applications.
VP2	3SGR (ruby), 48A (ruby), 25A (pink) and 38A (white): Unique, controlled-porosity (NORPOR) bond for heat-sensitive applications.

APPLICATION/GRIT RECOMMENDATION GUIDE

GRIT	REQUIREMENT	FINISH	MINIMUM CORNER RADIUS
46	General Purpose	32 Ra and rougher	0.020"
60	Commercial Finish	32 Ra and better	0.016"
80 – 100	Fine Finish	20 Ra and better	0.0105"
120	Very Fine Finish	10 Ra and better	0.006"
150	Corner-Form Holding		0.005"
180	Corner-Form Holding		0.0035"
220	Corner-Form Holding		0.0026"

CROSS REFERENCE GUIDE

NORTON	CAMEL	CINCINNATI	RADIAC	TYROLIT	WINTERTHUR
Quantum 5NQ		5M5B			
3SGR	AS3	3BP	7BP, 8BP		
5SG	SZA	5MSB	7BW, 8BW		
25A	PA	12A	RAA	88A	57A
32A	AZ	4A, 12A, 29A, 32A	32A, WRA	90A	67A, 68A
38A	83A, WA, AZ (Blue)	9A, 10A, 11A, 82A	WA, 9A	88A, 89A	53A, 49A, 42A
48A			RA	91A	68A
53A	91A, DA	29A, 97A	43A, 45A, 97A, WPA	50A	61A, 64A
57A	94A, CGW, A	A, AK	A	A, 52A	A
37C		6C	C	1C	C
39C		5C	GC	C	11C

STARTING RECOMMENDATIONS FOR TRUING AND DRESSING NORTON TOOLROOM WHEELS

TRUING & DRESSING: DRESSING STICK STARTING RECOMMENDATIONS

SIZE/SPEC.	HIGH PERFORMANCE STICK PART NO.	SIZE/SPEC.	CONVENTIONAL STICK PART NO.
3 x 1/2 x 1/4" Norbide	61463610148	6 x 1 x 1" 37C24-SVK	61463610462
		8 x 1 x 1" 37C24-SVK	61463610471
		other sizes are available	

DRESSING: SINGLE POINT DRESSING TOOL STARTING RECOMMENDATIONS

WHEEL SIZES	TOOL SHANK DIAMETER	CERAMIC (NQ, NORTON SG, TG, ETC.), 37C & 39C WHEELS		25A, 32A, 38A, 48A, 53A, 57A, 64A, 86A WHEELS	
		PRODUCT NO.	PART NO.	PRODUCT NO.	PART NO.
Up to 7"	3/8	BCSG2M6	66260157007	BC2M6	66260195000
	7/16	BCSG2M7	66260156905	BC2M7	66260195001
8" to 10"	3/8	BCSG3M6	66260157008	BC3M6	66260195002
	7/16	BCSG3M7	66260156906	BC3M7	66260195003
12" to 14"	3/8	BCSG5M6	66260157009	BC5M6	66260195004
	7/16	BCSG5M7	66260156907	BC5M7	66260195005

THESE TOOLS ARE A STANDARD RECOMMENDATION; SEE THE "DIAMOND TOOL" SECTION FOR ADDITIONAL TOOLS
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 Restricted or low coolant volume Wheel too hard Wheel structure too closed Wheel dressed too fine Worn dressing tool Work speed too slow Infeed too fast	Redirect coolant into grinding zone Increase coolant volume Use one grade softer wheel Use porous bond wheel Dress wheel coarser, more "open" Inspect, rotate or replace dressing tool Increase work speed Reduce stock removed per pass or upgrade to 5SG or 5NQ
Wheel loading and glazing	Wheel too fine Wheel too hard Too durable abrasive Poor coolant quality Wheel structure too closed Wheel too finely dressed Diamond dressing tool worn Depth of cut too small	Use coarser grit or softer grade wheel Use one grade softer wheel Use a sharper, more friable abrasive Change coolant or use high detergent type Use a porous bond wheel Dress wheel very open Replace diamond and dress coarse (open) Increase feed and traverse speed
Chatter	Unsupported work Machine vibration Too heavy cut rate Wheel too hard Wheel structure too closed Wheel out of balance	Increase work support Check for worn bearings Reduce cut rate Use one grade softer wheel Use a porous bond wheel Check wheel balance or try new wheel
Chatter marks on workpiece	Worn spindle bearings Wheel out of truth Poorly clamped wheel Glazed face of wheel	Check and correct for truth and end play Redress wheel and check mounting Check tightness of mounting nuts Redress wheel with sharp dressing tool
Poor surface finish	Incorrect wheel dress Worn dressing tool Too coarse grit size Wheel too hard	Dress wheel finer (slow down dressing tool traverse) Inspect, rotate, or replace dressing tool Use a finer grit size Use softer grade
Not holding form	Wheel too soft Wheel structure too open	Use one grade harder wheel Use a more closed wheel structure
Not holding corner	Incorrect wheel dress Too large grit size Wheel too soft Wheel structure too open	Dress wheel finer. Face and side true wheel Use smaller grit size (maximum grit diameter less than 1.5 times corner radius) Use harder grade wheel Use more closed structure wheel

TECHtip

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 center of the wheel, pointing in the direction of wheel travel.
- Point of contact should be slightly below centerline 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.

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 maximize productivity of the ceramic abrasive.

To optimize 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.



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

FEATURED PRODUCTS



NORTON QUANTUM (5NQ)

BEST CHOICE FOR VERSATILITY, MAXIMUM PERFORMANCE AND COST SAVINGS

FEATURES

- Revolutionary, engineered ceramic grain shape and chemistry with proven bond technology – green

BENEFITS

- Versatile; for all low, medium and high force applications ranging from cast iron, to stainless steel and hard-to-grind Inconel and titanium
- Perform well on old and new machines
- 33% to 100% longer life vs. competitive ceramic products
- 30%+ higher metal removal rate
- 15%+ lower threshold power
- Lowest total grinding costs



NORTON SG

BEST CHOICE FOR HIGH PRODUCTIVITY, LOW TOTAL PER-PART GRINDING COST

FEATURES

- Exceptionally high-performance proprietary seeded gel ceramic aluminum oxide abrasive
- Self-sharpening abrasive
- High performance VS and VSP bonds
- Provide sharp edge on tools and dies
- 5SG – Durable Norton SG and aluminum oxide blend – blue
- NORPOR 3SGR – Purple Norton SG and 48A abrasive blend with VP2 porous bond

BENEFITS

- Fast stock removal, cool, superior cutting
- 3X - 5X more life than aluminum oxide wheels
- Double rough stock removal rate versus conventional abrasives
- Less burn, less dressing; very consistent performing wheel
- Versatile; exceptional form holding
- Longer life of tools and dies in production
- High stock removal rates, excellent productivity, long wheel life, low overall grinding cost
- Maximum productivity in heat-sensitive, heavy stock removal operations



NORTON 32A

BETTER CHOICE FOR MEDIUM TO HEAVY STOCK REMOVAL

FEATURES

- Sharp monocrystalline aluminum oxide grain – the industry's most versatile abrasive – purple

BENEFITS

- Free cutting on a wide range of applications and materials
- Outstanding form holding



NORTON 38A

GOOD CHOICE FOR LIGHT GRINDING OF TOOL STEELS

FEATURES

- White, friable abrasive grain
- Consistent quality
- NORPOR 38A — White, most friable, aluminum oxide abrasive with VP2 porous bond
- Versatile

BENEFITS

- Cool and burn-free cutting; ideal for heat-sensitive applications with light to moderate feed rates
- Excellent balance and dimensional accuracy time after time
- Exceptionally cool cutting in light pressure grinding applications, or heat-sensitive applications
- Ideal for use across a broad variety of tool steels



NORTON GEMINI ALUMINUM OXIDE

GOOD CHOICE FOR USE ON GENERAL PURPOSE APPLICATIONS; ECONOMICAL

FEATURES

- Durable aluminum oxide abrasive and strong vitrified bond – brown
- Versatile, economical

BENEFITS

- Consistent stock removing performance on narrow to medium contact areas; cool cutting
- Ideal when numerous small jobs are run on one machine
- The choice when initial price is the main purchasing criterion

ID and Race Wheels



Vitrified First Line (VFL) ID and Race Wheel availability encompasses over 1,000 wheel sizes and most abrasive types. These high-performance wheels are made-to-order and shipped within two weeks of receipt of your order.

Additional dimensions and grinding faces are available as made-to-order products with 4-week lead-times.

ID and Race Wheel FastTrack Availability

Type 01 Straight 

Diameter: 0.164" thru 4.532"

Thickness: 0.150" thru 2.750"

Type 05 Recessed One Side 

Diameter: 0.407" thru 4.625"

Thickness: 3/16" thru 3.100"

ABRASIVE	25A, 32A, 38A, 48A, 53A, 57A	5TG**	Quantum (NQ) 1SG, 3SG, 5SG	32AA
GRIT	46* - 120	80/1, 120/1	36 - 150	46 - 80
GRADE	J - P	I - M	I - N	I - M
STRUCTURE	6	8	6	6
BOND	VFL	VFL	VFL	VFL
SPEED	8,500 SFPM***			
TREAT 22	Available for Quantum (NQ) 32A, and 53A			

* 46 GRIT ONLY AVAILABLE IN .312 DIAMETER

** 5TG IS AVAILABLE IN /1 COMBINATION, ONLY

*** SPEEDS UP TO 12,500 SFPM BY REQUEST AND SAFETY APPROVAL

For more program details, ask your Norton sales representative to review the First Line VFL ID & Race Wheel Brochure #6981 with you.

TECHtip

WHEEL DRESSING

SINGLE POINT DIAMOND TOOLS

- Use VBE, V, VS, VK bonds for general purpose applications or medium contact areas.
- Use VBEP, VSP, VCP, VP2 bonds on wide contact areas where heat is an issue.
- Wheel dressing
 - When using a single-point diamond tool, approach the wheel at a 10°–15° angle.
 - When using a multi-point diamond tool, approach the wheel at a 0° angle.



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



High Porosity Wheels for Heat-Sensitive Applications

Norton 3SGR, 48A, 25A and 38A NorPor wheels were developed with a controlled high-porosity bond specifically for heat-sensitive applications.

- | | |
|----------------------------|--|
| • Controlled porosity bond | • Increased chip clearance and maximum coolant flow |
| | • Reduced loading |
| | • Cool cutting – wet or dry – in heat-sensitive applications |
| • Durable bond post | • Maximum grain retention |
| | • Less dressing; longer wheel life |
| • Maximum depth of cut | • Increased grain efficiency; consistent grinding action at high metal removal rates |

Vitrified Wheels For Steel Applications

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST	BETTER	GOOD
Norton	Norton	Norton
NORTON SG	32A	38A / GEMINI
Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type O1 Straight									
2 x 1/2 x 3/8	16,235	20/50			32A60-KVBE	66243428214			
3 x 1/4 x 1/2	10,825	10/50			32A60-KVBE	66243528696			
3 x 1/2 x 3/8	10,825	10/50			32A60-KVBE	66243528825	10/50	38A60-JVBE	66243529032
3 x 1/2 x 1/2	10,825	10/50			32A60-KVBE	66243528828			
3 x 1 x 1/2	10,825						1/10	38A60-MVBE	66243529145
								38A80-MVBE	66243529146
4 x 1/4 x 1/2	8,120	1/10			32A60-KVBE	66243529532	1/10	38A60-KVBE	66243529777
								38A100-IVBE	66243529782
4 x 1/4 x 3/4	8,120	1/10			32A60-KVBE	66243529736			
4 x 1/2 x 1/2	8,120	1/10			32A46-KVBE	66243529845	1/10	38A60-KVBE	66243529947
								38A100-KVBE	66243529954
4 x 1/2 x 3/4	8,120	1/10			32A60-KVBE	66243529849	1/10	38A60-KVBE	66243529961
					32A80-KVBE	66243529850			
4 x 1 x 1/2	8,120						1/10	38A60-MVBE	66243530126
5 x 1/4 x 1/2	4,970	1/10			32A60-KVBE	66252830572			
6 x 1/8 x 1-1/4	4,140	1/10			32A80-KVBE	66252835361	1/10	38A150-LVBE	66252835506
6 x 1/4 x 1/2	4,140	1/10			32A60-KVBE	66252835784			
6 x 1/4 x 1-1/4	4,140	1/10			32A60-KVBE	66252835786	1/10	38A60-KVBE	66252835803
								38A80-KVBE	66252835807
								38A150-KV	66252835759
6 x 1/2 x 1/2	4,140	1/10			32A60-KVBE	66252836394	1/10	38A60-KVBE	66252836530
								38A80-KVBE	66252836548
6 x 1/2 x 1-1/4	4,140	1/10	5SG60-KVS	66252803344	32A46-KVBE	66252836380	1/10	38A46-KVBE	66252836520
					32A60-KVBE	66252836396 B		38A60-KVBE	66252836533
					32A80-JVBE	66252836405		38A80-KVBE	66252836550
								38A120-KVBE	66252836664
6 x 3/4 x 1/2	4,140	1/10			32A60-KVBE	66252837420			
6 x 3/4 x 5/8	4,140						1/10	38A60-KVBE	66252837444
6 x 3/4 x 1-1/4	4,140	1/10			32A60-KVBE	66252837421	1/10	38A60-KVBE	66252837445
6 x 1 x 1-1/4	4,140	1/10			32A60-KVBE	66252837921 B			
7 x 1/8 x 1-1/4	3,275	1/10			32A60-IVBE	66252939112	1/10	38A80-IVBE	66252939219
	3,600							38A100-KVBE	66252939223
7 x 1/4 x 1-1/4	3,600	1/10	5SG46-IVS	66252940207 B	32A46-HVBE	66252939543	1/10	38A46-HVBE	66252939690
			5SG60-IVS	66252939459 B	32A46-IVBE	66252939544		38A46-IVBE	66252939691
			5SG60-JVS	66252939460	32A46-JVBE	66252939545		38A46-JVBE	66252909755
			5SG60-KVS	66252939461 B	32A46-KVBE	66252939862		38A60-HVBE	66252939695
			5SG80-IVS	66252939462	32A60-HVBE	66252939547		38A60-IVBE	66252939696
			5SG80-JVS	66252939463	32A60-IVBE	66252939548 B		38A60-JVBE	66252939698
			5SG80-KVS	66252939464	32A60-JVBE	66252939549 B		38A60-KVBE	66252939700
			5SG100-JVS	66252939467	32A60-KVBE	66252939552 B		38A80-HVBE	66252939707
			5SG100-KVS	66252939468 B	32A80-HVBE	66252939557		38A80-IVBE	66252939808
					32A80-IVBE	66252939658 B		38A80-JVBE	66252939809
					32A80-JVBE	66252939660 B		38A80-KVBE	66252939812
					32A80-KVBE	66252939662 B		38A100-IVBE	66252939823
					32A100-IVBE	66252939670 B		38A100-JVBE	66252939826
					32A100-JVBE	66252939672		38A100-KVBE	66252939827
					32A100-KVBE	66252939673 B		38A100-LVBE	66252939830
					32A120-IVBE	66252939680		38A120-JVBE	66252939833
					32A120-KVBE	66252939682		38A120-KVBE	66252939834
					32A220-LVBE	66252939689		38A150-KVBE	66252939838
								38A150-LVBE	66252939839
								38A150-MV	66252939521
								38A220-KV	66252939528
								38A220-LV	66252939529
								38A220-LVBE	66252939847
								38A220-MV	66252939530
							10/10	Gemini 60-I	66253246722
								Gemini 60-J	66253246788
								Gemini 60-K	66253246789
								Gemini 80-K	66253246792

B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST
Norton
QUANTUM / NORTON SG
Ceramic Alumina

BETTER
Norton
32A / 48A
Aluminum Oxide

GOOD
Norton
38A / 25A / GEMINI
Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type O1 Straight									
7 x 3/8 x 1-1/4	3,600	1/10			32A60-KVBE	66252940276	1/10	38A60-KVBE	66252940294
					32A80-KVBE	66252940284		38A80-IVBE	66252940297
7 x 1/2 x 1-1/4	3,600	1/10	5NQ46-IVS	69083159103	32A46-FVBEP	66252941203	1/10	25A46-HVP2	66252916219
			5NQ46-JVS	69083159104	32A46-GVBE	66252940862		25A60-HVP2	66252916221
			5NQ60-GVSP	69083159105	32A46-GVBEP	66252941204 B		38A46-GVBE	66252941022
			5NQ60-JVS	69083159106	32A46-HVBE	66252940863 B		38A46-GVBEP	66252941323
			3SGP46-GVSP	66252911717	32A46-HVBEP	66252941205 B		38A46-HVBE	66252941023
			3SGR46-HVP2	66252916211	32A46-IVBE	66252940864 B		38A46-HVBEP	66252941324
			3SGR60-HVP2	66252916213	32A46-IVBEP	66252941206		38A46-HVP2	66252916223
			5SG46-GVSP	66252940522	32A46-JVBE	66252940865 B		38A46-IVBE	66252941024
			5SG46-HVSP	66252941130	32A46-KVBE	66252940867 B		38A46-JVBE	66252941026
			5SG46-IVS	66252940193 B	32A54-IVBE	66252940873		38A46-KVBE	66252941028
			5SG46-IVSP	66252940523	32A60-GVBEP	66252941313		38A60-HVBE	66252941035
			5SG46-JVS	66252940194 B	32A60-HVBE	66252940879 B		38A60-HVBEP	66252941330
			5SG46-KVS	66252940195	32A60-HVBEP	66252941314		38A60-IVBE	66252941036
			5SG60-GVSP	66252940524	32A60-IVBE	66252940880 B		38A60-JVBE	66252941038
			5SG60-IVS	66252940196 B	32A60-JVBE	66252940882 B		38A60-KVBE	66252941041
			5SG60-IVSP	66252940525	32A60-JVBEP	66252941316		38A60-LVBE	66252911677
			5SG60-JVS	66252940197 B	32A60-KVBE	66252940885 B		38A80-HVBE	66252941047
			5SG60-KVS	66252940198	32A60-LVBE	66252940888		38A80-IVBE	66252941048
			5SG60-LVS	66252940199	32A80-HVBE	66252940894		38A80-JVBE	66252941049
			5SG80-IVS	66252940200	32A80-IVBE	66252940895 B		38A80-KVBE	66252941054
			5SG80-IVSP	66252940527	32A80-JVBE	66252940897 B		38A80-LVBE	66252941056
			5SG80-JVS	66252940201 B	32A80-KVBE	66252940899 B		38A100-IVBE	66252941163
			5SG80-KVS	66252940202	32A80-LVBE	66252940900		38A100-JVBE	66252941165
			5SG80-LVS	66252940203	32A100-IVBE	66252940907		38A100-KVBE	66252941168
			5SG100-JVS	66252940204	32A100-JVBE	66252941008		38A120-JVBE	66252941174
			5SG100-KVS	66252940205	32A120-LVBE	66252941018 B		38A120-KVBE	66252941175
					48A46-HVP2	66252916215 B		38A150-JVBE	66252941179
					48A60-HVP2	66252916217 B		38A150-MV	66252940595
							10/10	38A220-QV	66252940605
								Gemini 46-H	66253246795
								Gemini 46-I	66253246800
								Gemini 46-J	66253246802
								Gemini 46-K	66253246812
								Gemini 60-I	66253246818
								Gemini 60-J	66253246820
								Gemini 60-K	66253246821
								Gemini 80-K	66253246832
								Gemini 100-K	66253246838
7 x 5/8 x 1-1/4	3,600	1/10			32A60-IVBE	66252941762			
7 x 3/4 x 1-1/4	3,600	1/10	5SG46-IVS	66252942304	32A46-GVBEP	66252942070	1/10	38A46-HVBE	66252941950
			5SG46-KVS	66252942305	32A46-HVBE	66252941930		38A46-KVBE	66252941954
			5SG60-JVS	66252942307	32A46-IVBE	66252941931		38A60-IVBE	66252942207
			5SG60-KVS	66252942308	32A46-KVBE	66252941935		38A60-KVBE	66252942060
					32A60-IVBE	66252941938			
					32A60-KVBE	66252941943			
					32A80-IVBE	66252941946			
7 x 1 x 1-1/4	3,600	1/10	5SG60-JVS	66252942429	32A46-HVBE	66252942513	1/10	38A46-HVBE	66252942534
			5SG60-KVS	66252942430	32A46-JVBE	66252942268			
					32A60-IVBE	66252942524			
					32A60-KVBE	66252942709			

B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS

For non-stock toolroom wheels: if you don't see the toolroom wheel you need in our stock listing, call your local authorized Norton distributor to check our made-to-order non-stock availability – including our revolutionary new Quantum ceramic wheels.

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST	BETTER	GOOD
Norton	Norton	Norton
QUANTUM / NORTON SG	32A / 48A	38A / 25A / GEMINI
Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type O1 Straight									
8 x 1/4 x 1-1/4	+	1/10	5SG60-KVS	66253043351	32A46-HVBE	66253043412	1/10	38A60-IVBE	66253043431
			5SG80-KVS	66253043353	32A46-IVBE	66253043310		38A60-JVBE	66253043432
					32A46-KVBE	66253043413		38A60-KVBE	66253010825
					32A60-IVBE	66253043416 B		38A80-IVBE	66253043437
					32A60-JVBE	66253043417		38A80-JVBE	66253043439
					32A60-KVBE	66253043399		38A80-KVBE	66253043461
					32A80-IVBE	66253043421		38A100-IVBE	66253043445
					32A80-KVBE	66253043458 B		38A100-KVBE	66253043447
					32A80-LVBE	66253043425		38A120-KVBE	66253043450
					32A100-IVBE	66253043426		38A150-KVBE	66253043451
			32A100-KVBE	66253043428					
8 x 3/8 x 1-1/4	3,600	1/10			32A60-KVBE	66253043565			
8 x 1/2 x 1-1/4	+	1/10	5NQ46-IVS	69083159107	32A46-GVBEP	66253043882 B	1/10	25A46-HVP2	66253019354
			5NQ46-JVS	69083159108	32A46-HVBE	66253043712 B		38A46-HVBE	66253043746
			5NQ60-GVSP	69083159109	32A46-HVBEP	66253043883 †B		38A46-HVBEP	66253043891 †
			5NQ60-JVS	69083159110	32A46-IVBE	66253043713 B		38A46-IVBE	66253043749
			3SGP46-HVSP	66253011505					
			3SGP46-JVH	66253013796					
			3SGR46-GVP2	66253019345	32A46-JVBE	66253043715 B		38A46-JVBE	66253043752
			3SGR46-HVP2	66253019346	32A46-KVBE	66253043716 B		38A46-KVBE	66253043762
			3SGR60-HVP2	66253019348	32A60-FVBEP	66253043886 †		38A60-HVBE	66253043756
			5SG46-GVSP	66253043649	32A60-GVBEP	66253043887 †		38A60-IVBE	66253043757
			5SG46-HVSP	66253043915 †	32A60-HVBE	66253043724		38A60-JVBE	66253043858
			5SG46-IVS	66253044089 B	32A60-HVBEP	66253043888		38A60-KVBE	66253043861
			5SG46-IVSP	66253043650	32A60-IVBE	66253043725 B		38A80-IVBE	66253043866
			5SG46-JVS	66253044090 B	32A60-JVBE	66253043727 B		38A80-JVBE	66253013787
			5SG46-KVS	66253044091	32A60-KVBE	66253043729 B		38A80-KVBE	66253043869
			5SG60-GVSP	66253043651 †	32A80-HVBE	66253043733		38A100-KVBE	66253043877
			5SG60-IVS	66253044092	32A80-IVBE	66253043734		Gemini 46-H	66253246841
			5SG60-IVSP	66253043652	32A80-JVBE	66253043736		Gemini 46-I	66253246843
			5SG60-JVS	66253044093 B	32A80-KVBE	66253043737		Gemini 46-J	66253246845
			5SG60-KVS	66253044094	32A100-IVBE	66253043740		Gemini 46-K	66253246848
5SG80-JVS	66253044096	32A100-KVBE	66253043742	Gemini 60-J	66253246857				
5SG80-KVS	66253044097	48A46-HVP2	66253019350 B						
5SG100-KVS	66253019435								
8 x 3/4 x 1-1/4	+	1/10	5NQ46-IVS	69083159111	32A46-GVBEP	66253044195	1/10	38A46-HVBE	66253044175
			5NQ46-JVS	69083159112	32A46-HVBE	66253044159		38A46-IVBE	66253044177
			5NQ60-GVSP	69083159113	32A46-HVBEP	66253044196 †		38A46-KVBE	66253044180
			5NQ60-JVS	69083159114	32A46-IVBE	66253044215		38A60-IVBE	66253044184
			5SG46-IVS	66253044098	32A46-JVBE	66253044161			
			3SGP46-JVH	66253013792	32A46-KVBE	66253044165			
			5SG46-JVS	66253044099 B	32A60-GVBEP	66253044198			
			5SG60-IVS	66253044101	32A60-HVBE	66253044168			
			5SG60-JVS	66253044102	32A60-IVBE	66253044169			
			5SG60-KVS	66253044103	32A60-JVBE	66253044171			
		32A60-KVBE	66253044173						
		32A80-KVBE	66253044064						

+ † REFER TO THE TECH TIPS ON THIS PAGE. B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS

TECHtip

8" TYPE O1 AND TYPE O5 VITRIFIED TOOLROOM WHEELS' MAXIMUM OPERATING SPEEDS:

- Stock NorPor VP2 wheels = 3,600 RPMs
- All other 46 grit, J grade and harder = 3,600 RPMs
- All other 54 grit, I grade and harder = 3,600 RPMs
- All other 60 grit and finer, H grade and harder = 3,600 RPMs
- † Exceptions to the rule: speed-tested to 3,600 RPM
- All other specifications = 3,105 RPMs



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

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST
Norton
NORTON SG
Ceramic Alumina

BETTER
Norton
32A / 48A
Aluminum Oxide

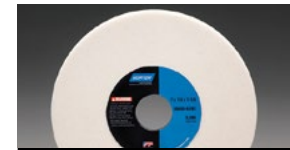
GOOD
Norton
38A / 57A
Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.	
Type O1 Straight										
8 x 1 x 1-1/4	+	1/10	5SG46-KVS	66253002588	32A46-HVBE	66253044616	1/10	38A46-IVBE	66253044636	
	+		5SG60-GVSP	66253003228†	32A46-IVBE	66253044617		38A60-IVBE	66253044456	
	3,600		5SG60-IVS	66253002639	32A46-KVBE	66253044622		57A60-MVBE	66253044270	
	3,600				32A60-IVBE	66253044624				
	3,600				32A60-KVBE	66253044629				
10 x 1/4 x 3	2,485					1/-	38A80-KVBE	66253149572		
10 x 1/2 x 3	2,485	2/-			32A60-JVBE	66253149729	1/-	38A60-KVBE	66253149859	
								38A80-KVBE	66253149865	
10 x 3/4 x 3	2,485	1/-			32A46-IVBE	66253160024	1/-	38A46-JVBE	66253160158	
					32A60-IVBE	66253160137		38A60-IVBE	66253160163	
					32A60-KVBE	66253160143				
10 x 1 x 1-1/4	2,485	1/-			32A60-KVBE	66253160774				
10 x 1 x 2	2,485	1/-			32A46-IVBE	66253160749				
10 x 1 x 3	2,485	1/-	5SG46-GVSP	66253160494	32A46-HVBE	66253160747	1/-	38A46-IVBE	66253160889	
			5SG46-IVS	66253160400	32A46-IVBE	66253160750		38A46-JVBE	66253160892	
			5SG46-JVS	66253160401	32A46-JVBE	66253160754		38A60-IVBE	66253160898	
			5SG46-KVS	66253160402	32A46-KVBE	66253160758		38A60-KVBE	66253160900	
			5SG60-GVSP	66253160495	32A60-IVBE	66253160769				
			5SG60-IVS	66253160403	32A60-KVBE	66253160777				
			5SG60-JVS	66253160404	32A80-KVBE	66253160782				
			5SG60-KVS	66253160405						
12 x 1/2 x 3	2,070	2/-			32A60-JVBE	66253262134				
					32A80-KVBE	66253262110				
12 x 1/2 x 5	2,070	2/-			32A60-KVBE	66253262107				
					32A80-KVBE	66253262111				
12 x 3/4 x 3	2,070	1/-	5SG46-IVS	66253262204	32A46-GVBEP	66253262392	1/-	38A46-JVBE	66253262281	
					32A46-HVBE	66253262260				
					32A46-IVBE	66253262261				
					32A60-IVBE	66253262270				
					32A60-KVBE	66253262273				
					32A46-KVBE	66253262570				
12 x 1 x 1-1/4	2,070	1/-								
12 x 1 x 3	•	1/-	3SGR46-HVP2	66253220885	32A46-GVBEP	66253262840	1/-	38A46-HVBE	66253262700	
			5SG46-HVSP	66253262488	32A46-HVBE	66253262562		38A46-IVBE	66253262702	
			5SG46-IVS	66253262500	32A46-HVBEP	66253262842		38A46-JVBE	66253262704	
			5SG46-JVS	66253262501	32A46-IVBE	66253262564		38A60-IVBE	66253262713	
			5SG46-KVS	66253262502	32A46-JVBE	66253262567				
			5SG60-GVSP	66253262593	32A46-KVBE	66253262572				
			5SG60-IVS	66253262503	32A60-HVBE	66253262580				
			5SG60-JVS	66253262504	32A60-IVBE	66253262581				
			5SG60-KVS	66253262505	32A60-KVBE	66253262689				
						32A80-KVBE		66253262532		
						48A60-HVP2		66253220891		
12 x 1 x 5	2,070	1/-	5SG46-GVSP	66253262594	32A46-GVBEP	66253262841	1/-	38A46-IVBE	66253262703	
			5SG46-IVS	66253262508	32A46-HVBE	66253262563		38A60-KVBE	66253262719	
			5SG46-JVS	66253262509 B	32A46-IVBE	66253262565				
			5SG46-KVS	66253262510	32A46-KVBE	66253262573				
			5SG60-GVSP	66253262595	32A60-HVBE	66253262734				
			5SG60-IVS	66253262511	32A60-IVBE	66253262582				
			5SG60-JVS	66253262512	32A60-JVBE	66253262686				
			5SG60-KVS	66253262513	32A60-KVBE	66253262691 B				
			5SG80-JVS	66253262515	32A80-JVBE	66253262696				
					32A80-KVBE	66253262697				
12 x 1-1/4 x 3	2,070	1/-			32A46-IVBE	66253262301				
12 x 1-1/2 x 1-1/4	2,070	1/-			32A46-KVBE	66253263146				
12 x 1-1/2 x 3	2,070	1/-	5SG46-IVS	66253202820	32A46-HVBE	66253263143				
					32A46-IVBE	66253263144				
					32A60-JVBE	66253263123				

+ † REFER TO THE TECH TIPS AT THE BOTTOM OF THE PREVIOUS PAGE
 • 12" TYPE O1 WHEEL MAXIMUM RPM: NORPOR WHEELS = 2,710; ALL OTHERS = 2,070
 B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST	BETTER	GOOD
Norton	Norton	Norton
QUANTUM / NORTON SG	32A	38A / 57A
Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type O1 Straight									
12 x 1-1/2 x 5	2,070	1/-	5NQ46-IVS	69083159115	32A46-GVBEP	66253263192	1/-	38A46-IVBE	66253214987
			5NQ46-JVS	69083159116	32A46-HVBE	66253263128			
			5NQ60-GVSP	69083159117	32A46-IVBE	66253263145			
			5NQ60-JVS	69083159118	32A46-JVBE	66253263120			
			3SGP60-GVSP	66253215030	32A60-HVBE	66253263149			
			5SG46-GVSP	66253203453	32A60-KVBE	66253263034			
			5SG46-IVS	66253202842					
			5SG46-JVS	66253202926					
			5SG60-GVSP	66253262596					
12 x 2 x 1-1/4	2,070	1/-			32A46-KVBE	66253263461			
					32A46-MVBE	66253263463			
12 x 2 x 3	2,070	1/-			32A46-IVBE	66253263459			
12 x 2 x 5	2,070	1/-			32A46-HVBE	66253263403			
					32A46-IVBE	66253262302			
					32A60-KVBE	66253263465			
14 x 1/2 x 5	1,800	1/-	5SG80-KVS	66253363814	32A60-KVBE	66253363761			
14 x 3/4 x 5	1,800	1/-			32A60-KVBE	66253363772			
14 x 1 x 3	1,800	1/-	5SG46-IVS	66253363960	32A46-HVBE	66253363912			
			5SG46-KVS	66253363961	32A46-IVBE	66253363914			
					32A60-IVBE	66253363927			
14 x 1 x 5	1,800	1/-	5SG46-GVSP	66253364108	32A46-GVBEP	66253364074	1/-	38A46-HVBE	66253364043
			5SG46-HVSP	66253313990	32A46-HVBE	66253363913		38A60-IVBE	66253363947
			5SG46-IVS	66253363970	32A46-IVBE	66253363915		38A60-JVBE	66253364051
			5SG46-JVS	66253363971	32A46-JVBE	66253363919		38A60-KVBE	66253364053
			5SG60-IVS	66253363974	32A46-KVBE	66253363921		38A80-KVBE	66253364058
			5SG60-IVSP	66253363871	32A60-GVBEP	66253364077		57A60-KVBE	66253364065
			5SG60-JVS	66253363975	32A60-HVBE	66253363926		57A60-LVBE	66253364066
			5SG60-KVS	66253363976	32A60-JVBE	66253363930		57A80-MVBE	66253364070
			5SG80-JVS	66253363979	32A60-KVBE	66253363932			
			5SG80-KVS	66253364003	32A60-LVBE	66253364035			
					32A80-JVBE	66253364038			
					32A80-KVBE	66253364039			
					32A60-IVBE	66253363887			
14 x 1 x 8	1,800	1/-			32A46-GVBEP	66253364238	1/-	38A46-HVBE	66253313968
14 x 1-1/2 x 5	1,800	1/-	5NQ46-IVS	69083159119	32A46-HVBE	66253364335 B		38A46-HVBEP	66253313969
			5NQ46-JVS	69083159120	32A46-HVBEP	66253364243		38A46-IVBE	66253364090
			5NQ60-GVSP	69083159122	32A46-IVBE	66253364336		38A46-JVBE	66253364240
			5NQ60-JVS	69083159124	32A46-JVBE	66253364337		38A60-IVBE	66253364247
			3SGP46-GVSP	66253306780	32A46-KVBE	66253364339			
			3SGP46-HVSP	66253307025	32A60-HVBE	66253364340			
			3SGP46-JVH	66253313976	32A60-IVBE	66253364239			
			5SG46-GVSP	66253364320	32A60-JVBE	66253364341			
			5SG46-HVSP	66253302625	32A60-KVBE	66253364342			
			5SG46-IVS	66253364097	32A80-JVBE	66253364246			
			5SG46-IVSP	66253302498					
			5SG46-JVS	66253364098 B					
			5SG60-IVS	66253364100					
			5SG60-JVS	66253364101					
			5SG60-KVS	66253302160					
			5SG80-KVS	66253363815					
14 x 2 x 5	1,800	1/-	5SG60-JVS	66253364414	32A46-IVBE	66253364323			
					32A46-JVBE	66253364508			
					32A46-KVBE	66253364509			
					32A60-KVBE	66253364510			

B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS

DRESSING: SINGLE POINT DRESSING TOOL STARTING RECOMMENDATIONS

WHEEL SIZES	TOOL SHANK DIAMETER	CERAMIC (NQ, NORTON SG, TG, ETC.), 37C & 39C WHEELS PRODUCT NO.	PART NO.	25A, 32A, 38A, 48A, 53A, 57A, 64A, 86A WHEELS PRODUCT NO.	PART NO.
12" to 14"	3/8"	BCSG5M6	66260157009	BC5M6	66260195004
	7/16"	BCSG5M7	66260156907	BC5M7	66260195005

THESE TOOLS ARE A STANDARD RECOMMENDATION; SEE THE "DIAMOND TOOL" SECTION FOR ADDITIONAL TOOLS. SEE THE FLIENEN TOOL SECTION FOR FURIOSO TOOLS, ENGINEERED SPECIFICALLY FOR QUANTUM VITRIFIED WHEEL DRESSING.

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:	BEST	BETTER	GOOD
BRAND:	Norton	Norton	Norton
TRADENAME:		32A / 23A	38A / 53A / 57A
ABRASIVE:	Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type O2 Cylinder									
6 x 1 x 4 Rim 1" Plate A47466	3,600	1/10			32A46-KVBE 32A60-JVBE	66252838308 66252838309	1/10	38A80-HVBE	66252838314
6 x 3-7/8 x 4-7/8 Used in Pairs Rim 9/16" (ME159035) Plate A308567	3,600						2/-	46-K+ Knife Sharpening	66253049501
8 x 2 x 5-1/2 Rim 1-1/4" Plate A50831	2,865						1/8	53A46-KVBE	66253044942
8 x 3-1/2 x 6-1/2 Used in Pairs Rim 3/4" (ME151086) Plate A76209	4,060						2/-	57A54-K+8VBE	66253038939
10 x 2 x 7-1/2 Rim 1-1/4" (ME62845) Plate A110170	2,295	1/-			32A54-JVG	66253161687	1/-	53A60-KVG	66253161701
11 x 5 Rim 1" (ME33437) Tape Wound	1,910	1/-			32A30-HVBE	66253161800			
11 x 5 Rim 1" (ME52726) Tape Wound	1,740 1,910	1/-			32A36-EVBEP 32A36-GVBEP	66253161780 66253161808	1/-	38A46-GVBE	66253161807
14 x 4 x 11 Rim 1-1/2" (ME62806) Plate A52814 Tape Wound	1,640				32A46-HVBE	66253161893	1/-	38A46-KVBE	66253364652
18 x 5 Rim 1-1/2" (ME15536) Tape Wound	1,065	1/-			32A30-E19VCP	66253465142			
18 x 5 Rim 1-1/2" (ME52719) Tape Wound Includes Strips	1,170	1/-			23A30-F19VCP 23A30-G19VCP	66253465235 66253465129			
20 x 5 Rim 1-3/4" (ME58559) Tape Wound Includes Strips	1,050	1/-			23A30-G19VCP	69078665769			
Type O5 Recessed One Side									
3/4 x 3/4 x 1/4 Recess 1/S 3/8 x 3/8	43,290	15/40			32A60-KVBE	66243427582			
1 x 1 x 1/4 Recess 1/S 1/2 x 1/2	32,470	15/40			32A60-KVBE	66243427769			
1 x 1 x 3/8 Recess 1/S 1/2 x 1/2	32,470	15/40			32A60-KVBE	66243427773			
1-1/4 x 1 x 3/8 Recess 1/S 5/8 x 1/2	25,975	15/40			32A60-KVBE	66243427799			
1-1/2 x 1 x 3/8 Recess 1/S 5/8 x 1/2	25,975	15/40			32A60-KVBE	66243427938			

For non-stock toolroom wheels: if you don't see the toolroom wheel you need in our stock listing, call your local authorized Norton distributor to check our made-to-order non-stock availability – including our revolutionary new Quantum ceramic wheels.

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST
Norton
NORTON SG
Ceramic Alumina

BETTER
Norton
32A / 48A
Aluminum Oxide

GOOD
Norton
38A / GEMINI
Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type 05 Recessed One Side									
1-1/2 x 1 x 3/8 Recess 1/S 3/4 x 1/2	21,645	15/40			32A60-KVBE	66243427937			
2 x 1 x 3/8 Recess 1/S 3/4 x 1/2	16,235	15/40			32A60-KVBE	66243428329			
2 x 1-1/2 x 5/8 Recess 1/S 1 x 3/4	16,235	10/15			32A60-KVBE	66243428332			
7 x 3/4 x 1-1/4 Rec 1/S 2-3/4 x 1/4	3,600	1/10	5SG46-IVS 5SG60-IVS	66252941976 66252942312	32A46-HVBE 32A46-IVBE 32A46-JVBE 32A60-IVBE 32A60-JVBE 32A60-KVBE	66252942209 66252942211 66252942213 66252942217 66252942218 66252942205	1/10	38A46-IVBE 38A60-IVBE	66252942222 66252942225
7 x 3/4 x 1-1/4 Rec 1/S 3 x 1/4	3,600						10/10	Gemini 46-J Gemini 60-J	66253246826 66253246830
7 x 1 x 1-1/4 Rec 1/S 2-3/4 x 1/2	3,600	1/10	3SGR46-HVP2 5SG46-IVS 5SG46-JVS 5SG60-JVS	66252916228 66252942318 66252942427 66252942431	32A46-GVBEP 32A46-HVBE 32A46-HVBEP 32A46-IVBE 32A46-KVBE 32A60-IVBE 32A60-JVBE 32A60-KVBE 48A46-HVP2	66252942826 66252942688 66252942828 66252942691 66252942708 66252942699 66252942701 66252942703 66252916232			
7 x 1 x 1-1/4 Rec 1/S 3 x 1/2	3,600	1/10	5SG46-IVS 5SG60-IVS	66252901814 66252906907	32A46-HVBE 32A46-IVBE 32A60-IVBE	66252942689 66252942690 66252942686	1/10	38A46-HVBE 38A46-IVBE 38A46-KVBE 38A60-IVBE 38A60-JVBE 38A60-KVBE	66252942707 66252942809 66252942793 66252942815 66252942816 66252942817
							10/10	Gemini 46-H Gemini 46-J Gemini 60-J	66253246831 66253246835 66253246839
7 x 1-1/4 x 1-1/4 Rec 1/S 2-3/4 x 5/8	3,600	1/5			32A46-HVBE 32A60-IVBE 32A60-JVBE	66252942833 66252942859 66252942835			
7 x 1-1/2 x 1-1/4 Rec 1/S 2-3/4 x 3/4	3,600	1/5			32A46-IVBE 32A60-IVBE	66252942843 66252942844			
8 x 3/4 x 1-1/4 Rec 1/S 3-1/4 x 1/4	3,105	1/10			32A46-IVBE	66253044213			
8 x 1 x 1-1/4 Rec 1/S 3 x 1/2	3,105 3,600						10/10	Gemini 46-H Gemini 46-J	66253246849 66253246850
8 x 1 x 1-1/4 Rec 1/S 3-1/4 x 1/2	3,105 3,600 3,600	1/10	5SG46-IVS 5SG46-JVS	66253013543 66253003301	32A46-IVBE 32A46-JVBE 32A60-IVBE 32A60-KVBE	66253044790 66253044382 66253044753 66253044810			
10 x 3/4 x 2 Rec Side A 5 x 3/16 Face Bev Side A 75 Deg From 1/8" Flat	2,485	1/-			32A60-KVBE 32A60-JVBE	66253044810 66253160189			
12 x 1-1/2 x 3 Rec 1/S 6 x 1/2	2,070	1/-			32A46-IVBE	66253263186			
12 x 1-1/2 x 5 Rec 1/S 7-1/2 x 1/2	• 2,070 2,070 2,070 2,070	1/-	3SGR46-HVP2 5SG46-GVSP 5SG46-IVS 5SG60-IVSP	66253220904 66253263127 66253202883 66253263050	32A46-HVBEP 32A46-IVBE 32A46-JVBE 32A46-KVBE 32A60-KVBE	66253263180 66253263166 66253263169 66253263170 66253263172	1/-	38A46-IVBE	66253263175

• 12" TYPE 05 WHEEL MAXIMUM RPM: NORPOR VP2 WHEELS = 2,710; ALL OTHERS = 2,070

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST	BETTER	GOOD
Norton	Norton	Norton
NORTON SG	32A / 48A	38A / 25A / 53A
Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type 05 Recessed One Side									
14 x 1-1/2 x 5	•	1/-	3SGR46-GVP2	66253319953	32A46-HVBE	66253364359			
Rec 1/S 8 x 1/2	•		3SGR46-HVP2	66253319954	32A46-IVBE	66253364300			
	•		3SGR60-HVP2	66253319956	32A46-KVBE	66253364362			
	1,800		5SG46-IVS	66253364102	32A60-JVBE	66253364364			
	1,800		5SG46-JVS	66253364103	32A60-KVBE	66253364365			
	•		5SG60-IVS	66253364104	48A46-HVP2	66253319958			
	1,800		5SG60-JVS	66253364105					
14 x 2 x 5	2,320	1/-	3SGR46-GVP2	66253319936	48A46-HVP2	66253319941	1/-	25A46-HVP2	66253319945
Rec 1/S 8 x 1/2			3SGR46-HVP2	66253319937				38A46-HVP2	66253319949
								38A60-HVP2	66253319951
14 x 2 x 5	1,800	1/-			32A60-KVBE	66253364390			
Rec 1/S 8 x 1					32A60-LVBE	66253364525			
Type 06 Straight Cup									
3-1/2 x 1-1/2 x 1/2	6,550						1/10	38A60-KVBE	66243529372
Rim 1/2" Back 1/2"									
100mm x 50mm x 20mm	6,550						1/10	38A80-JVBE	66243530429
Rim 10mm									
Back 13mm									
4 x 1-1/2 x 1/2	5,730	1/10			32A60-KVBE	66243530218			
Rim 1/2" Back 1/2"									
4 x 1-1/2 x 1-1/4	5,730						1/10	38A60-KVBE	66243530221
Rim 1/2" Back 1/2"									
4 x 2 x 20mm	5,730						1/10	38A80-JVBE	66243530523
Rim 3/8" Back 1/2"									
5 x 1-1/2 x 1-1/4	4,585	1/10			32A46-KVBE	66252830832	1/10	38A46-KVBE	66252830842
Rim 3/8" Back 3/8"					32A60-JVBE	66252830837		38A60-KVBE	66252830846
Face Y (ME19243)					32A60-KVBE	66252830838			
5 x 2 x 5/8	4,585	1/10			32A60-JVBE	66252830987			
Rim 1/2" Back 1/2"									
6 x 1-1/2 x 1/2	3,820	1/10			32A46-KVBE	66252838458			
Rim 1" Back 1/2"									
6 x 2 x 1-1/4	3,820	1/10			32A46-IVBE	66252838544	1/10	38A60-KVBE	66252838486
Rim 1/2" Back 1/2"					32A60-JVBE	66252838538			
7 x 2 x 1-1/4	3,275	1/8			32A46-JVBE	66252942856			
Rim 1/2" Back 1/2"									
9-1/2 x 1-1/2 x 1-1/2	2,415						1/-	53A46-LVBE	66253149136
Rim 1-1/2" Back 5/8"									
10 x 4 x 1-1/2	2,295						1/-	38A46-IVBE	66253161797
Rim 1-1/4" Back 1"									
Tape Wound									
12 x 2-1/2 x 7	1,910	1/-			32A46-LVBE	66253263614			
Rim 1-1/2" Back 7/8"									
Type 07 Recessed Two Sides									
12 x 2 x 3	2,070	1/-			32A46-IVBE	66253263588			
Rec 2/S 5-1/2 x 3/8									
12 x 2 x 3	2,070	1/-			32A46-HVBE	66253263590			
Rec 2/S 7-1/4 x 1/2					32A46-JVBE	66253263348			
12 x 2 x 5	2,070	1/-			32A46-IVBE	66253263594			
Rec 2/S 7-1/4 x 1/2									
12 x 2 x 5	2,070	1/-	5SG46-JVS	66253209930	32A46-HVBE	66253263591	1/-	38A46-IVBE	66253263600
Rec 2/S 7-1/2 x 1/2					32A46-HVBEP	66253263603			
					32A46-JVBE	66253263483			
					32A46-KVBE	66253263596			
					32A60-IVBE	66253263597			

• 14" TYPE 05 WHEEL MAXIMUM RPM: NORPOR VP2 WHEELS = 2,320; ALL OTHERS = 1,800

Vitrified Wheels For Steel Applications CONTINUED

AVAILABILITY



TIER:
BRAND:
TRADENAME:
ABRASIVE:

BEST	BETTER	GOOD
Norton	Norton	Norton
NORTON SG	32A	38A
Ceramic Alumina	Aluminum Oxide	Aluminum Oxide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.	SPEC.	PART NO.	MIN./STD. PKG.	SPEC.	PART NO.
Type 11 Flaring Cup									
3/2-1/4 x 1-1/4 x 3/4 Rim 1/4" Back 3/8" Face Z (ME21560)	7,640	1/10			32A60-JVBE 32A60-KVBE	66243529183 66243529187	1/10	38A60-JVBE	66243529197
3-1/2/2-3/4 x 1-1/2 x 1-1/4 Rim 1/4" Back 3/8" Face Z (ME24327)	7,640	1/10			32A60-KVBE	66243529358			
4/3 x 1-1/2 x 1-1/4 Rim 1/4" Back 1/2" Face Z (ME19237)	5,730	1/10	5SG46-IVSP 5SG46-KVS 5SG60-JVS 5SG60-LVS 5SG80-JVS 5SG80-KVS	66243530127 66243530342 66243530415 66243530417 66243530419 66243530420	32A46-IVBE 32A46-KVBE 32A60-JVBE 32A60-KVBE 32A80-KVBE	66243530240 66243530246 66243530256 66243530361 66243530368	1/10	38A46-KVBE 38A60-JVBE 38A60-KVBE 38A80-JVBE 38A80-KVBE	66243530378 66243530387 66243530390 66243530393 66243530395
4-1/2/3-3/4 x 2 x 1-1/4 Rim 1/4" Back 1/2" (ME20115)	5,730	1/10			32A46-KVBE	66252830539			
5/3-3/4 x 1-3/4 x 1-1/4 Rim 1/4" Back 1/2" Face Z (ME21563)	4,585	5/5	5SG46-KVS 5SG60-KVS 5SG60-LVS	66252803291 66252830737 66252830736	32A46-JVBE 32A46-KVBE 32A60-JVBE 32A60-KVBE 32A80-KVBE	66252830858 66252830859 66252830962 66252830964 66252830966	5/5	38A46-KVBE 38A60-JVBE 38A60-KVBE	66252830971 66252830973 66252830975
6/4-1/2 x 2 x 1-1/4 Rim 3/8" Back 1/2" Face Z (ME19241)	3,820	5/5			32A46-JVBE 32A46-KVBE 32A60-JVBE 32A60-KVBE	66252838491 66252838528 66252838492	5/5	38A46-KVBE 38A60-KVBE	66252838495 66252838497
7/5 x 2 x 1-1/4 Rim 3/4" Back 1/2" (ME19242)	3,275	1/8			32A46-JVBE	66252942959	1/8	38A46-HVBE	66252942963
Type 12 Dish									
4 x 1/2 x 3/4 (ME19226)	6,207	1/10			32A60-KVBE	66243530067			
6 x 1/2 x 1-1/4 (ME19229)	4,140	1/10	5SG60-LVS	66252836574	32A46-JVBE 32A60-JVBE	66252836860 66252836966	1/10	38A60-JVBE	66252836977
6 x 3/4 x 1-1/4 (ME19230)	4,140	1/10	5SG60-KVS	66252837771	32A46-KVBE 32A60-JVBE 32A60-KVBE	66252837732 66252837734 66252837735			
7 x 1/2 x 1-1/4 (ME13717)	3,600	1/10			32A46-KVBE 32A60-KVBE	66252941644 66252941647			
8 x 3/4 x 1-1/4 (ME19231)	3,600						1/10	38A60-KVBE	66253044319
10 x 1 x 1 (ME38702)	2,485	1/-			32A54-JVBE	66253161196			
10 x 1 x 1-1/4 (ME38702)	2,485	1/-			32A54-JVBE	66253161197			
Type 20 Concave One Side									
14 x 1-1/2 x 5 Concave from Periphery 1/2" Deep to 8" Flat Spot	1,800	1/-	5SG60-JVS	66253302265	32A60-JVBE 32A60-KVBE 32A60-LVBE	66253364250 66253364332 66253364375			
Type 35 Plate Mounted Disc									
9 x 2 x 4-15/16 Rim 2-1/32" (ME31130) Plate A47248	2,550	1/-			32A46-MVBE 32A60-J25VCF2 32A70-JVBEP	66253049115 66253006557 66253049112			



CATEGORY DEFINITION


These sharp silicon carbide, vitrified wheels are used for grinding non-steel applications.

- APPLICATIONS:** Use 39C (green silicon carbide) for cemented carbides, titanium, metal matrix composites and plasma sprayed materials.
Use 37C (black silicon carbide) on 300 series stainless steels, irons, nonferrous metals (aluminum, brass, bronze and copper) and non-metallic materials (stone, marble, rubber, ceramics and glass).
- SHAPES:** Type 01 Straight, Type 02 Cylinder, Type 05 Recessed 1 Side, Type 06 Straight Cup
- SIZE RANGE:** 2" – 14" diameter
- GRIT RANGE:** 24 – 120
- ABRASIVE GRAIN:** 39C Green Silicon Carbide, 37C Black Silicon Carbide

Vitrified Wheels For Non-Steel Applications



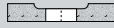

AVAILABILITY

TIER:	GOOD
BRAND:	Norton
TRADENAME:	39C / 37C
ABRASIVE:	Silicon Carbide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.
Type 01 Straight 				
3 x 1/2 x 1/2	10,825	10/50	37C60-MVK	66243529041
3 x 1 x 1/2	10,825	1/30	37C60-MVK	66243529166
			37C80-HVK	66243529170
			37C80-MVK	66243529171
			37C100-HVK	66243529172
			37C100-MVK	66243529070
3-1/2 x 1-1/2 x 7/8 (ME622)	7,095	1/10	37C24-SVK	66243529339
			37C30-SVK	66243529338
4 x 1/2 x 1/2	8,120	1/10	37C60-MVK	66243529960
			39C100-IVK	66243530064
6 x 1/2 x 1-1/4	4,140	1/10	39C60-IVK	66252836706
			39C80-IVK	66252836816
			39C100-IVK	66252836827
			39C120-IVK	66252836836
6 x 3/4 x 1-1/4	4,140	1/10	39C60-IVK	66252837584
			39C80-IVK	66252837598
			39C100-IVK	66252837717
6 x 1 x 1-1/4	4,140	1/10	39C60-IVK	66252838161
			39C80-IVK	66252838173
7 x 1/4 x 1-1/4	3,600	1/10	39C80-JVK	66252940007
			39C100-IVK	66252940109
			39C120-IVK	66252940111
7 x 1/2 x 1-1/4	3,600	1/10	37C46-JVK	66252941488
			37C60-OVK	66252941498
			39C60-IVK	66252941609
			39C60-JVK	66252941611
			39C60-KVK	66252941613
			39C80-IVK	66252941617
			39C80-JVK	66252941618
			39C100-HVK	66252941622
			39C100-IVK	66252941624
			39C120-IVK	66252941632 B
7 x 3/4 x 1-1/4	3,600	1/10	39C80-JVK	66252942096
			39C100-JVK	66252942104
7 x 1 x 1-1/4	3,600	1/10	39C60-IVK	66252942666
			39C80-IVK	66252942413
			39C120-IVK	66252942416
8 x 1/2 x 1-1/4	3,600	1/10	39C60-IVK	66253044013
			39C100-IVK	66253044017 B
8 x 3/4 x 1-1/4	3,600	1/10	39C60-JVK	66253044312
			39C100-IVK	66253044314
8 x 1 x 1-1/4	3,600	1/10	39C60-JVK	66253044770
			39C80-IVK	66253044425 B
			39C100-IVK	66253044379

AVAILABILITY

TIER:	GOOD
BRAND:	Norton
TRADENAME:	39C / 37C
ABRASIVE:	Silicon Carbide

SIZE (D x T x H)	MAX. RPM	MIN./STD. PKG.	SPEC.	PART NO.
Type 01 Straight 				
10 x 1 x 3	2,485	1/-	39C60-JVK	66253160348
10 x 1-1/2 x 2	2,485	1/-	39C60-JVK	66253161640
12 x 1 x 3	2,070	1/-	39C60-IVK	66253262985
12 x 1 x 5	2,070	1/-	39C60-IVK	66253262884
			39C80-JVK	66253262988
14 x 1 x 5	1,800	1/-	39C60-JVK	66253364206
			39C80-JVK	66253364208
14 x 1-1/2 x 5	1,800	1/-	39C60-JVK	66253364242
14 x 2 x 5	1,800	1/-	39C60-JVK	66253364322
Type 02 Cylinder 				
6 x 1 x 4	3,600	1/10	39C60-IVK	66252838322
Rim 1"			39C60-JVK	66252838324
Plate A47466			39C80-IVK	66252838327
			39C100-IVK	66252838330
			39C120-IVK	66252838193
6 x 1-1/4 x 4	3,600	1/10	39C60-IVK	66252838345
Rim 1"				
Plate A47466				
7 x 1-1/2 x 5	3,600	1/8	39C60-IVK	66252942848
Rim 1"				
Plate A39027				
10 x 2 x 7	2,100	1/-	39C60-HVK	66253161675
Rim 1-1/2"	2,295		39C60-JVK	66253161678
Plate A83831	2,295		39C120-IVK	66253161784
14 x 4 x 11	1,640	1/-	39C60-JVK	66253364657
Rim 1-1/2"				
Plate A52814				
Tape Wound				
Type 05 Recessed One Side 				
14 x 1-1/2 x 5	1,800	1/-	39C60-IVK	66253364328
Rec 1/S 8 x 1/2				
Type 06 Straight Cup 				
2 x 1 x 1/4	11,460	15/40	37C120-K8V	66243428319
Rim 5/16"				
Back 3/8"				

B = BEST SELLER; PERFORMS WELL IN A VARIETY OF APPLICATIONS FOR MANY SATISFIED CUSTOMERS