

NORTON

SAINT-GOBAIN

Reshaping
your
world.

FLAP DISCS FOR EVERY APPLICATION

FROM STOCK REMOVAL TO FINISHING: FLAP DISCS FOR EVERY PERFORMANCE/PRICE LEVEL

Norton abrasive flap discs eliminate the conventional 2-step grinding/finishing process of depressed center wheels and fiber discs – saving you time, labor, and money.

The BEST, BETTER, GOOD performance tiered offering from Norton lets you choose whether you want maximum productivity of product innovation or simply a competitive low initial cost for the job at hand.



KEY MARKET SEGMENTS

METAL FABRICATION | WELDING | WIND TURBINES | OIL & GAS

KEY APPLICATION SEGMENTS

STOCK REMOVAL | WELD BLENDING | EDGE CHAMFERING | DEBURRING/DEFLASHING | BLENDING/FINISHING

www.nortonabrasives.com


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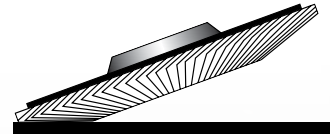
Flap Disc Shapes



GRIND AT FLATTER ANGLES:
0° – 15°

Type 27 Flat – The Best Choice for Finishing

- Used primarily on flat surfaces
- The best choice for blending and smooth finishing



GRIND AT STEEPER ANGLES:
15° – 25°

Type 29 Conical – The Best Choice for Aggressive Stock Removal

- Conical flap discs have angled flaps and may be used on both contoured and edge work
- The angle provides greater surface contact for stock removal on flat surfaces
- The best choice when speed and stock removal are primary considerations

Abrasive Flap Densities



Standard Density

- Excellent for heavy-duty applications and rapid stock removal

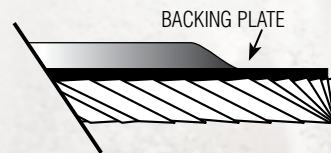


High Density

- Ideal when working on uneven or curved surfaces, as well as finer grit blending

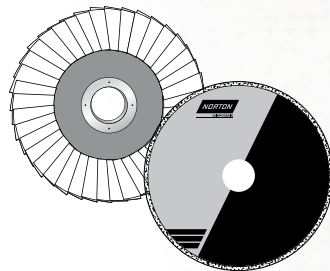
Backing Plate Materials

All flap discs are a combination of abrasive flaps adhered to a rigid backing plate. It is the backing plate that provides stability during operation. There are two main materials used: fiberglass and plastic. The fiberglass backing plate, along with the flap shape, helps to absorb vibration and is consumed during use with no smearing. Fiberglass is the most popular material because of its high strength and light weight. The plastic backing plate offers some additional conformability and is trimmable.



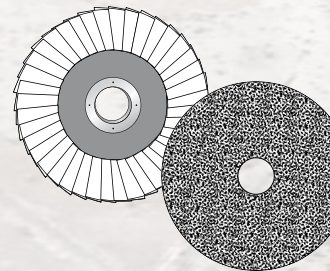
Why Choose Flap Discs?

Flap discs replace both grinding wheels and fiber discs. The same flap disc can be used for applications ranging from stock removal to blending.



Flap Discs vs. Grinding Wheels

- Faster stock removal
- Smoother finish, no gouging
- Cooler cutting, less glazing
- Lightweight, easier to control
- Less vibration, less operator fatigue
- Reduced noise



Flap Discs vs. Fiber Discs

- 20X longer life, reduced abrasive cost
- Fewer disc changes, reduced labor cost
- More consistent finish
- No back-up pad required
- Easier storage, no curling
- Reduced loading
- Use flap discs one grit size coarser than fiber discs, except in 36 grit



Best/highest productivity for stainless steel, titanium, and super alloys

BLAZE R980P CERAMIC ALUMINA

- Premium ceramic alumina abrasive grain lasts 50% – 200% longer than many flap discs on stainless steel, cobalt, chrome, inconel, titanium and other hard-to-grind materials
- Y-weight polyester flaps with a supersize grinding aid significantly improve life, grain retention, and fray resistance while providing a cool, noticeably fast cut rate
- High-strength fiberglass back on Type 29 and Type 27 High Density is durable, lightweight, and absorbs vibration; Black, flexible plastic backing plate on Type 27 Quick Trim allows for trimmability of the plate



IMPROVED VENABLE

Better choice for mild carbon steel, and welds

BLUEFIRE R860 ZIRCONIA ALUMINA

- High performance zirconia alumina abrasive for aggressive cut and long life, with up to 30% longer life than competitive zirconia alumina products
- Polyester flaps provide improved durability, life and helps reduce loading on aluminum
- High-strength fiberglass back on Type 29 and Type 27 High Density is durable, lightweight, and absorbs vibration; blue, flexible plastic backing plate on Type 27 Quick Trim allows for trimmability of the plate
- Venable 2-disc package is ideal for vending machines, small jobs, or carrying to a job site



Good consistent performance with low initial price

METAL R828 ZIRCONIA ALUMINA

- Durable zirconia grain provides good cut rate and life with consistent finish
- Fiberglass/resin backing plates with high strength, light weight, ability to absorb vibration, and operator comfort
- Good choice for coarse grit blending, deburring, and stock removal



Type 27 Flat – The Best Choice for Finishing

- Used primarily on flat surfaces
- The best choice for blending and smooth finishing



GRIND AT FLATTER ANGLES: 0° – 15°



TIER:	BEST	BEST	BETTER	BETTER	GOOD	GOOD	GOOD
TRADENAME:	BLAZE R980P	BLAZE R980P	BLUEFIRE R860	BLUEFIRE R860	METAL R828	METAL R828	METAL R828
SHAPE:	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat
FLAP DENSITY:	Standard	High	Standard	High	Standard	High Density	Standard
ABRASIVE:	Ceramic Alumina	Ceramic Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina
BACKING PLATE:	Quick Trim Plastic	Fiberglass	Quick Trim Plastic	Fiberglass	Quick Trim Plastic	Fiberglass	Fiberglass
OTHER:	Supersize	Supersize					

SIZE (D x H)	GRIT	MAX. RPM	STD. PKG.	PART #	PART #	PART #	PART #	PART #	PART #	
Type 27 Flat										
4-1/2" x 5/8"-11	36	13,300	10		662544 99894	666233 99136		666233 99125	666233 99205	662544 72655
	36	13,300	10 V			666233 41086	2-Pk			
	40	13,300	10	662544 00257	662610 98290	666233 99137	776960 90086	666233 99000	666233 99059	662544 37013
	60	13,300	10	662544 00258	662610 96435	666233 99138	776960 90087	666233 99001	666233 99060	662544 72656
	60	13,300	10 V			666233 41087	2-Pk			
	80	13,300	10	662544 00259	662610 96436	666233 99139	776960 90088	666233 99002	666233 99061	662544 72657
	120	13,300	10	662544 00261				666233 99003		
4-1/2" x 7/8"	36	13,300	10	636425 01865	662610 97678	666233 99140	776960 90081	666233 99126	666233 99062	662544 72653
	40	13,300	10	662544 00253	662610 20628	666233 99141	776960 90082	666233 99004	666233 99063	662544 37004
	60	13,300	10	662544 00254	662610 20633	666233 99142	776960 90083	666233 99005	666233 99064	662544 48989
	80	13,300	10	662544 00255	662610 20634	666233 99143	776960 90084	666233 99006	666233 99065	662544 48990
	120	13,300	10	662544 00256			776960 90085	666233 99007		
5" x 5/8"-11	36	12,000	10			666233 99144		666233 99127		
	40	12,000	10	776960 90141		666233 99145		666233 99128		
	60	12,000	10	776960 90142		666233 99146		666233 99130		
	80	12,000	10	776960 90143		666233 99147		666233 99131		
	120	12,000	10					666233 99132		

V = Vendible package. Ideal for vending machines & small jobs. 2 Flap Discs/pack, 5 packs/carton. Order in multiples of 10.

TIER:	BEST	BEST	BETTER	BETTER	GOOD	GOOD	GOOD
TRADENAME:	BLAZE R980P	BLAZE R980P	BLUEFIRE R860	BLUEFIRE R860	METAL R828	METAL R828	METAL R828
SHAPE:	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat	Type 27 Flat
FLAP DENSITY:	Standard	High	Standard	High	Standard	High Density	Standard
ABRASIVE:	Ceramic Alumina	Ceramic Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina
BACKING PLATE:	Quick Trim Plastic	Fiberglass	Quick Trim Plastic	Fiberglass	Quick Trim Plastic	Fiberglass	Fiberglass
OTHER:	Supersize	Supersize					

SIZE (D x H)	GRIT	MAX. RPM	STD. PKG.	PART #	PART #	PART #	PART #	PART #	PART #
Type 27 Flat									
5" x 7/8"	36	12,000	10			666233 99148		666233 99133	
	40	12,000	10	662544 00262		666233 99149		666233 99008	666233 99212
	60	12,000	10	662544 00264		666233 99150		666233 99009	666233 99213
	80	12,000	10	662544 00265		666233 99151		666233 99010	662544 72662
	120	12,000	10	662544 00519				666233 99011	
6" x 5/8"-11	40	10,200	10	662611 32128	662611 32145			666233 99219	662544 91773
	60	10,200	10	662611 32129	662611 32146			666233 99220	662544 91774
	80	10,200	10	662611 32130	662611 32147			666233 99221	662544 91775
6" x 7/8"	40	10,200	10	662611 32123		666233 99152		666233 99012	666233 99216
	60	10,200	10	662611 32124	662611 32136	666233 99153		666233 99013	666233 99217
	80	10,200	10	662611 32125		666233 99154		666233 99014	662544 91771
	120	10,200	10					666233 99015	
7" x 5/8"-11	36	8,600	10			666233 99155		666233 99134	662544 72669
	40	8,600	10	662544 61066	662611 32148	666233 99156	776960 90092	666233 99016	662544 72670
	60	8,600	10	662544 61067	662611 32168	666233 99157	776960 90093	666233 99017	662544 72671
	80	8,600	10	662544 61068		666233 99158	776960 90094	666233 99018	662544 72672
	120	8,600	10	662544 61069				666233 99019	
7" x 7/8"	36	8,600	10	636425 01866		666233 99159		666233 99135	
	40	8,600	10	662544 61059	662611 32138	666233 99160	776960 90089	666233 99020	662544 72665
	60	8,600	10	662544 61060	662611 32139	666233 99161	776960 90090	666233 99021	662544 72666
	80	8,600	10	662544 61061		666233 99162	776960 90091	666233 99022	662544 72667
	120	8,600	10	662544 61063				666233 99023	

Type 29 Conical – The Best Choice for Aggressive Stock Removal

- Conical flap discs have angled flaps and may be used on both contoured and edge work
- The angle provides greater surface contact for stock removal on flat surfaces
- The best choice when speed and stock removal are primary considerations



GRIND AT STEEPER ANGLES: 15° – 25°



TIER:	BEST	BETTER	GOOD	GOOD
TRADENAME:	BLAZE R980P	BLUEFIRE R860	METAL R828	METAL R828
SHAPE:	Type 29 Conical	Type 29 Conical	Type 29 Conical	Type 29 Conical
FLAP DENSITY:	Standard	Standard	Standard	High
ABRASIVE:	Ceramic Alumina	Zirconia Alumina	Zirconia Alumina	Zirconia Alumina
BACKING PLATE:	Fiberglass	Fiberglass	Fiberglass	Fiberglass
OTHER:	Supersize			

SIZE (D x H)	GRIT	MAX. RPM	STD. PKG.	PART #	PART #	PART #	PART #
Type 29 Conical							
4" x 5/8"	36	15,300	10		666233 99049		
	40	15,300	10		666233 99050		
	60	15,300	10		666233 99051		
	80	15,300	10		666233 99052		
4-1/2" x 5/8"-11	36	13,300	10	66261 183490	662544 61165	662544 19991	
	36	13,300	10 V		666233 41104 2-Pk		
	40	13,300	10	66261 183491	662544 61167	662544 19994	66261 132535
	60	13,300	10	66261 183492	662544 61170	662544 19996	66261 132536
	60	13,300	10 V		666233 41105 2-Pk		
	80	13,300	10	66261 183493	662544 61173	662544 19997	66261 132537
	80	13,300	10 V		666233 41106 2-Pk		
	120	13,300	10			666233 99174	
4-1/2" x 7/8"	24	13,300	10		666233 99204		
	36	13,300	10	66261 183486	662544 61155	662544 19963	
	36	13,300	10 V		666233 41107 2-Pk		
	40	13,300	10	66261 183487	662544 61161	662544 19978	66261 132538
	60	13,300	10	66261 183488	662544 61163	662544 19984	66261 132539
	60	13,300	10 V		666233 41108 2-Pk		
	80	13,300	10	66261 183489	662544 61164	662544 19987	66261 132540
	80	13,300	10 V		666233 41109 2-Pk		
	120	13,300	10			666233 99175	

V = Vendible package. Ideal for vending machines & small jobs. 2 Flap Discs/pack, 5 packs/carton. Order in multiples of 10.

Merchandising Display

WIRE RACK (WITH HEADER CARD) ALLOWS MERCHANDISING OF 4" AND 4-1/2" PRODUCT THREE WAYS: HUNG ON PEGBOARD, MOUNTED ON AN UPRIGHT, OR PLACED ON A SHELF/COUNTER



TIER:	BETTER
TRADENAME:	BLUEFIRE R860
SHAPE:	Type 29
FLAP DENSITY:	Standard
ABRASIVE:	Zirconia Alumina
BACKING PLATE:	Fiberglass

SIZE (D x H)	GRIT	MAX. RPM	STD. PKG.	PART #
4 x M-10	40	15,300	5	076607 03214
	60	15,300	5	076607 03215
	80	15,300	5	076607 03216
4-1/2" x 5/8"-11	40	13,300	5	076607 03211
	60	13,300	5	076607 03212
	80	13,300	5	076607 03213
7" x 5/8"-11	40	8,600	5	076607 03205
	60	8,600	5	076607 03206
	80	8,600	5	076607 03207
Wire Rack			1	076607 04157

TIER:	BEST	BETTER	GOOD
TRADENAME:	BLAZE R980P	BLUEFIRE R860	METAL R828
SHAPE:	Type 29 Conical	Type 29 Conical	Type 29 Conical
FLAP DENSITY:	Standard	Standard	Standard
ABRASIVE:	Ceramic Alumina	Zirconia Alumina	Zirconia Alumina
BACKING PLATE:	Fiberglass	Fiberglass	Fiberglass
OTHER:	Supersize		

SIZE (D x H)	GRIT	MAX. RPM	STD. PKG.	PART #	PART #	PART #
Type 29 Conical						
5" x 5/8"-11	36	12,000	10		666233 99189	
	40	12,000	10		666233 99190	
	60	12,000	10		666233 99191	
	80	12,000	10		666233 99192	
5" x 7/8"	24	12,000	10		666233 99206	
	36	12,000	10	66261 190001	662544 61174	662544 19998
	40	12,000	10	66261 190002	662544 61176	662544 20001
	60	12,000	10	66261 190003	662544 61177	662544 20002
	80	12,000	10	66261 190004	662544 61178	662544 20003
	120	12,000	10			662544 91779
6" x 5/8"-11	40	10,200	10			662544 91780
	60	10,200	10			662544 91781
	80	10,200	10			
6" x 7/8"	24	10,200	10		666233 99066	
	36	10,200	10		666233 99298	
	40	10,200	10		666233 99193	662544 91776
	60	10,200	10		666233 99194	662544 91777
	80	10,200	10		666233 99195	662544 91778
	120	10,200	10			662544 20009
7" x 5/8"-11	36	8,600	10	66261 183498	662544 61188	662544 20009
	40	8,600	10	66261 183499	662544 61190	662544 20010
	60	8,600	10	66261 183500	662544 61192	662544 20012
	80	8,600	10	66261 183501	662544 61193	662544 20013
7" x 7/8"	24	8,600	10		666233 99196	
	36	8,600	10	66261 183494	662544 61180	662544 20004
	40	8,600	10	66261 183495	662544 61183	662544 20006
	60	8,600	10	66261 183496	662544 61185	662544 20007
	80	8,600	10	66261 183497	662544 61186	
	120	8,600	10			



Blaze and BlueFire mini flap discs available in 2" and 3".

NORTON

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BLAZECASE STUDY
BLAZE R980P FLAP DISCSAPPLICATION: **WELD GRINDING** | MARKET: **WELDING**

THE CUSTOMER'S CHALLENGE

This facility had a strong relationship with the competitor and their Zirconia High Density flap discs despite the astronomically high price of the discs. We were brought in on a distribution partnership initiative to provide cost savings and grow business.

INCUMBENT INFORMATION/PERFORMANCE

Incumbent Disc: 4-1/2" x 5/8"-11 Type 27,
40 grit Zirconia high density flap disc

vs.

NORTON PRODUCT INFORMATION/PERFORMANCE

Norton Disc: Norton Blaze - 4-1/2" x 5/8"-11 Type 27,
40 grit standard density flap disc

MACHINE: Makita 4-1/2" Right Angle Grinder

PART MATERIAL: Mild steel 90%, Stainless Steel 10%
Structural Truck Parts

PART SPECS: 1/4" Flat Bar Stock



28%
Cost Savings

Norton Wheel Achievements

Two big take-aways from this case study were:

1. Operators experienced a smoother feel while grinding with the Blaze R980P with minimal pressure compared to the incumbent. The overall stock removal performed by Blaze R980P standard flap disc over the competitive Zirconia High Density by 32% increase.
2. The Norton Blaze R980P flap disc improved on the Zirconia High Density flap disc life by over 10%. It also showed a 20% decrease in price. Both of these resulted in a cost savings to the customer of 28%.

Management Assessment

The resulting cost savings were 28% in comparison to incumbent disc. Based on this particular customer's prior usage of 160 flap discs per month, an annual cost savings in this application totaled \$8,212.

BEST – NORTON Blaze**BETTER** – NORTON BlueFire**GOOD** – NORTON Metal

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 **NO-RISK TEST**

