



Random Orbital Sanding Guide

Abrasive Discs and System Solutions



What's inside

- 1 Dust Management** 3–5
Why dust extraction matters
- 2 Sanding Made Simple** 6
3M™ Cubitron™ II and general purpose discs to always have in your bag
- 3 Random Orbital Sanding Portfolio** 7–9
A full view of 3M sanding discs organized by backing type and weight
- 4 Sanding System Solutions** 10–11
Dial in sanding disc performance by selecting the right backup pad and tool
- 5 Application Guide** 12–13
Common sanding applications with recommended disc, backup pad and tool to serve as a starting point
- 6 Availability Guide** 14–16
Disc availability by grade and attachment type

Focus on the health and safety of your workers

Match the right backup pad to enhance sanding disc performance

Find the best abrasive for the job

Choose the tool to optimize the system

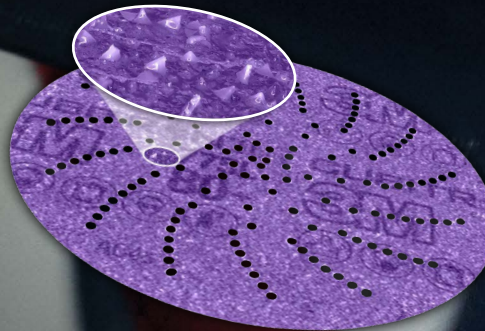
**In Random Orbital Sanding,
it's all about putting together
the optimal system.**



CUBITRON™ II
Industrial Abrasives

High-performance 3M™ Cubitron™ II Abrasives

3M™ Cubitron™ II Abrasives are designed with revolutionary 3M Precision-Shaped Grain technology. As the grain wears, it continuously fractures to form sharp points and edges that slice through material, wear evenly and provide super-long life and consistency.



	
Net	Film
	
Paper	Cloth

Revolutionary sanding technology. Designed with 3M Precision-Shaped Grain.

Our line of 3M™ Cubitron™ II Premium Series abrasives is designed with the exclusive 3M Precision-Shaped Grain technology, providing industry leading cut rate and prolonged abrasive life for a variety of applications and substrates.

- Industry-leading cut rate - **up to 2x faster cut¹** than conventional abrasives
- Engineered to require less pressure
- Discs **last up to 6x longer²** than conventional abrasives
- Consistent, quality finish for less rework
- 3M™ Hookit™ attachment system

Last up to
6x
Longer²
than conventional abrasives

Dust is a problem.

Airborne particles

The creation of airborne particles is inherent in most abrasive processes. The composition and physical cross section (quantity and distribution of particles sizes) depends on the workpiece and the properties of the abrasive product being used.

Airborne particles are hazardous to operators through contact with exposed skin or eyes, and especially by inhalation.

Extremely fine airborne particles can be particularly hazardous, as they are often invisible to the naked eye and are more easily absorbed into lungs and respiratory tracts, leading to long-term health risks.



Why dust extraction matters.



Shop Cleanliness
Shop environment and operator satisfaction



Productivity / Rework
Impacts cycle time



Health & Safety
Increase focus on operator health

Sanding discs cut better and last longer when dust isn't loading the cutting surface of the abrasives.

Dust extraction capability is influenced by several factors.

- Number of holes in abrasive disc
- Type of vacuum
- Power of the vacuum
- Volume of swarf
- Consistent pneumatic air supply
- Shape of workpiece



Xtract™
Clean Sanding Solutions

3M Xtract™ Clean Sanding Solutions

Imagine a cleaner workspace, where sanding is virtually dust-free and performance and dust extraction are not compromised. Now that's possible.

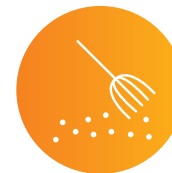
As you sand, any dust produced is easily pulled through the net backing, continuously extracting and collecting into the vacuum system.

Cut the dust. Full system solution.

Tools designed for ease of use.

Introducing a new line of tools and accessories designed for ease of use and optimal dust extraction. So that you don't have to compromise high performance for dust management.

- Designed to be quieter, lighter and easier to operate
- Virtually dust-free working environment for easy cleanup
- Helps reduce dust exposure
- Pneumatic and electric tool options available
- Portable Dust Extractor designed for cleaner work through mobile collection



3M Xtract™ tools attach to a filter bag or dust extraction unit, so you'll have little to no additional cleaning to do after the job is done.



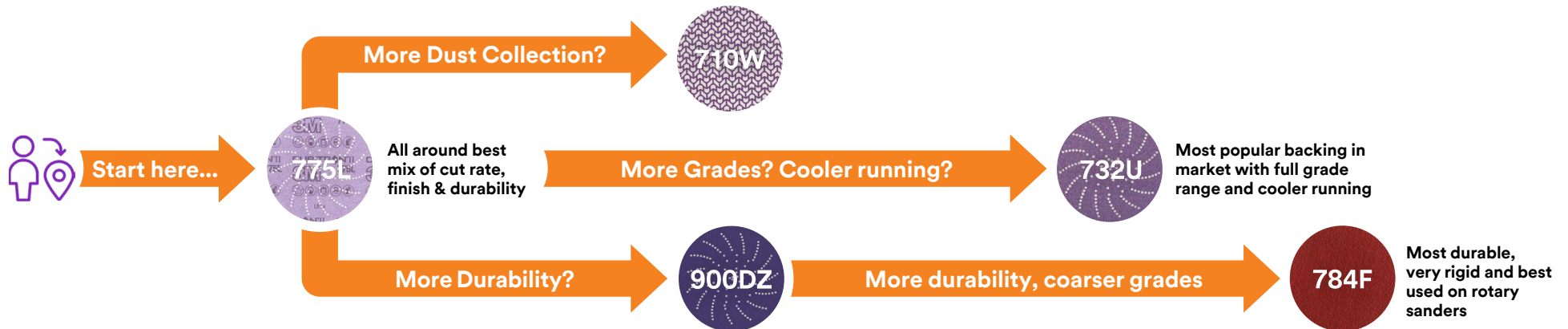
Scan QR code for more information about the 3M Xtract™ Clean Sanding Solutions



Sanding Made Simple ▶ Always have these in your bag

		Lighter backing → Heavier backing			
		Net	Paper	Film	Cloth
3M CUBITRON II Industrial Abrasives Premium Series For quality and growth-minded sanding process owners, who are focused on optimization, product performance, and are continuously looking to improve their operations.		• Best dust extraction • Flexible and conformable • Tear resistance similar to C-wt paper  710W ▶ Contains Precision Shaped Grain ▶ Net backing ▶ 80+ to 320+	• Most common backing • Good flexibility  732U ▶ Contains Precision Shaped Grain ▶ C-wight paper ▶ 80+ to 1000+	• Great durability, tear resistance & flexibility • Best for a uniform, consistent finish  775L ▶ Contains Precision Shaped Grain ▶ 3 mil film ▶ 80+ to 1000+	• Best durability & tear resistance • Best for coarse grade sanding or heavy stock removal  900DZ ▶ Contains Precision Shaped Grain ▶ J-weight cloth ▶ 40+ to 320+  784F ▶ Contains Precision Shaped Grain ▶ X-weight cloth ▶ 36+ to 120+
	Advanced Series For the sanding process owner looking for improved performance over a Standard product and a wider grade range than the PSG Premium series.	 310W ▶ Contains Al Ox mixed with PSG ▶ Net backing ▶ 80+ to 320+	 236U ▶ Contains Aluminium Oxide ▶ C-wight paper ▶ 80+ to P500	 375L ▶ Contains Aluminium Oxide ▶ 3 mil film ▶ 60 to P2000	 726A ▶ Contains Al Ox mixed with PSG ▶ J-weight backing ▶ 60+ to 320+

How To Sell Decision Tree



Random Orbital Sanding Portfolio

Net backed sanding discs

Industry-leading cut rate with optimal dust extraction for long life. Unique hole pattern available only from 3M. Helps maintain cleaner work environment. Ideal for stock removal and fine finishing.



710W

- ▶ 3M Precision-Shaped Grain on an open weave net backing
- ▶ Ideal for difficult coating removal and leveling fillers and putties
- ▶ Finer grades are great for final finishes or softer substrates such as wood and paint



310W

- ▶ 3M Precision-Shaped Grain and Aluminum Oxide Blend on an open weave net backing
- ▶ High performance general purpose price-value disc

Premium series

Advanced series

Film backed sanding discs

Best for a uniform consistent finish. Have good tear resistance and durability. Longer life than paper.



568XA*

- ▶ Cerium Oxide on 3 mil film
- ▶ Constructed for high gloss, semi gloss and acrylic solid surface applications



268L*

Specialized Applications

- ▶ Aluminum Oxide on 3 mil film
- ▶ Works well on sealer sanding, primer and e-coat scuff applications



775L

- ▶ Precision-Shaped Grain on 3 mil film
- ▶ The go-to choice for all applications that require premium performance



375L

- ▶ Aluminum Oxide on 3 mil film
- ▶ A multi-purpose value disc where finish and durability are musts



568XA*

Specialized Applications

- ▶ Microreplicated abrasive on 3 mil film
- ▶ Used in a variety of solid surface and AOEM tier prep for paint applications



675L

- ▶ Diamond abrasive on 5 mil film
- ▶ Designed for finishing on hard materials and can be used for coating removal and prep

Lighter backing

Heavier backing

*Stearate-free

Random Orbital Sanding Portfolio

Paper backed sanding discs

Most versatility and most common backing type. Have good flexibility. Performance can range from value to top tier.

 216U ▶ Aluminum Oxide on A-weight paper ▶ For light sanding and prep work on primers, paints, gelcoats and sealers	 236U ▶ Aluminum Oxide on C-weight paper ▶ The multi-purpose, multi-application value disc	 732U ▶ Precision-Shaped Grain on C-weight paper ▶ A premium choice for all applications that require fast cut and long life
 426U ▶ Silicon Carbide on A-weight paper ▶ A value product for wood sanding and applications where finish is critical	 401Q* ▶ Silicon Carbide on A or C-weight paper ▶ Can be run wet or dry in prep for buff or paint and in polishing applications	

Lighter backing

Heavier backing

*Stearate-free

Cloth backed sanding discs

For coarse grade sanding and heavy stock removal. Excellent tear resistance and durability. Choose from flexible to stiff.

 900DZ** ▶ Precision-Shaped Grain on flexible J-weight cloth ▶ A flexible disc for edge sanding, metal surface preparation and wood applications	 947A ▶ Precision-Shaped Grain on X-weight cloth ▶ A premium choice for stainless steel applications requiring a durable disc	
 726A ▶ Precision-Shaped Grain blend on flexible J-weight cloth ▶ Flexibility and durability for tough sanding applications	 337DC ▶ Aluminum Oxide on X-weight cloth ▶ Designed for Body in White blending and finishing prior to e-coat application	 784F ▶ Precision-Shaped Grain on YF-weight cloth ▶ A premium choice for the most unforgiving applications

Lighter backing

Heavier backing

**No grinding aid

Random Orbital Sanding Portfolio

Nonwoven finishing discs

Use on irregular, rounded work surfaces requiring a highly conformable abrasive.
Load resistant and good for imparting a bright final finish.



3M™ Finesse-it™ Refining Disc 3000

- ▶ Nonwoven with Silicon Carbide
- ▶ For refining 1200/1500 scratch marks in prep for buff and large area repair



Scotch-Brite™ Hookit™ 7448 Pro

- ▶ Nonwoven with Silicon Carbide
- ▶ For light cleaning, blending and scratch refinement on metal and solid surfaces



Scotch-Brite™ Hookit™ 7447 Pro

- ▶ Nonwoven with Aluminum Oxide
- ▶ For cleaning, scuffing, and finishing on metals and plastic substrates



Scotch-Brite™ Hookit™ Cut and Polish

- ▶ Nonwoven with Aluminum Oxide
- ▶ For heavier nonwoven blending applications where fast scratch removal is required



Scotch-Brite™ Hookit™ Clean and Finish

- ▶ Nonwoven with Silicon Carbide
- ▶ For light cleaning and blending on metal substrates



Scotch-Brite™ Hookit™ Production Clean and Finish

- ▶ Nonwoven with Aluminum Oxide
- ▶ For a uniform finish prior to coating primer, metal and solid surfaces

Fine

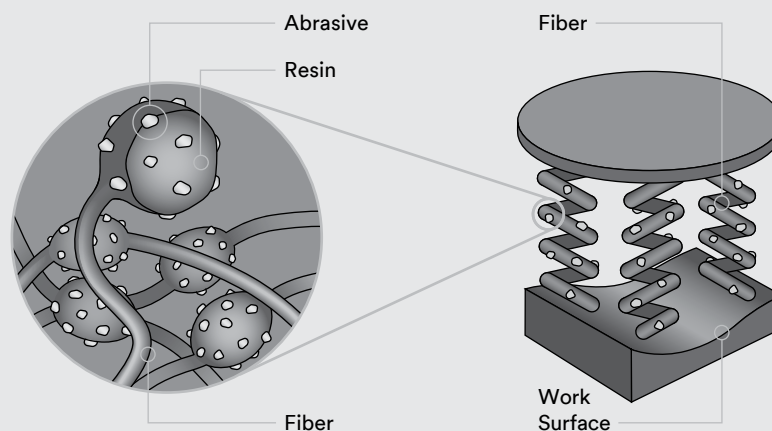
Coarse

Scotch-Brite™ Nonwoven Web Technology



The science behind high-quality finishes.

The nonwoven web technology from Scotch-Brite™ is made with nylon that has been soaked in resin and abrasive mineral. The fibers and particles are bound together to form an open, three-dimensional structure. This construction provides spring-like action, which helps the product conform and bounce back without leaving an uneven finish. New abrasive mineral is exposed while you work, helping to extend the life of your abrasive product so that you can keep producing consistent finishes.

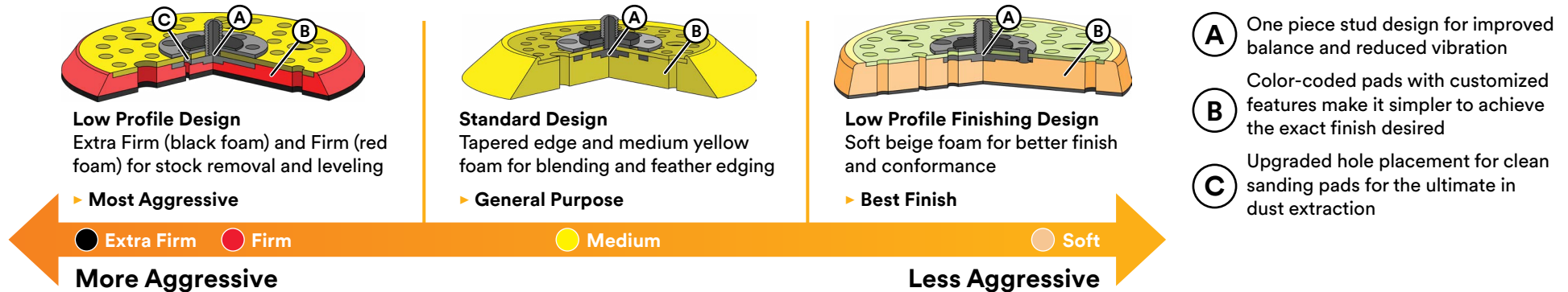


3D Open Web

Spring Action

Sanding System Solutions

Select the right backup pad.



Select the right tool.

- ▶ Available in 5" and 6" diameters
- ▶ Can be used with 3M Xtract™ and Hookit™ backup pads
- ▶ Using vacuum during sanding, increases disc life and productivity, improves work cleanliness and reduces airborne dust



3M Xtract™ Pneumatic Random Orbital Sander Central-Vacuum
Attaches to existing central vacuum systems for dust extraction



3M Xtract™ Pneumatic Random Orbital Sander Self-Generated Vacuum
Featuring 3M patented Clean Sanding System and 3M Filter Bag

3M Random Orbital Sander also available in non-vacuum

Factors affecting performance checklist.

Abrasive

- Ensure disc backing matches how aggressive the sanding application is
- Follow basic sanding technique
- Frequently inspect discs for tears, folds or loading
- Make sure work surface is debris-free before moving on to finer grade disc

Backup Pad

- Match backup pad to the job (i.e. low profile for stock removal)
- Confirm that tool and disc pad are the same diameter
- Inspect for damaged pad — adhesion loss, worn foam
- If increased conformability is needed attach a 3M foam interface pad

Pneumatic Random Orbital Sander

- Check tool lubrication schedule (1–3 drops of tool lubricant daily is recommended)
- Ensure that the speed control adjusted to 3/MAX
- Test that the lever is undamaged and muffler is not clogged

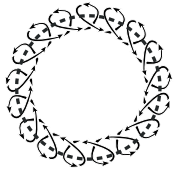
Electrical Random Orbital Sander

- Ensure sander is always attached to dust extraction in use
- Check that electrical cable and lever are undamaged and that muffler is not clogged

Air Pressure

- Check your gauge to make sure tools is running at 90 PSI
- Use minimum length of air hose necessary — no more than 25 ft.
- Ensure inside air line diameter is at a minimum 3/8"
- Check airline fittings: 9/32" is best, 3/16" is marginal

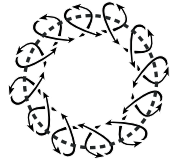
Select the right orbit.



**3/32" (2.5 mm)
Diameter Orbit**
Fine finish sanding

Why choose 3/32" (2.5 mm) orbit?

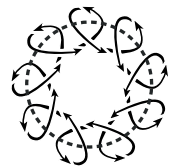
- ▶ To use with finer grades
- ▶ Least amount of stock removal



**3/16" (5 mm)
Diameter Orbit**
General purpose sanding

Why choose 3/16" (5 mm) orbit?

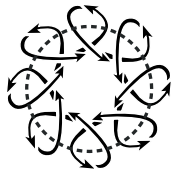
- ▶ Most commonly used orbit pattern
- ▶ Good balance of stock removal and finish



**5/16" (8 mm)
Diameter Orbit**
Aggressive sanding*

Why choose 5/16" (8 mm) orbit?

- ▶ More stock removal needed than 3/16" (5 mm) orbit
- ▶ Not as aggressive as 3/8" (10 mm) orbit



**3/8" (10 mm)
Diameter Orbit**
Most aggressive sanding*

Why choose 3/8" (10 mm) orbit?

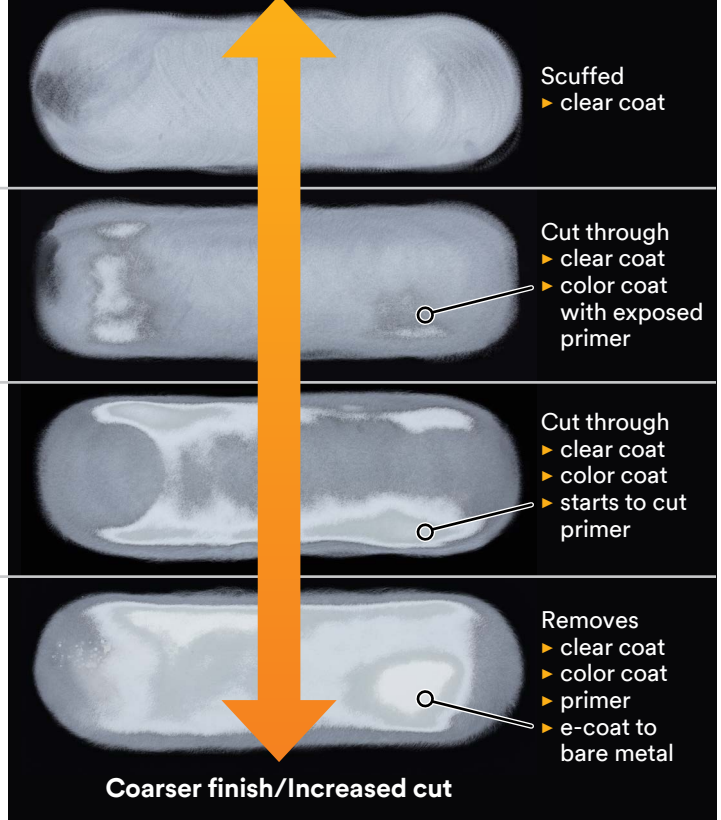
- ▶ Most aggressive stock removal
- ▶ Good for large area sanding or if high cut rate is needed

*Not recommended for woodworking applications

Material removal

After sanding with 775L 80+ for 30 seconds on a painted panel

Finer finish/Lower cut



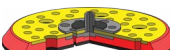
Basic sanding technique.

- 1 Start the sander ON the surface and stop OFF the surface. This will help to avoid swirl marks.
- 2 Apply light hand pressure on the tool and allow the backup pad to orbit freely. Let the tool do the work.
- 3 Run the tool flat on the work piece to prevent gouging.
- 4 Follow a set pattern when sanding. This ensures that previous scratches are removed and a uniform finish is reached.



Application Guide

The 3M recommendations below are starting points for the ideal system solutions. Be sure to conduct trials to find the right system for the application.

Application	Lead With Disc	Alternative Discs	Common Grades	Suggested Backup Pad	Suggested Tool Orbit	Process
Primer Sanding		 	180 – 600	Low Profile Finishing 	3/16" (5 mm)	Sanding workpiece for consistent scratch prior to paint
Coating Removal		 	80 – 240	Red Low Profile 	3/8" (10 mm)	Removing coatings from workpiece prior to application of primers and paints
Surface Refining/Flattening		 	80 – 220	Red Low Profile 	3/16" (5 mm)	Smoothing and leveling workpiece prior to paint for consistent paint adhesion
Deflashing Plastic		 	60 – 120	Red Low Profile 	3/16" (5 mm)	Removing excessive plastic flash by knocking off sharp edges
Gelcoat Sanding			240 – 1000	Low Profile Finishing 	3/16" (5 mm)	Flattening or removing defects in gelcoat while refining for following buff and polish or paint step
Removing Parting Lines		 	180 – 320	Red Low Profile 	3/16" (5 mm)	Removing raised lines in manufacturing to blend surface geometry
Shaping			36 – 220	Yellow Standard 	5/16" (8 mm)	Incremental steps of cutting and shaping refinement for composite fabrication
Whitewood Sanding		 	150 – 220	Red Low Profile 	3/16" (5 mm)	Leveling or smoothing wood surface and removing machining marks from saw cuts or routers
Sealer Sanding			180 – 400	Low Profile Finishing 	3/32" (2.5 mm)	Leveling orange peel and scuffing for adhesion of next layer of coatings or finish
Prep for Paint on Metal		 	60 – 180	Black Low Profile 	3/16" (5 mm)	Refining a fiber disc scratch used in stock removal for an even scratch prior to paint
Removing Handling Scratches		 	80 – 120	Black Low Profile 	5/16" (8 mm)	Identifying defects in metal parts caused by upstream handling
Edge Deburring			60 – 120	Yellow Standard 	5/16" (8 mm)	Removing sharp edges on sheared metal
Prep for Polish		 	600 – 2000	Red Low Profile 	3/32" (2.5mm)	Levelling orange peel and paint defects to refine surface prior to compound and polish

For applications needing a bright final finish, follow up with a Scotch-Brite™ Nonwoven finishing disc.

Optimize your sanding system with 3M™ Cubitron™ II and 3M Xtract™ Clean Sanding Systems.

Create a safer and cleaner workspace.

Sanding debris is removed directly from the workpiece as an operator sands with the system. With a convenient and efficient dust free system, the work environment is cleaner and more comfortable for all workers.

Improve sanding disc performance.

A disc loads less when the dust it generates is vacuumed away. Less loading means more of the disc's abrasive surface is in direct contact with the workpiece. More direct disc contact provides better cut rate and less disc loading equals longer life.

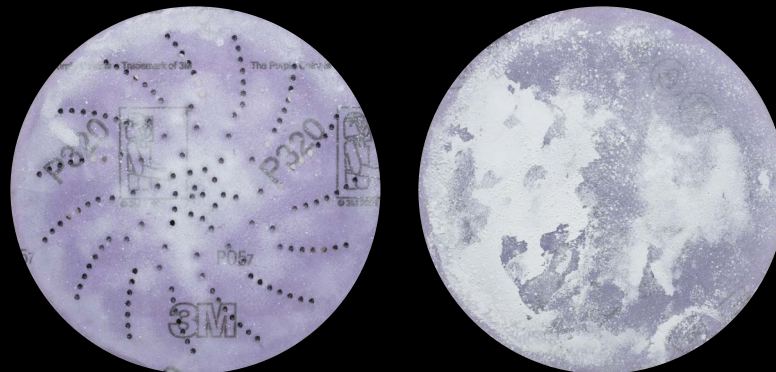
Save \$\$\$ on abrasives and improve productivity.

With longer life and a faster cut rate, less discs are used to complete a job. Not only can disc consumption be reduced, each job can be done faster, improving a shop's overall productivity.

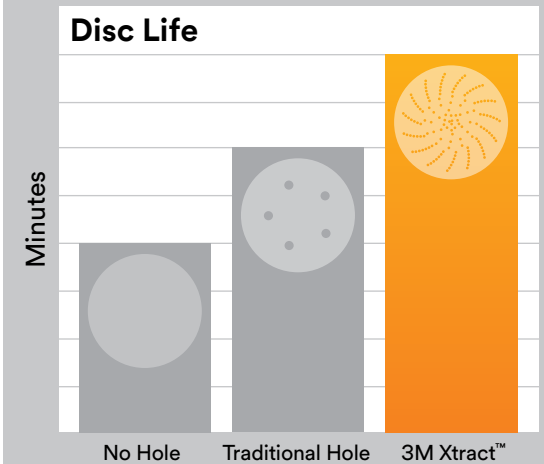
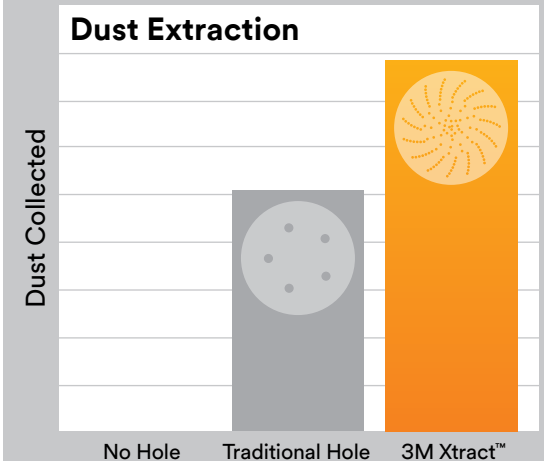


3M Xtract™ Clean Sanding vs. No Hole

After sanding on cured gelcoat for 30 seconds. The 3M Xtract™ Clean Sanding Disc has not loaded. This means a longer abrasive disc life.



3M Xtract™ Clean Sanding Abrasives removes more dust and lasts longer than traditional hole pattern discs of a similar diameter.



Test results are based on dry sanding applications. Results will vary by application, material being sanded and tool used.

Availability Guide: Sanding Made Simple

► Always have these in your bag

-  = 3M™ Cubitron™ II or Precision-Shaped Grain grade
 = ANSI (American National Standards Institute) grades
 = FEPA (Federation of the European Producers of Abrasives) grades

					Grade																								
Premium Series	Product	Backing	Attachment	Forms	24	36	40	50	60	80	100	120	150	180	220	240	280	320	360	400	500	600	800	1000	1200	1500	2000		
		Net	Hookit™	3M Xtract™ Clean Sanding																									
		Film	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
	Stikit™		No Hole																										
		Paper	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
			Stikit™	No Hole																									
		Cloth	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
Stikit™			No Hole																										
Advanced Series		Net	Hookit™	3M Xtract™ Clean Sanding																									
		Film	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
			Stikit™	No Hole																									
		Cloth	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
			Stikit™	No Hole																									
		Paper	Hookit™	No Hole																									
				3M Xtract™ Clean Sanding																									
			Stikit™	No Hole																									

Full Range Disc Options

Full Range Disc Options								Grade																								
Backing	Product	Weight	Mineral	Grinding Aid or Stearate	Attachment			24	36	40	50	60	80	100	120	150	180	220	240	280	320	360	400	500	600	800	1000	1200	1500	2000		
					Stikit™	Hookit™	PSA																									
Net	710W	Net	PSG			•							▲		▲	▲	▲	▲	▲		▲											
	310W	Net	PSG/AO			•							▲		▲	▲	▲	▲	▲		▲											
Cloth	900DZ	J	PSG		•	•				▲		▲	▲		▲	▲	▲	▲			▲											
	726A	J	PSG	✓		•				▲	▲	▲	▲		▲	▲	▲	▲			▲											
	947A	X	PSG	✓		•				▲	▲	▲	▲		▲																	
	784F	YF	PSG		•	•			▲		▲	▲	▲		▲																	
Paper	732U	C	PSG	✓	•	•						▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	P	P	P	P					
	426U	A	SC	✓	•	•						▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲									
	401Q	A	SC			•	•																					▲	▲	▲		
	236U	C	AO	✓	•	•						P	P	P	P	P	P	P	P		P		P	P								
	216U	A	AO	✓	•	•						P	P	P	P	P	P	P	P	P	P	P	P	P	P	P						
Film	775L	3 mil	PSG	✓	•	•						▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					
	375L	5/3 mil	AO	✓	•	•					▲	P	P	P	P	P	P	P	P		P		P	P	P	P	P	P	P	P	P	

								Micron Grade														
Film	675L	5 mil	D			•	•			125			74				45		30	20		9
	268L	3 mil	AO			•	•				100	80			60	50		40	30	20	15	9

								3M™ Trizact™ Grade									
Cloth	337DC	X	AO	✓		•	•	A300	A160	A100	A65	A45		A30			
Film	568XA	3 mil	CO			•	•										None
	268XA	3 mil	AO			•	•						A35		A20	A10	A5

Backing	Product	Mineral	Attachment	Scotch-Brite™ Grade
Non woven	3M™ Finesse-it™ Refining 3000	SC	Hookit™	3000
	Scotch-Brite™ 7448 Pro	SC		Ultra Fine
	Scotch-Brite™ Clean and Finish	SC		
	Scotch-Brite™ 7447 Pro	AO		Very Fine
	Scotch-Brite™ Production Clean and Finish	AO		
	Scotch-Brite™ Cut and Polish	AO		Medium

Mineral

AO = Aluminum Oxide
 C = Ceramic
 CO = Cerium Oxide
 D = Diamond
 PSG = Precision-Shaped Grain
 SC = Silicon Carbide

Grade

▲ = 3M™ Cubitron™ II or Precision-Shaped Grain
 A = ANSI (American National Standards Institute)
 P = FEPA (Federation of the European Producers of Abrasives)

Product and grade availability subject to change.
 Visit 3M.com/Abrasives to confirm current product grade and form offering.



Claims References

¹ Cuts up to twice as fast: Compared to 3M Aluminium Oxide Abrasive Products. Results are based on total cut over four x ninety second cycles on an automated test with maple material using 5 inch / 127mm 80 grit discs and 3M Xtract™ Low Profile Finishing Back-up Pad 20290. End of life is defined as when the 3M disc cut rate drops to 75% of the initial cut rate of the conventional abrasive disc.

² Lasts up to six times as long: Compared to 3M Aluminium Oxide Abrasive Products. Results are based total cut over twenty four x ninety second cycles on an automated test with maple material using 5 inch / 127 mm 180 grit discs and 3M Xtract™ Low Profile Finishing Back-up Pad 20290.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property. **Warranty, Limited Remedy, and Disclaimer:** Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price. **Limitation of Liability:** Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

3M, 3M Xtract, Cubitron, Finesse-it, Hookit, Scotch-Brite, Stikit and Trizact are trademarks of 3M. All other trademarks are owned by their respective owners.
© 3M 2025. All rights reserved. Please recycle.



3M India Limited
48-51 Electronic City, Hosur Road, Bengaluru, Karnataka- 560100

Phone: 1-800-425-3030 (Toll Free #)
Call Monday – Friday 8AM to 5PM Central Time
Web: go.3M.com/INAbrasives