3M Science. Applied to Life.™

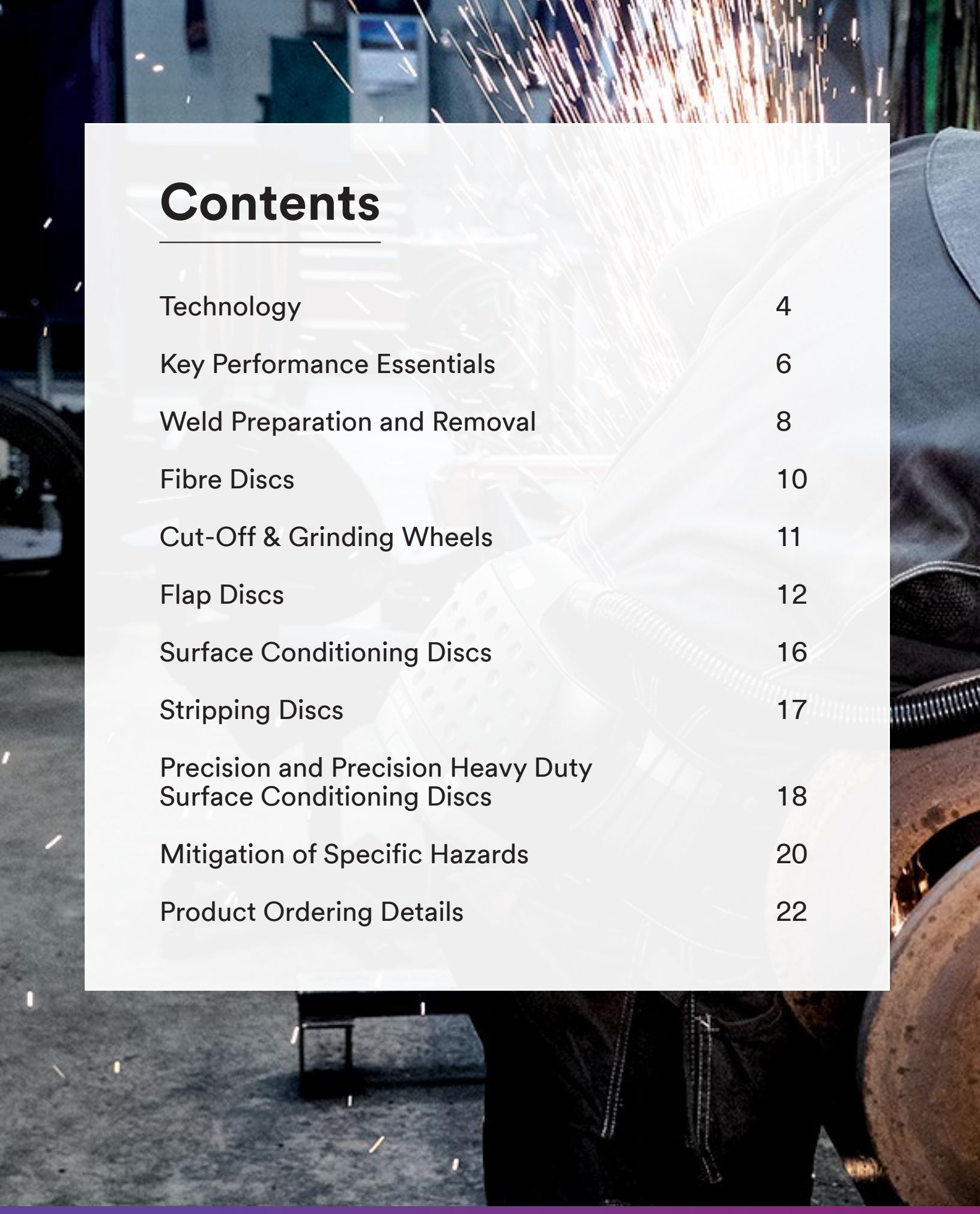
Grind Less, Weld More.

3M Winning Combinations for Weld Preparation & Removal

Welder's Choice

Transform your work with 3M's total solution of abrasives and personal Protective Equipment for welders and help your team reach new levels of productivity, confidence, and safety.

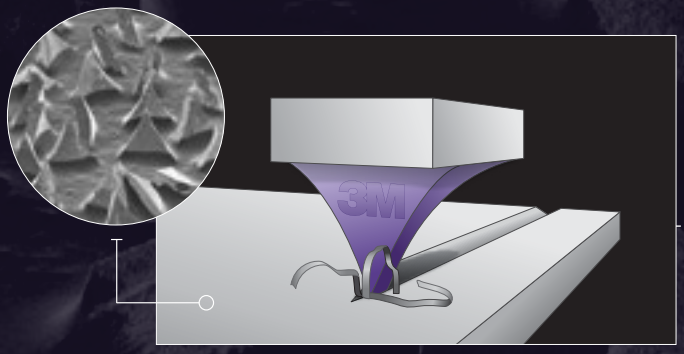
Scotch-Brite™ | 3M | Cubitron™ 3 Performance Abrasives | 3M | Speedglas™ Welding Safety



Contents

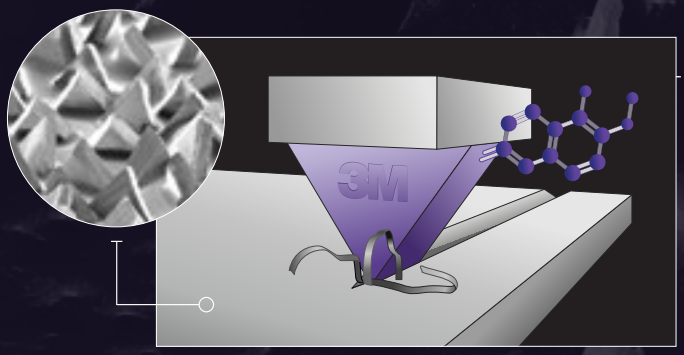
Technology	4
Key Performance Essentials	6
Weld Preparation and Removal	8
Fibre Discs	10
Cut-Off & Grinding Wheels	11
Flap Discs	12
Surface Conditioning Discs	16
Stripping Discs	17
Precision and Precision Heavy Duty Surface Conditioning Discs	18
Mitigation of Specific Hazards	20
Product Ordering Details	22

Technology That Transforms How Work Gets Done

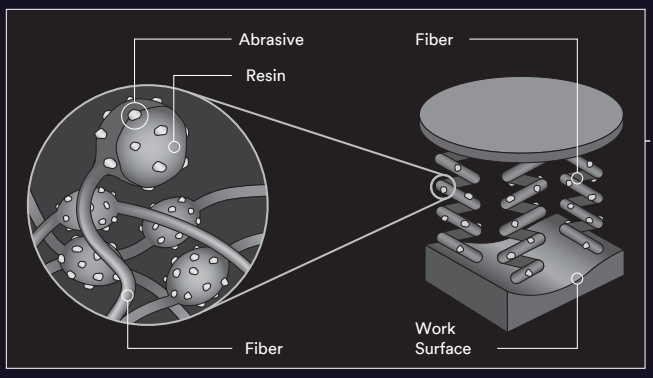


3M | Cubitron™ 3
Performance Abrasives

Re-engineered precision-shaped ceramic grain using a proprietary breakthrough in grain shape with curved sides.

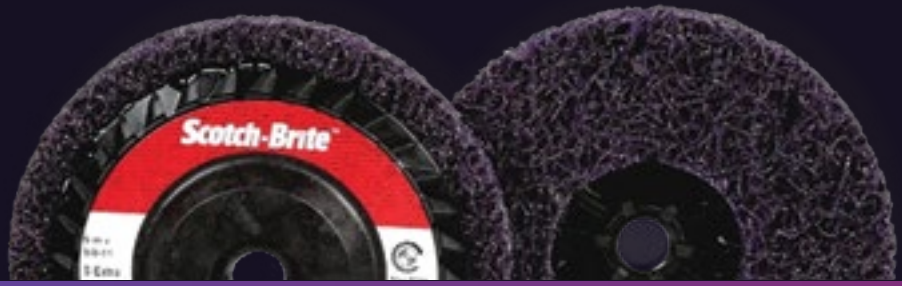


Re-engineered precision-shaped ceramic grain using proprietary breakthrough in molecular bonded technology.



Scotch-Brite™

3M™ Precision-Shaped Grain and nonwoven abrasives combine the benefits of two 3M technologies. A transformation in speed and life without sacrificing the smooth finish expected from Scotch-Brite™ products.



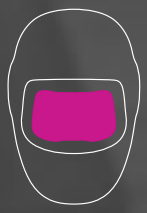
Easy Switching is Just a Tap Away

3M™ Speedglas™ G5-03 Welding Helmets

Tap on the side of the welding helmet, with or without a glove, to easily switch between grind (or cut) mode and weld mode.

1
Use the interface on the welding filter to set if you want to use TAP function with grind or cut mode.

2
TAP three times on the side of the welding helmet to switch between GRIND and WELD mode or CUT and WELD mode.



3
The welding filter will switch to desired setting.

4
Tap three times again and the welding filter switches back to welding mode.

3M | Speedglas™
Welding Safety

With 3M™ Speedglas™ Natural Color Technology colors appear brighter and more realistic in both the light and dark states. A more realistic view may enable:

Accuracy

Recognize color and contrast and see more details when using the welding filter.

Productivity

Better focus on the welding setup, welding technique and inspection of just-completed welds.

Quality

May help to increase the quality and precision of the welds.

Key Performance Essentials

Up to

40% **MORE SPEED***

When using these products together to undertake an end-to-end welding process

Up to

81% **REDUCTION IN VIBRATION (HAV)****

When using these products together to undertake an end-to-end welding process

Up to

68% **REDUCTION IN NOISE****

When using these products together to undertake an end-to-end welding process

*Process time recorded during testing in a selected metal fabrication processes. Performance solution of 3M™ Cubitron™ fibre disc and 3M™ Adflo™ Powered Air Purifying Respirator System with 3M™ Speedglas™ G5-01 Series Welding Helmet and hearing protection compared to a conventional solution of high-quality ceramic grinding wheel and 3M™ Speedglas™ 100 Series Welding Helmet with separate half face piece respirator, grinding shield, hearing protection, and safety glasses.

**Exposure to hand-arm vibration and noise recorded during testing in a selected metal fabrication process has been based on 3M™ Cubitron™ fibre disc testing vs. high-quality ceramic grinding wheel – also in line with independent testing by Fraunhofer Institute.

This story captures hand-arm vibration and noise levels, and completion times during a single challenge. Other welding and grinding activities may produce different experiences – results may vary.

Always follow local regulation and guidance when selecting PPE and follow the specific user instructions of your PPE.

Finish it Faster

with winning combinations from 3M.

Superior Protection and Welder Safety

The advantages of our cutting edge abrasive grain technology delivers measurable benefits for our customers.

Paired with 3M's advanced PPE—such as Speedglas™ welding helmets and Adflo™ respirators—welders get superior protection from sparks, particulates, and UV exposure. Comfortable, ergonomic designs enhance safety and visibility, enabling longer, more effective work sessions. Together, 3M abrasives and PPE streamline stock removal with unmatched performance and protection.

Productivity Delivered

Enhanced Productivity

With a significantly faster cut rate, this technology helps manufacturers to process more parts with smaller workforces, helping boost efficiency and output.

Safety Built In

Improved Worker Safety

Reduced hand-arm vibration and noise prioritize the well-being of employees, helping employers develop better working conditions.

Sustainably Forward

Sustainability at the Core

Longer-lasting abrasives and eco-friendly packaging align with the industry's sustainability objectives, helping to reduce carbon footprints and waste.

Weld Preparation and Removal
– Process Map

	STEP 1 A **Weld Preparation:** Cleaning and Removal	STEP 1 B **Weld Preparation:** Beveling (If Needed)
Thick Gauge	Scotch-Brite™ Scotch-Brite™ Clean and Strip XT Pro Disc	3M | Cubitron™ 3 Performance Abrasives 3M™ Cubitron™ 3 Depressed Center Grinding Wheel 3M™ Cubitron™ 3 Fibre Disc 1182C
Thin Gauge	Scotch-Brite™ Scotch-Brite™ Clean and Strip XT Pro Disc	

Fast Cut

Long Life

Increased Productivity

Increased Safety

STEP 2

Weld Removal	Cutting

3M Cubitron™ 3 Performance Abrasives

3M™ Cubitron™ 3 Depressed Center Grinding Wheel

3M™ Cubitron™ 3 Fibre Disc 1182C

3M™ Cubitron™ 3 Flap Disc 1169F

3M Cubitron™ 3 Performance Abrasives

3M™ Cubitron™ 3 Cut-Off Wheel

Welding

3M Cubitron™ 3 Performance Abrasives

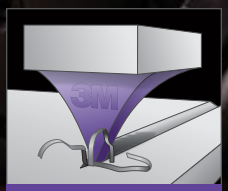
3M™ Cubitron™ 3 Flap Disc 1169F

3M™ Cubitron™ 3 Fibre Disc 1182C

3M Cubitron™ 3 Performance Abrasives

3M™ Cubitron™ 3 Cut-Off Wheel

3M | Cubitron™ 3
Performance Abrasives



Fibre Discs

Breakthroughs in technology are redefining the limits of cut rate and total stock removal, with a focus on prioritizing productivity, safety, sustainability and optimizing automation.

3M™ Cubitron™ 3 Fibre Disc 1182C
For carbon steel

3M™ Cubitron™ 3 Fibre Disc 1187C
Includes grinding aid for stainless steel

- ✓ Beveling
- ✓ Surface Grinding
- ✓ Flame Cut Smoothing
- ✓ Weld Grinding

11–Series Discs & Roloc™			
Grade	36+	60+	80+

1182C, 36+ up to
3X
Faster Initial Cut Rate[1]
vs. Competitive High-Quality Grinding Wheel

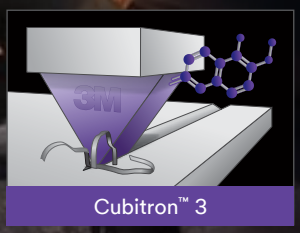
1182C, 36+ up to
60%
More Life More Speed[2]
vs. 3M™ Cubitron™ 2 Fibre Disc 982C, 36+

1182C up to
88% **Less Vibration Exposure[3]**

70% **Less Noise Energy[4]**
vs. Competitive High-Quality Grinding Wheel

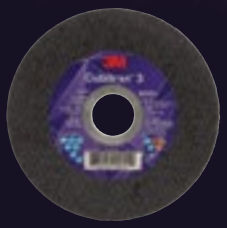
Scan for more detailed product ordering info ▶
1182C
1187C

3M | Cubitron™ 3
Performance Abrasives



Cut-Off and Grinding Wheels

Using re-engineered Precision-Shaped Grain with new molecular bonding technology and sharp, angular structures that continuously fracture to form sharp points to wear evenly, run cool and optimize mineral breakdown.



3M™ Cubitron™ 3 Cut-Off Wheels
For carbon and stainless steel

Up to **3X** More Life[6]
10% More Speed[6]
vs. 3M™ Cubitron™ 2 Cut-Off Wheels

Up to **33%** Less Vibration[7]
vs. Competitive Ceramic Grain Wheels

- ✓ For ultra-fast cutting through sheet metal, metal tubing and more

Scan for more detailed product ordering info

Designed for exceptional life and speed in heavy-duty grinding applications on stainless steel, mild steel and other specialist alloys.

3M™ Cubitron™ 3 Depressed Center Grinding Wheels
For carbon and stainless steel

Up to **50%** More Life[8]
14% More Speed[8]
vs. 3M™ Cubitron™ 2 Depressed Center Grinding Wheels

Up to **33%** Less Vibration[9]
vs. Competitive Ceramic Grain Wheels

- ✓ Beveling
- ✓ Surface Grinding
- ✓ Weld Grinding
- ✓ Gouging
- ✓ Flame Cut Smoothing

Fast and versatile — designed to be used both as a grinding wheel and as a cut-off wheel on stainless steel, mild steel and other specialist alloys.

3M™ Cubitron™ 3 Cut & Grind Wheels
For carbon and stainless steel

Up to **5%** More Speed[10]
vs. 3M™ Cubitron™ 2 Cut & Grind Wheels

Better Balance
More Speed
We've reformulated the product to further improve ergonomics vs. Cubitron™ 2

- ✓ All the combined applications of grinding and cut-off wheels

3M Cubitron™ 3
Performance Abrasives

Flap Discs

3M™ Cubitron™ 3 Flap Discs 1169F

Grades 40+, 60+ & 80+

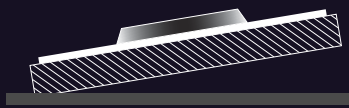
Maximizing Productivity and Flexibility

Powered by 3M re-engineered precision-shaped grain technology, the Cubitron 3 product line now includes flap discs available in grades 40+, 60+, 80+.

Built with a durable polyester backing, these versatile flap discs offer long life, increased productivity and consistent performance resulting in less abrasive spend.

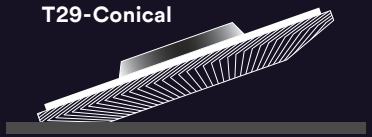
There are two styles of flap disc shape, conical and flat, that can work in your application. Choose the one that contacts the workpiece with the full width of the flap material to maximize flap disc service.

T27-Flat

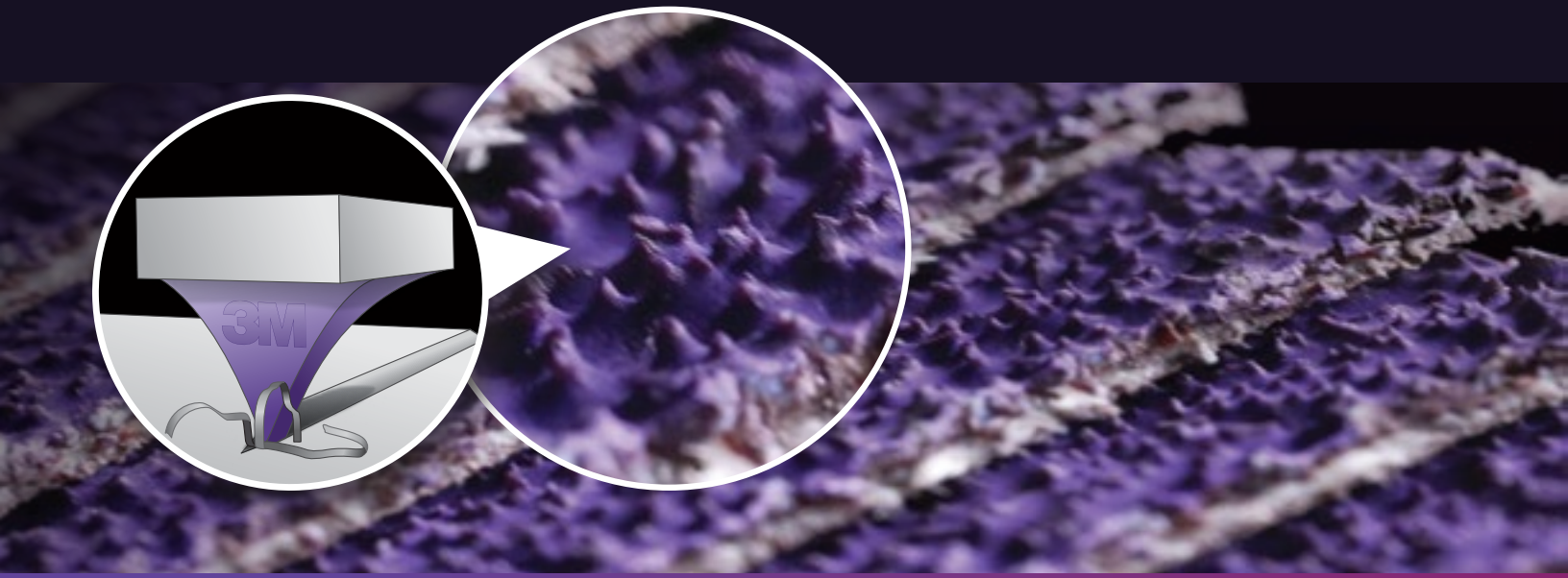


For use at flatter angles: 0° – 15°

T29-Conical



For use at steeper angles: 15° – 25°



Proven Performance That Takes Your Process To The Next Level

Increased productivity

Long life and fast cut mean more work done with every single flap disc, less time spent changing discs and less abrasive spend.

Increased versatility

Easy to use flap disc nature helps lower the risk of gouging compared to bonded wheels.

Increased consistency

Individual flaps break down, exposing fresh mineral throughout the life of the disc.

Increased safety and sustainability

Requires less operator pressure, and long life service helps reduce landfill waste.

Works best on:

Carbon steel | **Stainless steel**

Compliant with Contaminant-Free and INOX criteria to reduce risks of galvanic corrosion.

Abrasive flaps include grinding aid for high performance and long life on stainless steel and other heat-sensitive alloys.

Scan for more detailed product ordering info

More applications than before!

Ideal for medium to high pressure jobs where the quality and finish are crucial.

Automation Ready

Grinding | Deburring | Blending | Surface Prep | Refining | Finishing

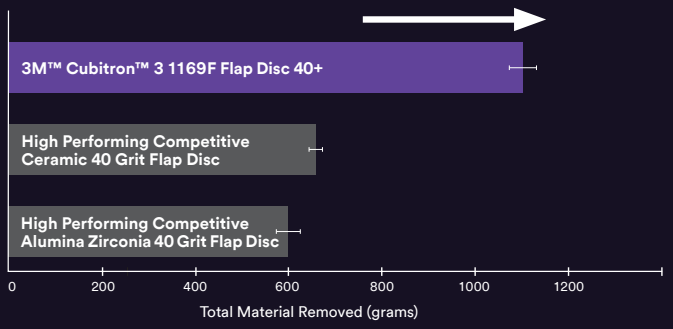
3M™ Cubitron™ 3 Flap Disc 1169F

Carbon steel grinding Grade 40+

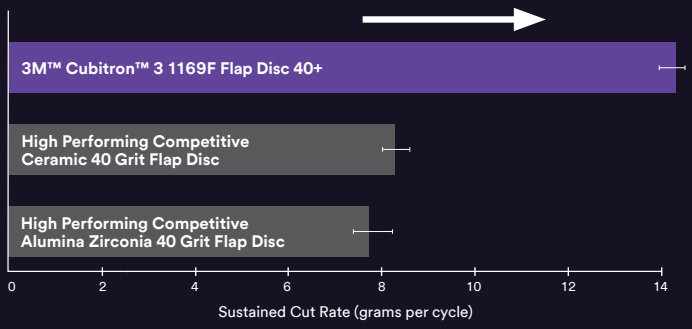
We tested 3M™ Cubitron™ 3 Flap disc 1169F grade 40+ on carbon steel and here are the results:

3M™ Cubitron™ 3 Flap Disc 1169F against the competition:

Up to **69%** More material removed

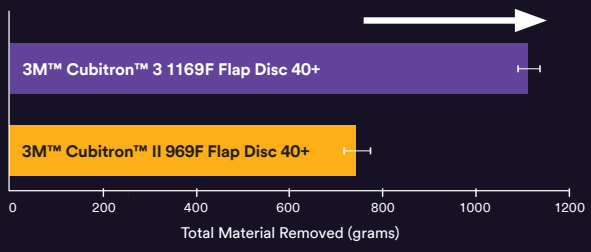


Up to **75%** Faster sustained cut rate

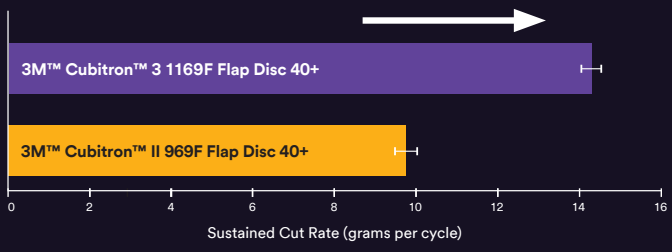


3M™ Cubitron™ 3 Flap Disc 1169F against other 3M products:

Up to **49%** More material removed



Up to **46%** Faster sustained cut rate



Upgrade now from the 3M™ Cubitron™ II Flap Disc 969F!

Note: Results are based on an automated, 37.5 minute, medium pressure test on 1045 steel using 4.5 inch 40 grit flap discs on a servo motor.

3M offers a wide range of flap discs

3M™ Cubitron™ 3 Flap Disc 1169F

3M Re-Engineered Precision-Shaped Grain

- Medium-high pressure applications
- Polyester backing
- Best 3M flap disc for long life and speed, plus requires less operator pressure
- Highest productivity delivered
- Size (inches): 4, 4.5, 5, 6, 7

Grade	40+	60+	80+

3M™ Cubitron™ II Flap Disc 967A

3M Precision-Shaped Grain

- Low pressure applications
- Poly-cotton backing
- Better 3M flap disc for long life and speed on stainless steel and aluminum substrates
- Finish delivered with easier breakdown
- Size (inches): 4, 4.5, 5, 7

Grade	40+	60+	80+

3M™ Flap Disc 769F

3M Precision-Shaped Grain

- Medium pressure applications
- Polyester backing
- Good 3M flap disc in life and speed vs. vast majority of flap discs in the market
- Price value for your everyday operations
- Size (inches): 4, 4.5, 5, 7

Grade	40+	60+	80+	120+

Surface Conditioning Discs

For surface finishing after heavy grinding.

Scotch-Brite™ Precision Surface Conditioning Discs

3M Precision-Shaped Grain

Grades			
	VFIN	FIN	MED
	CRS	XCRS	

Contains 3M Precision-Shaped Grain for fast cut and long life.

Expanded grades for a large range of applications.

Balance of conformability and durability.

Bright, vivid colors help to identify easier.

Up to **40%** More Speed[11]

Up to **2X** More Life[12]

vs. Competitive CRS Discs

Attachment Types

Roloc™ | TN Quick Change | 7/8 Center Hole | Hook and Loop

- ✓ Light Grinding
- ✓ Deburring
- ✓ Blending
- ✓ Refining
- ✓ Cleaning
- ✓ Finishing

Scan for more detailed product ordering info

Scotch-Brite™ Precision Heavy Duty Surface Conditioning Discs

3M Precision-Shaped Grain

Grades		
	MED	CRS
	XCRS	XCRS

Grinds and blends in one step.

Fast aggressive cut, long life and consistent finish.

Durable construction resists edge wear.

Attachment Types

Roloc™ | TN Quick Change | 7/8 Center Hole | Hook and Loop

- ✓ Light Grinding
- ✓ Blending
- ✓ Deburring
- ✓ Edge Break

Scan for more detailed product ordering info

Stripping Discs

Safety Built In

No steel wires or high impact particles that could injure workers.

For cleaning after heavy grinding.

Scotch-Brite™ Clean and Strip XT Pro Disc

Silicon Carbide Mineral

Grade	S XCS

Quickly removes rust, paint, mill scale, coatings from metal and leaves a fine finish.

Silicon carbide mineral cuts aggressively with low sparking.

Maintains workpiece shape.

Up to **90%** Less Vibration[13] | Up to **54%** More Speed[13]

vs. Crimped Wire Cup Brushes

Attachment Types

Roloc™ | TN Quick Change | Center Hole | 5/8–11

- ✓ Finishing
- ✓ Surface Preparation
- ✓ Light Scale Removal
- ✓ Coating Removal

Scan for more detailed product ordering info

Scotch-Brite™ Clean and Strip XT Pro Extra Cut Disc

Aluminum Oxide Mineral

Grade	A XCS

Heavy rust / rust pit removal without leaving divots, ideal for weld refinement and removing weld discoloration.

Aluminum oxide mineral cuts to bare metal quickly.

Resists chunking and loading, and performs well on edges.

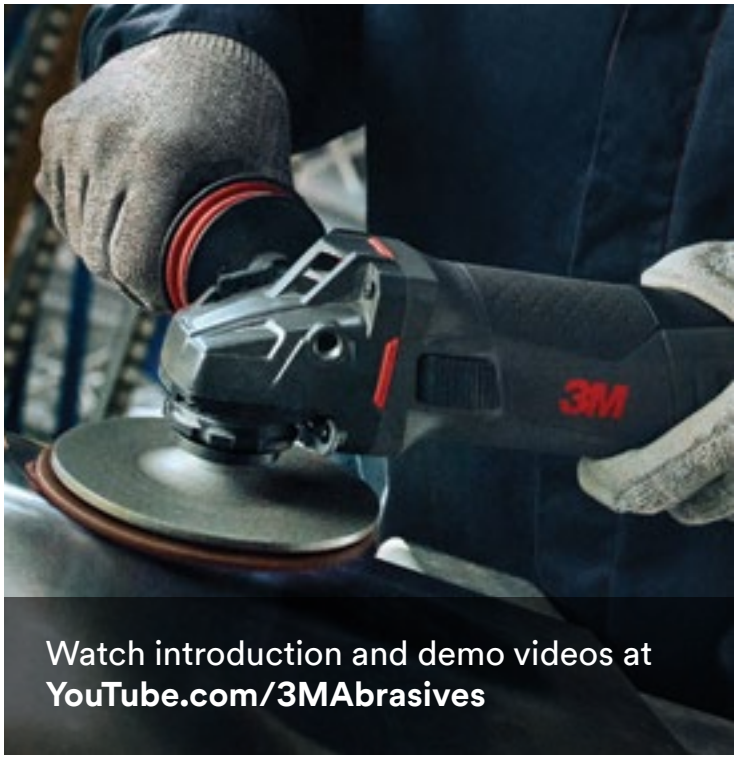
Attachment Types

Roloc™ | TN Quick Change | Center Hole | 5/8–11

- ✓ Cleaning
- ✓ Surface Preparation
- ✓ Finishing

Scotch-Brite™ Precision Heavy Duty Surface Conditioning Discs

Tough enough for heavy duty use.



1

2X Longer Lasting on Mild Steel

compared to competitive premium nonwoven abrasives — while offering edge durability and shape retention during edge wear*

2

3X More Parts Processed on Mild Steel

than competitive premium nonwoven abrasives*

3

Fast and Durable Long-lasting on parts with sharp edges

Heavy duty discs for applications that require a more aggressive and durable product

High-Pressure Applications

An extension of 3M's Precision Surface Conditioning Disc family, this heavy duty option is designed for durability, long product life, and consistent performance. These discs last longer than competitive premium nonwoven abrasives while offering edge durability and shape retention during edge wear.

- Light Grinding
- Deburring
- Edge Breaking
- Blending
- Refining

Tech Tip

Ever wondered what grit mineral is in your nonwoven?

Now including the size of PSG to better understand the positioning of our grades of Precision Heavy Duty Surface Conditioning Discs.

[1] Based on 3M internal testing: 7" discs were tested robotically on 1045 mild steel using a 3M face plate UPC 45193 until the end-of-life. The end-of-life is determined to be 30% of the original cut.

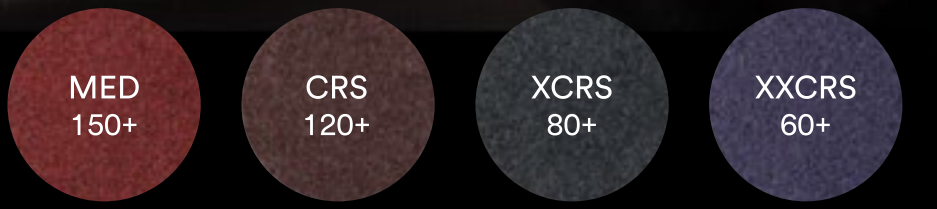
[2] Based on 3M internal testing: 7" discs were tested robotically on 1045 mild steel using a 3M face plate UPC 45193 until the end-of-life. The end-of-life is determined to be 30% of the original cut. One finished part is defined as 10 grams of mild steel removed.

Tech Tip

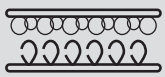
Try hook and loop discs with our new **Scotch-Brite™ Universal Surface Conditioning Back-up Pad.** Designed to optimize the performance of nonwoven abrasive discs. It comes packaged with everything you need for quick and easy tool attachment, including three attachment nuts and an optional snap-in center post. Low-profile design fits within most grinder guards.

CUTTING POWER FOR HEAVY DUTY JOBS.

Medium Finish/Less Aggressive → Coarser Finish/Most Aggressive



3M™ Hook and Loop – No Hole Disc



3M™ Hook and Loop – Center Hole Disc

TN Quick Change

Roloc™ TS

Roloc™ TR

Roloc™ TSM

How Our Technology Supports the Mitigation of Specific Hazards – Grinding Applications

Airborne particles

By slicing not plowing through metal, the chips produced by 3M Precision-Shaped Grain are larger, longer and heavier – meaning particles stay airborne for less time.

Metal chips with conventional grain

Metal chips with Precision-Shaped Grain

Hand-arm vibration

Up to **88%** reduction in vibration exposure*

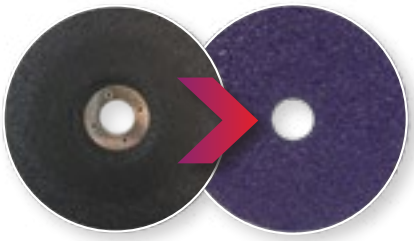
- Less vibration generated by the abrasive disc itself.
- Reduced trigger time on the vibrating tool due to cut speed.
- Less applied pressure is required due to cutting efficiency.

Noise

Up to **70%** reduction in noise energy*

- Less vibration leads to less noise generated.
- Reduced trigger time on the noisy tool.
- Different abrasive construction lowers noise levels.

3M | Cubitron™ 3 Performance Abrasives



Switch from a depressed center grinding wheel to a 3M™ Cubitron™ 3 Fibre Disc for grinding tasks.

The change in form and the speed of getting the job done can significantly reduce vibration and noise exposure.

*Performance testing is a typical weld preparation process; 3M Cubitron 3 Fibre Disc average compared to the average result of 10 globally selected high-quality competitive Type 27 grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute – January 2024.

Tools that take it to the next level.

The new 3M™ Electric Grinder is available in 115 mm, fixed speed. Designed with robust components, this grinder is built for durability in the harshest industrial conditions. A powerful and long-lasting tool you need to get more done.

- 1900 W power
- Available in fixed speed
- Excellent ergonomic design
- Restart protection
- Direct cooling for a long service life
- Overload protection
- Kickback control
- Adjustable guard
- Robust design and components provide durability in industrial conditions
- Accessories for maximum functionality and flexibility

Get the full system advantage.

3M™ Electric Grinder

3M™ Disc Back-up Pads ideal use

TECH TIP:

Combine with 3M™ Fibre Disc Back-up Pads and 3M™ Electric Grinder to optimize performance of 3M™ Cubitron™ 3 Fibre Discs 1182C and 1187C including abrasive life, cut rate and consistency.

3M | Cubitron™ 3
Performance Abrasives

Available in additional sizes, grades, and attachment types.
Scan the code for full product details.

Cut-Off Wheels

3M™ Cubitron™ 3
Cut-Off Wheels – T1

3M ID	Dia x Thk x Ah (In)	Max RPM
T1		
7100303860	3" x 0.035" x 1/4"	21,000
7100303859	3" x 0.035" x 3/8"	21,000
7100303858	3" x 0.045" x 3/8"	21,000
7100303857	4" x 0.035" x 3/8"	21,000
7100304004	4" x 0.045" x 3/8"	21,000
7100342887	4" x 0.06" x 3/8"	21,000
7100304005	4" x 1/8" x 3/8"	21,000
7100304307	4.5" x 0.04" x 7/8"	13,300
7100304006	4.5" x 0.045" x 7/8"	13,300
7100304007	5" x 0.045" x 7/8"	12,250
7100313190	6" x 0.045" x 7/8"	10,200
7100313189	7" x 0.45" x 7/8"	8,500

3M™ Cubitron™ 3
Cut-Off Wheels – T27

3M ID	Dia x Thk x Ah (In)	Max RPM
T27		
7100304308	4-1/2" x 0.045" x 7/8"	13,300
7100304009	4-1/2" x 0.125" x 7/8"	13,300
7100304010	5" x 0.045" x 7/8"	12,250
7100304011	5" x 0.09" x 7/8"	12,250
7100304009	5" x 0.125" x 7/8"	12,250
7100313201	6" x 0.045" x 7/8"	10,200
7100313191	7" x 0.09" x 7/8"	8,500
7100313192	4-1/2" x 0.045" x 5/8-11"	13,300
T27 Quick Change		
7100313187	4-1/2" x 1/8" x 5/8-11"	13,300
7100313200	4-1/2" x 0.09" x 5/8-11"	13,300
7100313192	4-1/2" x 0.045" x 5/8-11"	13,300
7100313188	6" x 0.045" x 5/8-11"	10,200
7100312963	7" x 0.09" x 5/8-11"	8,500

Fibre Discs

3M™ Cubitron™ 3
Fibre Disc 1182C

3M ID	Dia (In)	Grade	Max RPM
7100309791	4" x 5/8"	36+	15,000
7100309797	4" x 7/8"	36+	15,000
7100309799	4-1/2" x 7/8"	36+	13,300
7100309793	5" x 7/8"	36+	12,000
7100309903	6" x 7/8"	36+	10,000
7100309904	7" x 7/8"	36+	8,600
7100310797	9-1/8" x 7/8"	36+	6,600
7100349591	4-1/2" x 7/8"	60+*	13,300
7100349588	5" x 7/8"	60+*	12,000
7100349577	6" x 7/8"	60+*	10,000
7100349579	7" x 7/8"	60+*	8,600
7100349565	9-1/8" x 7/8"	60+*	6,600
7100349584	4-1/2" x 7/8"	80+*	13,300
7100349603	5" x 7/8"	80+*	12,000
7100349578	7" x 7/8"	80+*	12,000
7100349575	9-1/8" x 7/8"	80+*	6,600
TN Quick Change			
7100310727	4-1/2"	36+	13,300
7100310728	5"	36+	12,000
7100310729	7"	36+	8,600
7100349673	4-1/2"	60+*	13,300
7100349678	5"	60+*	12,000
7100349568	7"	60+*	8,600
7100349669	4-1/2"	80+*	13,300
7100349675	5"	80+*	12,000
7100349580	7"	80+*	8,600

3M ID	Dia (In)	Grade	Max RPM
GL Quick Change			
7100310730	4-1/2"	36+	13,300
7100310795	5"	36+	12,000
7100309796	7"	36+	8,600
7100349574	5"	60+*	12,000
7100349674	7"	60+*	8,600
7100349576	5"	80+*	12,000
7100349677	7"	80+*	8,600

Grinding Wheels

3M™ Cubitron™ 3
Depressed Center
Grinding Wheel

3M ID	Dia x Thk x Ah (In)	Max RPM
T27		
7100303965	4" x 1/4" x 3/8"	15,300
7100303964	4" x 1/4" x 5/8"	15,300
7100303966	4-1/2" x 1/4" x 7/8"	13,300
7100303967	5" x 1/4" x 7/8"	12,250
7100313193	6" x 1/4" x 7/8"	10,200
7100313198	7" x 1/4" x 7/8"	8,500
7100313202	9" x 1/4" x 7/8"	6,650
T27 Quick Change		
7100312968	4-1/2" x 1/4" x 5/8-11" INT	13,300
7100312967	5" x 1/4" x 5/8-11" INT	12,250
7100312966	6" x 1/4" x 5/8-11" INT	10,200
7100312965	7" x 1/4" x 5/8-11" INT	8,500
7100312964	9" x 1/4" x 5/8-11" INT	6,650

Scotch-Brite™

Available in additional sizes, grades, and attachment types. Scan the code for full product details.

Surface Conditioning Discs

Scotch-Brite™ Precision Heavy Duty Surface Conditioning Disc

3M ID	Dia x Ctr Hole (In)	Grade	Max RPM
Hook and Loop – No Hole			
7100358156	4" x NH	Medium	13,000/15,000*
7100358858	4" x NH	Coarse	13,000/15,000*
7100358883	4" x NH	Extra Coarse	13,000/15,000*
7100358857	4" x NH	X-Extra Coarse	13,000/15,000*
7100358157	4-1/2" x NH	Medium	13,000/13,300*
7100358903	4-1/2" x NH	Coarse	13,000/13,300*
7100358872	4-1/2" x NH	Extra Coarse	13,000/13,300*
7100358902	4-1/2" x NH	X-Extra Coarse	13,000/13,300*
7100358923	5" x NH	Medium	10,000/12,000*
7100358904	5" x NH	Coarse	10,000/12,000*
7100358924	5" x NH	Extra Coarse	10,000/12,000*
7100358905	5" x NH	X-Extra Coarse	10,000/12,000*
7100358925	6" x NH	Medium	10,000
7100358906	6" x NH	Coarse	10,000
7100358926	6" x NH	Extra Coarse	10,000
7100358871	6" x NH	X-Extra Coarse	10,000
7100358859	7" x NH	Medium	8,000
7100358898	7" x NH	Coarse	8,000
7100358890	7" x NH	Extra Coarse	8,000
7100358854	7" x NH	X-Extra Coarse	8,000

3M ID	Dia x Ctr Hole (In)	Grade	Max RPM
Hook and Loop – Center Hole			
7100358860	4" x 5/8"	Medium	15,000
7100358855	4" x 5/8"	Coarse	15,000
7100358861	4" x 5/8"	Extra Coarse	15,000
7100358887	4" x 5/8"	X-Extra Coarse	15,000
71003588967	4-1/2" x 7/8"	Medium	13,300
7100358856	4-1/2" x 7/8"	Coarse	13,300
7100359465	4-1/2" x 7/8"	Extra Coarse	13,300
710035946	4-1/2" x 7/8"	X-Extra Coarse	13,300
7100359473	5" x 7/8"	Medium	12,000
7100359468	5" x 7/8"	Coarse	12,000
7100359474	5" x 7/8"	Extra Coarse	12,000
7100359469	5" x 7/8"	X-Extra Coarse	12,000
7100358893	7" x 7/8"	Medium	8,600
7100358886	7" x 7/8"	Coarse	8,600
7100358899	7" x 7/8"	Extra Coarse	8,600
7100359475	7" x 7/8"	X-Extra Coarse	8,600
TN Quick Change			
7100358891	4-1/2" x 5/8-11"*	Medium	13,300
7100358888	4-1/2" x 5/8-11"*	Coarse	13,300
7100358862	4-1/2" x 5/8-11"*	Extra Coarse	13,300
7100358889	4-1/2" x 5/8-11"*	X-Extra Coarse	13,300
7100358897	5" x 5/8-11"*	Medium	12,000
7100358884	5" x 5/8-11"*	Coarse	12,000
7100358892	5" x 5/8-11"*	Extra Coarse	12,000
7100358885	5" x 5/8-11"*	X-Extra Coarse	12,000
7100358900	7" x 5/8-11"*	Medium	8,600
7100358894	7" x 5/8-11"*	Coarse	8,600
7100358901	7" x 5/8-11"*	Extra Coarse	8,600
7100358895	7" x 5/8-11"*	X-Extra Coarse	8,600

*Tinnerman Nut (TN) Quick-Change Attachment

Stripping Discs

Scotch-Brite™ Clean and Strip XT Pro Disc

3M ID	Dia x AH (In)	Grade	Max RPM
T27			
7100175393	4-1/2" x 7/8"	S XCS	13,300
7100176095	6" x 1/2"	S XCS	4,000
7100177515	7" x 3-1/8"	S XCS	3,600
7100175122	7" x 7/8"	S XCS	8,600
T27 Quick Change			
7100175252	4-1/2" x 5/8–11"	S XCS	13,300
7100177482	5" x 5/8–11"	S XCS	12,000
7100175474	7" x 5/8–11"	S XCS	8,600
TN Quick Change			
7100175464	4-1/2" x 5/8–11"	S XCS	13,300
7100175514	7" x 5/8–11"	S XCS	8,600
Roloc™ TR			
7100175521	2" x NH	S XCS	18,000
7100173795	3" x NH	S XCS	15,000
7100176094	4" x NH	S XCS	11,000

Scotch-Brite™ Clean and Strip XT Pro Extra Cut Disc

3M ID	Dia x AH (In)	Grade	Max RPM
T27			
7100176086	4" x 1/4"	A XCS	9,000
7100175515	4-1/2" x 7/8"	A XCS	13,300
7100176140	6" x 1/2"	A XCS	4,000
7100177517	7" x 3-1/8"	A XCS	3,600
7100175508	7" x 7/8"	A XCS	8,600
T27 Quick Change			
7100175520	4-1/2" x 5/8–11"	A XCS	13,300
7100177492	5" x 5/8–11"	A XCS	12,000
7100175493	7" x 5/8–11"	A XCS	8,600
TN Quick Change			
7100175465	4-1/2" x 5/8–11"	A XCS	13,300
7100175522	7" x 5/8–11"	A XCS	8,600
Roloc™ TR			
7100179815	2" x NH	A XCS	18,000
7100173790	3" x NH	A XCS	15,000
7100173796	4" x NH	A XCS	11,000

Available in additional sizes, grades, and attachment types. Scan the code for full product details.

Flap Discs

3M™ Cubitron 3 Flap Disc 1169F

SAP ID	Diameter (in.) x Bore (in.)	Grade	Max RPM
T27			
7100380474	4-1/2" x 7/8"	40+	13,300 RPM
7100380178	4-1/2" x 5/8-11"	40+	13,300 RPM
7100380493	5" x 7/8"	40+	12,000 RPM
7100380317	6" x 5/8-11"	40+	10,000 RPM
7100379978	7" x 7/8"	40+	8,600 RPM
7100380485	7" x 5/8-11"	40+	8,600 RPM
7100380348	4-1/2" x 7/8"	60+	13,300 RPM
7100380307	4-1/2" x 5/8-11"	60+	13,300 RPM
7100380168	5" x 7/8"	60+	12,000 RPM
7100380505	6" x 5/8-11"	60+	10,000 RPM
7100380218	4-1/2" x 7/8"	80+	13,300 RPM
7100380300	4-1/2" x 5/8-11"	80+	13,300 RPM
7100380309	5" x 7/8"	80+	12,000 RPM
7100380338	6" x 5/8-11"	80+	10,000 RPM

SAP ID	Diameter (in.) x Bore (in.)	Grade	Max RPM
T29			
7100404320	4" x 5/8"	40+	15,300 RPM
7100403690	4" x 3/8-24"	40+	15,300 RPM
7100380484	4-1/2" x 7/8"	40+	13,300 RPM
7100379929	4-1/2" x 5/8-11"	40+	13,300 RPM
7100380494	5" x 7/8"	40+	12,000 RPM
7100380207	5" x 5/8-11"	40+	12,000 RPM
7100380208	7" x 7/8"	40+	8,600 RPM
7100380495	7" x 5/8-11"	40+	8,600 RPM
7100403689	4" x 5/8"	60+	15,300 RPM
7100404345	4" x 3/8-24"	60+	15,300 RPM
7100380209	4-1/2" x 7/8"	60+	13,300 RPM
7100380349	4-1/2" x 5/8-11"	60+	13,300 RPM
7100380496	5" x 7/8"	60+	12,000 RPM
7100404321	4" x 5/8"	60+	15,300 RPM
7100403601	4" x 3/8-24"	80+	15,300 RPM
7100380288	4-1/2" x 7/8"	80+	13,300 RPM
7100380219	4-1/2" x 5/8-11"	80+	13,300 RPM
7100380316	5" x 7/8"	80+	12,000 RPM
7100380504	7" x 5/8-11"	80+	8,600 RPM

Tools

3M™ Electric Angle Grinders

3M ID	Model	Voltage	Disc Size (In)	Switch Type	Variable Speed	RPM Range	Weight (lb)	Amps	Watts	Includes
7100336685	11129	120V	4.5" – 5.0"	Paddle	No	11.500 RPM	6	13	1900	5 in Type 27 Guard, 5 in. Type 1 Guard, Vibration Reduction Side Handle
7100337004	11130	120V	4.5" – 5.0"	Slide	Yes	2.800 – 11.500 max RPM	5.7	13	1900	5 in Type 27 Guard, 5 in. Type 1 Guard, Vibration Reduction Side Handle
7100336788	11131	120V	6"	Paddle	Yes	2.800 – 9.300 max RPM	6.2	13	1900	6 in Type 27 Guard, 6 in. Type 1 Guard, Vibration Reduction Side Handle

Accessories

3M™ Universal Backup Pad

3M ID	Density	Color	Disc Size – in	Max RPM
7100258731	Extra Hard	Red	4.5"	13,300
7100258733	Extra Hard	Red	5"	12,000
7100258730	Extra Hard	Red	7"	8,600

3M ID	Density	Color	Disc Size – in	Max RPM
7100363248	Hard	Black	4.5"	13,300
7100362591	Hard	Black	5"	12,000
7100360002	Hard	Black	7"	8,600

3M | Speedglas™ Welding Safety

3M™ Speedglas™ Welding Helmet G5-01 and G5-03 Pro Air

Component		Part number	Description
Complete Kit	G5-01	46-1101-30TW	3M™ Speedglas™ G5-01 Heavy-Duty Welding Helmet with 3M™ Adflo™ PAPR Assembly 46-1101-30TW, G5TW ADF
		46-1101-30VC	3M™ Speedglas™ G5-01 Heavy-Duty Welding Helmet with 3M™ Adflo™ PAPR Assembly 46-1101-30VC, G5VC ADF
	G5-03 Pro Air	45-1101-30TW	3M™ Speedglas™ G5-03 Pro-Air Welding Helmet with 3M™ Adflo™ PAPR Assembly 45-1101-30TW, G5TW ADF
		45-1101-30VC	3M™ Speedglas™ G5-03 Pro-Air Welding Helmet with 3M™ Adflo™ PAPR Assembly 45-1101-30VC, G5VC ADF
Consumables	Outside Protection Plates	06-0200-51	3M™ Speedglas™ Welding Helmet Outside Protection Plate 9100, 06-0200-51, Standard
		06-0200-52	3M™ Speedglas™ Welding Helmet Outside Protection Plate 9100, 06-0200-52, Scratch Protection
		06-0200-53	3M™ Speedglas™ Welding Helmet Outside Protection Plate 9100, 06-0200-53, High Temperature
	Grinding Visor	46-0700-51	3M™ Speedglas™ G5-01 Inner Grinding Visor 46-0700-51, Anti-Fog, Hardcoated
	Sweatband	46-0200-54	3M™ Speedglas™ G5 Sweatband 46-0200-54

Additional accessory options for G5-01 and G5-03 Pro/Pro Air

A Task Light (G5-01 Task Light Kit: 46-0500-01; G5 Non-Air Welding Helmet Task Light Kit: 10-0500-01).

B Increase coverage of your head, neck and chest by adding the Large Fabric Head Cover (46-0700-81) and/or the Large Fabric Neck Cover (46-0700-66).

C For increased visibility, add the Large High-Visibility Head Cover (46-0700-83).

D When you need the durability of leather, attach the Leather Head Cover (46-0700-84) and Leather Neck Cover (46-0700-67).

E To provide additional respiratory protection on air helmets (APF 1000) as well as maximize coverage from sparks, add the Large Neck Shroud (46-0099-89) and Large Fabric Head Cover (46-0700-81).

3M | Speedglas™ Welding Safety

3M™ Speedglas™ Welding Helmets G5-03 Pro

	Part number	Description
Helmet Assemblies	10-0100-30VC	3M™ Speedglas™ G5-03 Pro Welding Helmet 10-0100-30VC, G5VC ADF
	10-0100-30TW	3M™ Speedglas™ G5-03 Pro Welding Helmet 10-0100-30TW, G5TW ADF
	10-0100-00	3M™ Speedglas™ G5-03 Pro Welding Helmet 10-0100-00, No ADF
	10-0100-00HH	3M™ Speedglas™ G5-03 Pro Welding Helmet with Hard Hat 10-0100-00HH, No ADF
	10-0100-00SH	3M™ Speedglas™ G5-03 Pro Welding Helmet with Safety Helmet 10-0100-00SH, No ADF
Welding Filters	46-0000-P10	3M™ Speedglas™ G5 Series Passive Filter Assembly 46-0000-P10, Shade 10
	46-0000-20	3M™ Speedglas™ G5NC Auto-Darkening Filter Natural Color 46-0000-20
	46-0000-30TW	3M™ Speedglas™ G5 Auto-Darkening Filter Tack Weld 46-0000-30TW
	46-0000-30VC	3M™ Speedglas™ G5 Auto-Darkening Filter Variable Color 46-0000-30VC

We suggest use of 3M disposable or reusable respirators underneath standard welding helmets.

Additional accessory options for G5-03 Pro

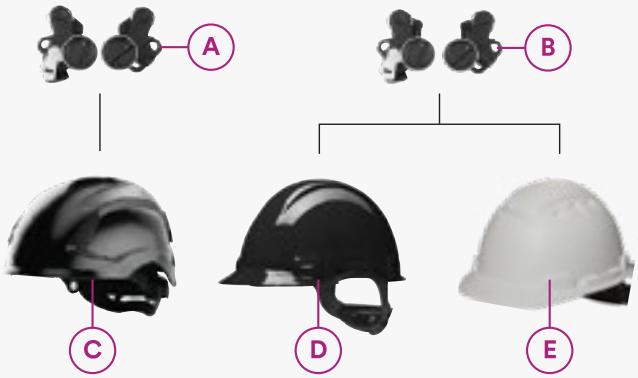
A 3M™ Speedglas™ G5-03 Pro Hard Hat Adapter for X-5000 Series Hard Hats (10-5014-00)

B 3M™ Speedglas™ G5-03 Pro Hard Hat Adapter for H-700 Series Hard Hats (10-0714-00)

C 3M™ SecureFit™ X5000 Series Safety Helmets (X5012-ANSI)

D 3M™ SecureFit™ Hard Hat H-700 Series (H-712SFR-UV)

E 3M™ SecureFit™ Elevated Temperature Hard Hat (H-701T-SF)



Before you choose your protective equipment

https://www.cdc.gov/niosh/topics/hierarchy

The Hierarchy of Controls can be used as a guide through the process of mitigating exposures to welding fume.*
The measures towards the top of the list are normally considered to be the most preferable.

Eliminate the hazard

E.g. Use different bonding solutions or find ways to minimize the amount of welding.

Substitute the hazard

E.g. Use a different metal or welding technique that produces less contaminants.

Engineering controls

Use engineering controls to isolate workers from the hazard. E.g. local exhaust ventilation (LEV) or on-tool extraction.

Administrative controls

E.g. Introduce dedicated welding areas and regular testing of LEV.

Personal Protective Equipment (PPE)

PPE will still be required for most manual welding due to the hazards involved and the limitations of other controls.

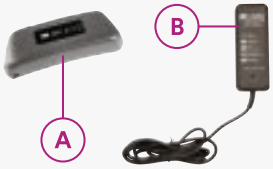
3M | Speedglas™ Welding Safety

3M™ Adflo™ Powered Air Purifying Respirator System

Component	Part number	Description
Adflo Assemblies	35-5401-01	3M™ Adflo™ PAPR Assembly 35-5401-01, Belt
	35-5401-BPK	3M™ Adflo™ PAPR Assembly 35-5401-BPK, BPK-HD
Headtop	M-207	3M™ Versaflo™ Respiratory Faceshield Assembly, M-207
	M-307	3M™ Versaflo™ Hard Hat Assembly, M-307
Spark Arrestor	15-0009-99X02	3M™ Adflo™ Spark Arrestor, 15-0009-99X02, 2 ea/Case
Pre-Filter	15-0099-99X06	3M™ Adflo™ Prefilter, 15-0099-99X06, 6 ea/Case
	15-0099-99X12	3M™ Adflo™ Prefilter, 15-0099-99X12, 12 ea/Case
Filters	15-0299-99X02	3M™ Adflo™ PAPR High Efficiency Particulate Filter 15-0299-99X02, 2 ea/Pack
	15-0299-99X20	3M™ Adflo™ PAPR High Efficiency Particulate Filter 15-0299-99X20, 20 ea/Case
	15-0299-99X80	3M™ Adflo™ PAPR High Efficiency Particulate Filter 15-0299-99X80, 80 ea/Case

Additional accessory options for Adflo

Heavy duty back pack (BPK-HD)



Batteries and charger

A 3M™ Adflo™ Powered Air Purifying Respirator Battery (35-1099-07)

B Battery Smart Charger (35-0099-08)

What is welding fume?

All welding fume contains particles as well as gases.

Welding fume particles vary in size, from particles that are large like grains of sand through to tiny particles that cannot be seen by the naked eye and can easily be inhaled.

Welding fume has been reclassified as carcinogenic[1], and exposure to welding fume and other gases associated with welding can cause a range of health issues.

ⓘ Fast fact:

Poor respiratory protection is the 4th most common workplace violation.[2]

1) IARC2017 2) Top 10 Most Frequently Cited Standards, OSHA, U.S. Department of Labor, for 2020.

Assess the risk

The type and quantity of welding fume, gases and vapors are determined by the material, welding process, amperage and the welding electrode used.

Consult an expert to identify the hazards levels against country safety standards.

ⓘ Fast fact:

A qualified health & safety professional or consultant can conduct area and personal exposure monitoring to determine type and concentration of contaminants.

Our range of products, models and colors may vary depending on region and year. For an accurate list of available products visit www.3M.com or contact your local supplier.

Case Study

3M helps large casting company improve safety and productivity

pam building

Pam Building specialize in the manufacture of cast iron drainage systems for commercial, public, and residential buildings. Operator safety is paramount, and productivity improvements are vital to stay competitive in their market.

Up to

87%

LESS vibration exposure

> *We were mainly focused on new tools to reduce hand-arm vibration and hadn't considered the significant impact abrasives could deliver before 3M came to see us.*
>
> Matthew Hoar - QEHS & Systems Manager

3M | Cubitron™ 3 Performance Abrasives

3M™ Cubitron™ 3 Cut & Grind Wheels reduced vibration magnitude and shortened the time to process each casting; these combined to help significantly mitigate operator exposure. Furthermore, this lower part processing time meant improved throughput – an important outcome for the production manager.

1. **Performance testing in a typical weld preparation process;** 3M™ Cubitron™ 3 Fibre Disc 1182C, 36+ average compared to the average result of 10 globally selected high-quality competitive type 27 grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute. January 2024.
2. The 'total material removed' claim is determined by averaging the amount of metal ground over the entire test method (30 cycles or 30 minutes of grinding). Error bars represent the results with a 95% confidence level.
3. **Performance testing in a typical weld preparation process;** 3M™ Cubitron™ 3 Fibre disc average compared to the average result of 10 globally selected high-quality competitive type 27 Grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute. January 2024.
4. **Noise energy operator exposure testing in a typical weld preparation process;** Cubitron™ 3 Fibre disc average compared to the average result of 10 globally selected high-quality competitive type 27 Grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute. January 2024.
5. Results are based on an automated, 37.5 minute, medium pressure test on 1045 steel using 4.5 inch 40 grit flap discs on a servo motor.
6. Results are based on an automated, cutting of a 3 mm thick 304 stainless steel sheet. Cut-off wheel geometry was T41 125 mm x 1.6 mm x 22 mm mounted on a 1.5 hp angle grinder with an applied force of 9 lb. Cut speed was defined by time needed to cut 1 meter of stainless steel. The number of cuts was estimated by the amount of wheel that was used after cutting a distance of 1 meter. End of life is assumed to be 50% of initial wheel mass.
7. Performance testing in a typical weld preparation process or cutting operation; 3M™ Cubitron™ 3 Cut-Off Wheels average compared to the average results of the high-quality competitive ceramic grain competitive wheels tested, according to independent testing, August 2023.
8. Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115 mm outer diameter mounted on a servo motor with an applied force of 12 lb. Cut speed was defined by metal removed after 10 minutes of testing life. End of life is assumed to be 50% of the initial wheel mass.
9. Performance testing in a typical weld preparation process or cutting operation; 3M™ Cubitron™ 3 Depressed Centre Grinding Wheels average compared to the average results of the high-quality competitive ceramic grain competitive wheels tested, according to independent testing, August 2023.
10. Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115 mm outer diameter mounted on a servo motor with an applied force of 12 lb. Cut speed was defined by metal removed after 10 minutes of testing. The total material removal was estimated based on the amount of wheel that was used for 10 minutes of testing life. End of life is assumed to be 50% of the initial wheel mass.
11. Based on 3M Internal Testing: CRS 3" discs were tested robotically on 304 series stainless steel for 12 minutes, using a 3" 3M™ Hard Back-Up, part number: 45091. One part is equivalent to 20 g of material removed.
12. Based on 3M internal testing: MED 3" discs were tested robotically on 6061 aluminum until the end of life (end of life is determined to be 50% of the averaged cut rate of the first three minutes) using a 3" 3M™ Hard Back-Up, part number: 45091. One part is equivalent to 20 g of material removed.
13. Hand-arm vibration compared to listed competitor and Scotch-Brite™ Clean and Strip XT Pro Disc, Type 27, according to independent testing by Fraunhofer Institute on October 2021.

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