



Cubitron™ 3

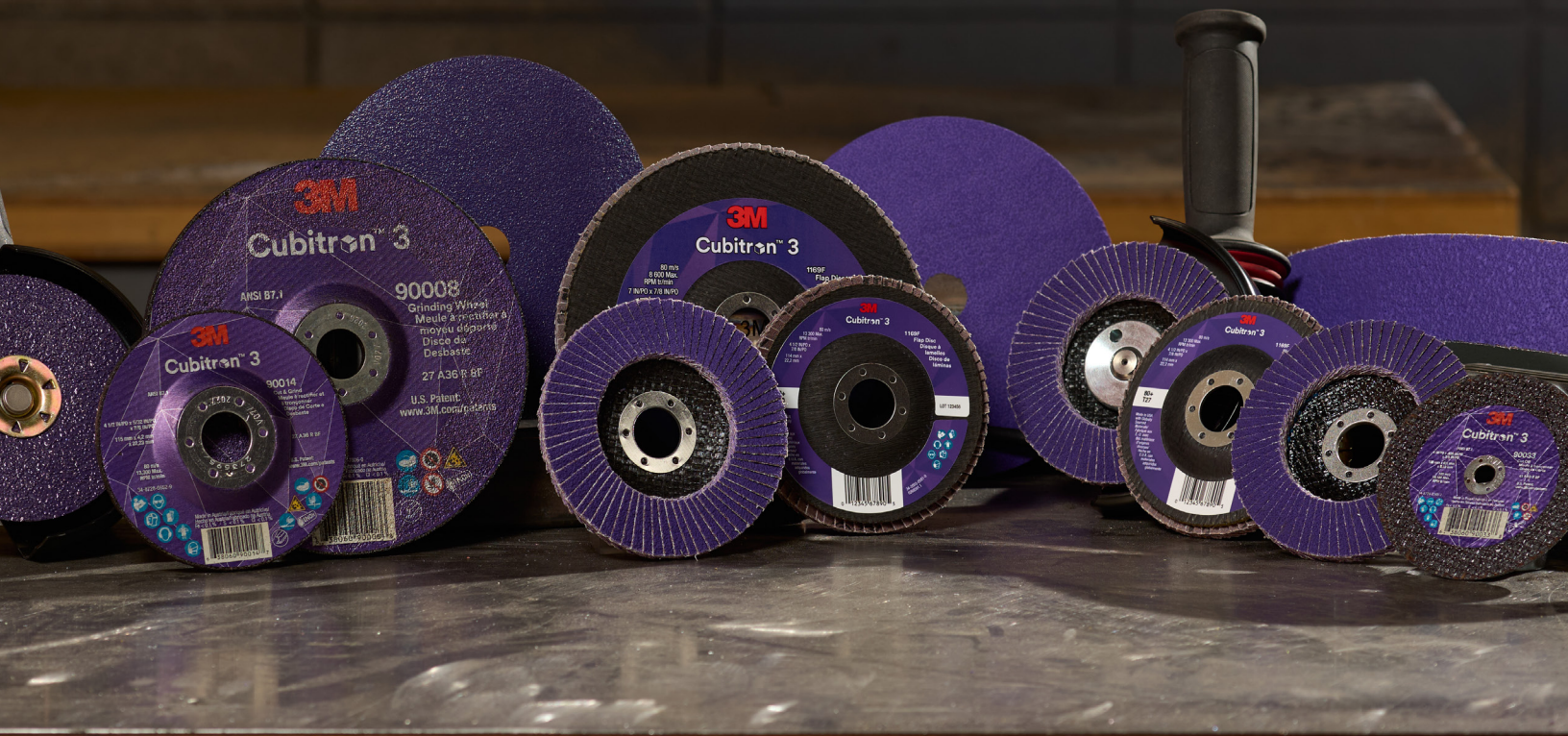
Performance Abrasives

Portable Bonded
Wheels

Fibre Discs

Cloth Belt

Flap Discs



3M™ Cubitron™ 3 Performance Abrasives

Abrasive Claims Publishing Guide



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Abrasive Claims Publishing Guide

3M™ Cubitron™ 3 Performance Abrasives were tested against previous 3M abrasive products and/or various competitors' products to compare performance, noise and vibration when grinding or cutting. The product comparison claims that can be made based on internal testing and/or independent testing results can be found in the following pages.

When publishing claims:

- Use the exact language provided based on your country or area's requirements and legal guidance regarding naming the competitive product
- Be sure to include the test method statement and the disclaimer
- When naming competitors, remember to use the proper trademark statement also based on your local legal guidance

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Performance



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Vibration



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3M™ Cubitron™ 3 Fibre Disc 1182C, 36+



Performance



Hand-Arm Vibration



Noise Level



3M™ Cubitron™ 3 Fibre Disc 1182C, 36+ vs. 3M™ Cubitron™ II Fibre Disc 982C, 36+

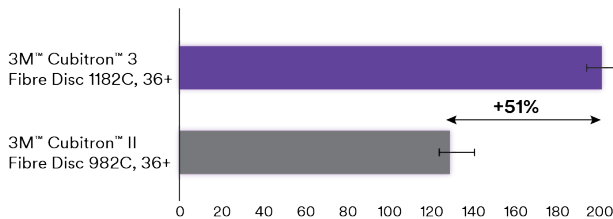
Results are based on an automated, 30-minute, high pressure test on 1018 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

3M Previous Product

Speed:

Up to 51% faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+, suitable for carbon steel grinding

Initial Cut Rate (Grams per cycle*)

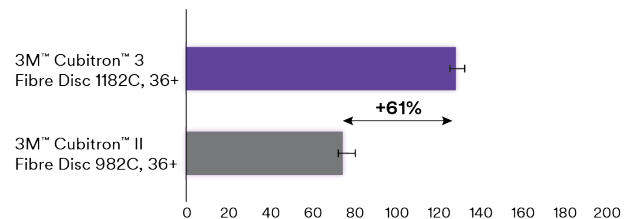


51% Faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+

Speed:

Up to 61% faster sustained cut rate compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)

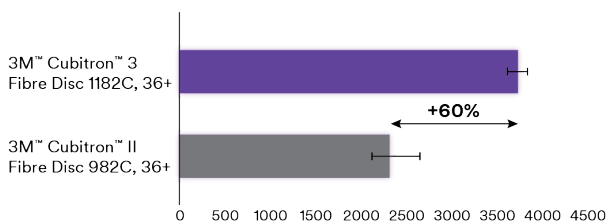


61% Faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+

Life:

Up to 60% more total material removed compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+, suitable for carbon steel grinding

Total Material Removed (Grams***)



60% More total material removed compared to 3M™ Cubitron™ II Fibre Disc 982C, 36+

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 7-20 (which is 14 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** 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.



3M™ Cubitron™ 3 Fibre Disc 1182C, 36+ vs. Competitive Shaped Grain Fibre Disc

Performance

Results are based on an automated, 30-minute, high pressure test on 1018 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

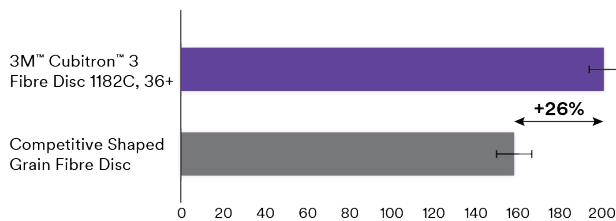
Competitor Un-named

Utilize these claims when substrate (Carbon Steel) is prominently placed near claims and/or bar charts.

Speed:

Up to 26% faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Initial Cut Rate (Grams per cycle*)

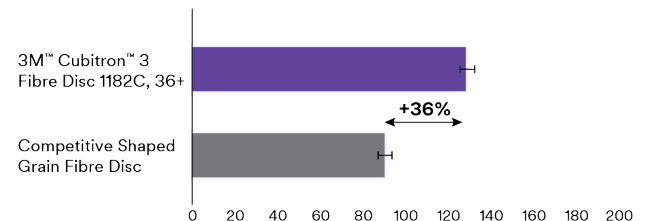
**26%**

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Speed:

Up to 36% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc

Sustained Cut Rate (Grams per cycle**)

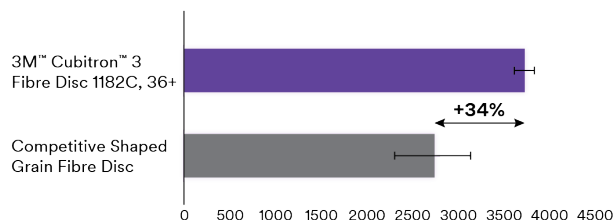
**36%**

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Life:

Up to 34% more total material removed compared to Competitive Shaped Grain Fibre Disc

Total Material Removed (Grams***)

**34%**

More total material removed compared to Competitive Shaped Grain Fibre Disc

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 7-20 (which is 14 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** 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.



3M™ Cubitron™ 3 Fibre Disc 1182C, 36+ vs. Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Performance

Results are based on an automated, 30-minute, high pressure test on 1018 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

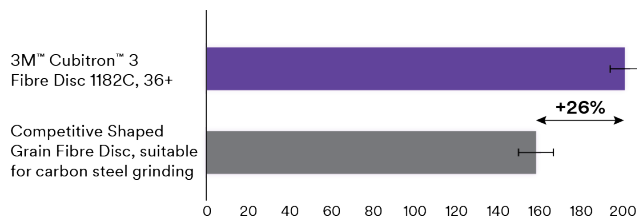
Competitor Un-named

Utilize these claims when substrate (Carbon Steel) is **not** placed near claims and/or bar charts.

Speed:

Up to 26% faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Initial Cut Rate (Grams per cycle*)



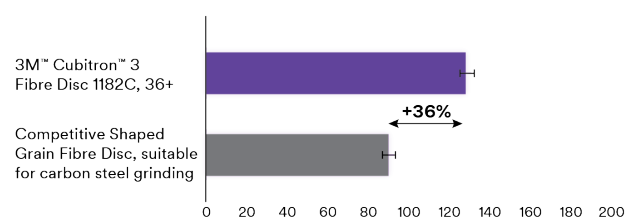
26%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Speed:

Up to 36% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)



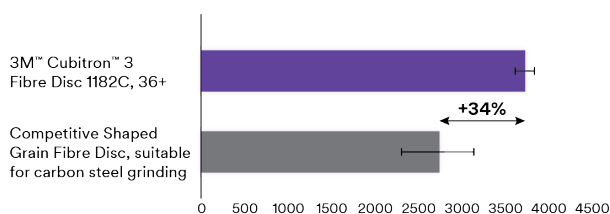
36%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Life:

Up to 34% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Total Material Removed (Grams***)



34%

More total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 7-20 (which is 14 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** 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.



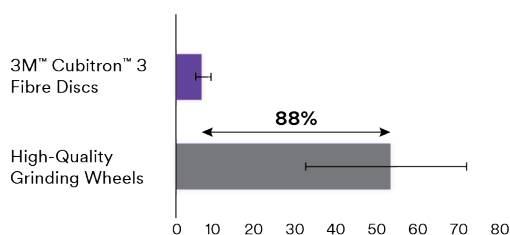
3M™ Cubitron™ 3 Fibre Discs vs. Other High-Quality Grinding Wheels and Fibre Discs

Competitor Un-named

Hand-Arm Vibration:

3M™ Cubitron™ 3 Fibre Discs are designed to minimize hand-arm vibration by 88% over high-quality grinding wheels

Operator exposure to vibration from grinding operation (Points*)



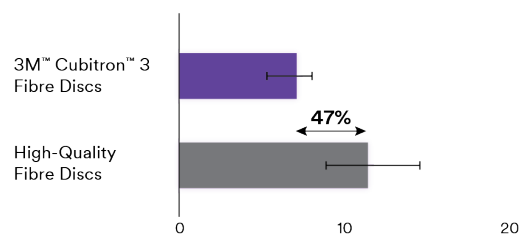
88%

Less hand-arm vibration exposure vs. other high-quality grinding wheels

Hand-Arm Vibration:

3M™ Cubitron™ 3 Fibre Discs are designed to minimize hand-arm vibration by 47% over high-quality fibre discs

Operator exposure to vibration from grinding operation (Points**)



47%

Less hand-arm vibration exposure vs. other high-quality fibre discs

* 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.

** Performance testing in a typical weld preparation process; 3M™ Cubitron™ 3 Fibre disc average compared to the average result of 5 globally selected high-quality competitive Fibre discs including ceramic shaped grain products, according to independent testing by Fraunhofer Institute. January 2024.



3M™ Cubitron™ 3 Fibre Discs vs. Other High-Quality Grinding Wheels



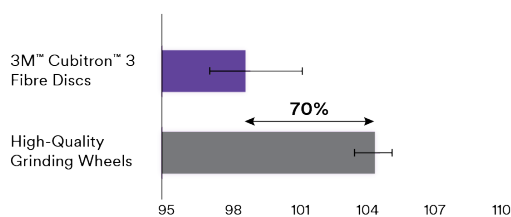
Operator
Safety

Competitor Un-named

Noise Level:

3M™ Cubitron™ 3 Fibre Discs are designed to minimize noise by 70% over high-quality grinding wheels

Noise level during grinding operation
decibels (dB(A))*



70%

Less noise energy generated
vs. other high-quality grinding
wheels

* 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.

* Average result from 10 high-quality globally represented competitive Grinding wheels including ceramic grain products.

Error bars shows a range of likely values for the mean with a confidence level of 95%.



3M™ Cubitron™ 3 Fibre Disc 1182C, 60+ vs. Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Performance

Results are based on an automated, 30-minute, high pressure test on 1018 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

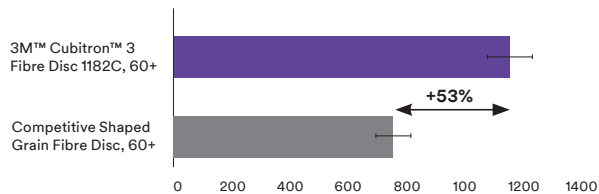
Competitor Un-named

Utilize these claims when substrate (Carbon Steel) is **not** placed near claims and/or bar charts.

Life:

Up to 53% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Total Material Removed (Grams*)



53%

More total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Speed:

Up to 69% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)



69%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

* Total Material Removed:

60+ Carbon Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 100 cycles, approximately 42 minutes of grinding

Units for carbon steel will be Grams

Each cycle for the carbon steel test method = 25.3 seconds of grinding per cycle

** Sustained Cut Rate:

60+ & 80+ Carbon Steel: The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 11-50 (40 cycles total, which is approximately 17 minutes of grinding)



3M™ Cubitron™ 3 Fibre Disc 1182C, 80+ vs. Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Performance

Results are based on an automated, 30-minute, high pressure test on 1018 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

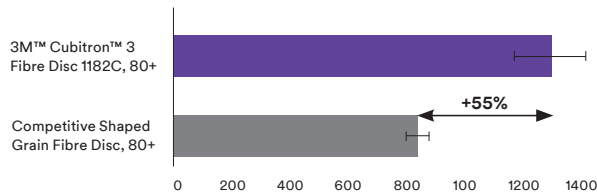
Competitor Un-named

Utilize these claims when substrate (Carbon Steel) is **not** placed near claims and/or bar charts.

Life:

Up to 55% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Total Material Removed (Grams*)



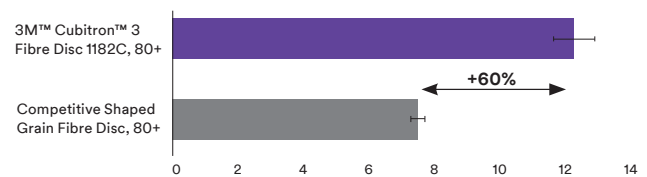
55%

More total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Speed:

Up to 60% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)



60%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

* Total Material Removed:

60+ Carbon Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 100 cycles, approximately 42 minutes of grinding

Units for carbon steel will be Grams

Each cycle for the carbon steel test method = 25.3 seconds of grinding per cycle

** Sustained Cut Rate:

60+ & 80+ Carbon Steel: The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 11-50 (40 cycles total, which is approximately 17 minutes of grinding)

3M™ Cubitron™ 3 Fibre Disc 1187C, 36+



Performance





3M™ Cubitron™ 3 Fibre Disc 1187C, 36+ vs. 3M™ Cubitron™ II Fibre Disc 987C, 36+

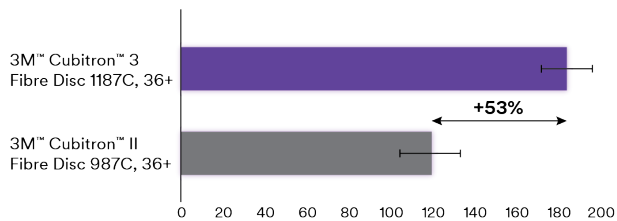
Results are based on an automated, 10-minute, high pressure test on 304 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

3M Previous Product

Speed:

Up to 53% faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+, suitable for stainless steel grinding

Initial Cut Rate (Grams per cycle*)



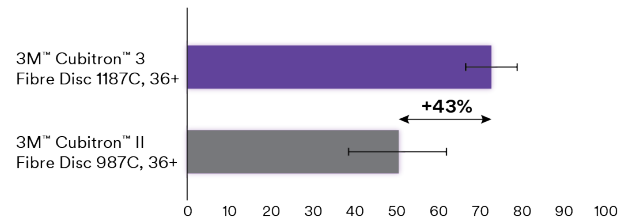
53%

Faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+

Speed:

Up to 43% faster sustained cut rate compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+, suitable for stainless steel grinding

Sustained Cut Rate (Grams per cycle**)



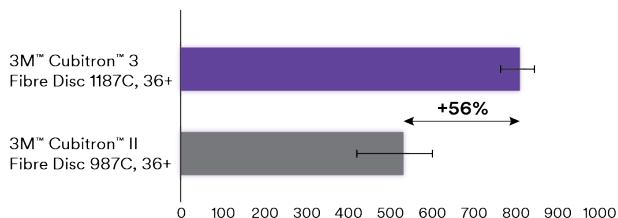
43%

Faster initial cut rate compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+

Life:

Up to 56% more total material removed compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+, suitable for stainless steel grinding

Total Material Removed (Grams***)



56%

More total material removed compared to 3M™ Cubitron™ II Fibre Disc 987C, 36+

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 3-6 (which is 4 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** The 'total material removed' claim is determined by averaging the amount of metal ground over the entire test method (10 cycles or 10 minutes of grinding). Error bars represent the results with a 95% confidence level.



3M™ Cubitron™ 3 Fibre Disc 1187C, 36+ vs. Competitive Shaped Grain Fibre Disc

Performance

Results are based on an automated, 10-minute, high pressure test on 304 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

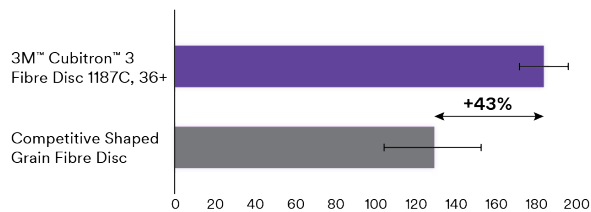
Competitor Un-named

Utilize these claims when substrate (Stainless Steel) is prominently placed near claims and/or bar charts.

Speed:

Up to 43% faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Initial Cut Rate (Grams per cycle*)



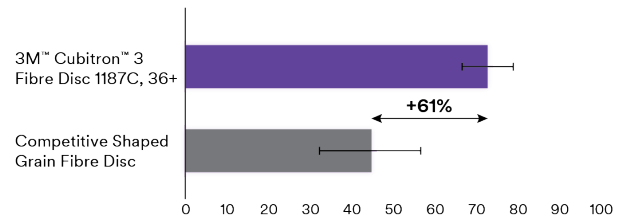
43%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Speed:

Up to 61% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc

Sustained Cut Rate (Grams per cycle**)



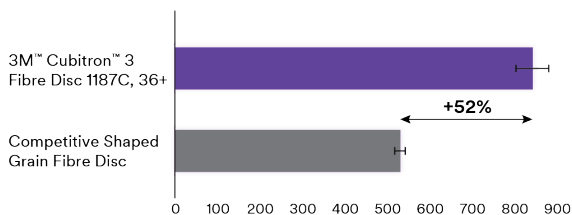
61%

Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc

Life:

Up to 52% more total material removed compared to Competitive Shaped Grain Fibre Disc

Total Material Removed (Grams***)



52%

More total material removed compared to Competitive Shaped Grain Fibre Disc

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 3-6 (which is 4 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** The 'total material removed' claim is determined by averaging the amount of metal ground over the entire test method (10 cycles or 10 minutes of grinding). Error bars represent the results with a 95% confidence level.



3M™ Cubitron™ 3 Fibre Disc 1187C, 36+ vs. Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Performance

Results are based on an automated, 10-minute, high pressure test on 304 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

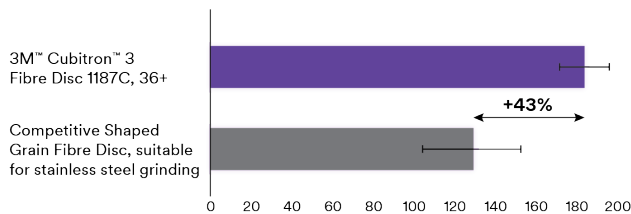
Competitor Un-named

Utilize these claims when substrate (Stainless Steel) is **not** placed near claims and/or bar charts.

Speed:

Up to 43% faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Initial Cut Rate (Grams per cycle*)

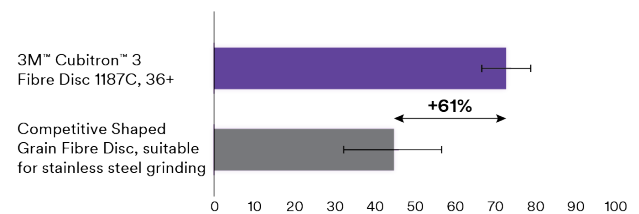


43% Faster initial cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Speed:

Up to 61% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Sustained Cut Rate (Grams per cycle**)

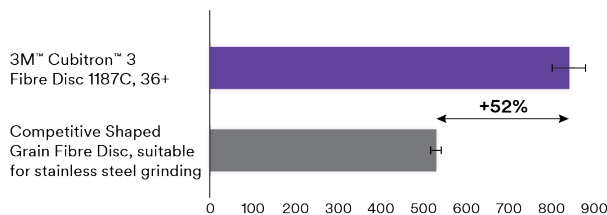


61% Faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Life:

Up to 52% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Total Material Removed (Grams***)



52% More total material removed compared to Competitive Shaped Grain Fibre Disc suitable for stainless steel grinding

* The 'initial cut rate' claim is determined from averaging the cut/cycle from cycles 1-2 (first two minutes of grinding). Each cycle on the test method is 1 minute of grinding time. Error bars represent the results with a 95% confidence level.

** The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 3-6 (which is 4 minutes of grinding). Error bars represent the results with a 95% confidence level.

*** The 'total material removed' claim is determined by averaging the amount of metal ground over the entire test method (10 cycles or 10 minutes of grinding). Error bars represent the results with a 95% confidence level.



3M™ Cubitron™ 3 Fibre Disc 1187C, 60+ vs. Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Performance

Results are based on an automated, 10-minute, high pressure test on 304 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

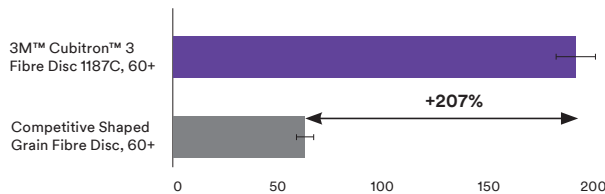
Competitor Un-named

Utilize these claims when substrate (Stainless Steel) is **not** placed near claims and/or bar charts.

Life:

Up to 207% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Total Material Removed (Grams*)



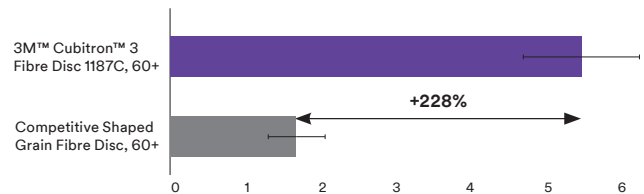
207%

More total material removed compared to Competitive Shaped Grain Fibre Disc suitable for stainless steel grinding

Speed:

Up to 69% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)



228%

Faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

* Total Material Removed:

60+ Stainless Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 40 cycles, approximately 8.5 minutes of grinding

80+ Stainless Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 72 cycles, approximately 15 minutes of grinding

Units for stainless steel will be Grams

Each cycle for the stainless steel test method = 12.7 seconds of grinding per cycle

** Sustained Cut Rate:

60+ & 80+ Stainless Steel: The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 5-24 (20 cycles total, which is approximately 4 minutes of grinding)

Units for stainless steel will be (Grams/cycle)



3M™ Cubitron™ 3 Fibre Disc 1187C, 80+ vs. Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

Performance

Results are based on an automated, 10-minute, high pressure test on 304 steel using 7-inch 36+ grit fibre discs and 3M™ Disc Pad Face Plate Ribbed 80514 on a servo motor.

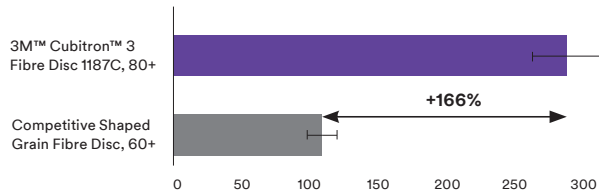
Competitor Un-named

Utilize these claims when substrate (Stainless Steel) is **not** placed near claims and/or bar charts.

Life:

Up to 166% more total material removed compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Total Material Removed (Grams*)



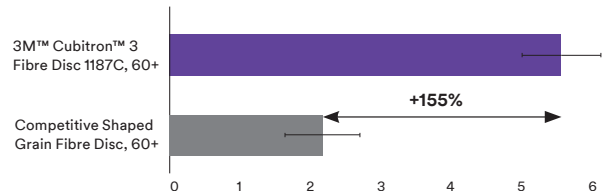
166%

More total material removed compared to Competitive Shaped Grain Fibre Disc suitable for stainless steel grinding

Speed:

Up to 155% faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for carbon steel grinding

Sustained Cut Rate (Grams per cycle**)



155%

Faster sustained cut rate compared to Competitive Shaped Grain Fibre Disc, suitable for stainless steel grinding

* Total Material Removed:

60+ Stainless Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 40 cycles, approximately 8.5 minutes of grinding

80+ Stainless Steel: The 'total material removed' claim is determined by averaging the amount of metal ground over 72 cycles, approximately 15 minutes of grinding

Units for stainless steel will be Grams

Each cycle for the stainless steel test method = 12.7 seconds of grinding per cycle

** Sustained Cut Rate:

60+ & 80+ Stainless Steel: The 'sustained cut rate' claim is determined from averaging the cut/cycle from cycles 5-24 (20 cycles total, which is approximately 4 minutes of grinding)

Units for stainless steel will be (Grams/cycle)



3M™ Cubitron™ 3 Depressed Center Grinding Wheels



Performance



Hand-Arm Vibration



Noise Level



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. 3M™ Cubitron™ II Depressed Center Grinding Wheels

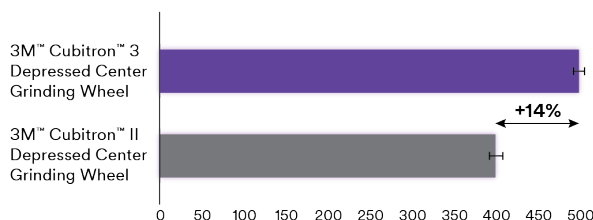
Performance

3M Previous Product

Speed:

Up to 14% faster cut rate compared to 3M™ Cubitron™ II Depressed Center Grinding Wheels

Cut Rate (metal removed in 10 minutes*)

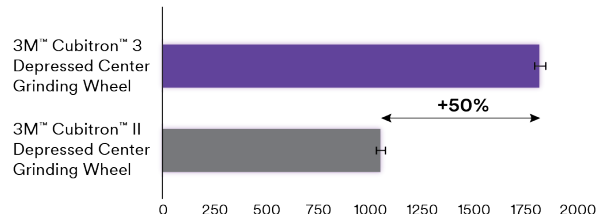
**14%**

Faster cut rate compared to 3M™ Cubitron™ II Depressed Center Grinding Wheels

Life:

Up to 50% more material removed compared to 3M™ Cubitron™ II Depressed Center Grinding Wheels

Total Material Removed (Grams*)

**50%**

More material removed compared to 3M™ Cubitron™ II Depressed Center Grinding Wheels

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. 3M™ Silver Depressed Center Grinding Wheels

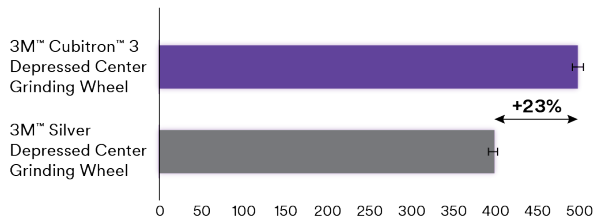
Performance

3M Product

Speed:

Up to 23% faster cut rate compared to 3M™ Silver Depressed Center Grinding Wheels

Cut Rate (metal removed in 10 minutes*)

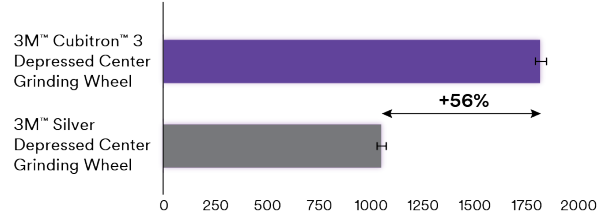
**23%**

Faster cut rate compared to 3M™ Silver Depressed Center Grinding Wheels

Life:

Up to 56% more material removed compared to 3M™ Silver Depressed Center Grinding Wheels

Total Material Removed (Grams*)

**56%**

More material removed compared to 3M™ Silver Depressed Center Grinding Wheels

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. Leading Competition

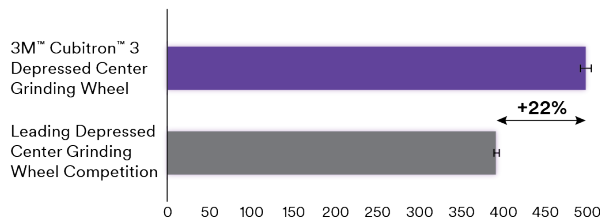
Performance

Competitor Un-named

Speed:

Up to 22% faster cut rate compared to leading depressed center grinding wheel competitors

Cut Rate (metal removed in 10 minutes*)

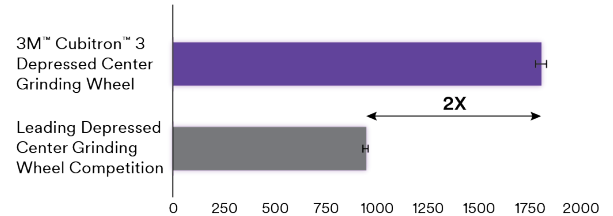
**22%**

Faster cut rate compared to leading competition

Life:

Up to 2X more material removed compared to leading depressed center grinding wheel competitors

Total Material Removed (Grams*)

**2X**

Longer life compared to leading depressed center grinding wheel competition

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. Leading Competition

Performance

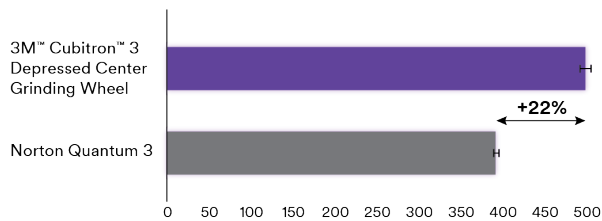
Competitors Named

Claims represent faster cut.

Speed:

Up to 22% faster cut rate compared to Norton Quantum 3

Cut Rate (metal removed in 10 minutes*)

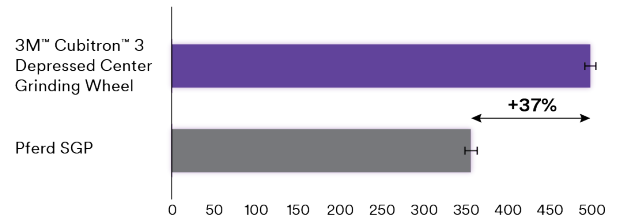


22% Faster cut rate compared to Norton Quantum 3

Speed:

Up to 37% faster cut rate compared to Pferd SGP

Cut Rate (metal removed in 10 minutes*)

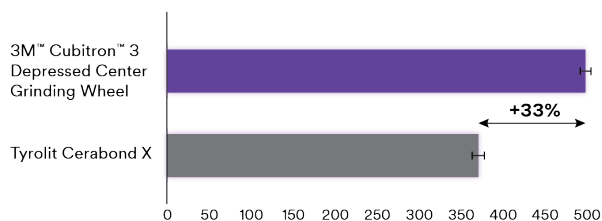


37% Faster cut rate compared to Pferd SGP

Speed:

Up to 33% faster cut rate compared to Tyrolit Cerabond X

Cut Rate (metal removed in 10 minutes*)

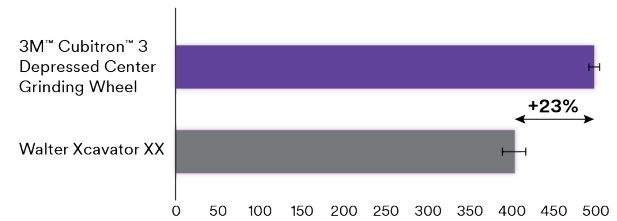


33% Faster cut rate compared to Tyrolit Cerabond X

Speed:

Up to 23% faster cut rate compared to Walter Xcavator XX

Cut Rate (metal removed in 10 minutes*)



23% Faster cut rate compared to Walter Xcavator XX

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. Leading Competition

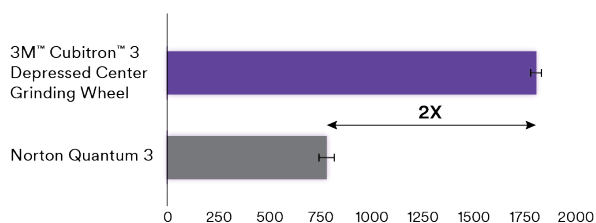
Competitors Named

Claims represent longer life.

Life:

Up to 2X longer life compared to Norton Quantum 3

Total Material Removed (Grams*)

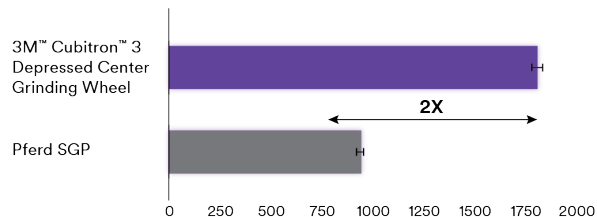


2X Longer life compared to Norton Quantum 3

Life:

Up to 2X more material removed compared to Pferd SGP

Total Material Removed (Grams*)



2X Longer life compared to Pferd SGP

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. competitive ceramic grain grinding wheels

Operator Safety

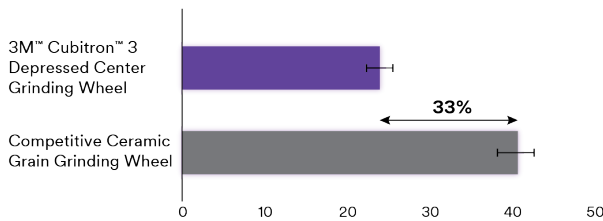
Average result of 5 high-quality competitive ceramic grain grinding wheels.

Competitor Un-named

Hand-Arm Vibration:

3M™ Cubitron™ 3 Depressed Center Grinding Wheels are designed to help minimize hand-arm vibration by 33% over high-quality 115mm type 27 grinding wheels

Operator exposure to vibration from grinding operation (Points*)



33% Less hand-arm vibration than high-quality grinding wheels

* Performance testing in a typical weld preparation process or cutting operation; 3M™ Cubitron™ 3 Depressed Center Grinding Wheels average compared to the average results of the high-quality competitive ceramic grain competitive wheels tested, according to independent testing, August 2023.



3M™ Cubitron™ 3 Depressed Center Grinding Wheels vs. competitive grinding wheels

Operator Safety

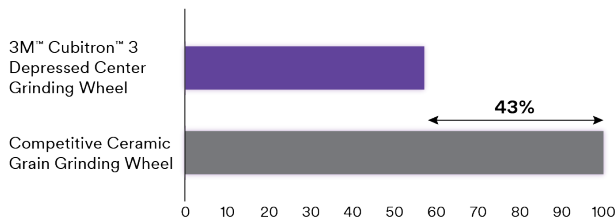
Average result of 5 high-quality grinding wheels.

Competitor Un-named

Noise Level:

3M™ Cubitron™ 3 Depressed Center Grinding Wheels are designed to help minimize noise by 43% over high-quality 115mm type 27 grinding wheels

Noise level during grinding operation
decibels (dB(A)*)



43%

Less noise energy generated
than other high-quality
grinding wheels

* Noise level operator exposure testing in a typical weld preparation process; 3M™ Cubitron™ 3 Depressed Center Grinding Wheels average compared to the average result of the high-quality ceramic bonded wheels tested, according to independent testing, August 2023.

** Noise is measured in dB(A) and is a logarithmic number, a reduction of 3dB(A) is a halving of the noise intensity. Above 80dB(A) hearing protection should be provided.

***105 decibels for high-quality grinding wheels, 102 decibels for 3M™ Cubitron™ 3 Depressed Center Grinding Wheels.



3M™ Cubitron™ 3 Cut-Off Wheels



Performance



Hand-Arm Vibration



3M™ Cubitron™ 3 Cut-Off Wheels vs. 3M™ Cubitron™ II Cut-Off Wheels

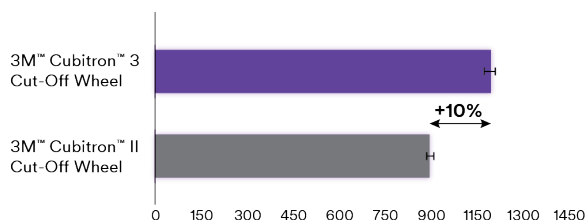
Performance

3M Previous Product

Speed:

Up to 10% faster cut rate compared to 3M™ Cubitron™ II Cut-Off Wheels

Cut Rate (Millimeters per minute*)

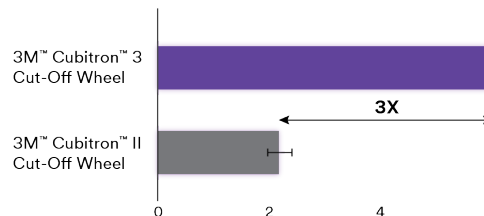
**10%**

Faster cut rate compared to 3M™ Cubitron™ II Cut-Off Wheels

Life:

Up to 3X more material cut compared to 3M™ Cubitron™ II Cut-Off Wheels

Cut Length (Meters*)

**3X**

Longer life compared to 3M™ Cubitron™ II Cut-Off Wheels

* Results are based on an automated, cutting of a 3mm 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 lbs. 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.



3M™ Cubitron™ 3 Cut-Off Wheels vs. 3M™ Silver Cut-Off Wheels

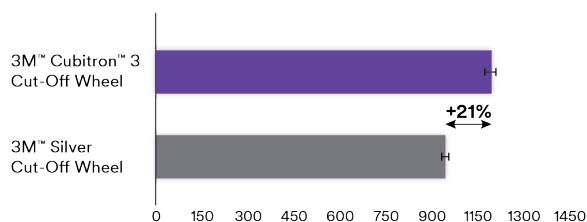
Performance

3M Product

Speed:

Up to 21% faster cut rate compared to 3M™ Silver Cut-Off Wheels

Cut Rate (Millimeters per minute*)

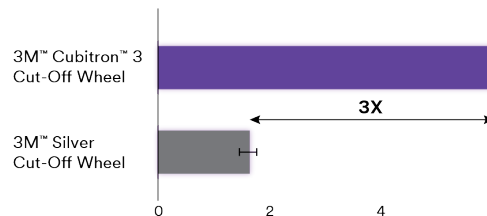


+21% Faster cut rate compared to 3M™ Silver Cut-Off Wheels

Life:

Up to 3X more material cut compared to 3M™ Silver Cut-Off Wheels

Cut Length (Meters*)



3X Longer life compared to 3M™ Silver Cut-Off Wheels

* Results are based on an automated, cutting of a 3mm 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 lbs. 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.



3M™ Cubitron™ 3 Cut-Off Wheels vs. Leading Competition

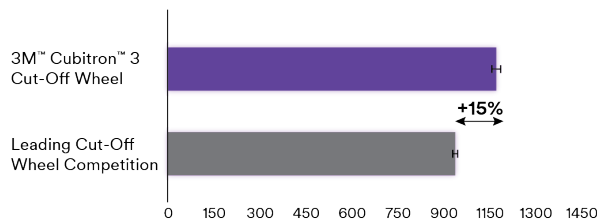
Performance

Competitor Un-named

Speed:

Up to 15% faster cut rate compared to leading cut-off wheel competition

Cut Rate (Millimeters per minute*)

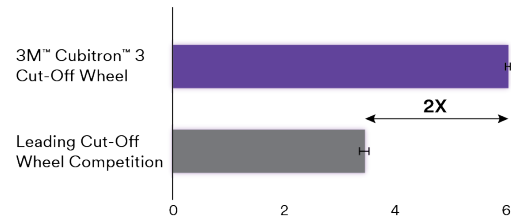
**15%**

Faster cut rate compared to leading cut-off wheel competition

Life:

Up to 2X more material cut compared to leading cut-off wheel competition

Cut Length (Meters*)

**2X**

Longer life compared to leading cut-off wheel competition

* Results are based on an automated, cutting of a 3mm 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 lbs. 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.



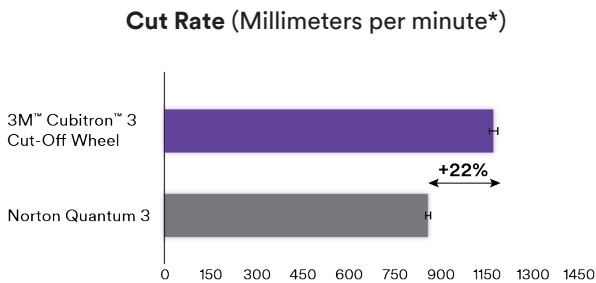
3M™ Cubitron™ 3 Cut-Off Wheels vs. Leading Competition

Competitors Named

Claims represent faster cut.

Speed:

Up to 22% faster cut rate compared to Norton Quantum 3

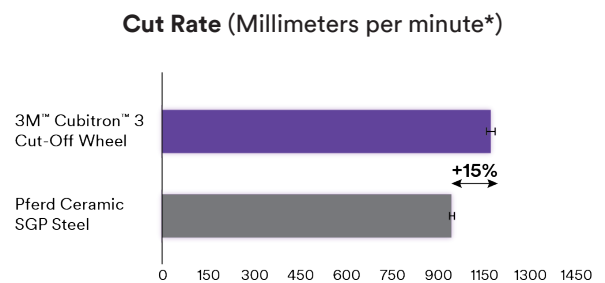


22%

Faster cut rate compared to Norton Quantum 3

Speed:

Up to 15% faster cut rate compared to Pferd Ceramic SGP Steel

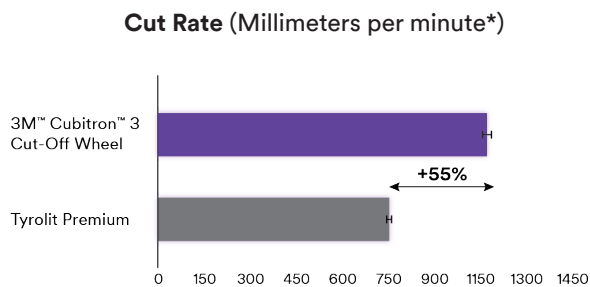


15%

Faster cut rate compared to Pferd Ceramic SGP Steel

Speed:

Up to 55% faster cut rate compared to Tyrolit Premium

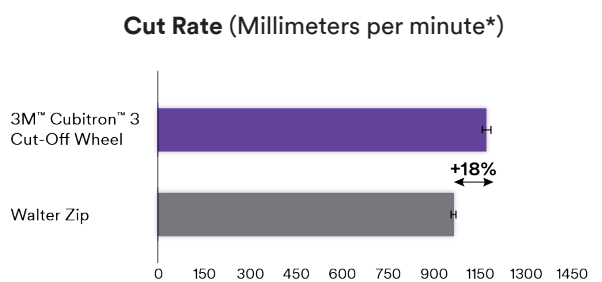


55%

Faster cut rate compared to Tyrolit Premium

Speed:

Up to 18% faster cut rate compared to Walter Zip



18%

Faster cut rate compared to Walter Zip

* Results are based on an automated, cutting of a 3mm 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 lbs. 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.



3M™ Cubitron™ 3 Cut-Off Wheels vs. Leading Competition

Performance

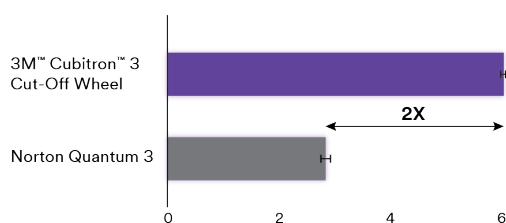
Competitors Named

Claims represent longer life.

Life:

Up to 2X more material cut compared to Norton Quantum 3

Cut Length (Meters*)

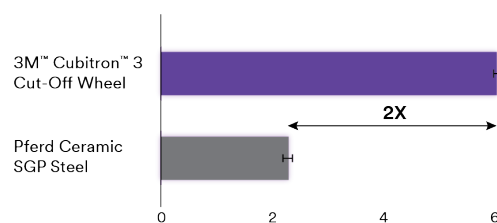
**2X**

Longer life compared to Norton Quantum 3

Life:

Up to 2X more material cut compared to Pferd Ceramic SGP Steel

Cut Length (Meters*)

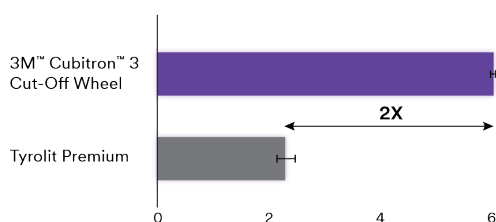
**2X**

Longer life compared to Pferd Ceramic SGP Steel

Life:

Up to 2X more material cut compared to Tyrolit Premium

Cut Length (Meters*)

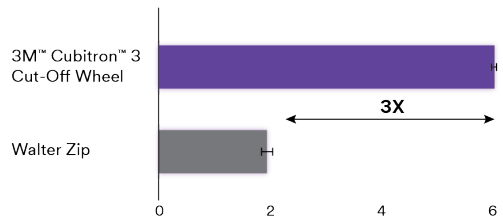
**2X**

Faster cut rate compared to Tyrolit Premium

Life:

Up to 3X more material cut compared to Walter Zip

Cut Length (Meters*)

**3X**

Longer life compared to Walter Zip

* Results are based on an automated, cutting of a 3mm 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 lbs. 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.



3M™ Cubitron™ 3 Cut-Off Wheels vs. competitive ceramic grain cut-off wheels

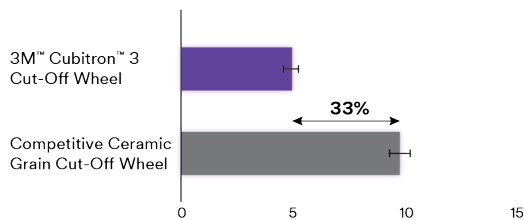
Average result of 6 high-quality competitive ceramic grain cut-off wheels.

Competitor Un-named

Hand-Arm Vibration:

3M™ Cubitron™ 3 Cut-Off Wheels are designed to help minimize hand-arm vibration by 33% over high-quality 125mm type 41 cut-off wheels

Operator exposure to vibration from grinding operation (Points*)



33% Less hand-arm vibration than high-quality cut-off wheels

* 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.



3M™ Cubitron™ 3 Cut & Grind Wheels



Performance





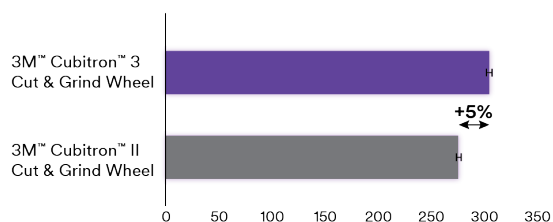
3M™ Cubitron™ 3 Cut & Grind Wheels vs. 3M™ Cubitron™ II Cut & Grind Wheels

3M Previous Product

Speed:

Up to 5% faster cut rate compared to 3M™ Cubitron™ II Cut & Grind Wheels

Cut Rate (metal removed in 10 minutes*)



5%

Faster cut rate compared to
3M™ Cubitron™ II Cut & Grind
Wheels

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Cut & Grind Wheels vs. Leading Competition

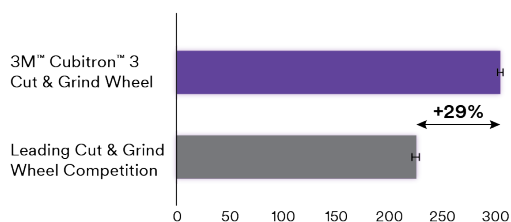
Performance

Competitor Un-named

Speed:

Up to 29% faster cut rate compared to leading Cut & Grind wheel competition

Cut Rate (metal removed in 10 minutes*)

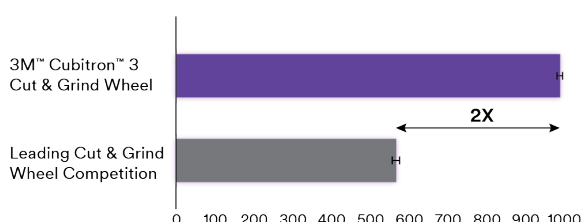
**29%**

Faster cut rate compared to leading Cut & Grind wheel competition

Life:

Up to 2X more material removed compared to leading Cut & Grind wheel competition

Total Material Removed (Grams*)

**2X**

Longer life compared to leading Cut & Grind wheel competition

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Cut & Grind Wheels vs. Leading Competition

Performance

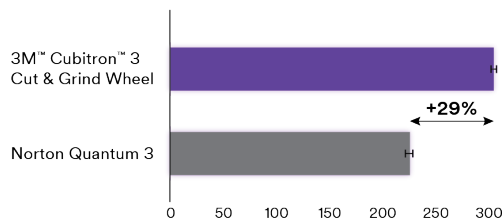
Competitors Named

Claims represent faster cut.

Speed:

Up to 29% faster cut rate compared to Norton Quantum 3

Cut Rate (metal removed in 10 minutes*)

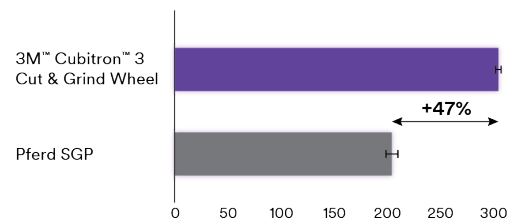
**29%**

Faster cut rate compared to Norton Quantum 3

Speed:

Up to 47% faster cut rate compared to Pferd SGP

Cut Rate (metal removed in 10 minutes*)

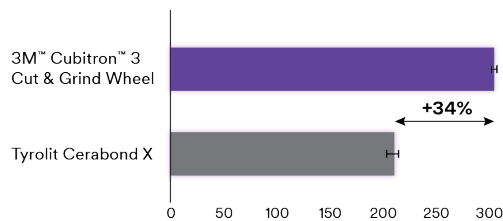
**47%**

Faster cut rate compared to Pferd SGP

Speed:

Up to 34% faster cut rate compared to Tyrolit Cerabond XX

Cut Rate (metal removed in 10 minutes*)

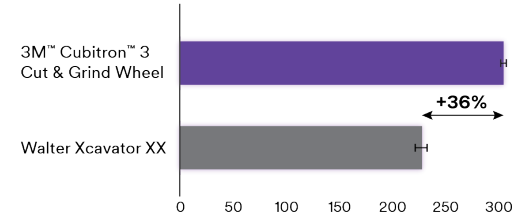
**34%**

Faster cut rate compared to Tyrolit Cerabond XX

Speed:

Up to 36% faster cut rate compared to Walter Xcavator XX

Cut Rate (metal removed in 10 minutes*)

**36%**

Faster cut rate compared to Walter Xcavator XX

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.



3M™ Cubitron™ 3 Cut & Grind Wheel vs. Leading Competition

Performance

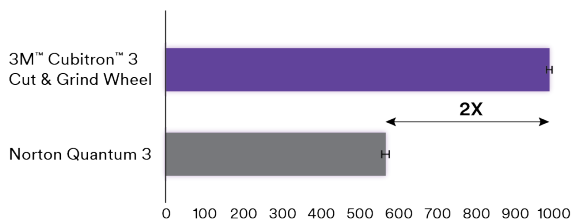
Competitors Named

Claims represent longer life.

Life:

Up to 2X more material removed compared to Norton Quantum 3

Total Material Removed (Grams*)

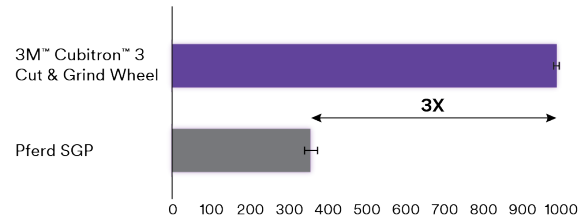


2X Longer life compared to Norton Quantum 3

Life:

Up to 3X more material removed compared to Pferd SGP

Total Material Removed (Grams*)



3X Longer life compared to Pferd SGP

* Results are based on an automated beveling of 1018 carbon steel bars. Grinding wheel geometry was 115mm outer diameter mounted on a servo motor with an applied force of 12 lbs. 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.

3M™ Cubitron™ 3 Cloth Belt 1184F, 36+



Performance



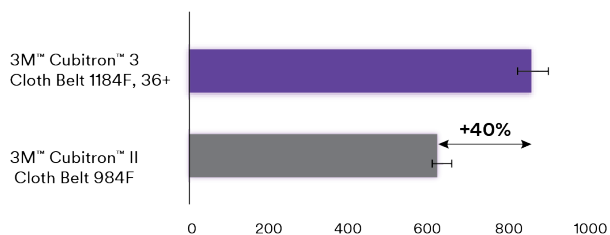
3M™ Cubitron™ 3 Cloth Belt 1184F, 36+ vs. 3M™ Cubitron™ II Cloth Belt 984F

3M Previous Product

Life:

Up to 40% more material removed compared to 3M™ Cubitron™ II Cloth Belt 984F

Material Removed (Grams*)



40% More material removed than
3M™ Cubitron™ II Cloth Belt
984F

* Results are based on an automated, 10-minute grinding test on 304 stainless steel using 36" long belts. The total material removed claim is determined by averaging the amount of metal ground over the entire test method (40 cycles or 10 minutes of grinding). Error bars represent the results with a 95% confidence level.



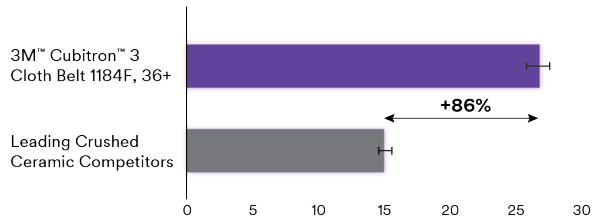
3M™ Cubitron™ 3 Cloth Belt 1184F, 36+ vs. leading crushed ceramic competition

Competitor Un-named

Speed:

Up to 86% faster sustained cut rate compared to leading crushed ceramic competition

Sustained Cut Rate (Grams per cycle*)

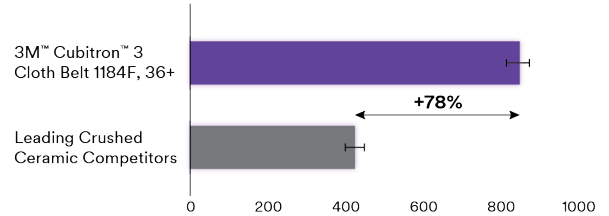


86% Faster sustained cut rate compared to leading crushed ceramic competition

Life:

Up to 78% more material removed compared to leading crushed ceramic competitors

Material Removed (Grams)**



78% More material removed compared to leading crushed ceramic competitors

* Results based on an automated, 10-minute grinding test on 304 stainless steel using 36" long belts. The sustained cut rate claim is determined by averaging the total material removed after 10 cycles minus total material removed after 3 cycles divided by seven cycles. Error bars represent the results with a 95% confidence level.

** Results based on an automated, 10-minute grinding test on 304 stainless steel using 36" long belts. The total material removed claim is determined by averaging the amount of metal ground over the entire test method (40 cycles or 10 minutes of grinding). Error bars represent the results with a 95% confidence level.

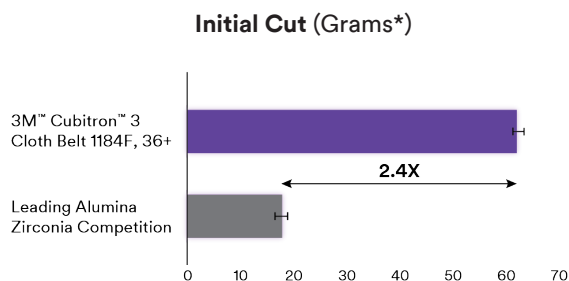


3M™ Cubitron™ 3 Cloth Belt 1184F, 36+ vs. leading competitive alumina zirconia

Competitor Un-named

Speed:

Up to 2.4x faster initial cut compared to leading competitive alumina zirconia



2.4x Faster initial cut compared to leading competitive alumina zirconia

* The initial cut rate claim is determined by averaging the total material removed after the first 2 cycles. Error bars represent the results with a 95% confidence level.

3M™ Cubitron™ 3 Flap Disc 1169F, 40+



Performance



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. 3M™ Cubitron™ II Flap Disc 969F, 40+

Results are based on an automated, 37.5 minutes, medium pressure test on 1045 steel using 4.5 inches 40+ grit flap discs on a servo motor.

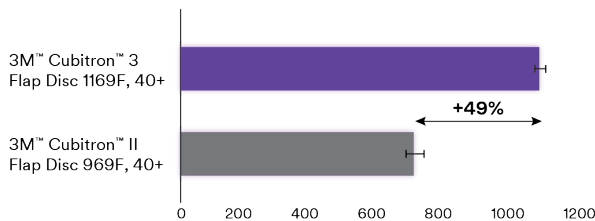
3M Product

Utilize these claims when substrate (**Carbon Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 49% more material removed compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

Total Material Removed (Grams*)

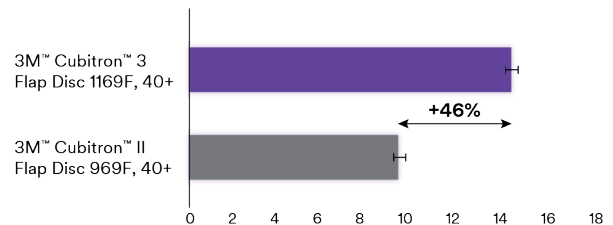


49% More material removed compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

Speed:

Up to 46% faster sustained cut rate compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

Sustained Cut Rate (Grams per cycle**)

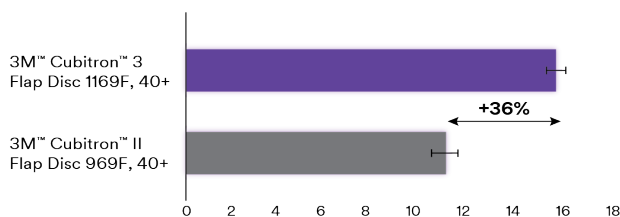


46% Faster sustained cut rate compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

Speed:

Up to 36% faster initial cut rate compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

Initial Cut Rate (Grams per cycle***)



36% Faster initial cut rate compared to 3M™ Cubitron™ II Flap Disc 969F, 40+

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. 3M™ Flap Disc 769F, 40+

Results are based on an automated, 37.5 minutes, medium pressure test on 1045 steel using 4.5 inches 40+ grit flap discs on a servo motor.

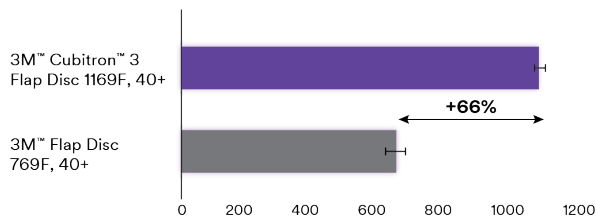
3M Product

Utilize these claims when substrate (**Carbon Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 66% more material removed compared to 3M™ Flap Disc 769F, 40+

Total Material Removed (Grams*)

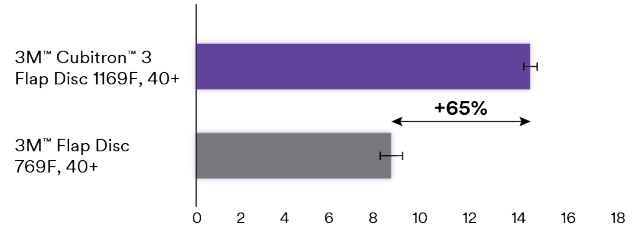


66% More material removed compared to 3M™ Flap Disc 769F, 40+

Speed:

Up to 65% faster sustained cut rate compared to 3M™ Flap Disc 769F, 40+

Sustained Cut Rate (Grams per cycle**)

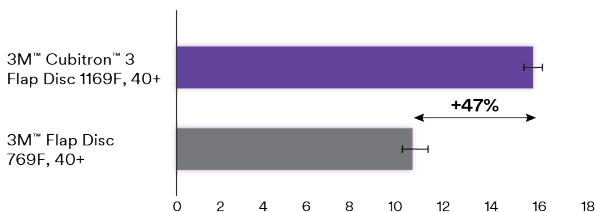


65% Faster sustained cut rate compared to 3M™ Flap Disc 769F, 40+

Speed:

Up to 47% faster initial cut rate compared to 3M™ Flap Disc 769F, 40+

Initial Cut Rate (Grams per cycle***)



47% Faster initial cut rate compared to 3M™ 3M™ Flap Disc 769F, 40+

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. Competitive Ceramic Flap Disc Grade 40

Results are based on an automated, 37.5 minutes, medium pressure test on 1045 steel using 4.5 inches 40+ grit flap discs on a servo motor.

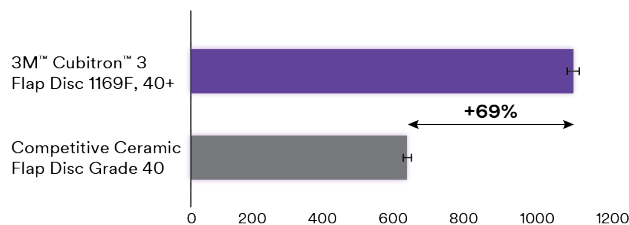
Competitor Un-named

Utilize these claims when substrate (**Carbon Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 69% more material removed compared to Competitive Ceramic Flap Disc Grade 40

Total Material Removed (Grams*)



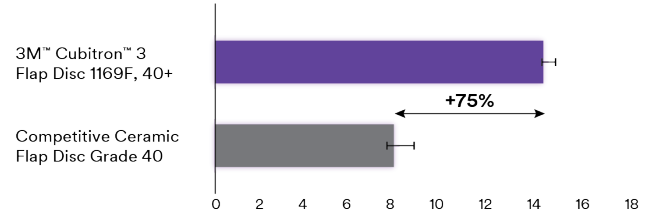
69%

More material removed compared to Competitive Ceramic Flap Disc Grade 40

Speed:

Up to 75% faster sustained cut rate compared to Competitive Ceramic Flap Disc Grade 40

Sustained Cut Rate (Grams per cycle**)



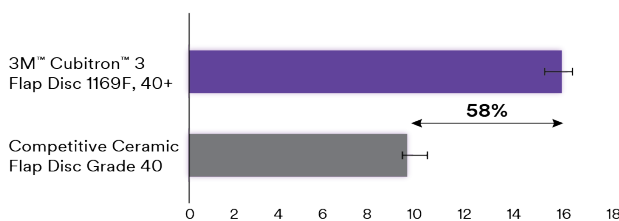
75%

Faster sustained cut rate compared to Competitive Ceramic Flap Disc Grade 40

Speed:

Up to 58% faster initial cut rate compared to Competitive Ceramic Flap Disc Grade 40

Initial Cut Rate (Grams per cycle***)



58%

Faster initial cut rate compared to Competitive Ceramic Flap Disc Grade 40

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. Competitive Alumina Zirconia Flap Disc Grade 40

Results are based on an automated, 37.5 minutes, medium pressure test on 1045 steel using 4.5 inches 40+ grit flap discs on a servo motor.

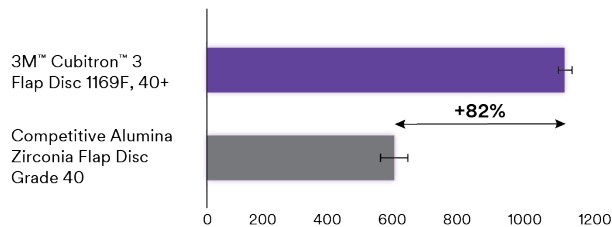
Competitor Un-named

Utilize these claims when substrate (**Carbon Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 82% more material removed compared to Competitive Alumina Zirconia Flap Disc Grade 40

Total Material Removed (Grams*)



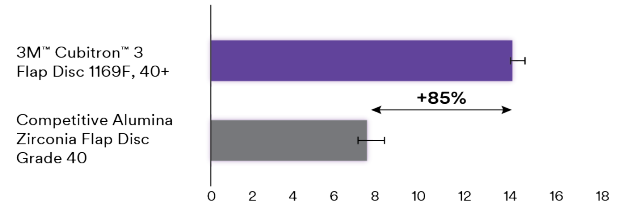
82%

More material removed compared to Competitive Alumina Zirconia Flap Disc Grade 40

Speed:

Up to 85% faster sustained cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Sustained Cut Rate (Grams per cycle**)



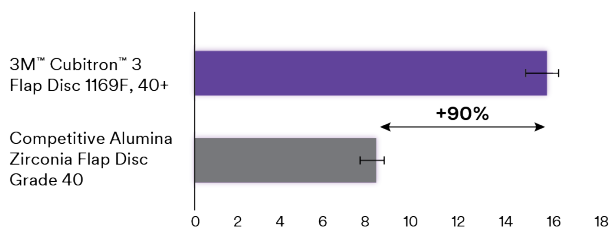
85%

Faster sustained cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Speed:

Up to 90% faster initial cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Initial Cut Rate (Grams per cycle***)



90%

Faster initial cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. 3M™ Flap Disc 769F, 40+

Results are based on an automated, 37.5 minutes, medium pressure test on 304 steel using 4.5 inches 40+ grit flap discs on a servo motor.

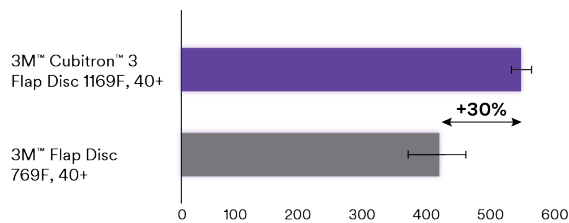
3M Product

Utilize these claims when substrate (**Stainless Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 30% more material removed compared to 3M™ Flap Disc 769F, 40+

Total Material Removed (Grams*)

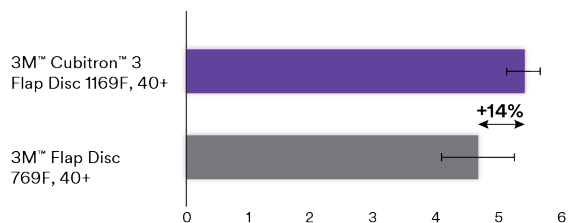


30% More material removed compared to 3M™ Flap Disc 769F, 40+

Speed:

Up to 14% faster sustained cut rate compared to 3M™ Flap Disc 769F, 40+

Sustained Cut Rate (Grams per cycle**)

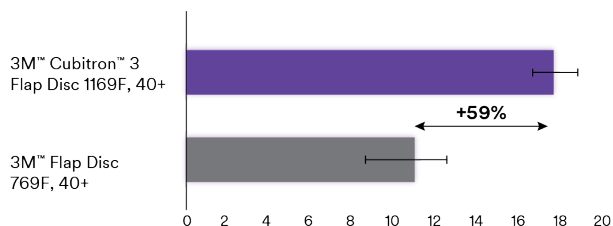


14% Faster sustained cut rate compared to 3M™ Flap Disc 769F, 40+

Speed:

Up to 59% faster initial cut rate compared to 3M™ Flap Disc 769F, 40+

Initial Cut Rate (Grams per cycle***)



59% Faster initial cut rate compared to 3M™ Flap Disc 769F, 40+

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. Competitive Ceramic Flap Disc Grade 40

Results are based on an automated, 37.5 minutes, medium pressure test on 304 steel using 4.5 inches 40+ grit flap discs on a servo motor.

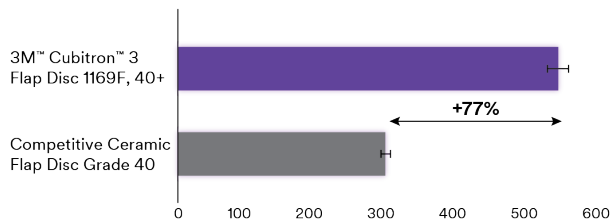
Competitor Un-named

Utilize these claims when substrate (**Stainless Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 77% more material removed compared to Competitive Ceramic Flap Disc Grade 40

Total Material Removed (Grams*)



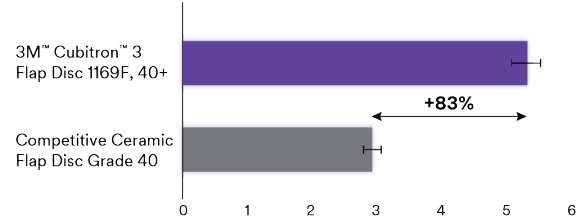
77%

More material removed compared to Competitive Ceramic Flap Disc Grade 40

Speed:

Up to 83% faster sustained cut rate compared to Competitive Ceramic Flap Disc Grade 40

Sustained Cut Rate (Grams per cycle**)



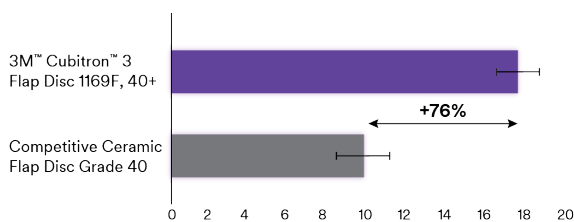
83%

Faster sustained cut rate compared to Competitive Ceramic Flap Disc Grade 40

Speed:

Up to 76% faster initial cut rate compared to Competitive Ceramic Flap Disc Grade 40

Initial Cut Rate (Grams per cycle***)



76%

Faster initial cut rate compared to Competitive Ceramic Flap Disc Grade 40

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



3M™ Cubitron™ 3 Flap Disc 1169F, 40+ vs. Competitive Alumina Zirconia Flap Disc Grade 40

Results are based on an automated, 37.5 minutes, medium pressure test on 304 steel using 4.5 inches 40+ grit flap discs on a servo motor.

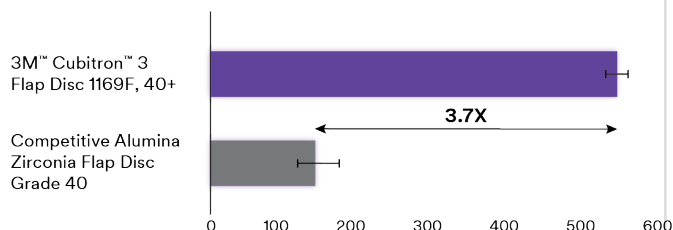
Competitor Un-named

Utilize these claims when substrate (**Stainless Steel**) is prominently placed near claims and/or bar charts.

Life:

Up to 3.7X more material removed compared to Competitive Alumina Zirconia Flap Disc Grade 40

Total Material Removed (Grams*)



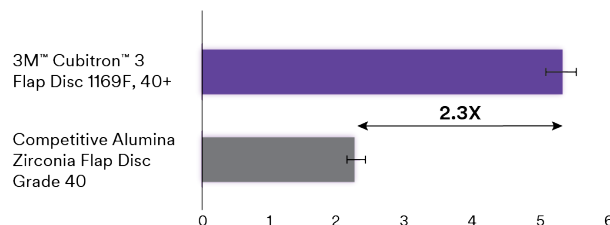
3.7X

More material removed compared to Competitive Alumina Zirconia Flap Disc Grade 40

Speed:

Up to 2.3X faster sustained cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Sustained Cut Rate (Grams per cycle**)



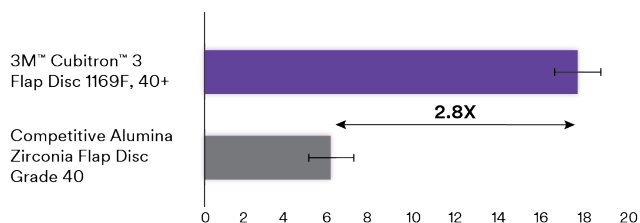
2.3X

Faster sustained cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Speed:

Up to 2.8X faster initial cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

Initial Cut Rate (Grams per cycle***)



2.8X

Faster initial cut rate compared to Competitive Alumina Zirconia Flap Disc Grade 40

* Total material removed claim is determined by averaging the amount of metal ground over the entire 75 cycles. Units is grams.

** Sustained cut rate claim is determined from averaging the cut/cycle from cycle 66-75 (which is 5 minutes of grinding). Units is Grams/cycle.

*** Initial cut rate determined from averaging the cut/cycle from cycles 1-3 (first 1.5 minutes of grinding). Each cycle on the test method is 30 seconds of grinding time. Units is Grams/cycle.



**For more information on the independent test data, please contact us:
abrasives.uk@mmm.com**

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