

GENERAL

Flap discs are a 3-Dimensional abrasive product. They consist of abrasive flaps glued radially to a backing plate. As the product is used the abrasive wears down and new abrasive is exposed underneath. Zirconia is the most common mineral for flap discs due to its cool cutting action. Ceramic is sometimes used but the price usually cannot be justified for the small performance increase.

APPLICATION

Flap discs are used in heavy stock removal, usually weld removal. They outperform Resin Fiber Discs due to their increased lifetime. Resin Fiber discs are only two dimensional, once the abrasive surface wears down the product is finished. To achieve a finish equivalent to a resin fiber disc always use a flap disc one grit coarser. E.g. if the operator is running a 60 grit resin fiber disc try a 40 or 50 grit flap disc.

BACKING PLATE

Flap discs come with aluminum, fiberglass or plastic backing plates. Fiberglass is the most common. Aluminum is sometimes chosen due to no potential fiberglass dust hazards. Plastic backing is becoming more popular with some manufacturers suggesting that the plastic backing can be trimmed to increase working life.

SHAPE

Flap discs are broken down into flat and angle face. Following grinding wheel terminology flat discs are type 27 while angle discs are type 29. Typical angle faced flap wheels are about 10°. Angle faced discs are more aggressive and are more suited to stock removal while flat faced discs are better on flat surfaces and will produce a more consistent finish.

ARBOR

Flap discs come either with a plain circular arbor which require a locking nut or a 5/8-11 threaded hub which allows for a quick change over.

DENSITY

Flap discs are available in regular and high density. High density discs, often called jumbo discs, have more flaps and are thicker. Jumbo discs tend to be a little softer and are therefore not as aggressive. Jumbo discs will last longer due to the extra abrasive.

TEST NO. 261	Mild Steel	Stainless Steel	Aluminum	Titanium
	Quick-Lok Disc			
Resin Fibre Disc				
Flap Disc		•		
PSA Disc				
Belt				

Direct performance comparison of PREDATOR™ against zirconia and aluminum oxide flap discs on stainless steel.

PRODUCTS USED

- 71-10825AF** 4-1/2 x 7/8" PREDATOR™ Flap Disc, 60 Grit
- 10825AF** 4-1/2 x 7/8" Zirconia Flap Disc, 60 Grit
- 1061355-2** 4-1/2 x 7/8" Aluminum Oxide Flap Disc, 60 Grit

TEST METHOD

Testing was administered by hand, using a 4-1/2" angle grinder operating at 11,000 RPM for 15 minutes. The work piece, a 12 x 2 x 1/4" stainless steel bar, was weighed every minute to determine accurate cut rates. All flap discs were weighed before and after the test to help determine product life.

CONCLUSION

The 60 grit PREDATOR™ flap disc outperformed the zirconia product by 17% in total cut.

The aluminum oxide flap disc was unable to last the entire 15 minute test. At the end of the test, the aluminum oxide product only cut 27% of the PREDATOR™ total.

