

Polymak

QUALITY

SAFETY

www.polymak.co.in



WIDEST RANGE OF CUTTING & GRINDING WHEELS



60 TRAINED FIELD STAFF TO OFFER
TECHNICAL SUPPORT AND TRIALS

STATE OF THE ART MANUFACTURING FACILITIES
FOR ABRASIVES, FLAP DISCS AND COATED ABRASIVES.

RANKED **3rd** AMONGST THE LEADING
MANUFACTURERS OF THIN WHEELS IN INDIA.

Polymak ABRASIVES

Polymak Abrasives manufactured by Ital Plastic Compounds Pvt. Ltd., situated in Irungatukottai near Chennai, which has the facility to manufacture a wide range of thin grinding and cut-off wheels. The eco – friendly, state- of –the- art factory spread over 135000 sq. ft. is equipped with the latest moulding machines, ovens, testing & storage facilities.

Quality & safety being the very foundation of the manufacturing policy, abrasives are manufactured in compliance with EN12413 standards.

Polymak abrasives are guaranteed to give the best in terms of grinding and cutting performance, life and safety; certainly proving to be a cut above the rest.

**We have the following sizes listed below in Aloxite, WA,
Silicon carbide and Zirconia Abrasives.**

S.NO	CUT- OFF WHEELS	DEPRESSED CENTRE WHEELS
1	100 mm x 3mm x 16mm	100mm x 4mm x 16mm
2	105 mm x 1mm x16 mm	100mm x 5mm x 16mm
3	105 mm x 2mm x 16mm	100mm x 6mm x 16mm
4	115 mm x 1mm x 22.23mm	115mm x 6mm x 16mm
5	115 mm x 3mm x 22.23mm	125mm x 6mm x 22.23mm
6	125 mm x 1mm x 22.23mm	125mm x 7mm x22.23mm
7	125 mm x 3mm x 22.23mm	180mm x 5mm x22.23mm
8	180 mm x 1.2mm x 22.23mm	180mm x 6mm x22.23mm
9	180 mm x 1.6mm x 22.23mm	180mm x 6.5mm x22.23mm
10	180 mm x 3mm x 22.23mm	180mm x 7mm x 22.23mm
11	180 mm x4mm x 22.23mm	230mm x 7mm x 22.23mm
12	230 mm x 3mm x 22.23mm	
13	305mm x 2.8mm x 25.4mm	
14	305mm x 3mm x 25.4mm	
15	355mm x 2.7mm x 25.4mm	
16	355mm x 2.8mm x 25.4mm	
17	355mm x 3mm x 25.4mm	
18	400mm x 3mm x 25.4mm	
19	400mm x 3.2mm x 25.4mm	

“ Polymak range of abrasives meet the requirements of a wide spectrum of industries. Polymak abrasives are marketed by Polymak Tools India Pvt. Ltd., a pan India marketing organization with more than a decade old experience in abrasives and related accessories. Managed by professional with over 100 years of experience between them with thorough knowledge of product applications and the market. ”



Polymak CUT-OFF WHEELS

ABOUT THE PRODUCT

Polymak cutt-off wheels with a minimum disc thickness of 1 mm and maximum thickness of 3 mm and has excellent cutting properties, great stability and minimum burr formation.

TYPICAL MATERIALS FOR Polymak Cut-off Wheels

- Steel
- Stainless steel
- Construction steel
- Non-Ferrous - metals
- Cast materials
- Pipes
- Flat iron
- Tins
- Solid materials



TYPICAL APPLICATIONS FOR THESE PRODUCTS

- Structural steel
- Shipyards
- Steelwork
- Plant Construction
- Metal works
- Vehicle construction





While the exhaustive program of our abrasives will cater to most grinding and cutting needs, abrasives could also be custom manufactured for specific applications. The above mentioned wheels can be used with Cut-off machines, Electric Pneumatic Angle Grinders.





Polymak GRINDING DISCS

ABOUT THE PRODUCT

Polymak grinding discs are renowned for maximum stock removal in a short span of time. Polymak grinding wheels are used in all major surface grinding applications, as well as for edge beveling and burr removal.

Polymak offers professional advice in selecting the right grinding disc for your applications and also trials at your site.

Our technical advisors would be very happy to offer any technical or help when you have a specific problem.

PRACTICAL TIPS

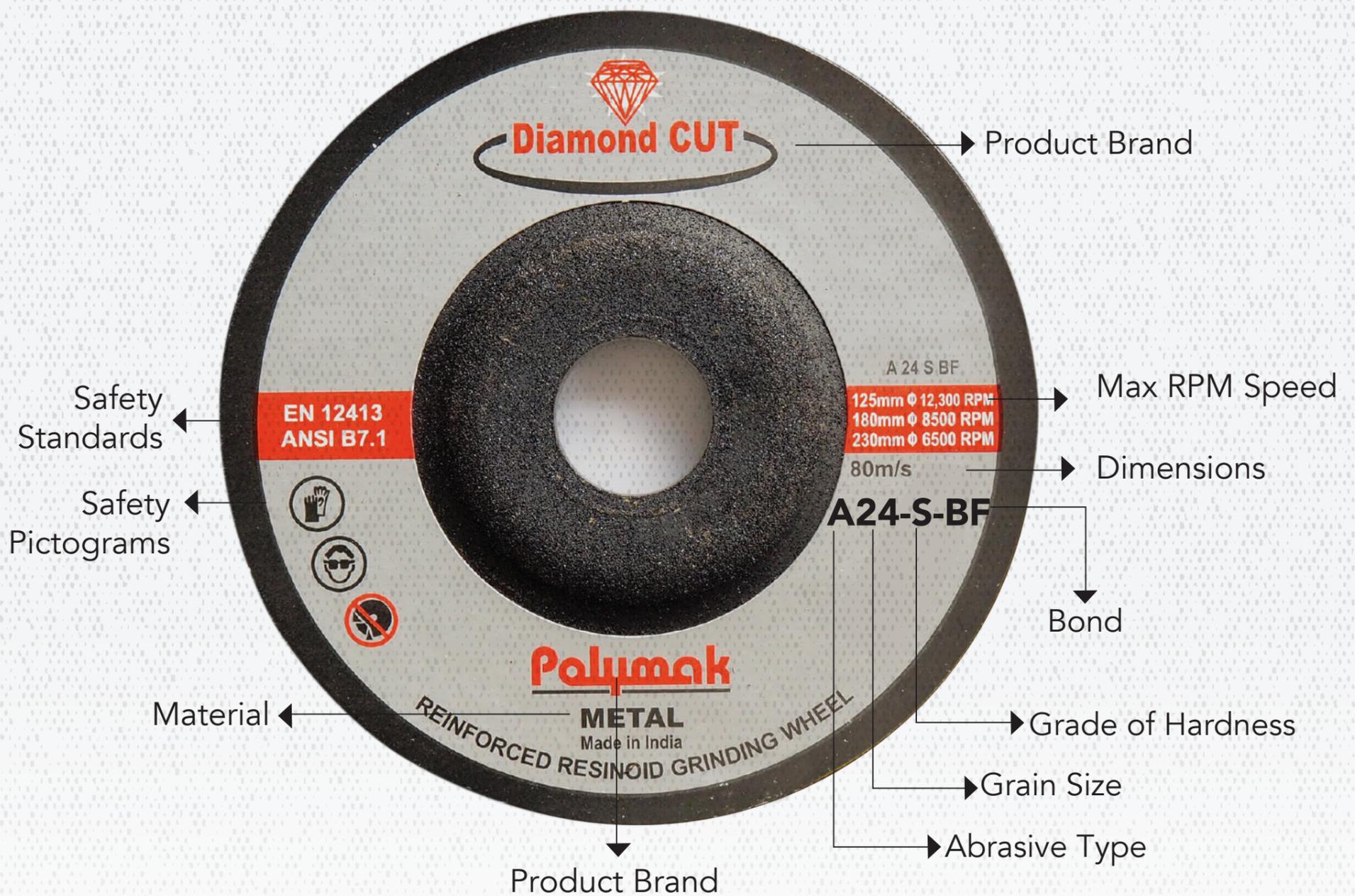
This thumb rule applies to grinding discs: the harder the material, the softer the bond of the grinding disc. In addition, the application plays a very decisive role.

A hard bond is more suitable while grinding corners and burrs as they have sharp edges and remove the grit out of the bond.

While working on surfaces a soft wheel would be suitable.



DE-CODING THE LABEL



Polymak CUT-OFF AND GRINDING WHEELS

1) LABEL AND COVER SHEET

The label includes all of the important information on the product, manufacturer and information on the proper usage of the grinding tool.

2) MIXTURE

The Grit: Today all grit types are only produced synthetically. Only grit produced synthetically can ensure continuously high wear and disc quality.

Resins and fillers: Additional, important components for cutting and grinding discs are resins, (in liquid and dry form), and fillers. These components are key in determining the disc properties, such as stability, stock removal rate, shear strength and can be adjusted to meet the needs of the specific application.

3) METAL RING

Provides information on the expiry date of the disc.



4) GLASS FIBRE DISC

Glass fibre is a reinforcing layer to ensure stability and increases the safety of the cut-off wheel.

The number and strength of the glass fibre layers is dependent upon disc type and application. The higher the potential lateral load on a cut-off disc (it is greater during free cutting than during stationary cutting). The more glass fibre that the cutting disc must contain, or the contained glass fibre must be more stable. Particularly thin material is used for thin cutting discs (0.8 mm to 1.0 mm), to despite of the thin discs, ensure that a large grit ratio is achieved between the layers. Grinding wheels are constructed with at least 2 glass fibre layers

Polymak CUT-OFF AND GRINDING WHEELS

Application guides



Quarter	
V 01	January-March
V 04	April-June
V 07	July-September
V 10	October-December

Safety and storage

The shelf life of cut-off wheels and grinding discs is primarily determined by their moisture content. Cut-off wheels and grinding discs that are subjected to increased humidity after they are manufactured lose their original service life. Correct storage ensures a consistent long service life. Cut-off wheels and grinding discs that are subjected to water or steam are a safety risk. The user is obligated to use the product correctly. Cut-off wheels and grinding wheels should not be used after the expiry date.

Working safely...

... by being careful and recognising risks

Please avoid the risks listed below when working with cut-off wheels and grinding discs.

- ▶ contact with rotating abrasive discs
- ▶ abrasive disc breakage
- ▶ grinding dust and debris
- ▶ vibration
- ▶ noise

... through with personal protective gear

Goggles, gloves, ear muffs and dust masks must be worn. When working on hard grinding applications additional protective gear is required, such as face protection, leather aprons and safety boots.

... with protective machine guards

Machine guards are supplied with the grinding machine and may not be changed or removed. When using cup grinding wheels the outer surface must be completely enclosed.

In addition, cup grinding wheels may only be used in combination with an adjustable wheel guard, to balance the wear on the disc and to keep the exposure of the disc at a minimum.

... through visual inspection and performance of checks prior to mounting

Ensure the disc RPM matches the machine RPM setting and avoid exceeding the maximum admissible operating speed.

Carefully check the cutting-off wheel and grinding disc for damage. If the cut-off wheel or grinding disc is damaged, do not use the damaged product. Our cut-off wheels and grinding discs are marked with the corresponding safety pictograms.

... through correct use

Ensure that the respective disc is being used correctly. Avoid damage to the mounting bore or to the disc through jerks, excessive force, or falls.

Ensure that the disc is correctly and securely mounted and use the correct mounting flange.

Prior to starting work, the abrasive disc should run at operating speed for at least 30 seconds.

Please observe the FEPA safety regulations and the European Standard **EN12413**

The peripheral speed and grinding pressure are important parameters for achieving optimal cut-off and grinding wheel results.

Polymak CUT-OFF AND GRINDING WHEELS

Application guides



The optimal speed

Too low

If the RPM of the machine is too low, the cut-off wheel and grinding disc tend to “jump”, and the disc edges wear down unevenly. Particularly with thin material cross sections, such as cutting tin or wire, this causes the grit to be separated from the bond and the disc wear speed is above average.

Optimal

Polymak cut-off wheels and grinding discs are high performance products and were developed such that best disc performance (measured according the stock removal volume to disc wear ratio) is achieved in the range right below the maximum peripheral speed. Keep the machine running at a consistently high RPM and, if needed, select a more powerful machine.

Too high

The maximum RPM and peripheral speed is printed on the label of each disc. For your own safety, please be sure not to exceed the recommended speeds when grinding.

The correct grinding pressure

An important requirement for a satisfactory cutting result is the correct grinding pressure. A common mistake is to reduce the grinding pressure to preserve the disc and extend the cutting life of the wheel. If this is done, the material overheats (turns blue); the cut-off wheel becomes clogged and “burns up”. This is why the grinding pressure should always be set such that the cutting time is as short as possible. This is particularly true for heat sensitive material with large material cross sections.

The proper hardness

...for cut-off wheels

Generally, the rule of thumb when selecting the correct cut-off wheel is: the harder the material, the softer the abrasive bond. The reason: the service life of a cut-off wheel is dependent on whether the cutting surface of the workpiece hardens or not. Overheating results in the disc “glazing” and the cutting properties are negatively affected. In this case, the hardness of the bond should be decreased and a softer cutting-off wheel should be used.

...for grinding discs

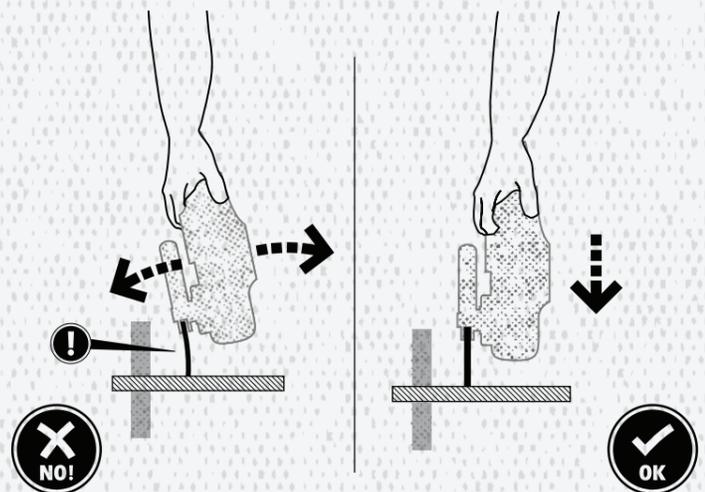
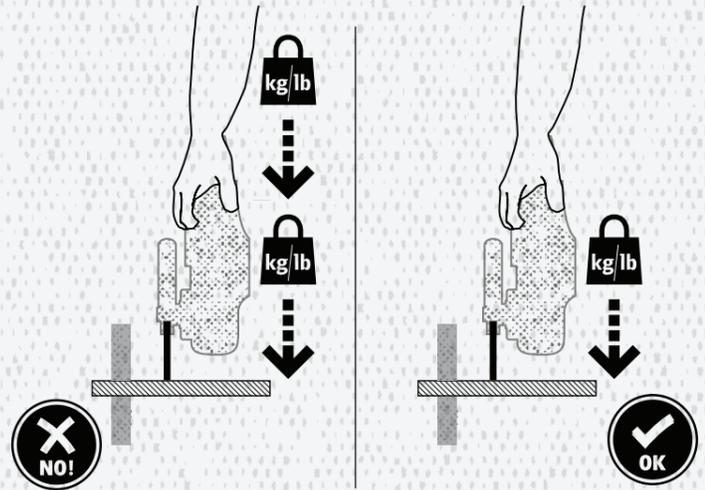
The rule of thumb also applies to grinding discs: the harder the material, the softer the grinding disc bond. In addition, the application plays a decisive role. Corner grinding and the grinding of burrs and sharp edges can cause grit to be removed from the bond. We suggest the selection of a hard bond. On the other hand, when working on surfaces or small weld seams a disc that is too hard would become dull and would no longer be effective. It would have a good service life, but would also have a low stock removal rate and high work costs. A medium or soft disc bond would be best for finish grinding.

Polymak CUT-OFF AND GRINDING WHEELS

Application guides

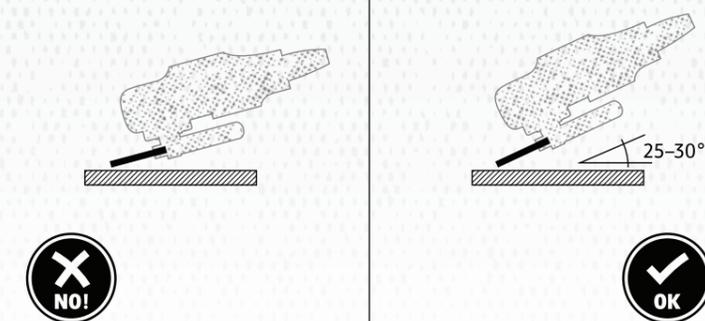
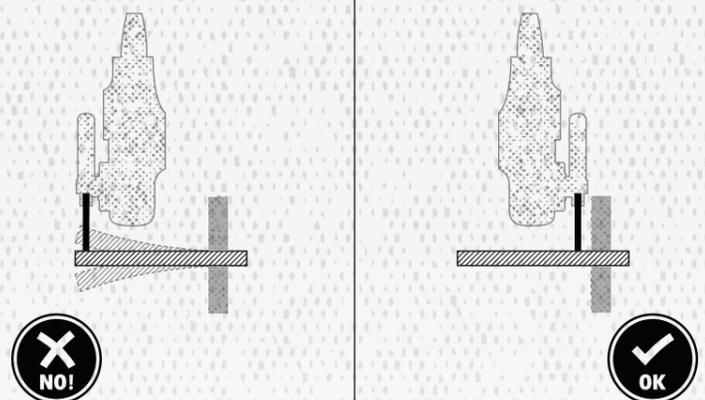
Correct application/techniques for cut-off

Pressure may only be placed on the cut-off wheel from a radial direction. This is the only way to avoid wobbling, buckling and disc breakage, especially when applying a high level of cutting pressure. The workpiece that is to be cut-off should be properly affixed to the workbench to ensure that the disc does not slide off to the side. In addition, we recommend that the material is affixed as close to the cutting site as possible to ensure that it does not vibrate, flutter or slip to the side.



Correct application/techniques for grinding

Grinding discs work best at 35 degree angle to the workpiece. This angle provides the best stock removal to disc wear ratio. If possible, always select this angle. When grinding and the angle is below 15° a very thin edge which levels off is formed around the circumference of the disc. Even minimal changes to the angle can result in a situation in which the grinding pressure can no longer be absorbed resulting in the grinding disc slipping to the side. Valuable grit is not used and an imbalance is created that results in having to replace the disc prematurely.



Polymak CUT-OFF AND GRINDING WHEELS

Application guides

The correct mount

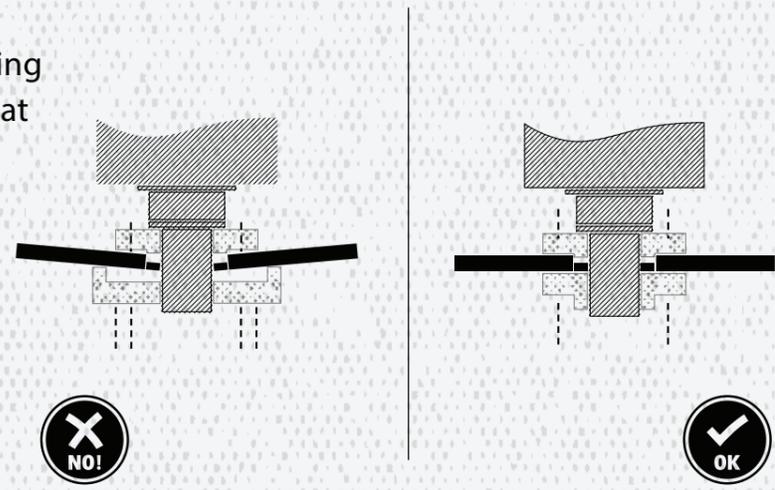
... for better power transmission

Cut-off wheels and grinding discs are mounted to the machine with side flanges. The flange elements are responsible for transferring power to the disc. For reasons of safety it is extremely important that defective or incorrect flanges are not used.

... and for more safety

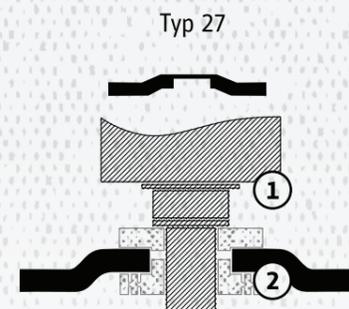
The use of wheel flange FL 76 provides increased lateral stability and user control, specifically when using thin cut-off wheels with a flat form and diameter of 180 mm and 230 mm.

The applicable regulations and standards must be complied with when using the wheel flange. The contact surface and diameter of the wheel flange must match. Using wheel flanges with diameters that do not match is prohibited.



Depressed centre grinding discs

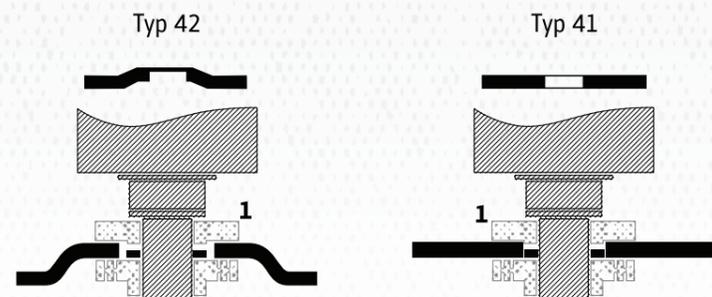
4 - 10 mm thickness



1. Disc flange
2. Flange nut

Flat and depressed centre cut-off wheels

0.8 - 4 mm thickness



1. Disc flange
2. Flange nut

Abrasive flap discs

Applications guide

1. Yellow bar
Label indicates the max. peripheral speed
2. Safety recommendations
Language neutral pictograms
3. Dimensions
Product dimensions in millimetre
4. Metal ring
5. Grit size



About the Product

Since their market launch, the Polymak abrasive Flap disc has successfully taken the place of the grinding disc in many areas of surface finishing.

The performance of the abrasive Flap disc, with its fan-shaped radial arrangement of cloth grinding flaps, far exceeds that of other abrasive products.

Polymak abrasive Flap discs are made of zirconia alumina, ceramic, or aluminium oxide coated flaps fastened to glass fibre-reinforced or plastic backing plates.

The even arrangement of the flaps guarantees high flexibility, constant high grinding performance and low vibrations.



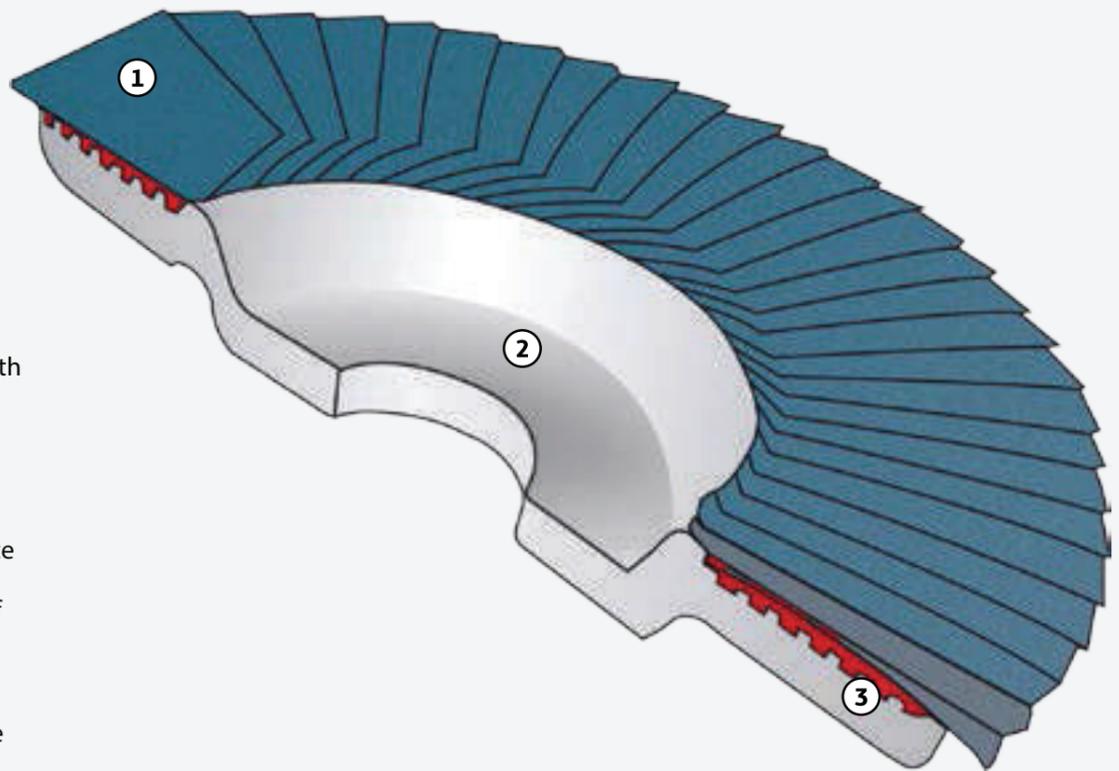
Abrasive Flap discs

Applications guide

Product structure

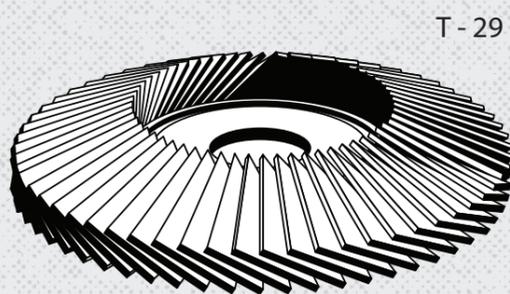
The three abrasive flap disc components are perfectly integrated to achieve maximum performance.

- 1. Grinding flaps**
Polymak has developed special coated abrasives for its abrasive mop discs. The grinding tool is perfect for use with high speed angle grinders and corresponding applications. This ensures top grinding performance long service life.
- 2. Backing plate**
Polymak uses two different backing plate types to produce abrasive mop discs. The first one is the most popular on the market made of glass fibre; the second one is made of plastic.
- 3. Glue**
The glue (adhesive) is the joint between the backing plate and the grinding flaps. It ensures that the grinding flaps cannot come off the backing plate if used properly. It also ensures safety far above the guidelines of the ANSI directives and the EN 12413 safety standard.

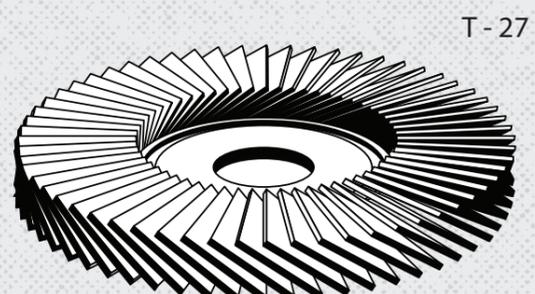


Form

The convex abrasive flap disc grinds a narrower surface than the flat abrasive flap disc. The more selective use of the convex disc achieves a greater stock removal rate per time unit as compared to the flat flap disc. The convex abrasive flap disc is particularly suited to working on edges and welded seams. The flat disc is primarily used for flat and surface grinding.



convex



flat





MADE IN INDIA
MADE FOR THE WORLD

Polymak

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