

Abrasive belts

General information

PFERD offers a comprehensive range of short and long belts. They differ in their

- dimensions,
- grit sizes,
- flexibility and
- abrasive.

The PFERD range is tailored to the common belt grinders available on the market.

PFERD short and long belts are designated "abrasive belts" according to ISO 2976.

Advantages

- High abrasive performance.
- High tensile strength with appropriate flexibility.
- Very good grit adhesion.
- Long belt life.

Application examples

- Fine grinding of larger surfaces in multiple steps.
- Surface texturing.
- Creation of uniform visual effects on large surfaces.
- Polishing parts of railings with felt belts.

Cutting speeds

The adjacent diagram allows you to determine the rotational speed [RPM] from a given cutting speed. For the recommended cutting speeds, see page 38.

In the diagram, the cutting speeds are represented by blue diagonal lines. The vertical line representing the diameter of the drive roll meets the given cutting speed (diagonals). From its point of intersection, proceed horizontally to the left margin, where you will find the recommended rotational speed [RPM] for the drive roll diameter selected.

Example

Drive wheel diameter: 5"
 Peripheral speed: 4,000 - 6,000 SFPM
Rotational speed: 3,000 - 4,600 RPM

Safety notes

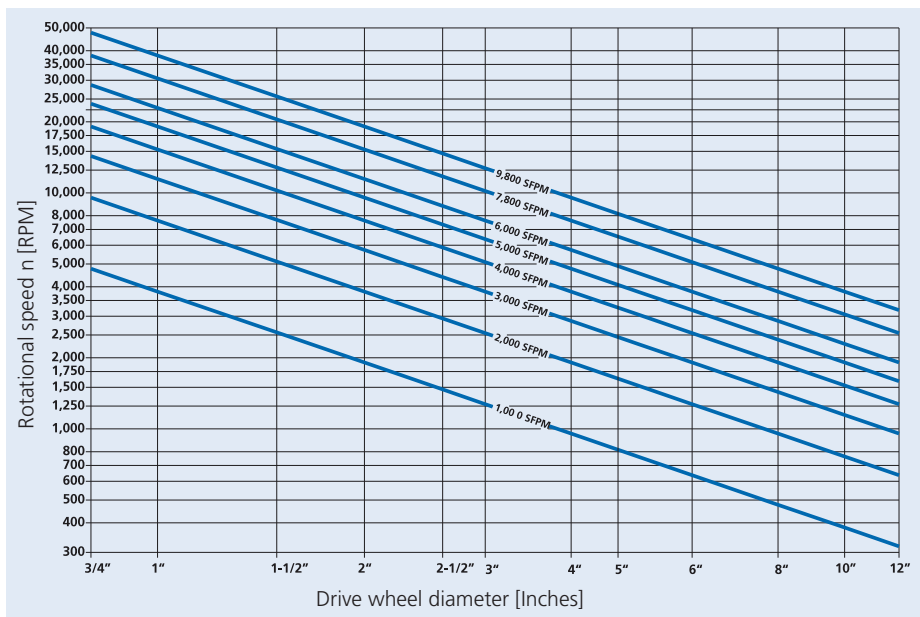
-  = Wear eye protection!
-  = Wear a dust mask!
-  = Wear hearing protection!
-  = Wear gloves!
-  = Please read the safety instructions!
-  = Read the Safety Data Sheets (SDS) before using any materials!
-  = Not permitted for wet grinding!

Dust warning

Use of the products in this catalogue may create dust and other particles. To avoid any risk of adverse health effects, the operator must use appropriate protective measures, including a



respirator, during and after operation. Refer to our Safety Data Sheet (SDS) for further information regarding the product to be used. Furthermore, additional health hazards may result from dust in the surrounding environment and from dust generated from the workpiece material. PROTECTIVE MEASURES FOR THE OPERATOR MUST ADDRESS DUST AND OTHER PARTICULATES ARISING FROM ALL SOURCES. Always use our products in a well-ventilated workspace.



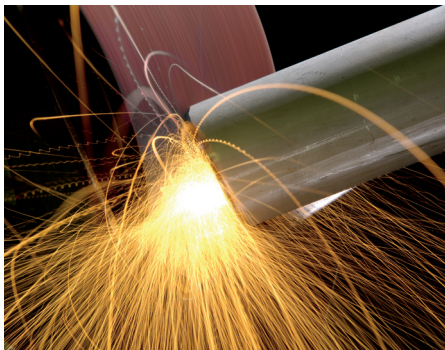
Variables influencing removal performance

This chart illustrates the variables that affect grinding results on the workpiece surface.

Variable	More aggressive, Better cutting	Less aggressive, Lower cutting
Workpiece feed speed	← slower	faster →
Belt speed (SFPM)	← slower	faster →
Belt length	← longer	shorter →
Grit size	← coarse	fine →
Contact wheel: Type	← serrated	smooth →
Diameter	← smaller	larger →
Composition	← steel	rubber - canvas →
Feed pressure	← high	low →
Grinding aid	← straight oil	oil solubles - water - dry →
Workpiece hardness	← softer	harder →

Troubleshooting – symptoms and solutions

This table is a partial listing of potential problems and possible solutions to grinding problems with abrasive belts. If you experience problems that cannot be solved using these recommendations, PFERD has trained technicians that will try to solve your problems via telephone or on-site at your location.



Belt breakage

Too much work pressure	<ul style="list-style-type: none"> ■ reduce pressure ■ use coarser grit ■ change belts
Not enough belt tension under work load	<ul style="list-style-type: none"> ■ increase tension (do not over-tighten)
Too much belt tension for grit use	<ul style="list-style-type: none"> ■ adjust tension (should not be more than required under load to prevent slippage)
Foreign materials caught between belt's backer and drive or contact wheels	<ul style="list-style-type: none"> ■ use dust collection system clean work area
Belts creased or damaged during handling	<ul style="list-style-type: none"> ■ handle carefully, see storage and handling information

Belt not tracking properly

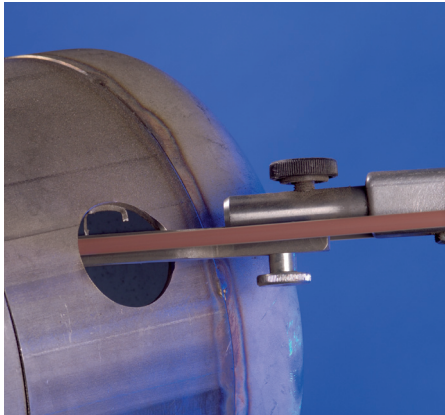
Tracking mechanism not properly adjusted	<ul style="list-style-type: none"> ■ follow machine manual to properly adjust tracking
Damaged or fluttering edges of belt	<ul style="list-style-type: none"> ■ increase belt tension, replace belt if necessary
Belt runs off due to slippage under load	<ul style="list-style-type: none"> ■ increase tension to prevent slippage (do not overtighten)
Tapered contact roll or idler roll, idler roll and contact roll not parallel	<ul style="list-style-type: none"> ■ redress roll to remove taper, align to parallel

Poor grinding results

Burnishing of work surface – indication of over-used belt	<ul style="list-style-type: none"> ■ use belt only as long as efficient ■ use proper feed speeds
Streaks and/or ridges on workpiece	<ul style="list-style-type: none"> ■ clean or redress contact roll ■ clean platen, replace felt or graphite ■ check dust collection for blockages
Too coarse finish	<ul style="list-style-type: none"> ■ use finer grit ■ increase SFPM ■ apply more feed pressure
Too fine finish	<ul style="list-style-type: none"> ■ use coarser grit ■ decrease SFPM ■ apply less feed pressure

Recommendations for use of abrasive belts

Workpiece material			Application	Surface roughness	Grit size	Recom. abrasive grit	Recom. peripheral speed [SFPM]
Steel, cast steel	Non-hardened, non-heat treated steels up to 38 HRC (<1,200 N/mm ²)	Construction steels, carbon steels, tool steels, non-alloyed steels, case-hardened steels, cast steels	coarse grinding	coarse	coarse	Aluminum oxide A POLIVLIES®	4,900 - 6,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
	Hardened, heat-treated steels exceeding 38 HRC (>1,200 N/mm ²)	Tool steels, tempered steels, alloyed steels, cast steels	coarse grinding	coarse	coarse	Aluminum oxide A Zirconia alumina Z POLIVLIES®	3,900 - 5,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
Stainless steel (INOX)	Rust and acid-resistant steels	Austenitic and ferritic stainless steels	coarse grinding	coarse	coarse	Ceramic oxide CO-COOL POLIVLIES®	2,900 - 4,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
Non-ferrous metals	Soft non-ferrous metals	Aluminum-alloys, brass, copper, zinc	coarse grinding	coarse	coarse	Aluminum oxide A POLIVLIES®	5,900 - 7,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
	Hard non-ferrous metals	Bronze, titanium, titanium alloys, aluminum alloys (high Si content)	coarse grinding	coarse	coarse	Ceramic oxide CO-COOL Aluminum oxide A POLIVLIES®	3,900 - 5,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
	High-temperature resistant materials	Nickel-based alloys, cobalt-based alloys (aircraft engine and turbine construction)	coarse grinding	coarse	coarse	Aluminum oxide A POLIVLIES®	1,000 - 2,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
Cast iron	Grey cast iron, white cast iron	Cast iron with flake graphite, with nodular graphite cast iron, white annealed cast iron, black cast iron	coarse grinding	coarse	coarse	Aluminum oxide A	4,900 - 6,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		
Plastics and other materials	Plastics, wood, paint	Fibre-reinforced plastics, thermoplastics, woods, chipboard, paint, melamine	coarse grinding	coarse	coarse	Aluminum oxide A	1,900 - 4,900
			fine grinding	▼	▼		
			very fine grinding	fine	fine		



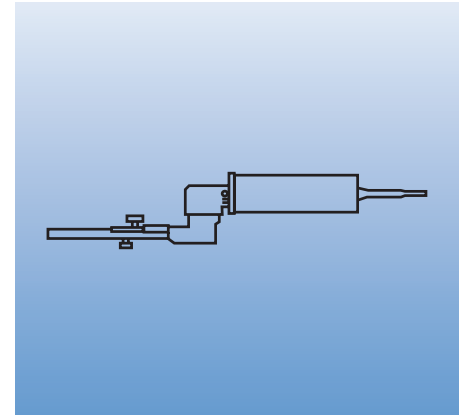
Application examples

File belts

- Portable, light duty use.
- For grinding, deburring, finishing and polishing.
- Small area of surface contact.
- For use on hard-to-reach areas and contours, e.g., tubes, railings.

Recommendation for use

Recommendations for use of these belts under various operating conditions, as well as belt/grinder compatibility information, are given in the table "Recommendations for use of abrasive belts" (page 38).



For general-purpose grinding, from coarse to fine in diverse applications.


Abrasive: Aluminum oxide A

PFERD specification number
BA-A

File belts

Aluminum oxide A



Width x length [Inches]	Grit and EDP number							
	36	40	50	60	80	100	120	
1/8 x 12	-	-	-	48947	48948	-	48950	10
1/8 x 20-1/2	-	-	-	48955	48956	-	48958	10
1/4 x 12	-	-	-	48963	48964	-	48966	10
1/4 x 18	49000	49001	49002	49003	49004	-	49006	10
1/4 x 20-1/2	48968	48969	48970	48971	48972	-	48974	10
1/4 x 24	49008	49009	49010	49011	49012	-	49014	10
3/8 x 12	-	-	-	48979	48980	-	48982	10
3/8 x 13	49016	49017	49018	49019	49020	-	49022	10
1/2 x 12	49024	-	49026	49027	49028	-	49030	10
1/2 x 18	49032	49033	49034	49035	49036	49037	49038	10
1/2 x 20-1/2	48984	48985	48986	48987	48988	-	48990	10
1/2 x 24	49040	49041	49042	49043	49044	49045	49046	10
5/8 x 20-1/2	-	-	-	48995	48996	-	48998	10
3/4 x 18	49048	49049	49050	49051	49052	-	49054	10
3/4 x 20-1/2	-	49057	49058	49059	49060	-	49062	10
1 x 12	-	49065	49066	49067	49068	-	49070	10
1 x 30	-	-	-	49086	49087	-	49089	10

Abrasive belts

File belts

File belts Zirconia alumina Z




Designed for coarse grinding and high stock removal, these belts attain a long service life. Zirconia alumina is a high-performance abrasive which delivers best results at increased contact pressure.

Abrasive: Zirconia alumina Z

PFERD specification number

BA-Z



Width x length [Inches]	Grit and EDP number				
	36	40	60	80	
1/4 x 18	49691	49692	49694	49695	10
1/4 x 24	49696	49697	49699	49700	10
3/8 x 13	49701	49702	49704	49705	10
1/2 x 12	49712	49713	49715	49716	10
1/2 x 18	49717	49718	49720	49730	10
1/2 x 24	49734	49735	49738	49739	10
3/4 x 18	49740	49741	49743	49744	10
3/4 x 20-1/2	49746	49747	49749	49750	10

File belts Ceramic grain CO-COOL

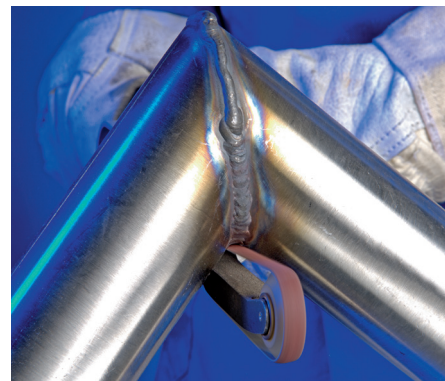



For aggressive grinding achieving maximum stock removal on hard, poor heat-conducting materials. Active additives in the coating ensure a substantially improved abrasive performance while preventing loading and reducing heat build-up in the workpiece.

**Abrasive: Ceramic oxide CO-COOL
(top-sized)**

PFERD specification number

BA-CO-COOL



Width x length [Inches]	Grit and EDP number				
	40	50	60	80	
1/4 x 18	49497	49498	49499	49500	10
1/4 x 24	49504	49505	49506	49507	10
3/8 x 13	49511	49512	49513	49514	10
1/2 x 12	49529	49530	49531	49532	10
1/2 x 18	49536	49537	49538	49539	10
1/2 x 24	49543	49544	49545	49546	10
3/4 x 18	49560	49561	49562	49563	10
3/4 x 20-1/2	49567	49568	49569	49570	10



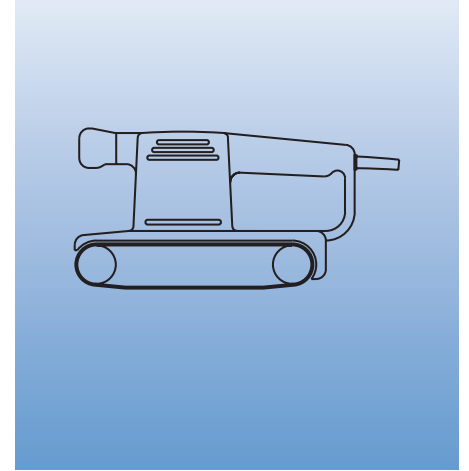
Application examples

Portable belts

- Portable use for working large flat or near flat surfaces.
- For grinding, deburring, finishing and polishing.
- Removing rust and corrosion, surface conditioning.
- Belt designed for use on metals, wood, plastic, fibreglass and composites.

Recommendation for use

Recommendations for use of these belts under various operating conditions, as well as belt/grinder compatibility information, are given in the table "Recommendations for use of abrasive belts" (page 38).

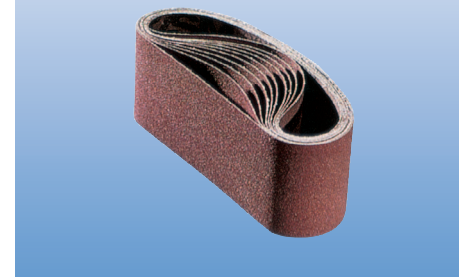



For general-purpose grinding, from coarse to fine in diverse applications.

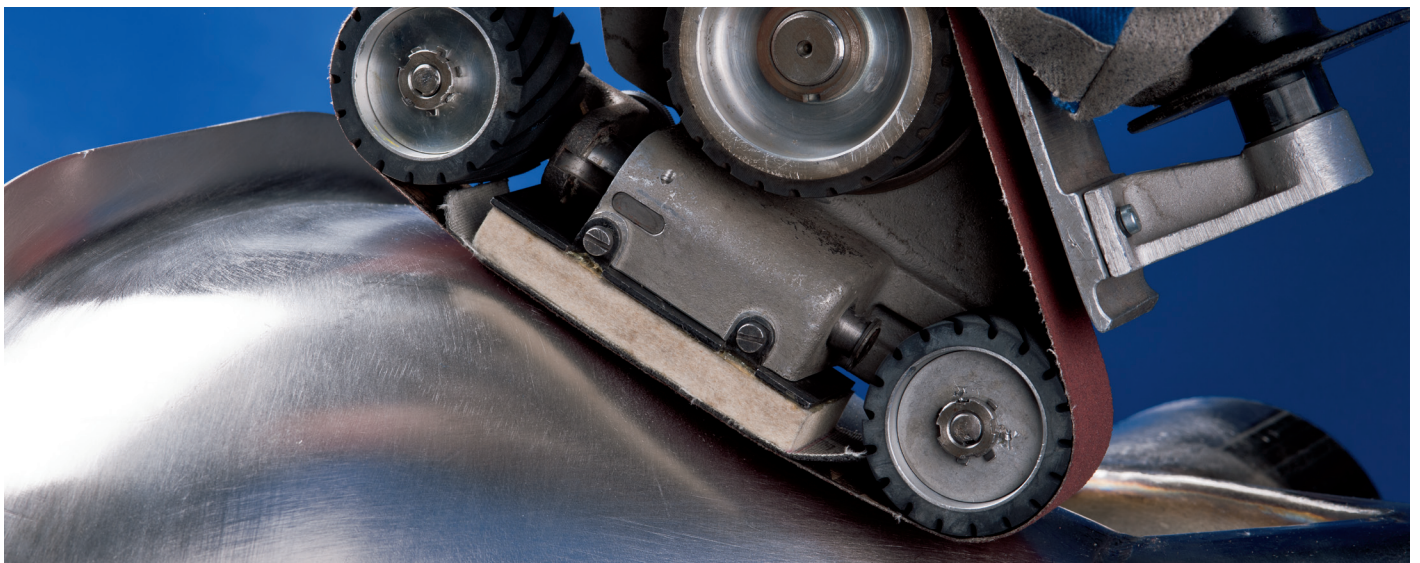
Abrasive: Aluminum oxide A

PFERD specification number
 BA-A

Portable belts
Aluminum oxide A



Width x length [Inches]	Grit and EDP number						
	40	50	60	80	100	120	
3 x 21	49211	49212	49213	49214	49215	49216	10
3 x 24	49250	49251	49252	49253	49254	49255	10
3-1/2 x 15-1/2	49312	-	49314	49315	49316	49317	10
4 x 24	49360	49361	49362	49363	49364	49365	10



Abrasive belts

NEW Pneumatic drums and accessories

Pneumatic drum

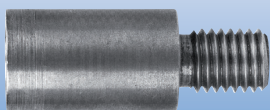


Pneumatic drum holder for 3-1/2" x 15-1/2" belts. The cushioned grinding increases the service life of belts by reducing heat build-up and allowing more flexibility.


For use on linear finishing tool (EDP 91217) see our "Power tools" catalogue (section 209).

For belt size [Inches]	Drum diameter [Inches]	Max. inflation	Internal thread	EDP number	Max. RPM	
3-1/2 x 15-1/2	5	15 psi	5/8-11	49985	3,800	1

Threaded spindle extension

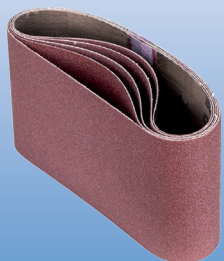


Threaded spindle extension allows pneumatic drum to be mounted on linear finishing tool (EDP 91217), see our "Power tools" catalogue (section 209). Has internal and external 5/8-11 threads.

Fits power tool spindle (internal thread)	External thread	EDP number	
5/8-11	5/8-11	49986	1


NEW Belts for pneumatic drums

Drum belts Aluminum oxide A



For general-purpose grinding, from coarse to fine in diverse applications.

Abrasive: Aluminum oxide A
PFERD specification number
BA-A

Width x length [Inches]	Grit and EDP number					
	40	60	80	100	120	
3-1/2 x 15-1/2	49312	49314	49315	49316	49317	10


For aggressive grinding achieving maximum stock removal on hard, poor heat-conducting materials. Active additives in the coating ensure a substantially improved abrasive performance while preventing loading and reducing heat build-up in the workpiece.

Abrasive: Ceramic oxide CO-COOL (top-sized)

PFERD specification number
BA-CO-COOL

Drum belts
Ceramic grain CO-COOL



Width x length [Inches]	Grit and EDP number			
	40	60	80	
3-1/2 x 15-1/2	49641	49642	49643	10

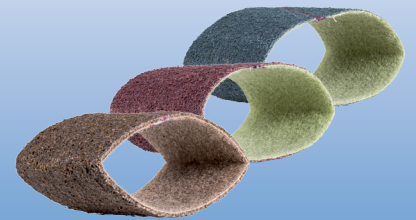
These heavy-duty non-woven surface conditioning belts are manufactured with aluminum oxide impregnated fibre mesh on a tough web backing. The grain is evenly dispersed on the material, resulting in a smooth, uniform finish. The open structure resists loading and can be used wet or dry. The synthetic material will not rust or corrode. Its life can be increased by washing after use. POLIVLIES® belts are designed for buffing, blending, cleaning, light deburring, finishing and polishing on all metals. Particularly well suited for use on stainless and aluminum.


Abrasive: Aluminum oxide A

100 C = coarse (colour: yellowish brown)
180 M = medium (colour: reddish brown)
240 F = fine (colour: blue)

PFERD specification number
VB

POLIVLIES® surface conditioning
Drum belts

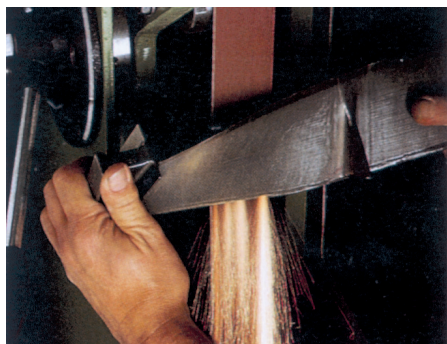


Width x length [Inches]	Grit and EDP number			
	coarse	medium	fine	
3-1/2 x 15-1/2	43613	43614	43615	10



Abrasive belts

Benchstand and backstand belts



Application examples

Benchstand belts

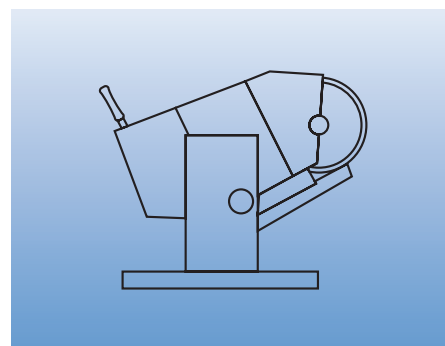
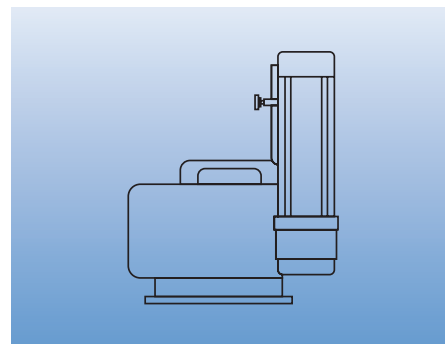
- Stationary machine for light to moderate duty use.
- Most machines are sanding attachments to bench grinders.
- Versatile, low powered machines for general purpose use.
- Grinding and finishing against platen or contact wheel.

Backstand belts

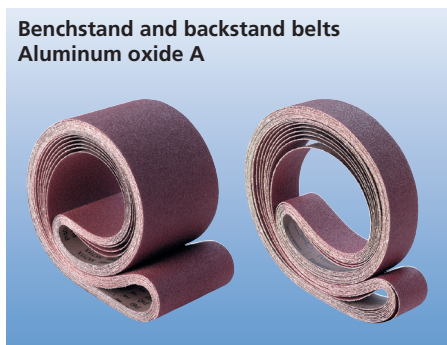
- Stationary, heavy-duty machine.
- Deburring, blending and finishing.
- Work performed at contact wheel for most aggressive action.
- Grinding and finishing castings and forgings.

Recommendation for use

Recommendations for use of these belts under various operating conditions, as well as belt/grinder compatibility information, are given in the table "Recommendations for use of abrasive belts" (page 38).



Benchstand and backstand belts Aluminum oxide A

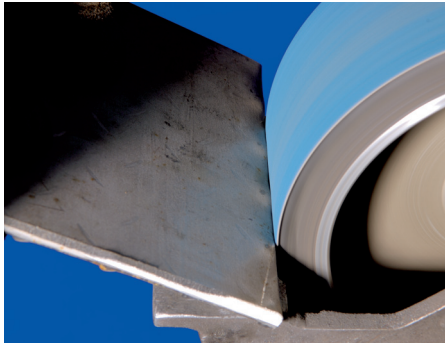


For general-purpose grinding, from coarse to fine in diverse applications.

Abrasive: Aluminum oxide A

PFERD specification number
BA-A

Width x length [Inches]	Grit and EDP number							
	24	36	40	50	60	80	120	
Benchstand belts								
1 x 42	-	-	49093	49094	49095	49096	49098	10
1-1/2 x 60	-	-	49106	-	49108	49109	-	10
2 x 48	-	49132	49133	49134	49135	49136	49138	10
2-1/2 x 60	-	49179	-	49181	49182	49183	-	10
4 x 36	-	-	49373	-	49375	49376	49378	10
6 x 48	49463	49464	49465	49466	49467	49468	49470	10
Backstand belts								
2 x 132	-	49159	-	-	49162	49163	-	10

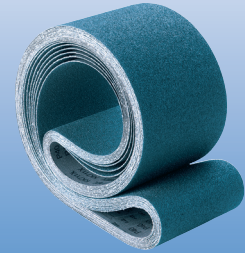



Designed for coarse grinding and high stock removal, these belts also attain a long service life. Zirconia alumina is a high-performance abrasive which delivers best results at increased contact pressure.

Abrasive: Zirconia alumina Z

PFERD specification number
BA-Z

Benchstand belts Zirconia alumina Z



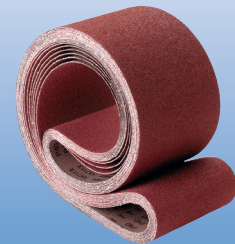
Width x length [Inches]	Grit and EDP number			
	36	60	80	
2 x 48	49786	49789	49790	10
2 x 60	49792	-	49796	10
2-1/2 x 60	49828	49831	49832	10
4 x 36	49879	49882	49883	10
6 x 48	49885	49888	49889	10


For aggressive grinding achieving maximum stock removal on hard, poor heat-conducting materials. Active additives in the coating ensure a substantially improved abrasive performance while preventing loading and reducing heat build-up in the workpiece.

**Abrasive: Ceramic oxide CO-COOL
(top-sized)**

PFERD specification number
BA-CO-COOL

Benchstand belts Ceramic grain CO-COOL



Width x length [Inches]	Grit and EDP number			
	40	60	80	
1 x 42	49574	49576	49577	10
1-1/2 x 60	49581	49583	49584	10
2 x 48	49588	49590	49591	10
2 x 60	49595	49597	49598	10
2-1/2 x 60	49616	49618	49619	10
4 x 36	49658	49660	49661	10
6 x 48	49672	49674	49675	10

Special-purpose accessory for cleaning loaded abrasive belts. ABRACLEAN provides powerful cleaning action on all coated abrasive products.


Recommendations for use

- The ABRACLEAN cleaning stick cleans loaded belts and virtually any coated product. Just apply the rotating abrasive to the cleaning stick.
- Always use protective goggles when using this product.

PFERD specification number
RG 300 50

ABRACLEAN cleaning stick



Length x height x width [Inches]	EDP number	
12 x 2 x 2	62918	2

Abrasive belts

POLIVLIES® surface conditioning belts

POLIVLIES® surface conditioning belts



These heavy-duty non-woven surface conditioning belts are manufactured with aluminum oxide impregnated fibre mesh on a tough web backing. The grain is evenly dispersed on the material, resulting in a smooth, uniform finish.

The open structure resists loading and can be used wet or dry. The synthetic material will not rust or corrode. Its life can be increased by washing after use.

POLIVLIES® belts are designed for buffing, blending, cleaning, light deburring, finishing and polishing on all metals. Particularly well suited for use on stainless steel and aluminum.

Abrasive: Aluminum oxide A

100 C = coarse (colour: yellowish brown)

180 M = medium (colour: reddish brown)


240 F = fine (colour: blue)

Recommendation for use

Please observe indicated direction of rotation.

PFERD specification number

VB

Width x length [Inches]	Grit size and EDP number			
	coarse	medium	fine	
1/4 x 12	43634	43635	43636	10
1/4 x 18	43550	43551	43552	10
1/4 x 20-1/2	43637	43638	43639	10
1/4 x 24	43553	43554	43555	10
3/8 x 12	43640	43641	43642	10
1/2 x 12	43643	43644	43645	10
1/2 x 18	43556	43557	43558	10
1/2 x 20-1/2	43646	43647	43648	10
1/2 x 24	43559	43560	43561	10
5/8 x 20-1/2	43649	43650	43651	10
3/4 x 18	43562	43563	43564	10
3/4 x 20-1/2	43565	43566	43567	10
3 x 24	43607	43608	43609	10
3-1/2 x 15-1/2	43613	43614	43615	10

