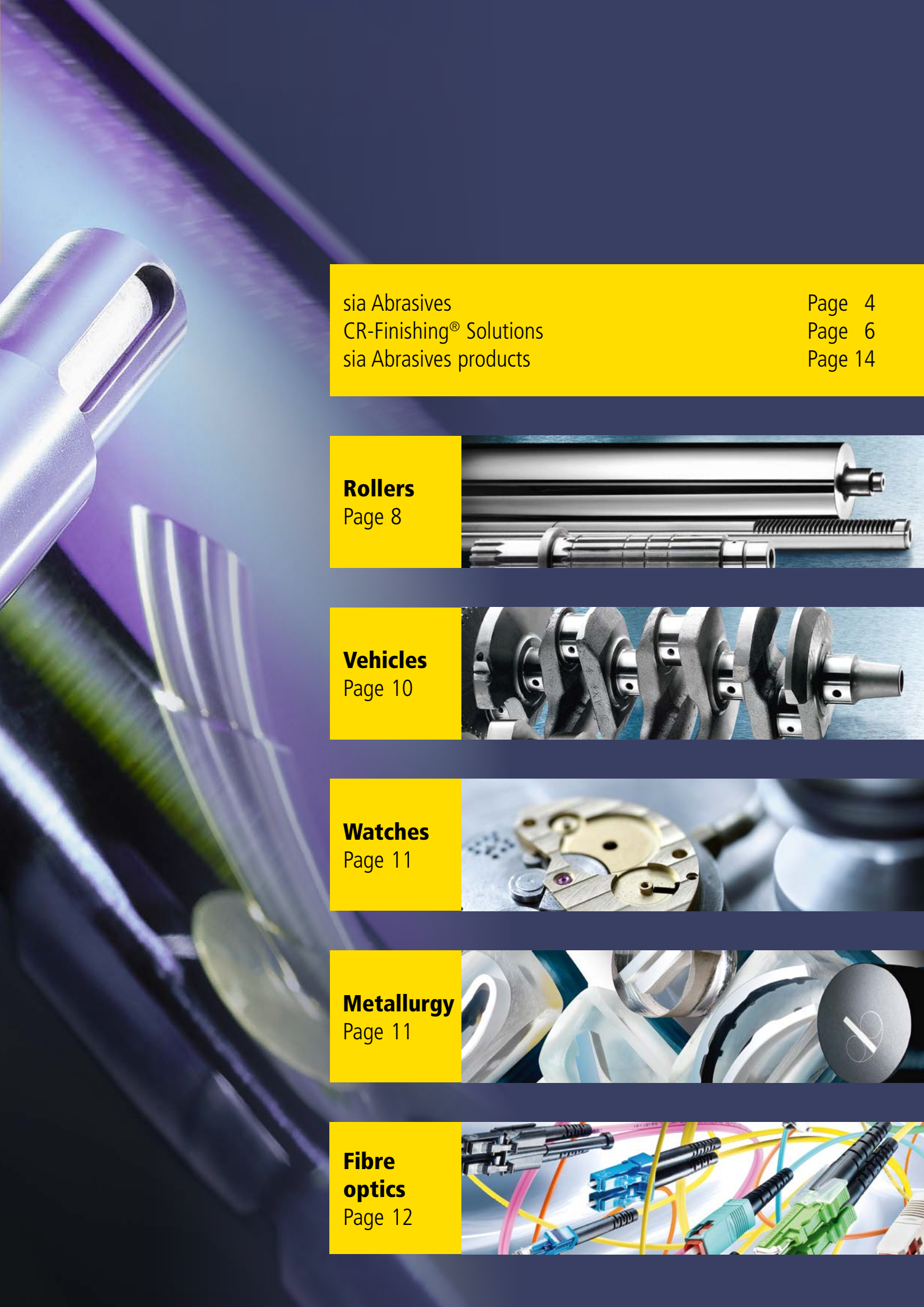


**microtec**

**Microabrasives for CR-Finishing® solutions**

**microtec**  
**Microabrasives**  
for CR-Finishing® solutions





sia Abrasives  
CR-Finishing® Solutions  
sia Abrasives products

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# sia Abrasives



## Global partner

Developed and manufactured using Swiss technology and represented in over 80 countries: sia Abrasives sells complete abrasive systems for all kinds of surfaces and has 1400 employees worldwide.

## World's most modern abrasives plant

Setting the pace for the next generations of abrasives: A modular manufacturing process enables "just-in-time" production of innovative abrasives in the technically advanced "Maker 5" plant.

## Fit for the future

Maker 5 is designed to enable it to be adjusted to suit new requirements at any time.

## Visit us online:



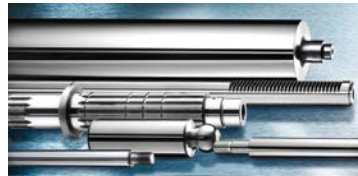
- ▶ Convenient product search
- ▶ Clear comparison of products
- ▶ Access at any time, from anywhere

[www.sia-abrasives.com](http://www.sia-abrasives.com)

# Industry Expertise

As a leading international manufacturer of high-quality abrasives with over 140 years of experience, we are familiar with the process steps of our customers and can provide the right abrasive solution for every material.

## Rollers



## Watches



## Fibre optics



## Vehicles



## Metallurgy



# Types of abrasives

Over 60,000 abrasive products in a variety of abrasive formats, sizes and specifications for all materials, applications and requirements.



## Coated abrasives

- Classic coated abrasives and abrasive systems
- For advanced surface treatment of all types of material



## Non-woven abrasives

- Non-woven products for preparation and cleaning tasks and for structuring
- Especially for use on metal



## Foam abrasives

- Foam sanding pads in the largest possible range of shapes and grades
- For precision treatment of wood, primer fillers, paints and varnishes



## Bonded abrasives

- Precision cutting discs for optimum cutting performance and efficient grinding discs
- For a wide variety of metalworking applications

# CR-Finishing® solutions



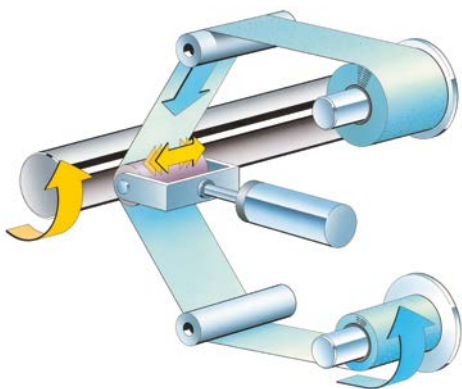
## Technology for surface treatment

### CR-Finishing® (Constant Result Finishing)

CR-Finishing® is a quality concept aimed at ensuring an efficient process which produces functional surfaces first time. Our microtec products have been designed specifically to suit application procedures, workpieces and materials.

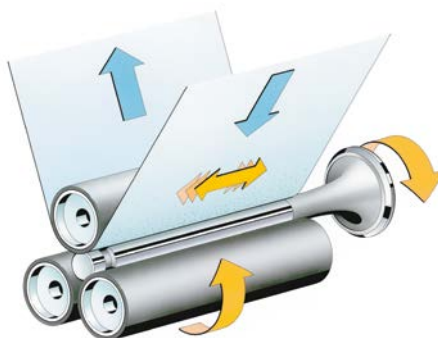
#### Advantages

- Constant and precise surface structure
- Excellent cutting results
- High material removal rates and finishing performance
- High cost efficiency thanks to reduced process and retooling times
- Defined and reproducible surface roughness



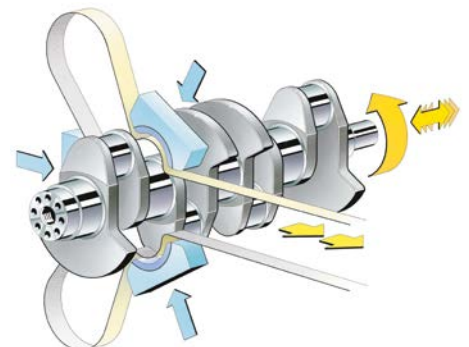
#### Contact roller

- Made from plastic or metal
- Continuous film feed
- Oscillating contact roller



#### Centerless

- Through- and in-feed process
- Continuous film feed
- Belt oscillation



#### Pressure shoe

- Single or multi jaw principle
- Cycled film feed
- Hard or soft pressure shoe
- Oscillating workpiece

### Functional surfaces



- Automotive industry: Cross-cut for crankshafts and camshafts
- Printing industry: Defined surface roughness for copper rollers
- Roller industry: Cross-cut to a mirror finish

### Visual surfaces



Watches/jewellery industry

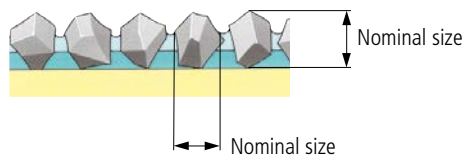


## Structure of microabrasives

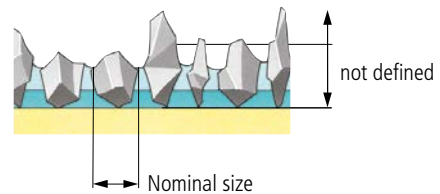
### Grit selection

#### Excellent finish quality thanks to unique grit calibration

A particularly extensive grit selection guarantees consistent, reproducible machining results. The microtec standard is more precise than the FEPA-P standard. The CR-Finishing® grit therefore guarantees a consistent, first-class surface structure conforming to defined requirements.



The benefits for you:  
Perfect contact line thanks to homogeneous grit size



The risk:  
Needle grits can cause scratches

### Adhesive

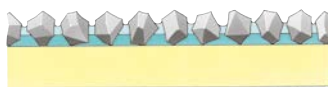
#### Based on synthetic resin

A special binder system bonds the grit precisely onto the backing material. This ensures constant finishing rates while also permitting the use of modern cooling lubricants, such as emulsions or water (also spray cooling).

### Backing

#### Polyester films as backing material

Due to their precision and quality, polyester films are especially suited as a backing material for precision finishing tools. Since conventional sanding belts made of cloth or paper are compressible, they cannot ensure a constant processing action. This results in undesirable and inaccurate roughness depth values which prevent a consistent and reproducible surface from being achieved.



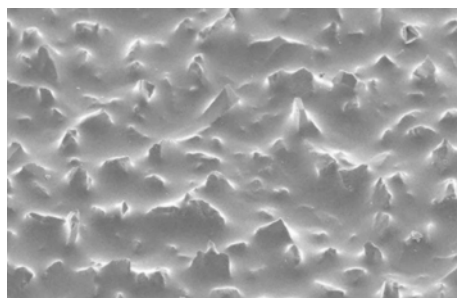
CR-Finishing® abrasive grit  
on polyester film

#### Advantages:

- Perfect flattening thanks to absolutely flat film backing
- Constant finishing action
- Exact roughness depth values

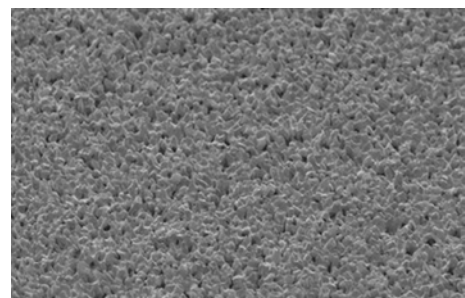
### Coating

#### Electrostatically coated



- Grit tips face upwards
- Higher cutting power than slurry coated abrasives

#### Slurry coated



- Multiple layers of grit embedded in a binder
- Smoother surface than electrostatically coated products of same grit size

# Rollers



Application	5232	5262	5930	5960	5752
Copper rollers					
Chrome/hard chrome rollers					
Zinc rollers					
Hardened steel rollers					
Coated rollers (plasma ceramic/tungsten carbides)					
Rubber and plastic rollers					
Teflon rollers					

## Perfect surfaces thanks to finishing process

In the roller production process, a perfect surface finish is a major factor when it comes to achieving concentricity, roundness, cylindricity and surface quality. To obtain constant and reproducible technical surfaces, via Abrasives can supply state-of-the-art products which deliver consistent quality. This range of co-ordinated products makes for high cost efficiency in the roller finishing process.

What is achieved by the finishing process:

- Defined surface roughness
- Maximum useful life
- Cross-cut or high gloss polished

### 5232 microtec

This slurry coated diamond finishing product with a 75 µm (3 mil) polyester film backing and resin-over-resin bonding is ideally suited to machining very hard surfaces, such as plasma ceramics or tungsten carbide coatings. Diamond abrasives are always used together with a coolant (emulsion).

### 5262 microtec

The electrostatically coated diamond series 5262 with 125 µm polyester film backing for grit sizes 80 µm–15 µm and 188 µm polyester film backing for grit size 125 µm is specifically designed for powerful machining and constant finish of very hard surfaces, such as plasma ceramics or tungsten carbide coatings. Diamond Abrasives are always used together with a coolant (emulsion).

### 5930 microtec

This slurry coated aluminium oxide finishing product with 75 µm (3 mil) polyester film backing and resin-over-resin bonding is particularly suited to machining different materials, such as copper or chrome. It is normally used together with a coolant (emulsion).

### 5960 microtec

This electrostatically coated aluminium oxide finishing product with 75 µm (3 mil) polyester film backing and resin-over-resin bonding is suitable for applications which demand higher cutting power. Optimal results are achieved when a coolant (emulsion) is used.

### 5752 microtec

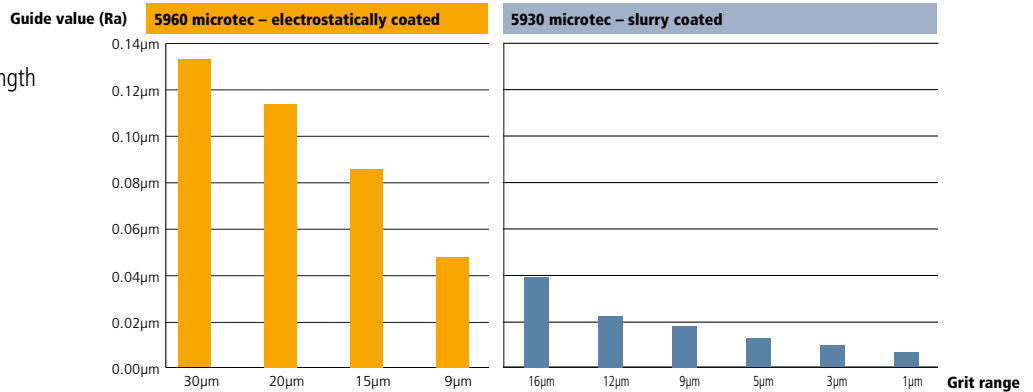
This electrostatically coated silicon carbide finishing product with 125 µm (5 mil) polyester film backing and resin-over-resin bonding and anti-slip coating is specifically designed for the surface finishing of rubber, plastic and Teflon rollers.



## Surface roughness according to use

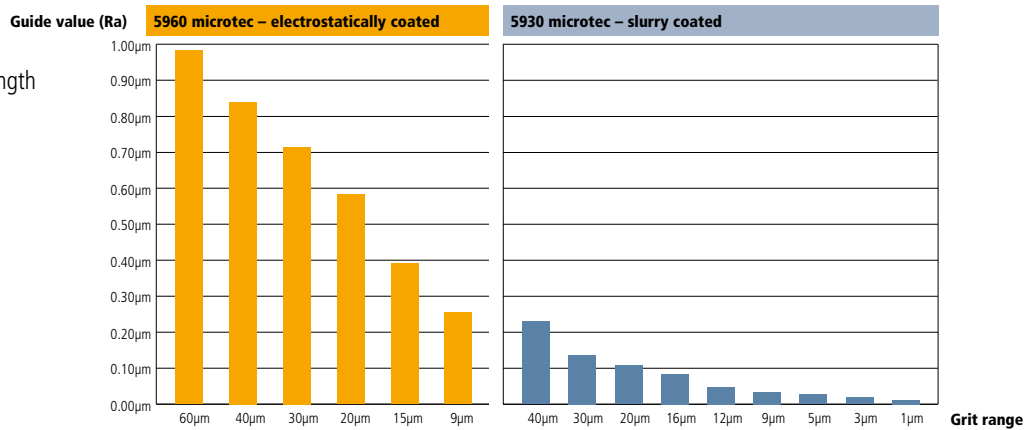
### Hard chrome roller

Dimensions: Ø 34 mm x 250 mm length  
 Cutting speed: 12 cm/min  
 Rotation speed: 550 rpm  
 Axial feed: 2.5 m/min  
 Transitions: 2 x 2  
 Contact roller: Rubber, 65ShA  
 Oscillation: 30 Hz  
 Contact pressure: 4 bar



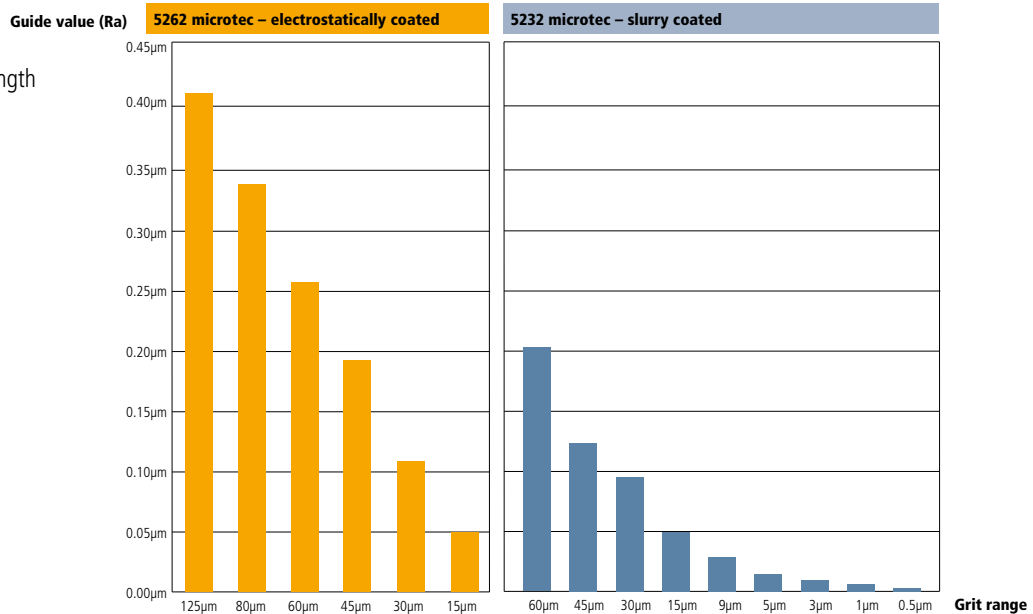
### Copper roller

Dimensions: Ø 40 mm x 250 mm length  
 Cutting speed: 12 cm/min  
 Rotation speed: 550 rpm  
 Axial feed: 2.5 m/min  
 Transitions: 2 x 2  
 Contact roller: Rubber, 65ShA  
 Oscillation: 30 Hz  
 Contact pressure: 3 bar



### Tungsten roller

Dimensions: Ø 40 mm x 250 mm length  
 Cutting speed: 6.5 cm/min  
 Rotation speed: 550 rpm  
 Axial feed: 2.5 m/min  
 Transitions: 2 x 2  
 Contact roller: Rubber, 65ShA  
 Oscillation: 30 Hz  
 Contact pressure: 3.5 bar



All values were obtained using the specified parameters and to a large extent depend on the workpieces and settings used.

# Vehicles and machines



Application	5930	5960	5962
Camshafts			
Crankshafts			
Steering components			
Shock absorber parts			
Valves			
Hydraulic components			
Pneumatic components			
Ball bearings			

## High load and endurance strength

Reproducible surfaces permit defined tolerances. This is essential for the production of precision components in the machine and vehicle manufacturing industries. Finishing is the key to the production of consistent and reproducible technical surfaces. The co-ordinated products from sia Abrasives deliver the consistent quality needed to achieve high cost efficiency in the production process.

What is achieved by the finishing process:

- Defined surface roughness
- Higher contact ratio thanks to cross-cut

### 5930 microtec

This slurry coated aluminium oxide finishing product with 75 µm (3 mil) polyester film backing and resin-over-resin bonding is only suitable for contact roller or centerless applications; coolant (oil) is always used.

### 5960 microtec

This electrostatically coated aluminium oxide finishing product with 75 µm (3 mil) polyester film backing and resin-over-resin bonding is only suitable for contact roller or centerless applications which demand higher cutting power than the 5930 can deliver. Coolant (oil) is always used in this application.

### 5962 microtec

This electrostatically coated aluminium oxide finishing product with 125 µm (5 mil) polyester film backing and resin-over-resin bonding with anti-slip coating is, among other things, particularly suited to automatic applications involving the use of a clamping shoe for machining crankshafts, camshafts, etc. Coolant (oil) is always used in this application.

# Watches



Application	5232	5930	5962
Watch cases and bracelets			

## Create an emotional impact with perfect surface finishes

Perfect visual finishes are an absolute must in the watch and jewellery industry. The most suitable finishing product depends on the desired final result and the material to be worked. To ensure a perfect finish, sia Abrasives delivers the right products for any application.

# Metallurgy



Application	5232	5930	5960
Test specimens, etc.			

## Production technology

Finishing of test specimens is key in the research and development of technology for the production of complex alloys and innovative materials. The choice of finishing product depends to a great extent on the quality of the test specimen. With the co-ordinated products from the sia Abrasives range, you can meet all metallurgical requirements with respect to surface finish.

# Fibre optics



Application	5232	5330
Ceramic/fibreglass terminations		

## sia Abrasives fibre optic polishing system

The polishing process is an important stage in the production of ferrule terminations. For this purpose, sia Abrasives supplies suitable products which offer consistent quality. High cost efficiency is achieved in ferrule production by co-ordinating the individual work steps. The following application recommendations apply to the most widely used polishing machines. Our high-performance polishing system will help you to produce high-quality terminations which meet international standards.

What is achieved by the polishing process:

- Improved optical performance
- Maximum light transmission in the termination

### 5232 microtec

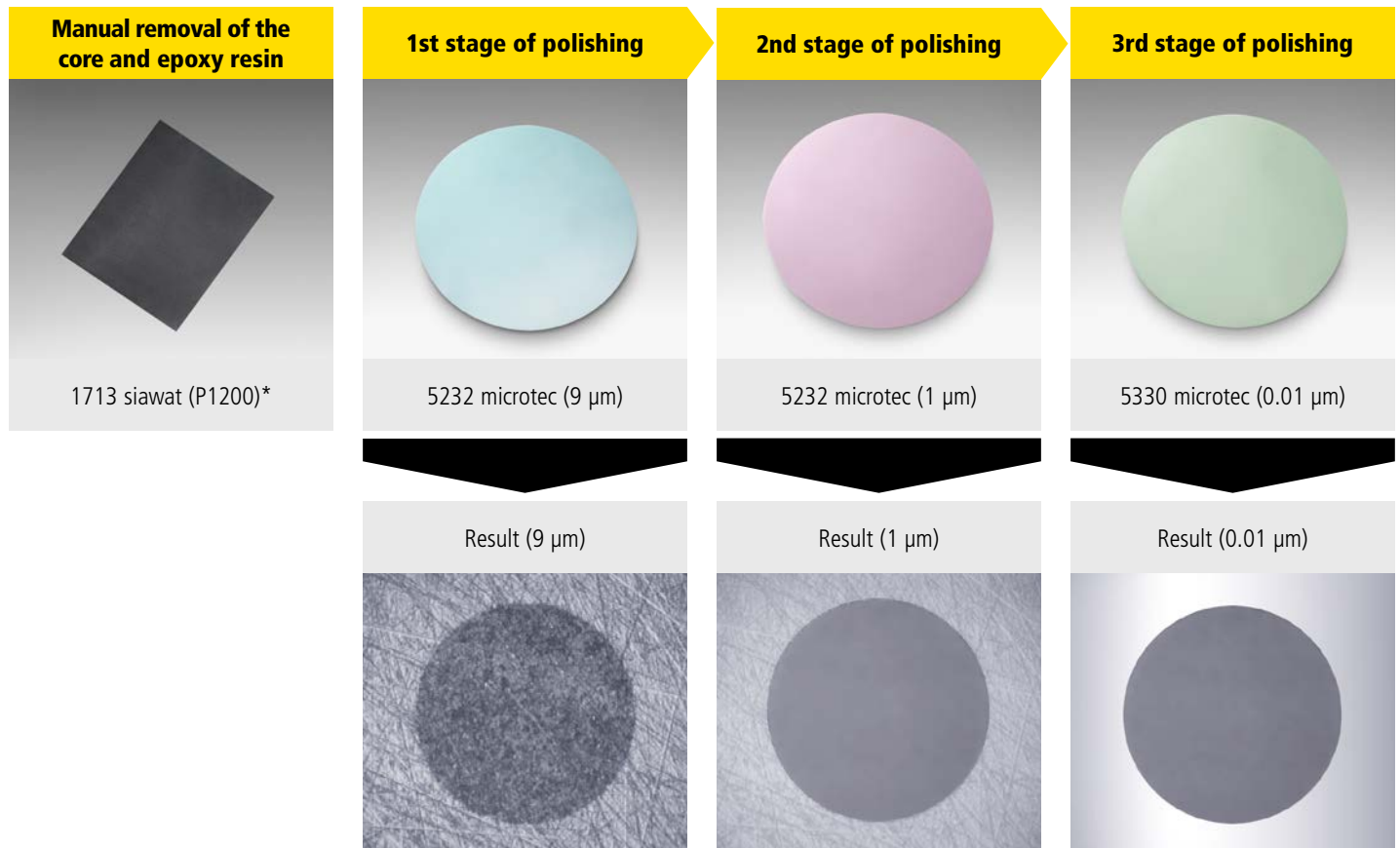
This diamond abrasive with a 75 µm (3 mil ) polyester film backing is very well suited to machining ceramic ferrules with fibreglass cores.

### 5330 microtec

This specially developed silicon dioxide grit coated on a 75 µm (3 mil) polyester film backing is used in the final stage of polishing.

## Application recommendation

Our sia Abrasives applications engineers recommend the following machining sequence for fibre optic terminations. These polishing steps show the stages of ferrule machining necessary to obtain a perfect finish. The recommendation may differ from existing processes and is dependent on the polishing equipment and the associated parameters.



# Microtec Abrasives products









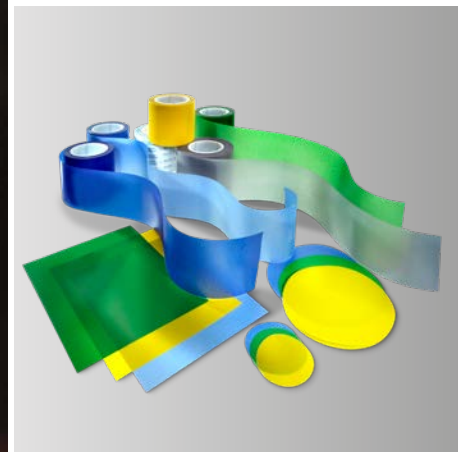
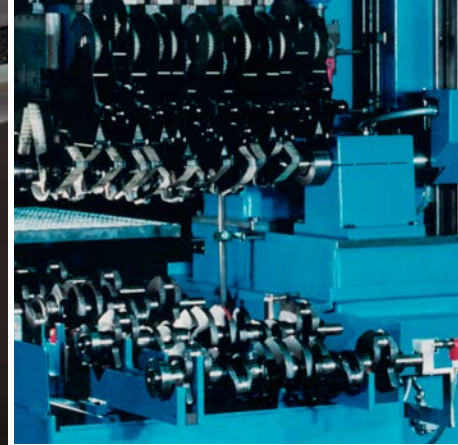
## Slurry coated products

Colour		µm	FEPA P*	Film thickness	Coating	Grit type	Conversion forms
<b>5232 microtec</b>							
Silver		80	180	75 µm (3 mil)	Slurry coated	Diamond	Rolls (4–200 mm) x (15; 50; 100 m)
Silver		60	240				Sheets 230 x 280 mm
Silver		45	320				Discs
Green		30	500				Available with and without PSA
Orange		15	1200				Ø 25–490 mm (0.5–30 µm)
Blue		9	2000				Ø 25–230 mm (all grits)
Brown		5	2700				Available with and without PSA
Pink		3	3000				
Lilac		1	6000				
Colourless		0.5	9000				Other dimensions on request
<b>5330 microtec</b>							
Light green		0.01	–	75 µm (3 mil)	Slurry coated	Silicon dioxide	Discs Ø 25–450 mm
<b>5930 microtec</b>							
Scarlet red		60	240	75 µm (3 mil)	Slurry coated	Aluminium oxide	Rolls (4–200 mm) x (15–300 m)
Colourless		40	360				Sheets 230 x 280 mm
Violet		30	500				Discs
Colourless		20	800				Available with and without PSA
Orange		16	1200				Ø 25–500 mm
Scarlet red		12	1500				Available with and without PSA
Blue		9	2000				
Colourless		5	2700				
Yellow		3	3000				
Pink		1	6000				
Colourless		0.5	9000				Other dimensions on request
Colourless		0.2	–				25 µm (1 mil)



## Electrostatically coated products

Colour		µm	FEPA P*	Film thickness	Coating	Grit type	Conversion forms
<b>5262 microtec</b>							
Color-coded		125	120	188 µm	Electrostatic	Diamond	Rolls (4–200 mm) x (15 m; 50 m) Sheets 230 x 280 mm Discs Ø 25–500 mm Belts (10–200 mm) x (320 mm-10 m)  Sheets and discs available with and without PSA Other dimensions on request
Printed with anti-slip coating		80	180	125 µm			
		60	240				
		45	320				
		30	500				
		15	1200				
<b>5752 microtec</b>							
Grey		60	240	125 µm (5 mil)	Electrostatic	Silicon carbide	Rolls (4–200 mm) x (15–300 m) Sheets 230 x 280 mm Discs Ø 25–500 mm Belts (10–200 mm) x (320 mm–10m)  Sheets and discs available with and without PSA Other dimensions on request
Printed with anti-slip coating		40	360				
		30	500				
		20	800				
		15	1200				
<b>5960 microtec</b>							
Transparent		60	240	75 µm (3 mil)	Electrostatic	Aluminium oxide	Rolls (4–200 mm) x (15–300 m) Sheets 230 x 280 mm Discs Ø 25–500 mm PSA discs Ø 25–350 mm Belts (10–200 mm) x (320 mm–10 m)  Sheets and discs available with and without PSA Other dimensions on request
Printed		40	360				
		30	500				
		20	800				
		15	1200				
		9	2000				
<b>5962 microtec</b>							
Transparent		100	150	125 µm (5 mil)	Electrostatic	Aluminium oxide	Rolls (4–200 mm) x (15–300 m) Sheets 230 x 280 mm Discs Ø 50–500 mm Belts (10–200 mm) x (320 mm–10 m) (preferred series for belts)  Sheets and discs available with and without PSA Other dimensions on request
Printed with anti-slip coating		80	180				
		60	240				
		50	280				
		40	360				
		30	500				
		20	800				
		15	1200				
		12	1500				
		9	2000				
		5	2700				



**Your Key to a Perfect Surface**  
[www.sia-abrasives.com](http://www.sia-abrasives.com)

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