



Belt sanding

Solid wood, veneer, wood-based materials and varnishes



sia Abrasives – Your Key to a Perfect Surface

Many materials hide a secret. They keep their real beauty hidden. Only a professional finish can reveal what is inside. sia Abrasives has devoted itself to achieving perfectly finished surfaces for more than 135 years.

“Finished by sia Abrasives” – the final touch makes all the difference to a wide variety of materials: wood acquires its expressive colour, striking colour contrasts or astounding grain, leather captivates with its subtle nuances, contact lenses ensure the very best acuity of vision, metal glows at the peak of its perfection, marble develops its variety of effects, both robust and filigree, and plastics or the most sophisticated of coatings become the embodiment of functionality and aesthetic appeal.

With our tried and tested surface solutions using top-quality sia products, we would be pleased to help with your specific applications.

www.sia-abrasives.com





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Sanding technology

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Perfect surfaces

sia Abrasives
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Our commitment



Company

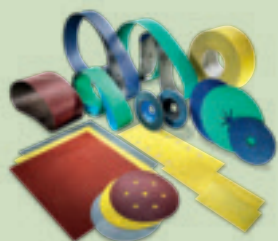
The sia Group is based in Frauenfeld, Switzerland, and is one of the world's top three suppliers of innovative abrasives. It develops, manufactures and markets complete abrasive systems, customised to specific requirements and applications, for the treatment of every type of surface. Sanding has become a surface treatment technology.

sia Abrasives employs about 1,250 people worldwide and is represented through local partners in more than 80 countries.

Top-quality products from Switzerland

Our careful choice of premium materials, the latest production and manufacturing equipment and sophisticated production technologies enable us to provide sanding products at the highest level. Abrasive materials from sia undergo continuous development based on demanding customer requirements and our detailed analysis of production materials. They represent top-quality Swiss precision and quality workmanship with the aim of a commitment to the perfect surface.

Innovative abrasives



Coated abrasives

Classic coated abrasives and abrasive systems for conventional surface treatment on all types of material.



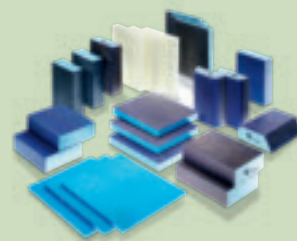
Nonwoven abrasives

Nonwoven products for preparation, cleaning, finishing and regaining, especially on metal.



Microabrasives

Products on special polyester film to achieve defined surface structures in the graphics, optics and automotive industries.



Foam abrasives

Foam sanding pads in the widest possible range of shapes and grades for precision sanding on wood, fillers, paintwork and varnish.

Environment



Environmental-friendly production, competent and ethical waste disposal

For many years we have concerned ourselves with the efficient use of energy and committed ourselves to protecting the environment. We have implemented many measures within our production processes to protect the air, land and water. We use our energy and raw-material resources efficiently and carefully.

We care

By joining the "EnAW" (Energy Agency for Industry) programme, we have voluntarily made a commitment to improve energy efficiency and limit our CO₂ emissions as part of our day-to-day operations.

We take responsibility

As a "dry factory", we protect nature by not putting untreated industrial wastewater back into the water system (i.e. public drains). Weekly analyses of additional industrial wastewater to ensure they meet prescribed values confirm the cleanliness of our wastewater.

Quality



Monitoring raw materials, setting quality standards

We manufacture top-quality products by thorough monitoring during the production process. The superior properties of sia products represent excellent value for our customers.

We verify

We select our raw materials and their suppliers carefully and according to strict criteria. Long-standing partnerships and continuous testing of raw materials ensure good-quality, reliable and fault-free materials.

We continually optimise

Our internal process management system (PMS) records and improves important procedures and allows direct intervention in the production process where necessary. In this we can operate an active, committed opportunity-management programme.

People



A safe, healthy workplace

We set the standard for an accident- and hazard-free workplace. The well-being of people is an integral part of our culture.

We are clean

We develop products that also effectively help our customers remain healthy. We have had our finishing products tested for dust formation by the Swiss Accident Insurance Fund (SUVA). The results are impressive: the lowest dust emissions compared with our competitors' products.

We set an example

We comply strictly with the recommendations of the FEPA safety standards and publish this, together with other safety information, at www.sia-abrasives.com

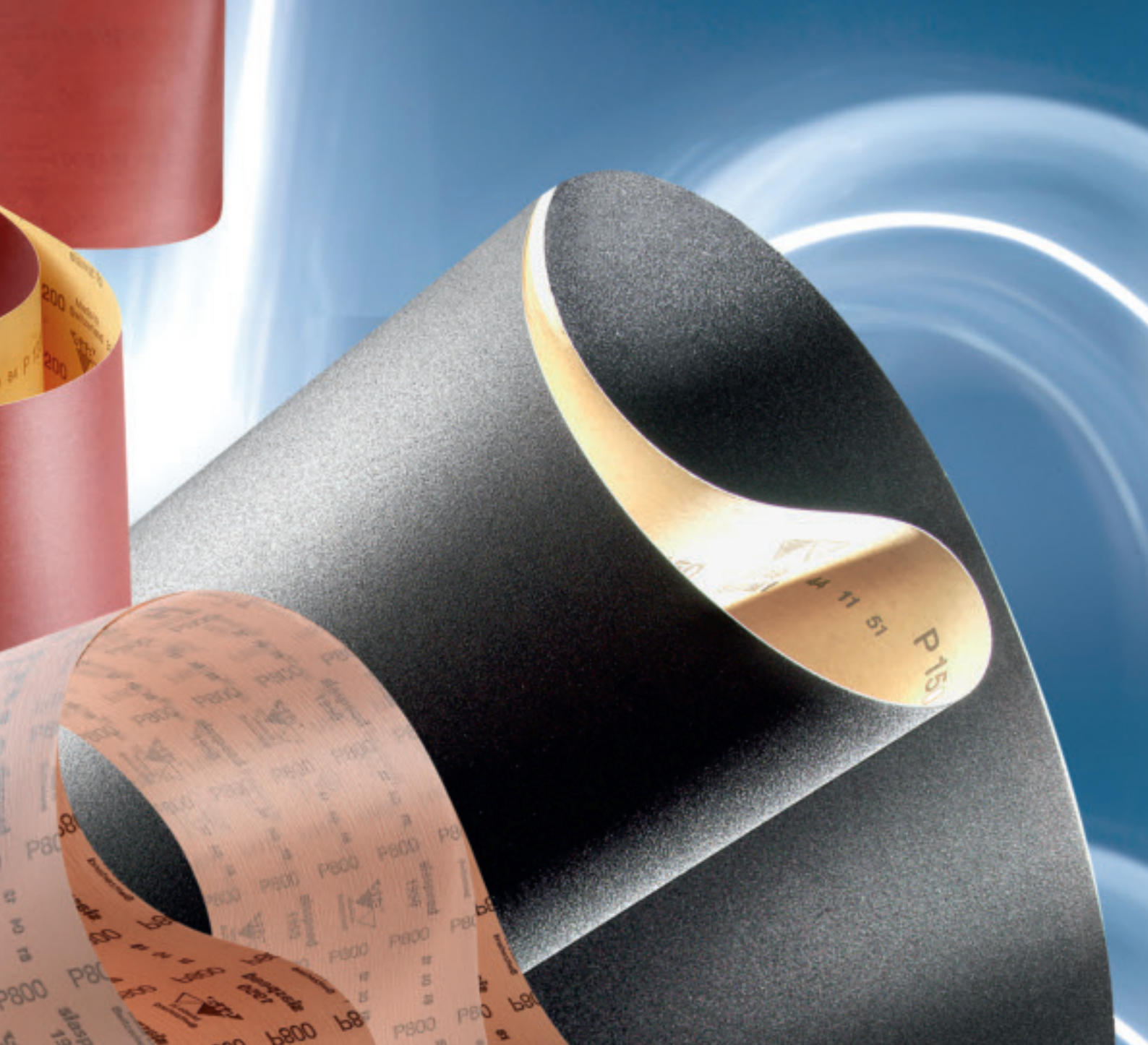


"REACH"

Regulation for chemicals – a priority project

REACH (Registration, Evaluation and Authorisation of Chemicals) is a European Community regulation dealing with chemicals and has been in force since June 2007. Its purpose is to gather all necessary information regarding the properties of chemical substances and to examine their use and the associated risks to humans and the environment. We ensure compliance with REACH by keeping up-to-date records of all chemical materials and substances and by taking all necessary steps to meet our REACH obligations.





Products

Application	Product
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Edge belt



- 1749 siaral f
- 1919 siawood
- 1920 siawood
- 1939 siawood
- 2920 siawood

Cross/long belt



- 1729 sialac
- 1749 siaral f
- 1796 sialac
- 1913 siawat fc
- 1919 siawood
- 1920 siawood
- 1939 siawood
- 1950 siaspeed fk
- 2920 siawood

Wide belt



- 1729 sialac
- 1749 siaral f
- 1796 sialac
- 1919 siawood
- 1920 siawood
- 1939 siawood
- 1993 siawood
- 2918 siapan z
- 2920 siawood

Solid wood and veneer							
Wood-based materials					Varnishes		Page
Hardwood	Softwood	Plywood	Chipboard	MDF	Thermoplastics (water, NC varnishes)	Thermosets (PUR, UV, UP varnishes)	
			✓	✓			10
✓	✓	✓	✓	✓			12
✓							12
	✓						13
✓	✓	✓	✓	✓			15

						✓	10
			✓	✓			10
						✓	11
						✓	11
✓	✓	✓	✓	✓	✓	✓	12
✓		✓				✓	12
	✓	✓					13
					✓	✓	13
✓	✓	✓	✓	✓			15

						✓	10
			✓	✓			10
						✓	11
✓	✓	✓	✓	✓	✓	✓	12
✓						✓	12
	✓						13
	✓	✓					14
✓							14
✓	✓	✓					15

1729 sialac – for perfect varnish sanding



Product profile:

Grit:	silicon carbide
Bonding:	synthetic resin
Backing:	e-wt paper
Special coating:	stearate
Grit range:	P220–P800
Coating:	closed
Equipment:	TopTec

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Superior surface quality when sanding on industrial varnish systems
- Extra stearate coating prevents belt clogging
- Long product life

Applications

- Intermediate sanding on industrial varnish systems
- Intermediate sanding of varnish to sand off raised wood fibres
- Removing varnish defects

Application

Cross/long belt



Wide belt



1749 siaral f – for calibration, medium and final sanding of panels



Product profile:

Grit:	silicon carbide
Bonding:	synthetic resin
Backing:	f-wt paper
Grit range:	P036–P400
Coating:	closed
Equipment:	TopTec

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Long life when sanding MDF and HDF sheeting and chipboard
- Best surface quality when sanding MDF

Applications

- Sanding edges and surfaces on MDF and HDF sheeting and chipboard
- Coarse and fine sanding of composite/synthetic materials and GRP surfaces
- Fine sanding of surfaces

Application

Wide belt



Edge belt



1796 sialac – for fine sanding especially of thin varnish layers**Product profile:**

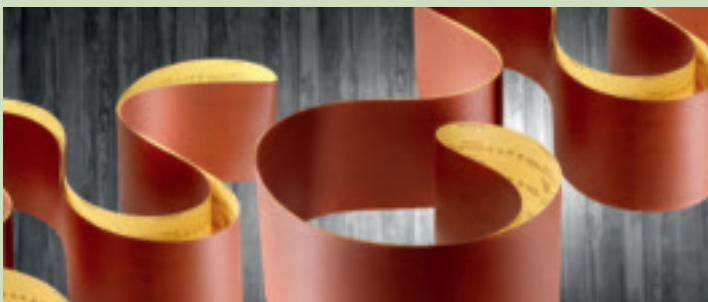
Grit:	silicon carbide
Bonding:	hide glue
Backing:	e-wt paper
Grit range:	P180–P800
Coating:	closed

Advantages

- Soft construction and flexible bonding ensure finest-quality surfaces
- For thin, difficult-to-sand varnishes
- Especially for use where surface gloss is paramount and surface quality is more important than high levels of performance

Applications

- Keying and matting of primers
- Intermediate sanding of thin varnish layers
- Final sanding to prepare for polishing

Application**Cross/long belt****Wide belt****1913 siawat fc** – for cross belt use in the finest grits**Product profile:**

Grit:	semi-friable aluminium oxide	P060–P1200
	silicon carbide	P1500–P2500
Bonding:	synthetic resin	
Backing:	c-wt paper, water-resistant	
Grit range:	P060–P2500	
Coating:	closed	

Advantages

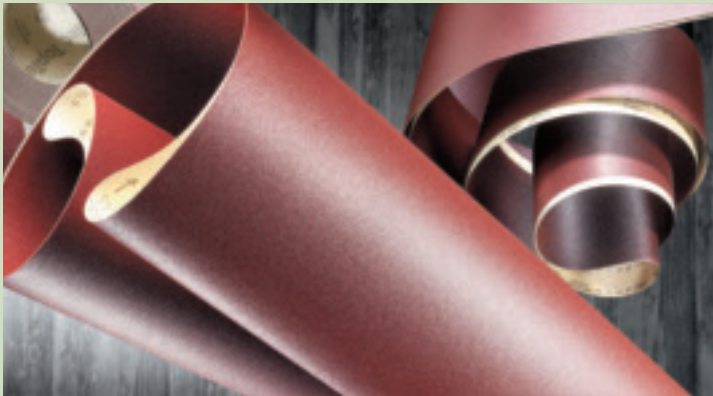
- Very fine finish
- Smooth, even surfaces, even on curved workpieces
- Extremely adaptable to contours
- Available up to grit size P2500

Applications

- Can be used on oiled surfaces
- Polishing preparation for high-gloss surfaces
- Fine grit sizes for finishing high-gloss varnish
- Removal of varnish defects

Application**Cross/long belt**

1919 siawood – the universal series for wood and varnish sanding



Product profile:		
Grit:	semi-friable aluminium oxide	P036–P220
	silicon carbide	P240–P800
Bonding:	synthetic resin	
Backing:	f-wt paper	P036–P220
	d-wt paper	P240–P800
Special coating:	stearate	P240–P800
Grit range:		P036–P800
Coating:	open	P036–P120
	closed	P150–P800
Equipment:	TopTec	

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Universal all-around product for wood and varnish
- Very versatile
- Outstanding performance and long life
- Backing keeps its shape and is unaffected by changes in temperature and humidity

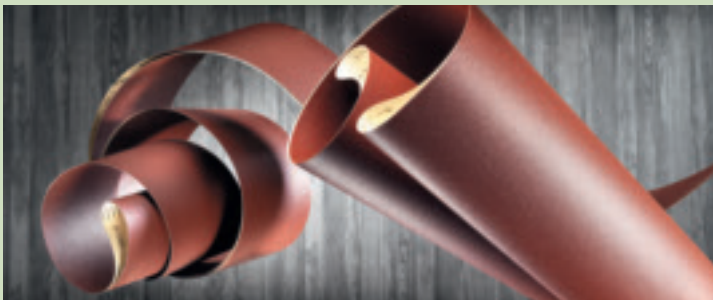
Applications

- Flush sanding of edges, edge bands and protrusions
- Calibration, medium and fine sanding of surfaces
- Keying and matting of primers
- Intermediate sanding of varnishes
- Final sanding to prepare for polishing

Application



1920 siawood – for hardwood thanks to closed coating



Product profile:		
Grit:	semi-friable aluminium oxide	
Bonding:	synthetic resin	
Backing:	f-wt paper	
Grit range:	P060–P400	
Coating:	closed	
Equipment:	TopTec	

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- High surface quality when sanding hardwood
- High removal rate and fine surface quality on hardwood across the entire grit range
- High surface quality using fine grit sizes

Applications

- Flush sanding of edges, edge bands and protrusions
- Calibration, medium and fine sanding of surfaces
- Intermediate sanding of polyester varnishes

Application



1939 siawood – for softwood and wood containing oils or resins thanks to open coating



Product profile:

Grit:	semi-friable aluminium oxide
Bonding:	synthetic resin
Backing:	f-wt paper
Special coating:	stearate
Grit range:	P060–P220
Coating:	open
Equipment:	TopTec

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Ideal for wood that smears or wood containing oils or resins
- Very good finish on solid wood and veneer

Applications

- Flush sanding of edges, edge bands and protrusions
- Calibration, medium and fine sanding of surfaces

Application

Cross/long belt



Wide belt



Edge belt



1950 siaspeed fk – film cross belts for perfect high-gloss surfaces



Product profile:

Grit:	aluminium oxide
Coating:	special coating process
Bonding:	synthetic resin
Additional coating:	stearate
Backing:	plain film / laminated film
Grit range:	P800–P1500

Advantages

- Consistent abrasive structure on film for the perfect finish (P800–1500)
- Premium series with the longest lifetime thanks to flexible and tough film backing
- New stearate concept
- siafast lamination for perfect surface quality and no excess thickness at the belt joint
- Plain belts for more aggressive sanding

Applications

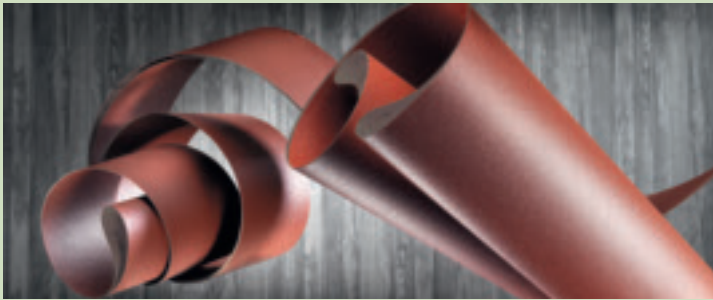
- Efficient fine sanding of high-gloss varnishes
- For stationary polishing preparation with long/cross belts
- Removal of varnish defects such as trapped dust and orange peel effect thanks to perfect flattening

Application

Cross/long belt



1993 siawood – for final sanding of softwood and wood containing oils or resins



Product profile:	
Grit:	semi-friable aluminium oxide
Bonding:	synthetic resin
Backing:	f-wt paper
Grit range:	P100–P180
Coating:	open
Equipment:	TopTec

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Very good finish on solid wood and veneer
- High performance thanks to optimised grit distribution
- Ideal for wood that smears or wood containing oils or resins

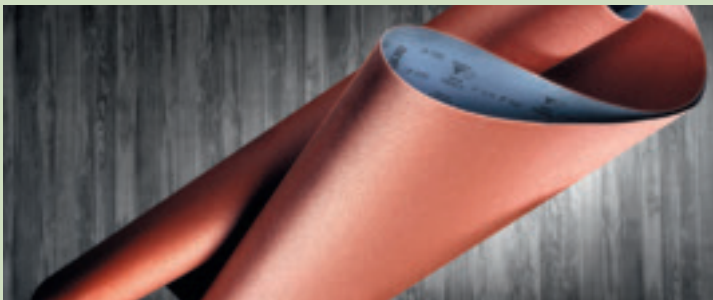
Applications

- Flush sanding of edges, edge bands and protrusions
- Calibration, medium and fine sanding of surfaces

Application



2918 siapan z – for coarse sanding of wood-based materials



Product profile:		
Grit:	semi-friable aluminium oxide	
Bonding:	synthetic resin	
Backing:	z-wt cloth, polyester	
Grit range:	P036–P120	
Coating:	open	P036–P060
	closed	P080–P120
Equipment	TopTec	

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- High level of lateral belt stability, segmentable
- For continuous, very heavy-duty use, washable
- High removal rate in coarser grit sizes on softwood and hardwood

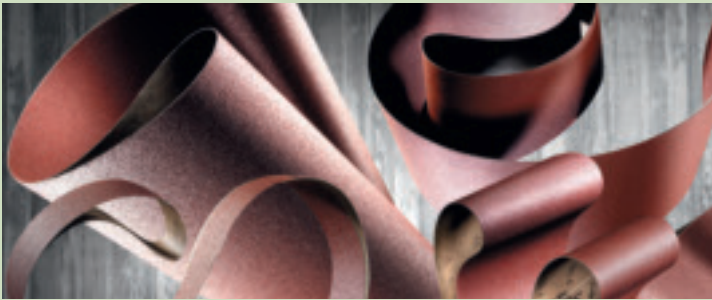
Applications

- Industrial coarse sanding of various types of solid wood
- Coarse to medium sanding in plywood manufacturing
- Coarse to fine sanding of glued solid-wood panels

Application



2920 siawood – universal for heavy-duty wood sanding



Product profile:		
Grit:	semi-friable aluminium oxide	
Bonding:	synthetic resin	
Backing:	y-wt cloth, cotton	P016 – P050
	x-wt cloth, cotton	P060 – P320
Grit range:	P016 – P320	
Coating:	open: P016 – P120 closed: P150 – P320	
Equipment:	TopTec	

Advantages

- Perfect surface thanks to TopTec
- Dust-free process; antistatic construction gives low dust formation on belt, workpiece and machinery
- Long lifetime thanks to robust backing
- High removal rate in coarser grit sizes on softwood and hardwood

Applications

- Flush sanding of edges
- Fine sanding of surfaces and edges
- Coarse to fine sanding in plywood manufacturing
- Coarse to fine sanding of glued softwood panels
- Sanding off old varnish and paint

Application





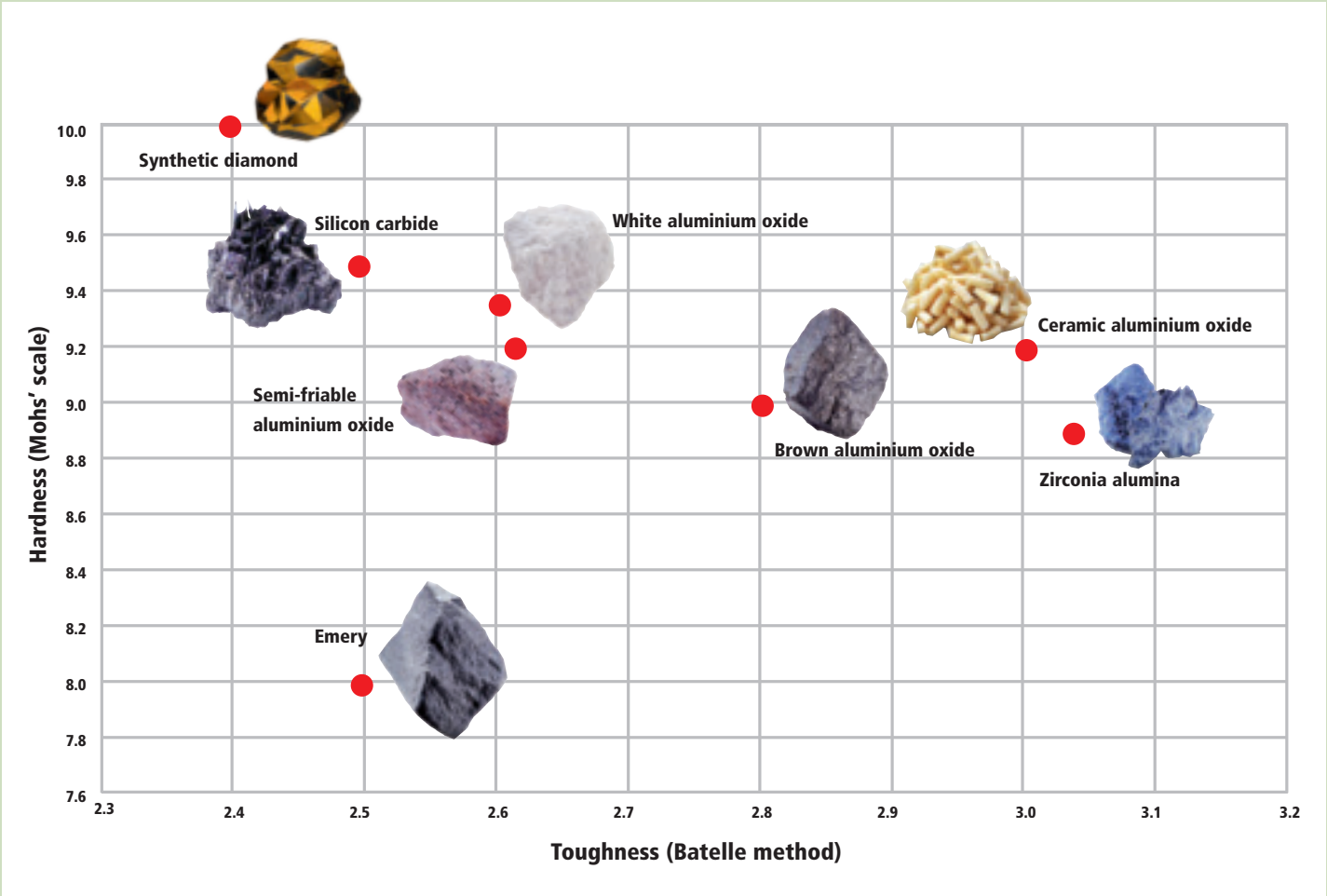


Sanding technology

Grit minerals



The most common materials used to make abrasive grit today are the synthetic minerals aluminium oxide and silicon carbide in their various forms. There is also a growing use of special minerals such as zirconia alumina, ceramic aluminium oxide and diamond. The use of natural minerals such as garnet and emery, however, is rapidly declining. The grit’s hardness and toughness, which are a function of the starting material used, determine the properties and applications of the abrasives.



Applications	
Emery	ferrous metals, precious metals
Zirconia alumina	steel alloys
Ceramic aluminium oxide	high-alloy steel
Brown aluminium oxide	wood, metal
Semi-friable aluminium oxide	varnish, wood, metal
White aluminium oxide	wood, varnish, paint
Silicon carbide	varnish, sheet materials, stone
Synthetic diamond	hard-finish varnish, glass, stone

Storage



Due to fluctuations in humidity and/or temperature, incorrect storage of abrasives can result in the following negative effects:

- changes in dimensions
- buckling
- reduced sanding performance
- belt slippage
- belt flutter
- breakage of belts or joints

Correct storage means:

- achieving optimum sanding results
- guaranteed product life
- guaranteed good performance
- saving money

Storage conditions:

- temperature: 15 – 25 °C | 59 – 77 °F
- relative humidity 40 – 70%
- store abrasives in their original packaging
- hang up belts

Never store abrasives:

- on heaters
- near open windows
- on concrete floors

Safety

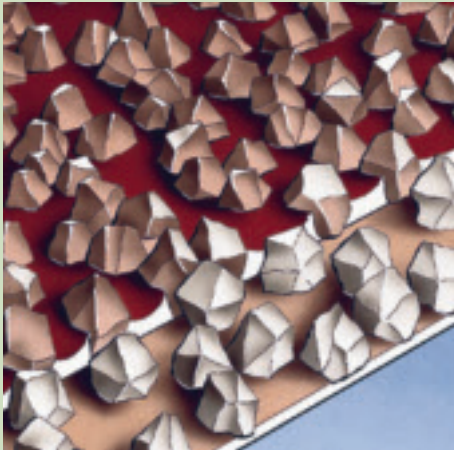


For safety reasons, sia Abrasives recommends that its customers wear ear protection, protective eyewear, masks and gloves and that they use a dust-removal system. Where sia Abrasives prints pictograms on products and/or packaging, these must be complied with. The sia abrasives products listed in this catalogue do not contain any hazardous materials

(EU Directive 67 / 548 / EEC) and may be disposed of in an environmentally compatible way in modern waste-incineration plants. We refer specifically to the FEPA safety recommendations and the safety datasheets for abrasive products on backing material, which you can download from www.sia-abrasives.com.

TopTec – Top technology for perfect surfaces

Controlled scatter



sia high-tech scatter technology offers the following benefits:

- optimum grit volume
- perfect grit adhesion
- even grit distribution
- tested to FEPA standards

... and, as a result, perfect surface quality

Optimum belt joints



sia belt joints offer the following benefits:

- high and consistent quality
- tailored to specific applications
- high-quality finishing
- high level of stability and long lifetime
- no sanding faults

... and, as a result, perfect surface quality

Dust-free process



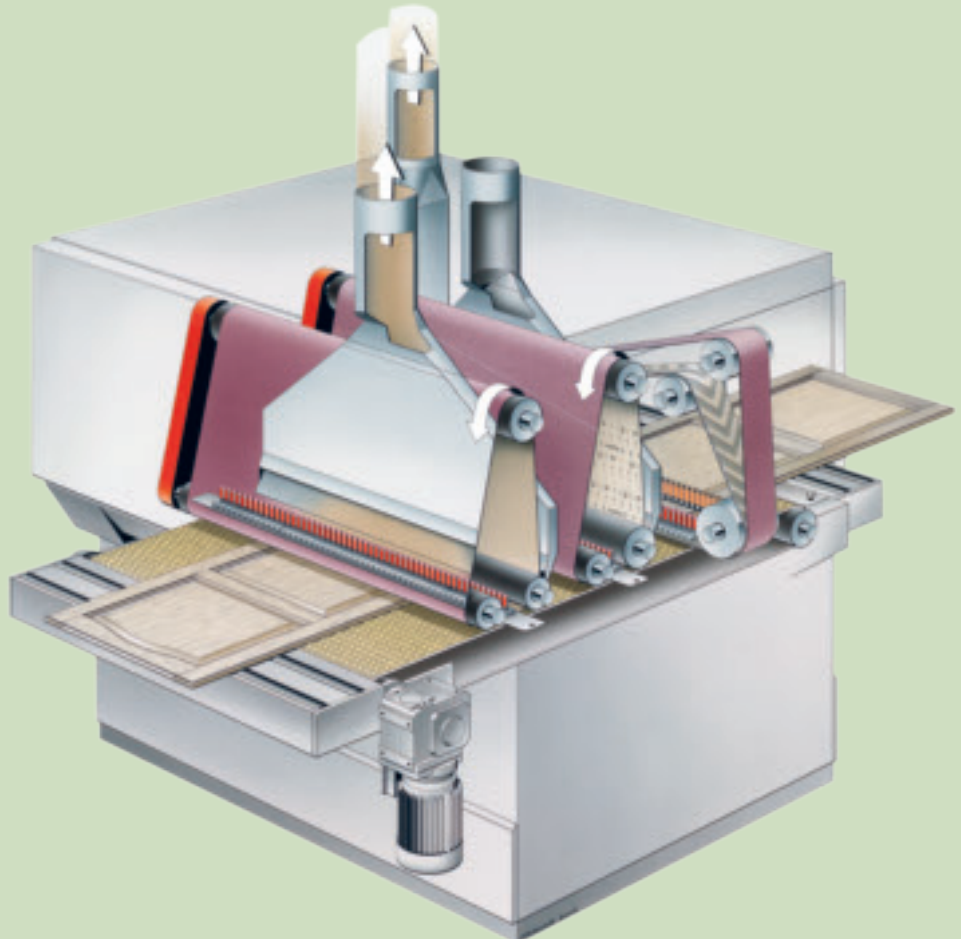
The antistatic treatment of the belts has the following benefits:

- dust-free workpieces
- clean machinery
- efficient dust extraction
- clean environmental air
- longer belt life
- low clogging

... and, as a result, perfect surface quality

With TopTec, the new generation of sanding belts, sia Abrasives reaches another milestone in the development of application-optimised sanding belts with maximum customer benefit.

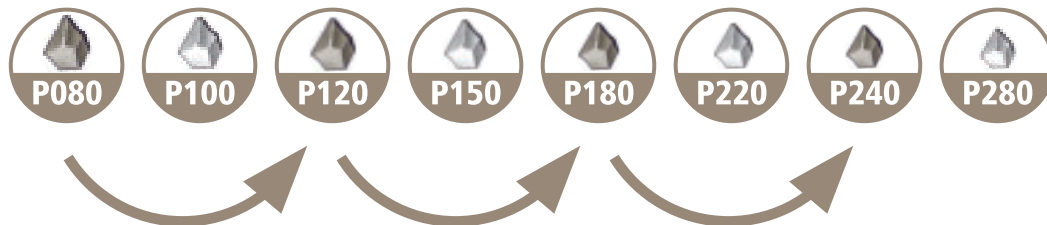
Outstanding sanding results and superior surface quality come from the combination of controlled grit distribution, belt joints and backing materials designed to suit the specific application along with antistatic properties that arise from a brand-new production process.



Optimum grit sequence

Using the optimum grit sequence during the sanding process not only gives better sanding results but is also important in achieving the most economical surface treatment. For this reason it is important never to skip more than one grit size at one time!





For example:



The main exceptions to this are given below:




from		to		Remark
Contact belt sanding		Pad belt sanding		Use next finer grit, e.g. P150 and P180
Cross belt sanding		Pad belt sanding		Use same grit, e.g. P150 and P150
Pad belt sanding		Orbital sanding		Use same grit, e.g. P150 and P150

Cutting speeds



Material	Contact belt	Pad belt	Long /cross belt	Edge belt
				
Plywood	20 – 30 m/s 66 – 98 ft/s	10 – 22 m/s 33 – 72 ft/s	10 – 22 m/s 33 – 72 ft/s	12 – 18 m/s 39 – 59 ft/s
Chipboard /MDF	20 – 30 m/s 66 – 98 ft/s	10 – 22 m/s 33 – 72 ft/s	10 – 22 m/s 33 – 72 ft/s	
Solid wood	20 – 30 m/s 66 – 98 ft/s	10 – 22 m/s 33 – 72 ft/s	10 – 22 m/s 33 – 72 ft/s	12 – 18 m/s 39 – 58 ft/s
Veneer		10 – 22 m/s 33 – 72 ft/s	10 – 22 m/s 33 – 72 ft/s	
Varnish		1 – 4 m/s * 3 – 13 ft/s *	1 – 4 m/s * 3 – 13 ft/s *	

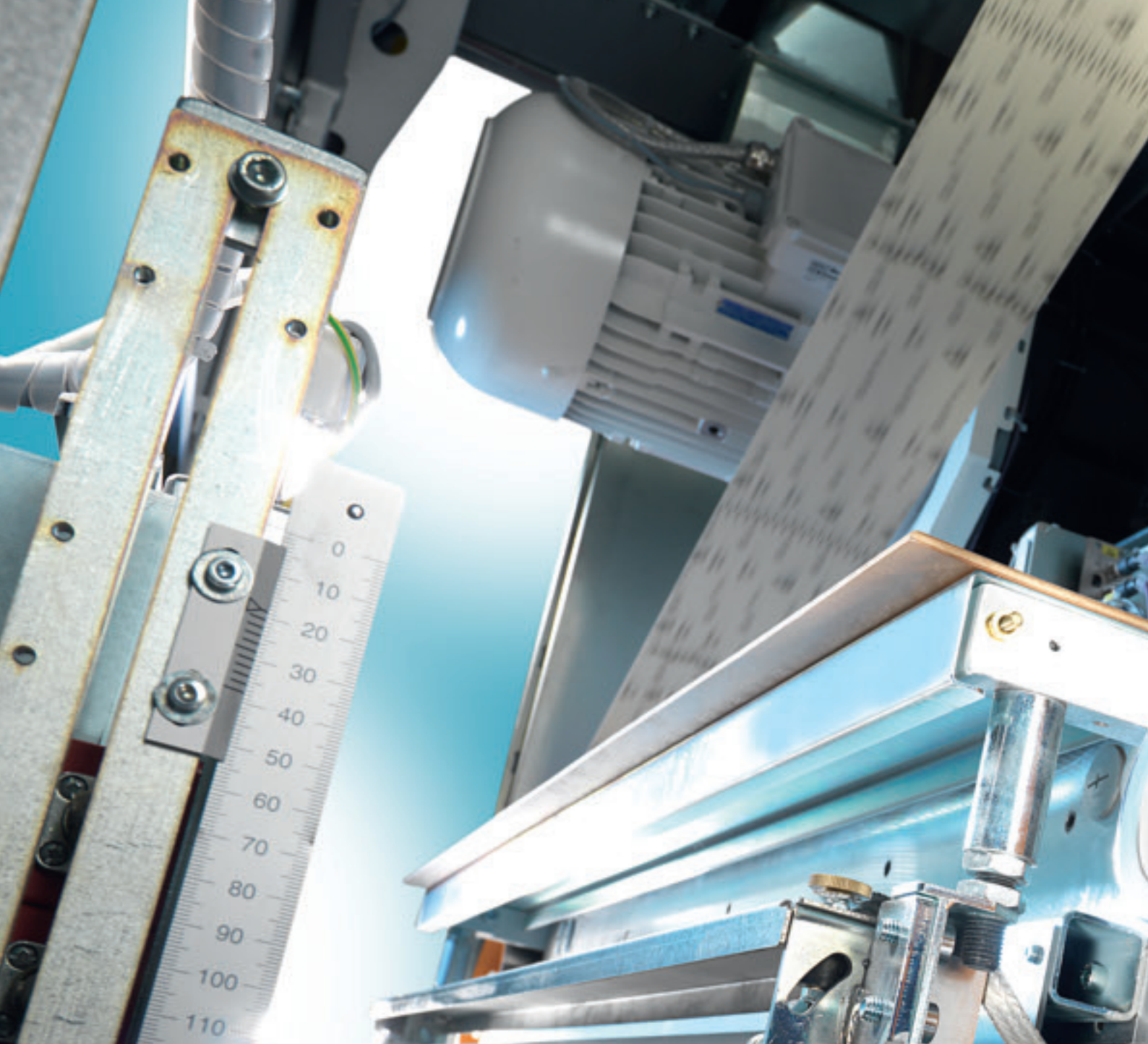
* High cutting speeds for the intermediate sanding of varnish (of 8 – 12 m/s or 26 – 39 ft/s) are generally only for saturated polyester varnishes

Feed rates

Material	Contact belt	Pad belt	Long /cross belt	Edge belt
				
Plywood	5 – 10 m/min 16 – 33 ft/min	8 – 15 m/min 26 – 49 ft/min	8 – 15 m/min 26 – 49 ft/min	8 – 15 m/min 26 – 49 ft/min
Chipboard /MDF	20 – 30 m/min 66 – 98 ft/min	10 – 22 m/min 33 – 72 ft/min	10 – 22 m/min 33 – 72 ft/min	
Solid wood	5 – 10 m/min 16 – 33 ft/min	8 – 15 m/min 26 – 49 ft/min	8 – 15 m/min 26 – 49 ft/min	8 – 15 m/min 26 – 49 ft/min
Veneer		8 – 15 m/min 26 – 49 ft/min	8 – 15 m/min 26 – 49 ft/min	
Varnish		10 – 18 m/min 33 – 59 ft/min	10 – 18 m/min 33 – 59 ft/min	

Maximum removal rates

Material	Contact belt				Pad belt		
							
	Grit size	Roller	Removal in mm	Removal in inches	Grit size	Removal in mm	Removal in inches
Solid wood	P036	Steel / hard rubber roller	< 1.00	< 0.04	P036	-	-
Veneer	P040	Steel / hard rubber roller	< 0.80	< 0.03	P040	-	-
Wood-based materials	P060	Steel / hard rubber roller	< 0.60	< 0.02	P060	-	-
	P080	Medium-hard rubber roller	< 0.40	< 0.019	P080	< 0.30	< 0.012
	P100	Medium-hard rubber roller	< 0.30	< 0.012	P100	< 0.20	< 0.008
	P120	Soft rubber roller	< 0.20	< 0.008	P120	< 0.15	< 0.006
	P150	Soft rubber roller	< 0.10	< 0.004	P150	< 0.10	< 0.003
	P180		-	-	P180	< 0.05	< 0.002
	P220		-	-	P220	< 0.03	< 0.001
	finer		-	-	finer	< 0.03	< 0.001
Varnishes	P180		-	-	P180	< 0.05	< 0.002
	P220		-	-	P220	< 0.03	< 0.001
	finer		-	-	finer	< 0.03	< 0.001



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