

## Professional tools for the welding trade

### Flap discs

Compared to grinding wheels, flap discs do not remove as much stock from the work-piece. They achieve less material removal. Due to the abrasive flaps, they produce a finer, uniform pattern and are easier to use. Osborn uses abrasive cloth with standard, zirconium or ceramic grain. They are treated with a special coating which helps to reduce the working temperature. This helps to reduce or even eliminate tarnishing.

#### Flap discs are more versatile:



- Flap discs are used in weld seam preparation for descaling, deburring, chamfering or V-seam preparation of the workpiece.
- After welding, flap discs can be used to smooth and flatten the weld. Surface contamination caused by weld spatter or slag can be removed quickly.

### Grinding wheels

Grinding wheels are cutting tools and are often used to remove material quickly. This usually results in a coarse grinding pattern being left on the surface.

#### Heat generated when working with grinding wheels can lead to discolouration of the workpiece.



- Grinding wheels achieve high stock removal quickly. The grinding wheel can be used to completely remove the weld seam if that is what is required. For contamination removal without stock removal, we would recommend one of our other products such as a brush or polishing flap disc.
- Grinding wheels have a longer life than flap discs.

Fast and high stock removal with a grinding wheel

### Brushes

Technical brushes are best used when impurities and inclusions need to be safely removed without affecting the surface or shape of the weld.

#### The use of technical brushes for cleaning welds has many advantages:



Weld seam cleaning with a round knotted brush



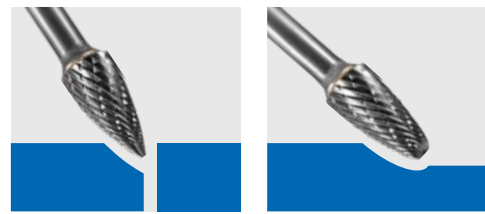
Differences in processing: On the left, processing with a grinding disc (stock removal), right with a brush (surface finishing only).

- Brushes produce 95% less sparks than grinding tools. Brushes are non-stock removing. They remove inclusions and impurities, but leave the welded and metal untouched.
- Brushes produce 95% less sparks than grinding tools.
- Brushes are on average 6–8 dB (A) quieter than grinding tools. (Note: +/- 3 dB (A) corresponds to a halving or doubling of the noise level).
- Brushes generate much less heat during use. They do not change the molecular surface. They preserve the surface finish of the metal.
- Brushes have a longer service life than grinding tools.

### Carbide burrs

Whether vehicle, container, rail or metal fabrication - carbide cutters are used in many industries. With the special Z6 tooth-pattern, high material removal can easily be achieved.

#### Carbide burrs are universally suitable for use on the most popular industrial materials, such as: stainless steel, steel, non-ferrous metal and cast iron.



Carbide burr – Pointed Arc

Carbide burr – Round Arc



Please ask about our special SHIPYARD tooth-pattern. Thanks to the optimised cutting angle, material removal is increased by up to 30%. (Available for all shapes).

### Polishing flap wheels

Polishing flap wheels (coarse and medium) deliver outstanding results on weld seam preparation and finishing as well as weld spatter removal. This is thanks to the fan-shape arrangement of the abrasive fleece. Polishing flap discs can easily remove oxide contamination and tarnish after welding.

- The coarse fleece is slightly more aggressive so can be used for finishing weld seams where light stock removal is needed.
- The medium fleece is ideal for final finishing and satinising – V2A weld seams.



Finishing of weld seam with polishing flap wheel



Efficient rust and scale removal

Presented by:

### Coarse cleaning fleeces

Coarse cleaning fleeces work in a similar way to technical brushes. They are ideal for metal surface preparation and will remove contamination without the risk of surface damage. They are particularly recommended for surface finishing.



Cleaning/descaling steel surface with the coarse cleaning fleece.

- Coarse cleaning fleeces consist of interlaced nylon threads which have been soaked in synthetic resin and hardened.
- Coarse cleaning fleeces remove impurities and inclusions on the surface, thermal blue discolouration and fine weld spatter.





# Welding matrix

## Product recommendations

Depending on the welding process, impurities or non-metallic inclusions can occur on the surface of the weld. Our welding matrix helps you to select the right product for your application.

Welding Method	Material	Welding-Layer / Application	Features	Angle Grinder / Machine	Osborn Item No.	Product Name	Material Type	Wire/Grit	
Chamfer edges	Steel	coarse, edge grinding	high material removal	straight grinder	model 115	5241-306 100	Flap disc Zircon Plus, Ø 115 x 22,23 mm, tapered	Zircon corundum	60
					model 125	5242-306 100	Flap disc Zircon Plus, Ø 125 x 22,23 mm, tapered		
	model 180				5248-306 100	Flap disc Zircon Plus, Ø 180 x 22,23 mm, tapered			
	model 115				6761-043 100	Grinding wheel Grindmaxx, Ø 115 x M 14, straight			
	Steel / Stainless Steel			model 125	6762-043 100	Grinding wheel Grindmaxx, Ø 125 x M 14, straight	Ceramic grain	40	
Milling edges	Steel	edges, weld seam	high material removal	straight grinder	0093-080 065	Carbide burr with pointed arc SPG 10 mm	Carbide (burr)	Cross toothing	
					0043-080 070	Carbide burr with pointed arc SPG 12 mm			
					0083-080 065	Carbide burr with round arc RBF 10 mm			
					0033-080 070	Carbide burr with round arc RBF 12 mm			
Preclean weld	Steel	coarse, flat	material-friendly	straight grinder	model 115	0002-608 151	Cup brush Ø 65 mm, twist-knot wire	Steel wire	0,50 mm
					model 125	0002-622 151	Bevel brush Ø 125 mm, twist-knot wire		
	Stainless Steel	coarse, flat	material-friendly	straight grinder	model 115	0002-608 351	Cup brush Ø 65 mm, twist-knot wire	Cleaning fleece	
					model 125	0002-622 351	Bevel brush Ø 125 mm, twist-knot wire		
	Steel / Stainless Steel	coarse, only two-dimensional	only cleaning	straight grinder	model 125	6700-002 100	Coarse cleaning fleece Ø 125 mm	Polishing fleece	coarse medium coarse medium
					model 115	5541-204 100	Fleece flap disc Polimax 1, Ø 115 x 22,23 mm		
		fine, two-dimensional	light material removal	drilling machine	model 115	5541-206 100	Fleece flap disc Polimax 2, Ø 115 x 22,23 mm		
					model 125	5542-204 100	Fleece flap disc Polimax 1, Ø 125 x 22,23 mm		
				model 125	5542-206 100	Fleece flap disc Polimax 2, Ø 125 x 22,23 mm			
Welding - MMA, Electrode	Stahl	root seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	2906-026 501	Wheel brush Ø 115 x 6 mm, twist-knot wire	Steel wire	0,50 mm
					model 125	9802-921 873	Wheel brush Ø 125 x 6 mm, twist-knot wire, plastic bonded, straight shape		
					model 180	9802-921 875	Wheel brush Ø 178 x 6 mm, twist-knot wire, plastic bonded, straight shape		
					model 115	9502-626 501	Wheel brush Ø 115 x 6 mm, twist-knot wire		
					model 125	9502-626 251	Wheel brush Ø 125 x 6 mm, twist-knot wire		
					model 180	9906-026 051	Wheel brush Ø 178 x 6 mm, twist-knot wire		
		filling seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-631 151	Wheel brush Ø 115 x 13 mm, twist-knot wire	Steel wire	0,50 mm
					model 125	2202-631 151	Wheel brush Ø 125 x 13 mm, twist-knot wire		
					model 180	0002-653 151	Wheel brush Ø 178 x 13 mm, twist-knot wire		
		cover seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-631 151	Wheel brush Ø 115 x 13 mm, twist-knot wire	Steel wire	0,50 mm
					model 125	2202-631 151	Wheel brush Ø 125 x 13 mm, twist-knot wire		
					model 180	0002-653 151	Wheel brush Ø 178 x 13 mm, twist-knot wire		
Welding - TIG/MIG/MAG	Steel	root seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	9502-626 301	Wheel brush Ø 115 x 6 mm, twist-knot wire	Steel wire	0,35 mm
					model 125	9502-626 311	Wheel brush Ø 125 x 6 mm, twist-knot wire		
					model 180	4602-626 131	Wheel brush Ø 178 x 6 mm, twist-knot wire		
					model 115	9502-626 301	Wheel brush Ø 115 x 6 mm, twist-knot wire		
					model 125	9502-626 311	Wheel brush Ø 125 x 6 mm, twist-knot wire		
					model 180	4602-626 131	Wheel brush Ø 178 x 6 mm, twist-knot wire		
		filling seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-631 131	Wheel brush Ø 115 x 13 mm, twist-knot wire	Steel wire	0,35 mm
					model 125	6152-631 131	Wheel brush Ø 125 x 13 mm, twist-knot wire		
					model 180	0002-653 131	Wheel brush Ø 178 x 13 mm, twist-knot wire		
		cover seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-631 131	Wheel brush Ø 115 x 13 mm, twist-knot wire	Steel wire	0,35 mm
					model 125	6152-631 131	Wheel brush Ø 125 x 13 mm, twist-knot wire		
					model 180	0002-653 131	Wheel brush Ø 178 x 13 mm, twist-knot wire		
Welding - stainless steel/plasma	Stainless Steel	root seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-626 650	Wheel brush Ø 115 x 6 mm, twist-knot wire	Stainless steel wire	0,50 mm
					model 125	0002-626 651	Wheel brush Ø 125 x 6 mm, twist-knot wire		
					model 180	2902-626 051	Wheel brush Ø 178 x 6 mm, twist-knot wire		
		filling seam	up to 15 mm wall thickness up to 20 mm wall thickness up to 30 mm wall thickness	straight grinder	model 115	0002-631 331	Wheel brush Ø 125 x 13 mm, twist-knot wire	Stainless steel wire	0,35 mm
					model 125	2202-631 331	Wheel brush Ø 125 x 13 mm, twist-knot wire		
					model 180	0002-653 351	Wheel brush Ø 178 x 13 mm, twist-knot wire		
Grind weld	Steel	root seam	narrow medium wide	straight grinder	model 125	1123-270 100	Combo cutting/grinding disc AS 46 T Inox cut-grind, D 125 x 2,5 x 22,23 mm, cranked	Ceramic coated aluminium oxide	46
					model 115	3123-551 100	Grinding disc AK 36 T, Ø 125 x 3 x 22,23 mm, cranked		
					model 180	3124-500 100	Grinding disc AS 30R, Ø 125 x 4 x 22,23 mm, cranked		
		filling seam	high material removal	straight grinder	model 115	3116-040 100	Grinding disc A 30 T, Ø 115 x 6 mm, cranked	Aluminium oxide	30
					model 125	3126-040 100	Grinding disc A 30 T, Ø 125 x 6 mm, cranked		
					model 180	3186-041 100	Grinding disc A 30 T, Ø 180 x 6 mm, cranked		
	Stainless Steel	root seam	narrow medium wide	straight grinder	model 125	1123-270 100	Combo cutting/grinding disc AS 46 T Inox cut-grind, Ø 125 x 2,5 x 22,23 mm, cranked	Ceramic coated aluminium oxide	46
					model 115	3123-551 100	Grinding disc AK 36 T, Ø 125 x 3 x 22,23 mm, cranked		
					model 180	3124-560100	Grinding disc AK 24 V, Ø 125 x 4 x 22,23 mm, cranked		
		filling seam	high material removal	straight grinder	model 115	3116-540 100	Grinding disc AS 30 T Inox, Ø 115 x 6 mm, cranked	Aluminium oxide, iron and sulphur free	30
					model 125	3126-540 100	Grinding disc AS 30 T Inox, Ø 125 x 6 mm, cranked		
					model 180	3186-541 100	Grinding disc AS 30 T Inox, Ø 180 x 6 mm, cranked		
Brush weld	Steel	flat corner, angle, linear	material-friendly	straight grinder	model 115	3902-613 161	Cup brush Ø 60 mm, Xtreme wire	Steel wire, stranded	0,30 mm
					model 125	3912-613 163	Cup brush Ø 75 mm, Xtreme wire		
					model 115	3902-512 161	Bevel brush Ø 100 mm, Xtreme wire		
	Stainless Steel	contour, profiled, inside	variable diameter	straight grinder	model 115	0002-506 161	Wheel brush Ø 70x11 mm mit Schaft	Steel wire, crimped Stainless steel wire, crimped	0,30 mm
					model 125	0002-506 361			
					model 180	3906-030 304	Ruftuf end brush Ø 20 - 70 mm flaring, Xtreme wire		
	Steel	fillet welds	coarse, manual	manual	model 115	3906-030 310	Ruftuf end brush Ø 23 - 80 mm flaring, Xtreme wire	Steel wire, stranded	0,35 mm
					model 125	3906-030 316	Ruftuf end brush Ø 30 - 85 mm flaring, Xtreme wire		
					model 180	0003-162 133	Fillet weld brush, 3-rows, pointed		
	Stainless Steel	two-dimensional, universal	fine, manual	manual	model 115	0003-162 333	Universal hand brush, red handle	Steel wire	0,30 mm
					model 125	0008-462 291	Universal hand brush, green handle		
					model 180	0008-462 391	Universal hand brush, green handle		
Finishing weld	Steel / Stainless Steel	flat	material removal	straight grinder	model 115	5231-386 100	Flap disc Zircon Power, Ø 115 x 22,23 mm, tapered	Zircon corundum	60
					model 125	5232-386 100	Flap disc Zircon Power, Ø 125 x 22,23 mm, tapered		
					model 115	5851-306 100	Flap disc Zircon Maxx, Ø 115 x 22,23 mm, tapered		
	Stainless steel, high-alloy	coarse, edge grinding	high material removal	straight grinder	model 125	5852-306 100	Flap disc Zircon Maxx, Ø 125 x 22,23 mm, tapered	Zircon corundum with top-coat	40
					model 115	6761-043100	Grinding wheel Grindmaxx, Ø 115 x M 14, straight		
					model 125	6762-043100	Grinding wheel Grindmaxx, Ø 125 x M 14, straight		
Weld fine machining	Steel, Stainless Steel	flat	satinising	drilling machine	model 115	5541-206 100	Fleece flap disc Polimax 2, Ø 115 x 22,23 mm	Polishing fleece	medium
					model 125	5542-206 100	Fleece flap disc Polimax 2, Ø 125 x 22,23 mm		
		satinising colouring	polishing	drilling machine	model 115	8603-600 004	Satinising kit, 4 pieces: 3 abrasive buffs and clamp shaft	Grinding fleece	coarse/medium/fine
					model 125	8603-600 010	Polishing kit, 10 pieces: 3 polishing buffs, camping shaft and three matching polishing compounds		



### The most common impurities in welding:



MMA



TIG / MIG / MAG



STAINLESS STEEL / PLASMA

Inclusions tend not to adhere to the welded surface but if not removed then corrosion and lifting of any coating applied can occur. For each welding process and type of seam to be processed (root, fill or cap seams), our Welding matrix will offer you the appropriate cleaning or finishing tool or product from our professional range.