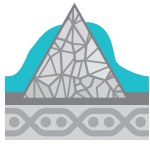


BEVELLING

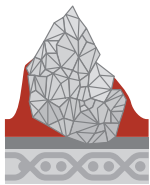
Preparation of a welding seam by grinding

VSM grain technologies for weld seam processing



VSM ACTIROX

- > **Geometrically shaped** ceramic grain
- > Maximum stock removal and a faster cut for superalloys and stainless steels
- > Cool grinding extends the service life thanks to **VSM TOP SIZE**



VSM CERAMICS Plus

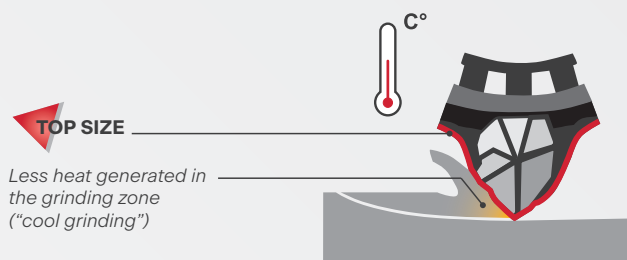
- > **Optimised self-sharpening effect** when processing high-alloyed steels ensures very high stock removal rates
- > Reduced temperature in the contact area
- > Significantly extended service life



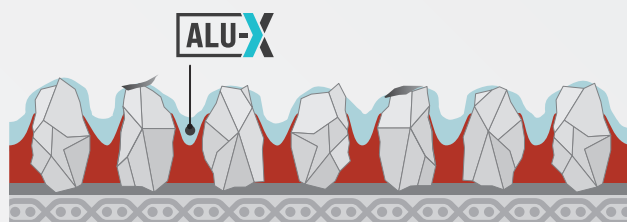
VSM CERAMICS

- > Top product with **self-sharpening effect** for processing non-alloyed steels and stainless steels
- > High removal rate
- > Cool grinding allows longer contact times

VSM grinding-active additional layers



VSM TOP SIZE is recommended for dry machining heat-resistant stainless steels and non-ferrous metals. The grinding-active additional layer improves the cutting performance whilst reducing the temperature in the contact zone. This significantly extends the service life of the abrasive.



VSM ALU-X significantly reduces chip adhesion when processing non-ferrous metals and thus also reduces clogging of the abrasive. The service life is assured and extended so dramatically that excellent stock removal is achieved even after longer periods of use.

VSM – Your specialist for the preparation of welding seams

Benefit from VSM's high-performing abrasives:

- > High stock removal per time unit
- > Extended service life and low set-up costs as a result
- > Smooth and clean surfaces with no traces of slag or other impurities
- > Optimum extraction due to very fine shavings
- > **VSM TOP SIZE** products achieve
 - Enhanced machining capacity
 - A reduced temperature in the grinding area and because of this structural changes are avoided

With VSM you can rely on receiving:

- > High-performance products made in Germany
- > On-site application-based advice
- > Reliable delivery performance
- > Analyses of problems and preliminary tests in the VSM Competence Center
- > Expertise based on co-operating with more than 60 machine manufacturers worldwide
- > A global distribution network with subsidiaries and partners in more than 70 countries

Your application



Cranes



Construction machinery



Excavator buckets



Machine frames and racks



Shipbuilding



Steel bridges



Case studies

Grinding of mild steel plates



Series	VSM CERAMICS XK888Z
Workpiece	Panels 15 mm thick
Material	Structural steel
Grinding machine	Bevelling machine
Contact wheel	> 400 mm diam. > hardness: 95° Shore A > serration: 1:1
Cutting speed	30 m/s
Feed rate	1.5 m/min
Belt dimensions	120 × 2,500 mm
Grit size	24, 36
Lubricants	None
Grinding task	Bevelling

Characteristics:

- > Extremely strong cutting capacity thanks to the sturdy backing and the consistent production of fresh cutting edges
- > Extremely sturdy belt joints on abrasive tools
- > VSM ceramic grain and **VSM TOP SIZE** ensure cool grinding

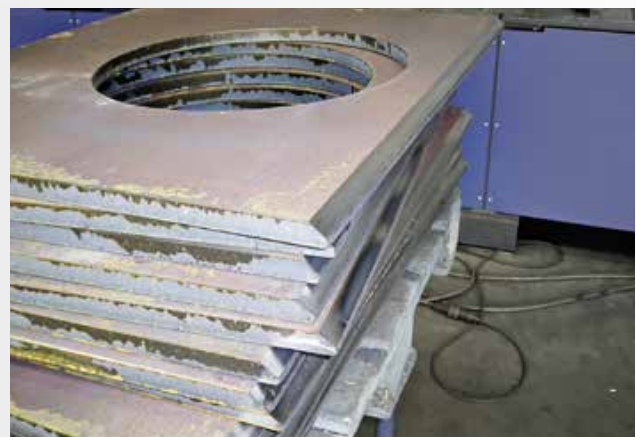


Grinding of structural components

Serie	VSM CERAMICS XK885Y
Workpiece	Structural components
Material	Steel
Grinding machine	Bevelling machine
Contact wheel	> 400 mm diam. > hardness: 90° Shore A > serration: 2:1
Cutting speed	30 m/s
Feed rate	14 m/min
Belt dimensions	100 × 3,200 mm
Grit size	20, 24
Lubricants	None
Grinding task	Bevelling

Characteristics:

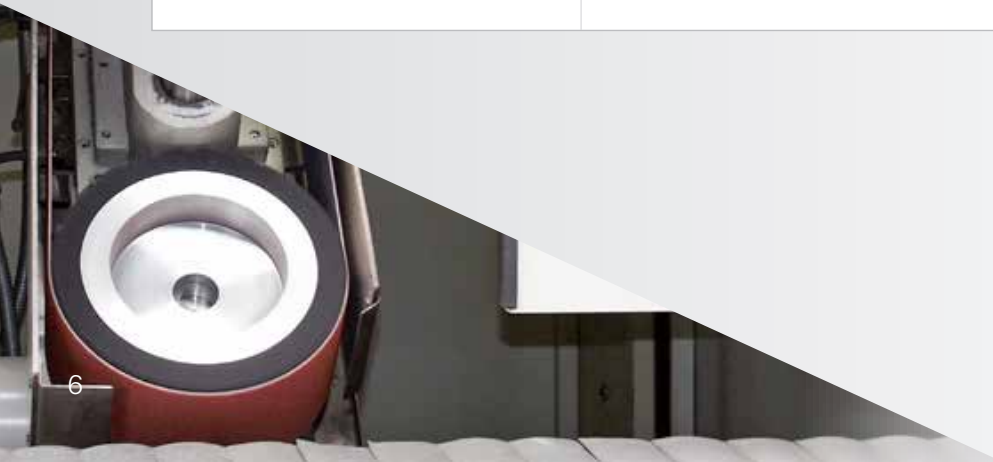
- > High-performing bevelling even for hard, high-alloyed steels
- > Optimum belt joints
- > VSM ceramic grain and **VSM TOP SIZE** ensure cool grinding



Bevelling with abrasives

Coated abrasives provide many advantages for the bevelling of welding seams as compared to other methods such as plasma and laser cutting, shearing, turning and milling.

Method	Advantages	Disadvantages
Grinding	<ul style="list-style-type: none"> > Suitable for all types of steel and bevel angle > Suitable for widths with high quality bevels > Utmost quality, speed and precision 	
Oxy-fuel cutting	<ul style="list-style-type: none"> > Low investment and wear part costs > Covering a wide range of material thicknesses from medium to large 	<ul style="list-style-type: none"> > Only suitable for structural steel > Poor cuts for thicknesses under 5 mm > Material distortion, straightening work required > High heat transfer, large impacted area > Low dimensional stability
Plasma cutting	<ul style="list-style-type: none"> > Cutting of alloyed steels and aluminium from thin to medium thicknesses > High cutting speeds 	<ul style="list-style-type: none"> > Heat-related distortion of workpieces > Limited range up to 30 mm > Wide kerf
Laser cutting	<ul style="list-style-type: none"> > High degree of part accuracy for thin and medium sheet metal thicknesses > Small kerf width (0.2 – 0.4 mm) 	<ul style="list-style-type: none"> > High investment and operational costs > Limited range of sheet metal thicknesses
Water jet	<ul style="list-style-type: none"> > No metallurgical changes on cut surfaces 	<ul style="list-style-type: none"> > High investment and operational costs
Shearing	<ul style="list-style-type: none"> > No heat transfer 	<ul style="list-style-type: none"> > Limited range up to 10 mm
Milling / Turning	<ul style="list-style-type: none"> > Clean, oxid-free cut surfaces without burrs 	<ul style="list-style-type: none"> > High wear and tear for stainless steel > Limited range of sheet metal thicknesses



VSM abrasives for bevelling in preparation of welding seams



VSM Series	Backstand	Bevelling machine	Angle grinder	Backing	Grain technology	Features	20	24	36	40	50	60	80	100	120
XK885Y	●	●		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK880Y	⊙	⊙		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK785Y	●	●		Cloth	VSM CERAMICS Plus	◊									
XK888Z	●	●		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK877Z	●	●		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK870X	⊙	⊙		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK850X	⊙	⊙		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊									
XK760X	⊙	⊙		Cloth	VSM CERAMICS Plus	◊									
KK815Y	●	●		Cloth	VSM ZIRCONIA ALUMINA	▼ TOP SIZE, ◊									
ZK744X	⊙	⊙		Cloth	VSM ZIRCONIA ALUMINA	▼ TOP SIZE, ◊									
KK715X	●	●		Cloth	VSM ZIRCONIA ALUMINA	◊									
KK716	●	●		Cloth	VSM ZIRCONIA ALUMINA	◊									
NEW AF733			●	Fibre	VSM ACTIROX	ALU-X			+				+	+	
AF890			●	Fibre	VSM ACTIROX	▼ TOP SIZE			+				+	+	
NEW AF979			●	Fibre	VSM ACTIROX				+						
AF799			●	Fibre	VSM ACTIROX				+				+	+	
XF733			○	Fibre	VSM CERAMICS	ALU-X									
XF885			●	Fibre	VSM CERAMICS Plus	▼ TOP SIZE									
XF870			●	Fibre	VSM CERAMICS	▼ TOP SIZE									
XF850			⊙	Fibre	VSM CERAMICS	▼ TOP SIZE									
XF760			⊙	Fibre	VSM CERAMICS										
ZF713			○	Fibre	VSM ZIRCONIA ALUMINA										

Last revised: 03/2025

Other dimensions and grit sizes upon request.

Features

- for low to medium contact pressure
- ⊙ for medium contact pressure
- for medium to high contact pressure
- ◊ also suitable for wet applications

Flexibility of the backing material

(last letter of the series name):

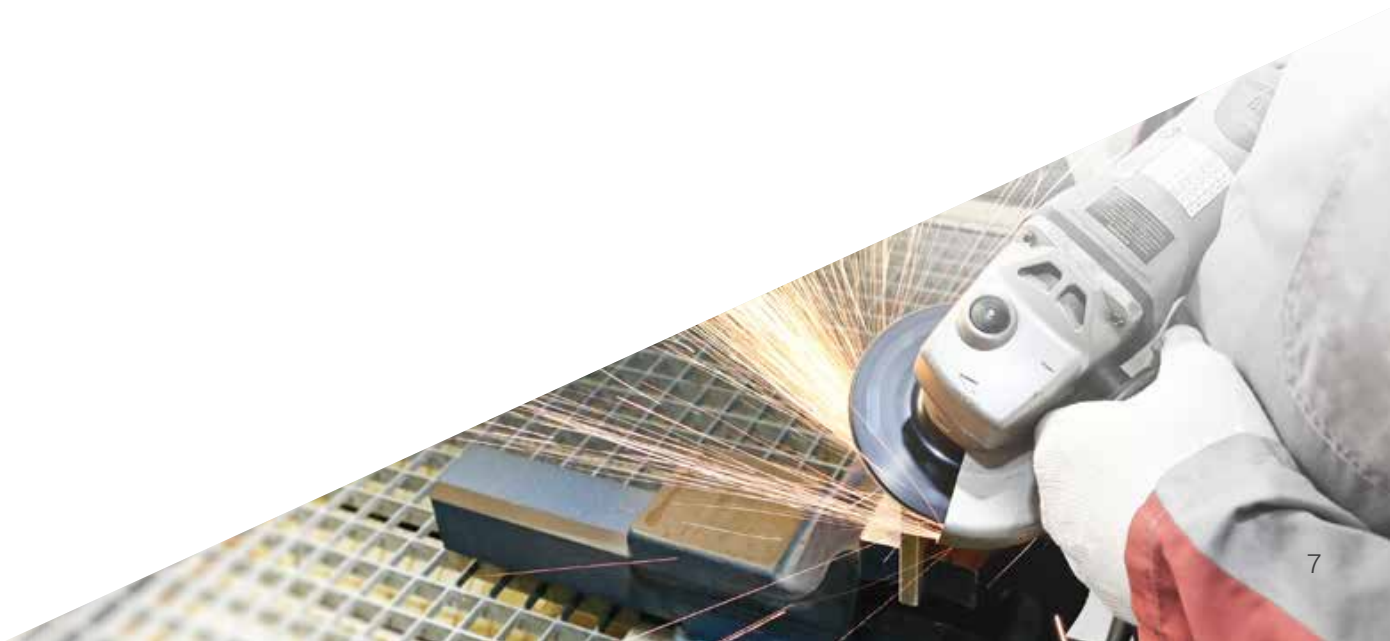
- E** extremely flexible
- F** very flexible
- J** flexible
- T** semi-sturdy
- X** sturdy
- Y** very sturdy
- Z** extremely sturdy

▼ TOP SIZE

Grinding-active additional layer reduces the temperature in the grinding zone



The ALU-X additional layer significantly reduces chip adhesion



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