



## FLAT SURFACE GRINDING

Surface grinding  
in metalworking

# VSM – Your specialist for flat surface grinding

## Benefit from VSM's high-performing abrasives:

- > High stock removal per time unit
- > Extended service life and low set-up costs as a result
- > Consistent and reproducible surface finishes
- > Defined scratch patterns, roughness and gloss value
- > **VSM TOP SIZE** products achieve:
  - > Enhanced machining capacity
  - > A reduced temperature in the grinding area and because of this structural changes are avoided
- > The additional **VSM STEARATE** layer actively supports the grinding process and prevents chip adhesion

## 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 Technical 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

Buildings and facades



Shipbuilding



Lifts and elevators



Food containers



Table legs



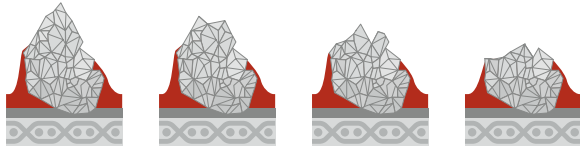
Large-scale catering facilities



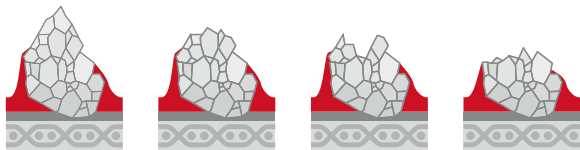
# The VSM self-sharpening concept

NEW

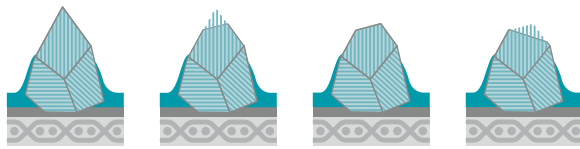
## VSM CERAMICS Plus (CER Plus)



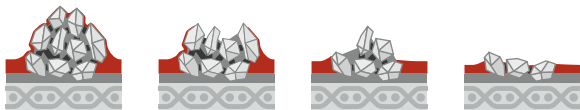
## VSM CERAMICS (CER)



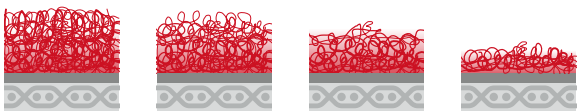
## VSM ZIRCONIA ALUMINA (ZA)



## VSM COMPACTGRAIN (COM)

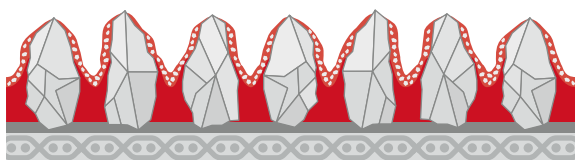


## VSM NON-WOVEN

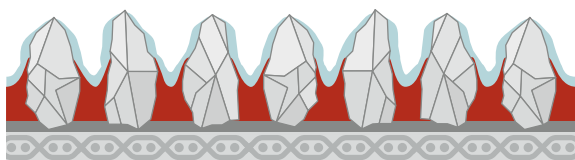


t=0 Grinding time

## VSM additional grinding-active layers



VSM TOP SIZE



VSM STEARATE

## For high stock removal

VSM abrasives with ceramic and zirconia alumina grains are the products we recommend when high stock removal rates are required. Continuous self-sharpening of the grain guarantees long-lasting high performance.

**VSM CERAMICS** are distinguished by their cool cutting characteristics. This enhances the service life of the abrasive. The risk of surface discoloration is considerably reduced.

The new **VSM CERAMICS Plus** makes machining of extremely hard surfaces easier. The fracture behaviour of the abrasive has been considerably improved, which enhances the service life even more.

## For perfect surface finishes

**VSM COMPACTGRAIN** describes an abrasive granulate which is composed of numerous individual abrasive grains. A uniform stock removal rate and a consistent roughness across the entire life of the product and an extremely long service life are the most impressive characteristics of the **VSM COMPACTGRAIN** series. **VSM NON-WOVEN** perfectly follows the shape of a workpiece. This produces premium surface qualities which can easily be reproduced.

For applications involving the dry machining of stainless and high-temperature steels we recommend using **VSM TOP SIZE** products. Additional layers with grinding additives can further improve the cutting performance of VSM abrasives whilst reducing the workpiece temperature in the contact area considerably.

The use of **VSM STEARATE** leads to an increase in productivity when machining wrought alloys (NF metals). This effect is achieved by effectively preventing clogging of the abrasive.

# Grinding throughout the whole production process



## Repair grinding of slabs $t \geq 100$ mm

Wide belt grinding with conveyor table



Stroke sanding machine with upper belt



## Repair grinding of coils and heavy plates

Wide belt grinding with support roller



### Product recommendations for slab grinding

VSM Series	Grain type	Grit size
XK885Y	CER Plus	20-120
XK880Y	CER Plus	20-120
XK870Y	CER	40, 60
XK760X	CER	40, 60
ZK713X	ZA/AO	24-60
CK727Y	SIC	36-60
XP780	CER Plus	60, 80, 100, 120
KP709	AO	36-60

Stock removal ↑

VSM Series	Grain type	Grit size
XK880Y	CER Plus	20-120
XK760X	CER	40, 60
ZK713X	ZA/AO	24-60
XP780	CER Plus	60, 80, 100, 120
KP709	AO	36-120
CP501	SIC	40-120

### Product recommendations for coil grinding

VSM Series	Grain type	Grit size
XK880Y	CER Plus	20-120
XK870Y	CER	40, 60
XK870X	CER	24-60
ZK713X	ZA/AO	24-60
KK711Y	AO	36-60
CK727Y	SIC	36-60

Stock removal ↑

### Legend

CER Plus	VSM CERAMICS Plus	COM (CER)	VSM COMPACTGRAIN CERAMICS	AO	VSM ALUMINIUM OXIDE
CER	VSM CERAMICS	COM (AO)	VSM COMPACTGRAIN ALUMINIUM OXIDE	SIC	VSM SILICON CARBIDE
ZA	VSM ZIRCONIA ALUMINA	COM (SIC)	VSM COMPACTGRAIN SILICON CARBIDE	Non-woven	VSM NON-WOVEN

# Process



Coils

Cold rolling

Coils

Thin sheets

heavy plates  $t \geq 3 \text{ mm}$

Customer-specific grinding of coils and sheet metal  $t \geq 2.99 \text{ mm}$

Stroke sanding machine with upper belt



Product recommendations for heavy plates

VSM Series	Grain type	Grit size
XK880Y	CER Plus	20-120
XK870X	CER	24-60
XK760X	CER	24-120
ZK713X	ZA/AO	24-60
XP780	CER Plus	60, 80, 100, 120
KP709	AO	36-60

Stock removal ↑

Stock removal ↑

Surface ↓

Wide belt grinding



Product recommendations for coils

VSM Series	Grain type	Grit size
XK870Y	CER	40, 60
XK870X	CER	24-120
ZK713X	ZA/AO	24-320
KK712Y	COM (AO)	180-600
KK712X	COM (AO)	80-600
KP712	COM (AO)	120-800
CP772	COM (SIC)	240-320
KK711Y	AO	36-500
CK721X	SIC	24-600

Belt grinding with belt conveyor



Product recommendations for fine sheet metal

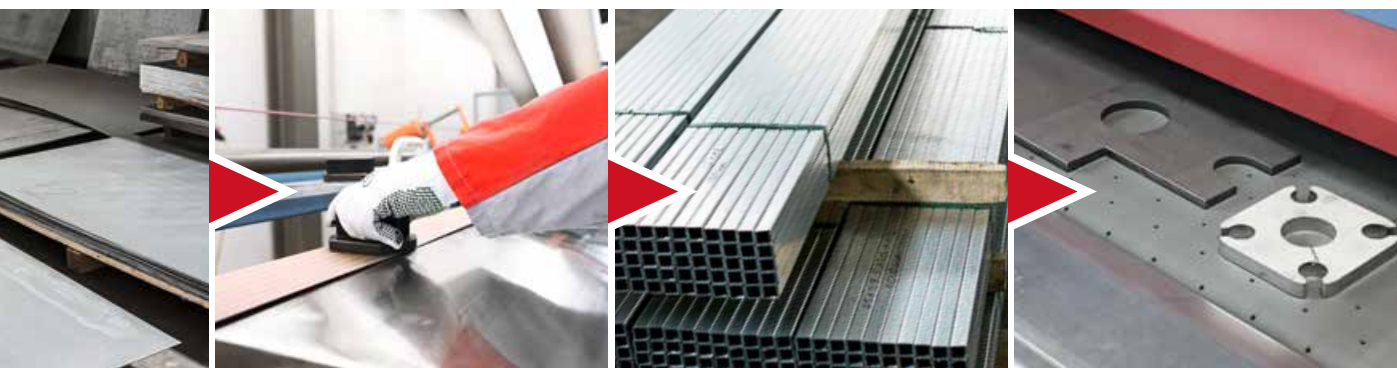
VSM Series	Grain type	Grit size
XK870X	CER	24-120
XK760Y	CER	24-120
XK786X	COM (CER)	60, 80, 120
ZK713X	ZA/AO	24-320
KK772X	COM (AO)	80-800
CK772T	COM (SIC)	80-1200
KP712	COM (AO)	120-800
CP772	COM (SIC)	240-320

Stock removal ↑

Surface ↓

Stock removal ↑

Surface ↓



Cuttings

Die-cut and laser parts

Square steel

## Customer-specific grinding of square, die-cut and laser parts

### Stroke sanding machine with upper belt



### Product recommendations for fine sheet metal

VSM Series	Grain type	Grit size
XK870X	CER	24–120
XK760X	CER	60, 80, 120
ZK713X	ZA/AO	24–320
KK772X	COM (AO)	80–800
KK712X	COM (AO)	80–600
CK772T	COM (SIC)	80–1200
XP780	CER Plus	60, 80, 100, 120
KP712	COM (AO)	120–800
CP772	COM (SIC)	180–320
KP709	AO	36–320

### Belt grinding with belt conveyer



### Product recommendations for square steel, die-cut and laser parts

VSM Series	Grain type	Grit size
XK880Y	CER Plus	20–120
XK870X	CER	24–120
XK760X	CER	24–120
XK786X	COM (CER)	60, 80, 120
ZK713X	ZA/AO	24–320
KK772X	COM (AO)	80–800
KK712X	COM (AO)	80–600
CK772T	COM (SIC)	80–1200
KK711Y	AO	36–500
KV707X	Non-woven (AO)	coarse–fine
KV707X	Non-woven (SIC)	very fine

Stock removal ↑  
Surface ↓

### Grinding with drum sander



### Product recommendations for square steel, die-cut and laser parts

VSM Series	Grain type	Grit size
XK885Y	CER Plus	20–120
XK870X	CER	24–120
XK760X	CER	60, 80, 120
ZK713X	ZA/AO	24–320
KK772X	COM (AO)	80–800
KK712X	COM (AO)	80–600
CK772T	COM (SIC)	80–1200
XP780	CER Plus	60, 80, 100, 120
KP712	COM (AO)	120–800
CP772	COM (SIC)	240–320
KP709	AO	36–320

Stock removal ↑  
Surface ↓

# VSM – for flawless surfaces

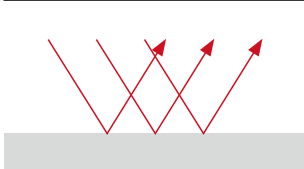

VSM abrasives are characterised by consistent and reproducible surface finishes. Gloss is one important parameter to describe the visual appearance of an object. It is an optical property which indicates how well a surface reflects light in a mirror-like direction. The intensity of the reflection can be technically measured.



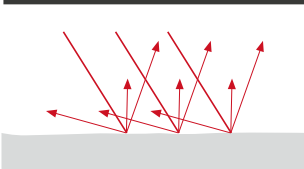

Scratch patterns in 1G, 2G or with a fine hairline finish can be achieved using VSM abrasives.

**VSM's comprehensive range of abrasives produce a large variety of different gloss units and scratch patterns. Please feel free to contact us to find out more!**

## High-gloss (stainless steel)

Reflection of light	Scratch pattern	VSM series	Gloss Unit (GU)*
		CK772T VSM COMPACTGRAIN (SIC) Grit size 1000	80

## Mid gloss (stainless steel)

Reflection of light	Scratch pattern	VSM series	Gloss Unit (GU)*
		CK772T VSM COMPACTGRAIN (SIC) Grit size 400	40

## Matt (stainless steel)

Reflection of light	Scratch pattern	VSM series	Gloss Unit (GU)*
		XP780 VSM CERAMICS Grit size 80	5

\*) The **measurement scale, Gloss Units (GU)**, is measured using a Gloss Meter also known as a Glossmeter. The defined standard for a perfectly satin finish is equal to 0 gloss units. High-gloss surfaces with a mirror finish achieve readings of more than 70 GU.

# A worldwide leader in abrasives.



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