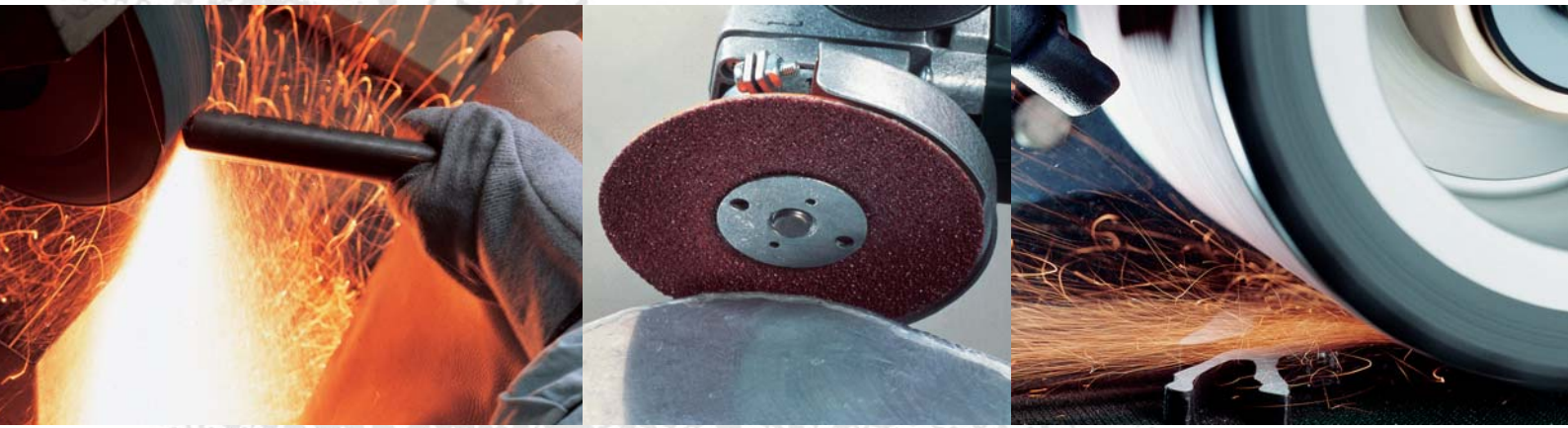


QUALITY ABRASIVES



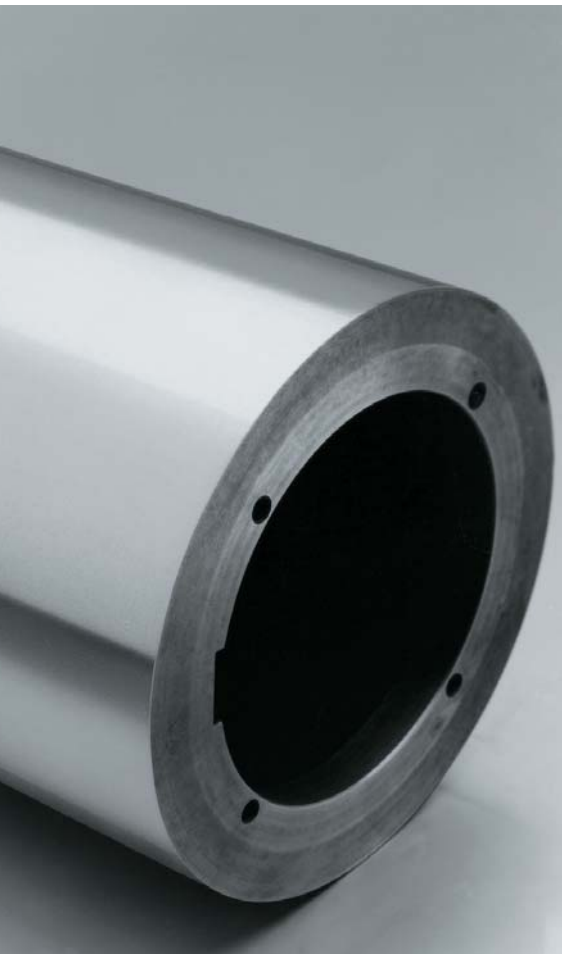
# Application Guide Metal

SPECIALS

PRODUCTS

APPLICATIONS

# The surest way to a perfect surface



**The ability to professionally grind work pieces with high-quality surface finishes is an essential feature for reliable parts.**

**To achieve high-quality production, it is important to choose the appropriate coated abrasive.**

**VSM AG has been producing these types of coated abrasives for over 140 years, based on a wealth of experience and knowledge of its customers' needs and requirements.**

We strongly focus on partnership-based collaborations between abrasive users, machinery manufacturers and ourselves because further development activities for abrasives and process technologies are closely interlinked.

Coupled with our research and development operations, this practical way of doing business guarantees application-specific expertise, product development in tune with market requirements and the very highest levels of product quality backed by value added products.

The result is you can place your trust in the expert advice of our applications engineers and VSM consultants and in our comprehensive range of products, no matter what technical challenges are involved.

Our global sales and marketing network with a large number of subsidiaries and competent partners ensures close proximity to our customers, wherever they are.

Whatever the grinding application – especially in the area of metal-working – we can provide the appropriate grinding tools on cloth, paper and vulcanized fibre backings in a virtually unlimited range of forms and dimensions.

The tables on the following pages will help you to find the right abrasive for your specific application.

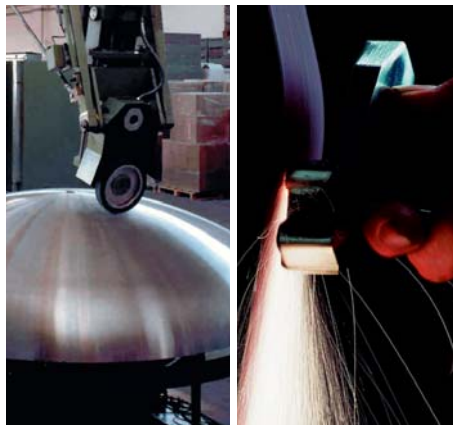
And please don't hesitate to contact us for advice on complex and demanding applications. VSM field engineers and dealers will be only too pleased to help you.



## **ABRASIVES TAILORED TO YOUR NEEDS**

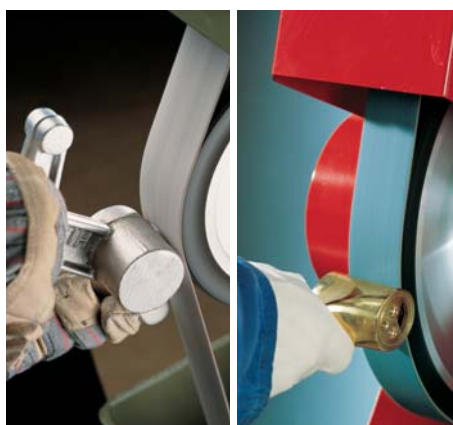
### **UNALLOYED STEEL . . . . . PAGE 4**

General structural steels, free-machining steels, heat-treatable steels, unalloyed tool steels, etc.



### **ALLOYED STEEL . . . . . PAGE 5**

Valve steels, high-temperature steels and alloys, non-magnetisable steels, corrosion, acid and heat-resistant steels (Cr, Cr Ni steels) etc.




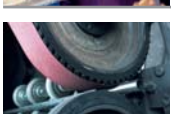







### **NON-FERROUS METALS . . . . . PAGE 6**

Aluminium, copper, nickel, tin, zinc, lead and titanium alloys

# Unalloyed Steel

General structural steels, free-machining steels, heat-treatable steels, unalloyed tool steels, etc.

										Grit size	Grain type	VSM series
●	● (●)	● (●)	● (●)	● (●)	● (●)	●		⊙		24, 36, 40, 50, 60, 80, 100, 120 24, 36, 40, 50, 60, 80, 120	CER CER	VSM XK760X VSM XF760
●	● (●)	● (●)	● (●)	● (●)	● (●)					24, 36, 40, 50, 60	ZA	VSM KK716
●	● (●)	● (●)	● (●)	● (●)	● (●)					24, 36, 40, 50, 60, 80	ZA	VSM KK715X
●	● (●)	● (●)	● (●)	● (●)	● (●)					24, 36, 40, 50, 60, 80	ZA	VSM ZK745X
⊙	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)		⊙			24, 36, 40, 50, 60, 80, 100, 120	ZA	VSM ZK713X
⊙	⊙									36, 40, 50, 60, 80, 120	ZA	VSM ZK713T
						●				24, 36, 40, 50, 60, 80	ZA	VSM ZF745
						●				24, 36, 40, 50, 60, 80, 100, 120	ZA	VSM ZF713
										80, 120, 180, 240, 320, 400, 600	COM-AO	VSM LK719X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						60, 80, 120, 180, 240, 320, 400, 600	COM-AO	VSM KK718X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)		⊙			80, 120, 180, 240, 320, 400, 600	COM-AO	VSM KK712X
⊙					⊙					80, 120, 180, 240, 320, 400	COM-AO	VSM KK712J
							○			120, 180, 600	COM-AO	VSM KK731X
										180, 240	COM-SIC	VSM MK748X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						80, 120, 180, 240, 320, 400	COM-SIC	VSM CK748X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						240, 320, 400, 600, 800, 1000, 1200	COM-SIC	VSM CK918X
○	○ (●)	○ (●)	○ (●)	○ (●)						36, 40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 400, 500	AO	VSM KK711Y
○	○	○	○	○	○		○			20, 24, 30, 36, 40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 400	AO	VSM KK711X
○										50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 400, 500	AO	VSM KK711T
○							○			60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400, 500	AO	VSM KK511J
○										60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400, 500, 600, 800	AO	VSM KK511F
								○		40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400	AO	VSM KK114F
										16, 24, 30, 36, 40, 50, 60, 80, 100, 120, 150	AO	VSM KF708
										36, 40, 60, 80, 100, 120, 150, 180, 220, 240, 320	AO	VSM KP709
○	○ (●)	○ (●)	○ (●)							24, 36, 40, 50, 60, 80, 100, 120, 150, 180	SIC	VSM CK722Y
○	○ (●)	○ (●)	○ (●)	○ (●)	○ (●)					24, 36, 40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 320, 400, 600	SIC	VSM CK721X
○								○		60, 80, 100, 150, 180, 220, 240, 280, 320	SIC	VSM CK721J
○										60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400, 600	SIC	VSM CK721F

Legend	○	●	⊙	○ (●)	● (●)	⊙ (●)	○	●	○	○	○	○
Requires Light Application Pressures	○	●	⊙	○ (●)	● (●)	⊙ (●)	○	●	○	○	○	○
Requires Medium Application Pressures	○	●	⊙	○ (●)	● (●)	⊙ (●)	○	●	○	○	○	○
Requires Heavy Application Pressures	○	●	⊙	○ (●)	● (●)	⊙ (●)	○	●	○	○	○	○
Acceptable for Wet Applications	○	●	⊙	○ (●)	● (●)	⊙ (●)	○	●	○	○	○	○
CER	CER	VSM®CERAMICS	AO	Aluminum Oxide	COM-AO	Compactgrain Aluminum Oxide	ZA	Zirconia Alumina	SIC	Silicon Carbide	COM-SIC	Compactgrain Silicon Carbide

# Alloyed Steel

Valve steels, high-temperature steels and alloys,  
non-magnetisable steels, corrosion, acid and heat-resistant steels  
(Cr, Cr Ni steels) etc.



	Backstand	Wide belt	Flat grinding	Centerless grinding	Robotic grinding	Slack of belt	Angle grinder	Dynaflex	Manual grinding	Grit size	Grain type	VSM series
●	●	●	●	●	●					24, 36, 40, 50, 60	CER ▲	VSM XK877Z
●	●	●	●	●	●					24, 36, 40, 50, 60, 80, 100, 120	CER ▲	VSM XK870X
	● (●)	● (●)	● (●)	● (●)			●			24, 36, 40, 50, 60, 80, 100, 120	CER ▲	VSM XF870
●	●	●	●	●				⊙		24, 36, 40, 50, 60, 80, 100, 120	CER	VSM XK760X
●	●	●	●	●				⊙		36, 40, 50, 60, 80, 100	ZA ▲	VSM KK815Y
●	●	●	●	●	●			⊙		24, 36, 40, 50, 60, 80	ZA ▲	VSM ZK744X
⊙					⊙			⊙		50, 60, 80, 100	ZA ▲	VSM ZK844J
●	●	●	●	●	⊙			⊙		36, 50, 60, 80	ZA ▲	VSM ZK813T
	● (●)	● (●)	● (●)	● (●)						24, 36, 40, 50, 60, 80	ZA	VSM KK715X
	● (●)	● (●)	● (●)	● (●)						24, 36, 40, 50, 60, 80	ZA	VSM ZK745X
⊙	⊙ (●)	⊙ (●)	⊙ (●)				●			24, 36, 40, 50, 60, 80, 100, 120	ZA	VSM ZK713X
							●			24, 36, 40, 50, 60, 80	ZA ▲	VSM ZF844
							●			24, 36, 40, 50, 60, 80, 100, 120	ZA	VSM ZF714
	⊙	⊙	⊙	⊙	⊙					80, 120, 180, 240	COM-AO ▲	VSM KK834X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						80, 120, 180, 240, 320, 400, 600	COM-AO	VSM LK719X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						60, 80, 120, 180, 240, 320, 400, 600	COM-AO	VSM KK718X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)	⊙					80, 120, 180, 240, 320, 400, 600	COM-AO	VSM KK712X
					⊙					80, 120, 180, 240, 320, 400	COM-AO	VSM KK712J
					⊙					120, 180, 600	COM-AO	VSM KK731X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						180, 240	COM-SIC	VSM MK748X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						80, 120, 180, 240, 320, 400	COM-SIC	VSM CK748X
	⊙ (●)	⊙ (●)	⊙ (●)	⊙ (●)						240, 320, 400, 600, 800, 1000, 1200	COM-SIC	VSM CK918X
⊙						⊙				80, 120, 180, 320	COM-SIC	VSM CK742J
○	○	○	○	○	○			○		36, 40, 50, 60, 80, 100, 120, 150, 180	AO	VSM KK812X
	○ (●)	○ (●)	○ (●)	○ (●)						36, 40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 400, 500	AO	VSM KK711Y
○					○			○		60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400, 500	AO	VSM KK511J
○				○	○				○	60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 400	AO ▲	VSM KK841F
									○	40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400	AO	VSM KK114F
										36, 50, 60, 80, 100, 120, 150, 180, 220	AO ▲	VSM KF808
	○									36, 40, 60, 80, 100, 120, 150, 180, 220, 240, 320	AO	VSM KP709
○	○ (●)	○ (●)	○ (●)							24, 36, 40, 50, 60, 80, 100, 120, 150, 180	SIC	VSM CK722Y
○	○ (●)	○ (●)	○ (●)	○ (●)						24, 36, 40, 50, 60, 80, 100, 120, 150, 180, 220, 240, 320, 400, 600	SIC	VSM CK721X
○					○			○		60, 80, 100, 150, 180, 220, 240, 280, 320	SIC	VSM CK721J
○					○					60, 80, 100, 120, 150, 180, 220, 240, 280, 320, 360, 400, 600	SIC	VSM CK721F

**Legend**

- Requires Light Application Pressures
- ⊙ Requires Medium Application Pressures
- Requires Heavy Application Pressures
- (●) Acceptable for Wet Applications

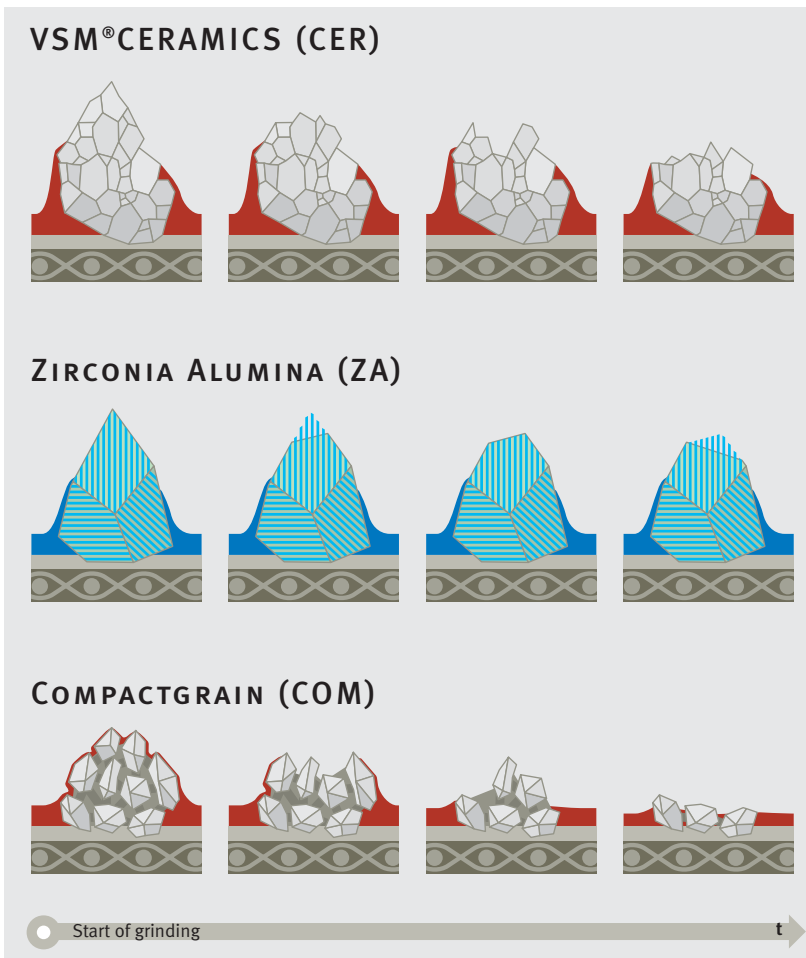
**CER** VSM®CERAMICS  
**ZA** Zirconia Alumina  
**AO** Aluminum Oxide  
**SIC** Silicon Carbide

**COM-AO** Compactgrain Aluminum Oxide  
**COM-SIC** Compactgrain Silicon Carbide

▲ TOP SIZE Additional layer for cooler grinding and higher cutting rate



# The concept for our High Tech Series: Self-sharpening



**FOR HIGH STOCK REMOVAL:**

Products based on **VSM® CERAMICS** and **zirconia alumina** are ideal solutions where a more aggressive cut is needed. These products ensure you achieve:

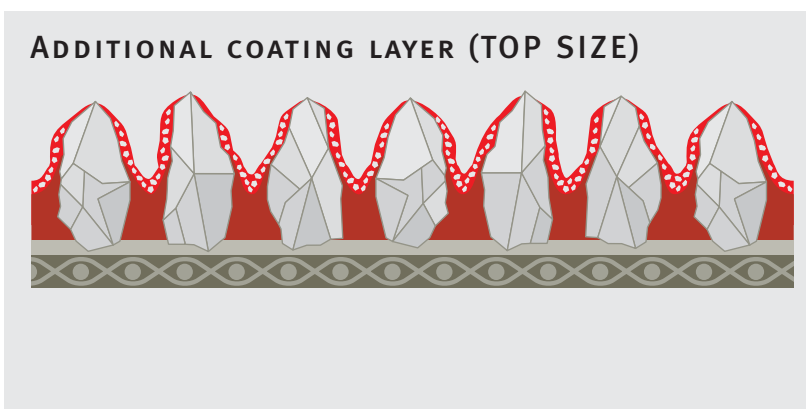
- extremely high stock removal rates
- extra-long service life due to their continuous self-sharpening characteristics.

Furthermore, **VSM® CERAMICS** products impress with their cool grinding action, which in turn makes for extended cutting performance and prevents surface discoloration. **VSM® CERAMICS** exhibit a high level of hardness, and this makes them ideal for machining extremely hard surfaces.

**FOR FINE SURFACE FINISHING:**

**Compactgrain abrasives** feature a granulate structure, this structure consists of many abrasive grains bonded together to form a granulate. Especially when machine grinding, compactgrain products ensure

- extra-long service life, thus reducing the number of set-ups required for a machine
- highly consistent stock removal with a uniform finish throughout their service life.



For applications involving the dry machining of stainless and high-temperature steels we recommend using **TOP SIZE** products. This additional lubricating layer provides for:

- increased stock removal rates
- significantly reduced temperatures at the grinding point, which prevents work piece structural changes.

Our locations can be found at

**[www.vsmag.de](http://www.vsmag.de)**



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