



Abrasives for perfect surfaces

VSM – More than just three letters

VSM stands for competence, quality and customer orientation

Very few others understand grinding processes like we do. Not only do we grind every surface to precision, we also analyse the specific grinding applications of our customers so that we can always find the best, long-term solution. Process-related expertise is one of the distinguishing features of VSM.

We know abrasives

Because we understand them. VSM develops and produces all the main preliminary products such as backing fabrics, resinoid bonds and abrasive grains at its Hanover site. By doing so, we fulfil our high, self-imposed requirements in industry, the commercial and trade sector. The continuous development of further grain compositions, their refinement and processing ensures that VSM remains one of the most experienced manufacturers of ceramic grain worldwide.

Application-based expertise

We see the entire grinding processes of our customers as a challenge. A global network of VSM specialists provides expert advice wherever it is needed irrespective of whether your company is large or small. Thanks to our close collaboration with machine manufacturers, cutting fluid experts and research institutes, we ensure that our customers can benefit from technological trends as soon as possible.

We make our expertise available for you

The VSM Technical Center (TC) in Hanover provides an opportunity for product training, seminars and extensive application tests. Customer applications can be adjusted and results reviewed. This service from VSM reduces downtimes and productivity losses for our customers.

Certified and recognized worldwide

VSM has been certified to ISO standard 9001:2008 as its basis for quality assurance for many years. In addition, it is a member of FEPA, oSa and the German Abrasives Association (VDS).



Company founded in 1864 in Hanover-Hainholz



More than 150 years' experience in the production of coated abrasives.

More than 800 employees are working on behalf of our customers worldwide each day.



VSM is operating in more than 70 countries with international subsidiaries and numerous partners.

Certified and recognized worldwide SA FEPA COSTANDED TO NORD

Extremely high level of safety

All VSM abrasives have been certified by internationally recognized testing bodies for many years and therefore conform to the highest safety standards.

Internal research and development

High vertical integration

VSM has its own internal grain and cloth production and develops almost all of its preliminary products itself. This enables us to achieve a consistently high quality of abrasives.



Our global sales network with **numerous subsidiaries** and **expert sales partners** ensures proximity to our customers. Further addresses and details can be found on our website at www.vsmabrasives.com

Our products

For almost every application

From welding seams to sheet metal working, vehicle bodywork and cast materials: VSM produces more than 200 different product ranges that can be worked into rolls, discs, belts and sheets on a range of different backing materials and in various shapes. Furthermore, we supply high-quality preliminary products to specialist customizers. This means that virtually any requirement can be met by VSM abrasives.

You can always rely on the high level of advisory expertise of our applications engineers and VSM consultants and the extensive product range for a wide variety of technical challenges.



Jumbos



Wide belts

Rolls





Narrow belts

Discs

You can rely on the following:

- > 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

VSM – Your specialist for metalworking

Benefit from efficient VSM abrasives

Whether you want a high stock removal rate or the perfect surface, VSM can offer the appropriate abrasive for every requirement in metalworking. Be it flat surface grinding, cylindrical grinding, off-hand grinding or hand-held machines, our products will always meet the highest standards for service life, stock removal capacity and surface quality.

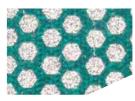
A **high stock removal** rate requires aggressive grinding with low physical strain for the user. The aim is a high stock removal rate per time unit.

Consistent and reproducible surface results and **specific surface finishes**, surface roughnesses and gloss levels are crucial for a perfect finish.

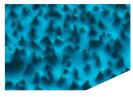
VSM offers a complete product range

For all grinding tasks – in particular for metal working – we will provide you with the appropriate grinding tools on a cloth, paper or vulcanised fibre backing. From **VSM DIAMOND** to **VSM CERAMICS**, **VSM COMPACTGRAIN** and **VSM NON-WOVEN**, in a wide range of different shapes and dimensions, our product range has everything.

The right grain for every application



VSM DIAMOND/CBN



VSM ACTIROX



VSM CERAMICS Plus



VSM CERAMICS

Efficient grinding

VSM produces abrasives for a wide range of applications. From a high stock removal rate to a reproducible surface, our range of abrasives, with more than 25,000 items, will have the appropriate solution for your grinding process.

Due to their exceptional properties, **VSM DIAMOND** and **VSM CBN** abrasives produce outstanding results when machining hard and brittle materials and wear-resistant HVOF coatings (thermal spray coatings).

VSM ACTIROX stands for maximum stock removal and increased productivity due to its geometrically shaped ceramic grain. Our specialist products with a self-sharpening effect, VSM CERAMICS Plus and VSM CERAMICS, achieve an extremely high stock removal rate and an extraordinarily long service life.

The newest long-term abrasive **VSM ILUMERON** achieves the highest gloss levels and perfect surface finishes. It also allows grinding and polishing to take place in a single processing step. **VSM COMPACT-GRAIN Plus** and **VSM COMPACTGRAIN** are characterised by their extremely long service life and an even surface. These product series are made of granulate that contains numerous abrasive grains. This technology continuously exposes unused, sharp grain tips.

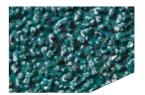
VSM ZIRCONIA ALUMINIA, VSM ALUMINUM OXIDE and VSM SILICON CARBIDE are general all-rounders for a large number of applications. They can be used for processing metals, wood, plastics, glass, ceramics and stone. VSM NON-WOVEN products ensure a flawless surface finish, irrespective of whether they are used for decorative satin finishes,

cleaning or light deburring work.





VSM COMPACTGRAIN Plus



VSM ZIRCONIA ALUMINA



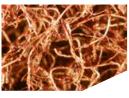
VSM SILICON CARBIDE



VSM COMPACTGRAIN



VSM ALUMINIUM OXIDE



VSM NON-WOVEN

VSM grain technologies in the spotlight

Top grain technologies for high stock removal rates

VSM ACTIROX



- > Geometrically formed 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 · (CER Plus)



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

$\textbf{VSM CERAMICS} \cdot (\text{CER})$



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

Top grain technologies for perfect surface finishes

VSM ILUMERON



- > Full faced coated long-term abrasive with special bonding
- For fine and consistent surfaces with high gloss levels
- Developed primarily for processing stainless steels, superalloys and non-alloyed steels

VSM COMPACTGRAIN Plus · (COM Plus)



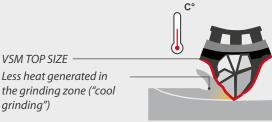
- > Long-term abrasive that wears uniformly down to the backing material and achieves a consistent surface finish
- > Optimised reserve grain capacity
- > Improved bonding properties
- > Continuous self-sharpening thanks to the granulate structure

VSM COMPACTGRAIN · (COM)



- > Long-term abrasive achieves reproducible surface finishes and consistent roughness
- > Uniform stock removal
- > Continuous self-sharpening thanks to the granulate structure

VSM grinding-active additional layers





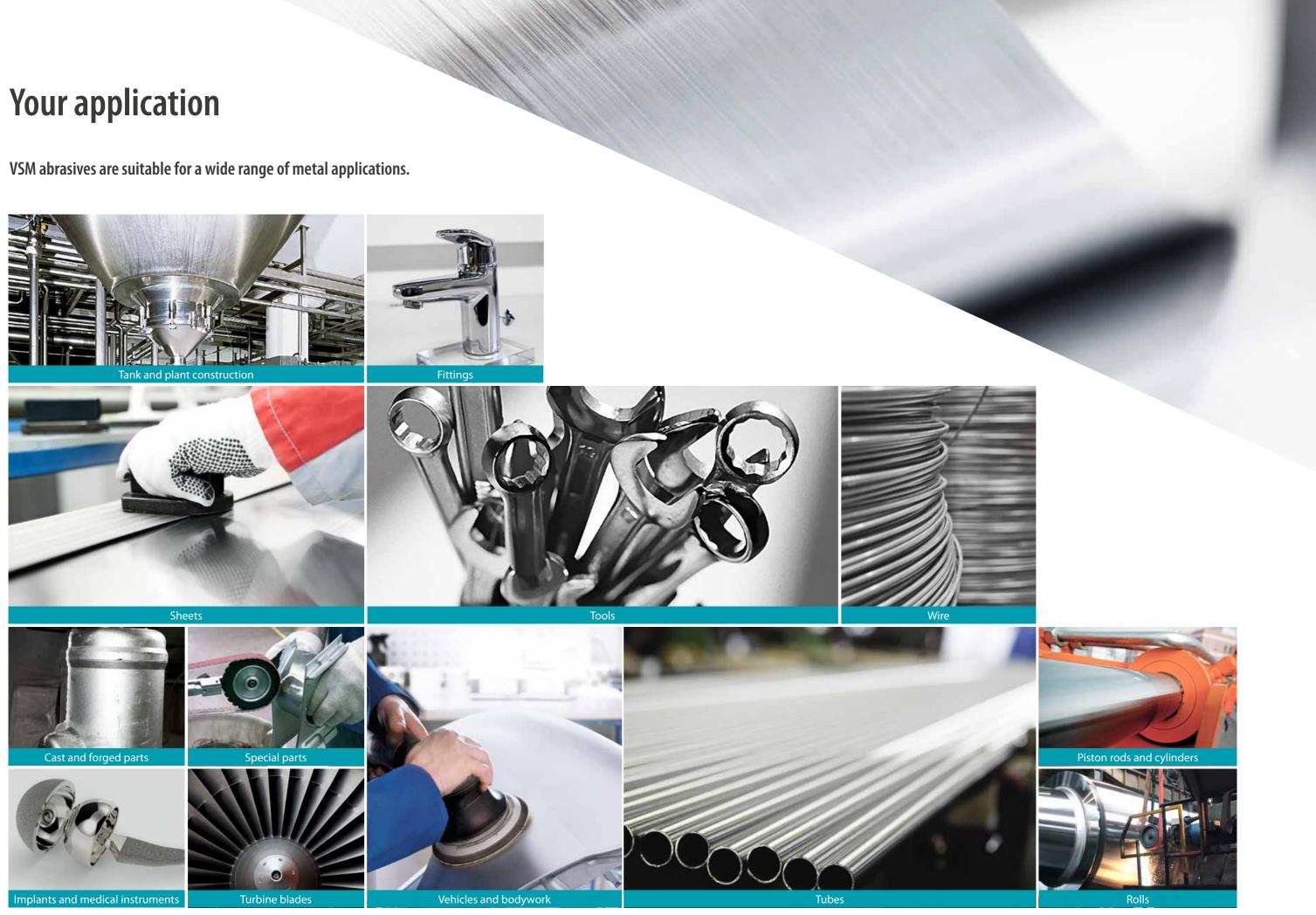


VSM TOP SIZE is recommended for dry machining heat-resistant stainless steels and non-ferrous metals. The grinding-active additional layer improves the cutting performance whilst reducing the temperature in the contact zone. This significantly extends the service life of the abrasive.

VSM STEARATE Plus and VSM STEARATE sig-

nificantly reduce chip adhesion when processing non-ferrous metals and thus also reduce 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 STEARATE Plus



Product overview

Last revised: 02/2019

teel	steel	us metals								P	50	AL A				Stock rem	oval					Surf	ace
Stainless steel	Unalloyed steel	Non-ferrous metals	ackstand	Wide belt grinding	Flat grinding	Centerless	Robotic grinding	Slack of belt			Dynafile sanding	Hand sanding	Backing	Grain type	Feature		357 µm	251 μm	126 µm	91µm	64 μm	46 µm 30 µm	VSM Ser
						•	٠				٠	1	Cloth	VSM DIAMOND	coated with point-shaped abrasives								DA930
						•	•			•	•		Cloth Cloth	VSM DIAMOND VSM DIAMOND	velour-backed, coated with point-shaped abrasives						_		DA930
						•	•				•		Cloth	VSM CBN	fully coated			-	-				PA070
		-				•	•				•		Cloth	VSIVICEIN	point-shaped coated								DA930 DA930 DA920 BA970
		Bi	ackstand	Wide belt grinding	Flat grinding	Centerless	Robotic grinding	Slack of belt	Angle ginding	Disc sanding	Dynafile sanding	Hand sanding	Backing	Grain type	Feature	16 24 26	0° 8 9 9	<u>8</u> 0 0	100 150	180 240 240	280 320 360	500 800 1000	
									•				Fibre	VSM ACTIROX	▼ TOP SIZE								AF890
									•				Fibre	VSM ACTIROX									AF799
			٠		٠	•	•						Cloth	VSM CERAMICS	STEARATE⁺, ◊								XK73
									•				Fibre	VSM CERAMICS	✓ STEARATE ⁺								XF73
			•	•	•	•	•						Cloth	VSM CERAMICS Plus	TOP SIZE, ◊								XK88
		•	۲	۲	۲	۲	\odot				۲		Cloth	VSM CERAMICS Plus	▼ TOP SIZE, ◊								XK88
			٠				•	٠			•		Cloth	VSM CERAMICS Plus	✓ TOP SIZE								XK8
			•	•	•								Cloth	VSM CERAMICS	✓ TOP SIZE, ◊								XK8
		-	•	•	•	•							Cloth Cloth	VSM CERAMICS VSM CERAMICS	 ✓ TOP SIZE, ◊ ✓ TOP SIZE, ◊ 								XK8 XK8
		21	•	•	•	•	•						Cloth	VSM CERAMICS	 TOP SIZE, δ TOP SIZE, δ 		_						XK8
			•	•	•	•	•				۲		Cloth	VSM CERAMICS	TOP SIZE, ◊								XK8
										۲			Cloth	VSM CERAMICS	✓ TOP SIZE, velour-backed								XK8
			•	•	٠	•	•				۲		Cloth	VSM CERAMICS	▼ TOP SIZE, ◊								XK8
							\odot	\odot			۲		Cloth	VSM CERAMICS	✓ TOP SIZE								XK8
							۲	۲			۲		Cloth	VSM CERAMICS	✓ TOP SIZE, ◊								XK87
							۲	۲		â	۲		Cloth	VSM CERAMICS	▼ TOP SIZE								XK87
				•	•					۲			Cloth Cloth	VSM CERAMICS VSM CERAMICS	▼ TOP SIZE, velour-backed								XL87 XK76
_	_		•	•	•	٠	•				۲		Cloth	VSM CERAMICS	۵ ٥	_	i i na						XK76
			-	•	•	•	•			0	Ŭ		Cloth	VSM CERAMICS	velour-backed	_							XK76
	_								•				Fibre	VSM CERAMICS Plus	▼ TOP SIZE			-	_				XF88
		1							•				Fibre	VSM CERAMICS FIGS	TOP SIZE								XF87
									•				Fibre	VSM CERAMICS	▼ TOP SIZE	_							XF85
									•				Fibre	VSM CERAMICS									XF76
	-			۲	۲								Paper	VSM CERAMICS Plus									XP78

Legend:

Flexibility of the backing material (last letter of the series name):

$\begin{array}{rcl} {\sf CER} &=& {\sf CERAMICS} \\ {\sf ZA} &=& {\sf ZIRCONIA} \; {\sf ALUMINA} \end{array}$		extremely flexible very flexible		st ve
AO = ALUMINIUM OXIDE	-	flexible	Z	ех
SIC = SILICON CARBIDE	Т	semi-sturdy		

sturdy very sturdy extremely sturdy

 \bigcirc for low to medium contact pressure ⊙ for medium contact pressure

Merkmale:

• for medium to high contact pressure ♦ also suitable for wet applications

 TOP SIZE
 Grinding-active additional layer reduces the temperature in the grinding zone
 The combination of VSM CERAMICS and STEARATE significantly reduces chip adhesion
 The combination of VSM ALUMINUM OXIDE and STEARATE ensures significantly reduced chip adhesion ∮antistatic velour-backed products with a velour backing

prevents adhesion of grinding dust

Product overview

Last revised: 02/2019

	teel steel	ous metals				St.			P	505	- Mis				Stock removal					Surfa	ce
	ainles	Pou- -uov Backstand	Wide belt grinding	Flat grinding	Centerless	Robotic grinding	Slack of belt	Angle ginding	Disc sanding	Dynafile sanding	Hand sanding	Backing	Grain type	Feature	16 24 36 36	6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	021 021 021 021 021 021 021 021 021 021	220 240 280	400 320 400	500 1000 1000	8 C VSM Series
W			0	0	0	0	0					Cloth	VSM ILUMERON								RK700X
			•		•							Cloth	VSM COMPACTGRAIN (CER)								XK789X
			•	•	•							Cloth		6							XK785X
			•	•	۲							Cloth	VSM COMPACTGRAIN Plus (AO)								KK790Y
W			•	•								Cloth	VSM COMPACTGRAIN Plus (AO)								KK791Y
			•	•	•							Cloth	VSM COMPACTGRAIN (AO)	٥							LK719X
			۲	۲	۲							Cloth	VSM COMPACTGRAIN (AO)	٥						-	KK718X
	•		۲	۲	۲	۲						Cloth	VSM COMPACTGRAIN (AO)	▼ TOP SIZE, ◊							KK834X
			۲									Cloth	VSM COMPACTGRAIN (AO)	٥					-		KK712Y
			۲	۲	۲	۲				۲		Cloth	VSM COMPACTGRAIN (AO)	0							KK712X
		۲				۲				۲		Cloth	VSM COMPACTGRAIN (AO)								KK712J
				0	0	0	0					Cloth	VSM COMPACTGRAIN (AO)								KK731X
									0			Cloth	VSM COMPACTGRAIN (AO)	velour-backed							KK731K
			0	0	0	0						Cloth	VSM COMPACTGRAIN (AO)	٥							KK772X
		•							0			Cloth	VSM COMPACTGRAIN (AO)	velour-backed							KK772K
						0	0			0		Cloth	VSM COMPACTGRAIN (AO)	٥							KK772J
						0	0			0		Cloth	VSM COMPACTGRAIN (AO)				-		-		KK712F
						0	0			0		Cloth	VSM COMPACTGRAIN (AO)	٥			-				KK770J
			۲	0	0							Cloth	VSM COMPACTGRAIN (SIC)	0							CK748X
		•	۲	۲	۲							Cloth	VSM COMPACTGRAIN (SIC)	٥				-	-		CK918X
			0	0	0	0	0			۲		Cloth	VSM COMPACTGRAIN (SIC)	٥							CK772T
_	•	•				۲	۲					Cloth	VSM COMPACTGRAIN (SIC)								CK742J
								۲				Fibre	VSM COMPACTGRAIN (AO)								KF736
_			0	0								Paper	VSM COMPACTGRAIN (AO)								KP712
				0	0							Cloth	VSM CORK (SIC)	٥							CK917C

Legend:

Flexibility of the backing material (last letter of the series name):

CER = CERAMICSE extremely flexible ZA = ZIRCONIA ALUMINAF very flexible AO = ALUMINIUM OXIDEJ flexible SIC = SILICON CARBIDET semi-sturdy

X sturdy Y very sturdyZ extremely sturdy

Merkmale:

 \odot for low to medium contact pressure ⊙ for medium contact pressure • for medium to high contact pressure ♦ also suitable for wet applications

TOP SIZE ✓ STEARATE⁺ **STEARATE** ≁antistatic velour-backed products with a velour backing

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Grinding-active additional layer reduces the temperature in the grinding zone The combination of VSM CERAMICS and STEARATE significantly reduces chip adhesion The combination of VSM ALUMINUM OXIDE and STEARATE ensures significantly reduced chip adhesion prevents adhesion of grinding dust

Product overview

Last revised: 02/2019

i steel d steel ous metals								P	50	and the second s				Stock remo	val			Su	urface
Stainless steel Unalloyed steel Non-ferrous me	Backstand	Wide belt grinding	Flat grinding	Centerless	Robotic grinding	Slack of belt	Angle ginding	Disc sanding	Dynafile sanding	Hand sanding	Backing	Grain type	Feature	20 24 30	50 50 120 120 120 120	180 220 240	320	800 00 800 00 800 00	8 8 2 VSM Ser
	•	•	•	•							Cloth	VSM ZIRCONIA ALUMINA	▼TOP SIZE, ◊			<u>i i i i i i i</u>			KK815
	I •	•	•								Cloth	VSM ZIRCONIA ALUMINA	٥						KK716
	I •	•	•	•							Cloth	VSM ZIRCONIA ALUMINA	0						KK715
	I •	•	•	•					۲		Cloth	VSM ZIRCONIA ALUMINA	▼ TOP SIZE, ◊						ZK7442
	•	۲	۲		۲				۲		Cloth	VSM ZIRCONIA ALUMINA							ZK7132
	•		۲		۲	۲			۲		Cloth	VSM ZIRCONIA ALUMINA							ZK713
								۲			Cloth	VSM ZIRCONIA ALUMINA	velour-backed						ZK713
	1						٠				Fibre	VSM ZIRCONIA ALUMINA							ZF714
							•				Fibre	VSM ZIRCONIA ALUMINA							ZF713
	0	۲	0	0	0				0		Cloth	VSM ALUMINIUM OXIDE							KK812
	•								٠		Cloth	VSM ALUMINIUM OXIDE	✓ STEARATE						KK732
	0	0	0	0							Cloth	VSM ALUMINIUM OXIDE	0						KK711
	0				0	0			0		Cloth	VSM ALUMINIUM OXIDE							KK7112
								0			Cloth	VSM ALUMINIUM OXIDE	velour-backed						KK711
					0	0			0		Cloth	VSM ALUMINIUM OXIDE							KK711
	0				0	0					Cloth	VSM ALUMINIUM OXIDE							KK511.
	0				0	0			0		Cloth	VSM ALUMINIUM OXIDE	✓ TOP SIZE						KK841
	0				0	0					Cloth	VSM ALUMINIUM OXIDE	✓ STEARATE						KK532
					0	0					Cloth	VSM ALUMINIUM OXIDE							KK511
	0				0	0					Cloth	VSM ALUMINIUM OXIDE							KK711
										0	Cloth	VSM ALUMINIUM OXIDE							KK114
	1						0				Fibre	VSM ALUMINIUM OXIDE	✓ TOP SIZE						KF808
							0				Fibre	VSM ALUMINIUM OXIDE							KF708
		0	0								Paper	VSM ALUMINIUM OXIDE							KP709
		0	0	0	0				0		Cloth	VSM SILICON CARBIDE	٥						CK721
	0			Ū.	0	0			0		Cloth	VSM SILICON CARBIDE							CK721.
							0				Fibre	VSM SILICON CARBIDE							SF08
		0	0				-						·						
		0	0								Paper	VSM SILICON CARBIDE			, _ , _ , _ , _ , _ ,				CP501
	0	0	0	0	0				0		Cloth	VSM NON-WOVEN (AO / SIC)	٥						KV707
	0		0	0					0		Cloth	VSM NON-WOVEN (AO)	٥						KV707
							0	0			Cloth	VSM NON-WOVEN (AO)	velour-backed, \diamond						KV707
			0								Cloth	VSM NON-WOVEN (AO)							KV701 KV701 KV701 KV301 CV701
								0		-	Cloth	VSM NON-WOVEN (AO)	velour-backed						KV701
										0	-	VSM NON-WOVEN (AO)	0						KV701
			~							0	-	VSM NON-WOVEN (AO)	٥						KV301
			0							~	Cloth	VSM NON-WOVEN (SIC)							CV701
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										0	-	VSM NON-WOVEN (SIC)	0						CV301
							0				Fibre	VSM NON-WOVEN (AO)							KV707

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 - **X** sturdy Y very sturdyZ extremely sturdy

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prevents adhesion of grinding dust

A worldwide leader in abrasives.



Europe

Germany (Headquarters)

VSM · Vereinigte Schmirgelund Maschinen-Fabriken AG Siegmundstraße 17 30165 Hannover T+49 511 3526 478 www.vsmabrasives.de

Hungary

VSM Abrasives Hungary Ltd. Leshegy út 31 2310 Szigetszentmiklós T + 36 24 519223 www.vsmabrasives.hu

Sweden

PFERD-VSM AB Radiovägen 3B 18155 Lidingö T+46 8 5647 2300 www.pferd-vsm.se

Americas

Canada

VSM Abrasives Canada Inc. 2425 Wyecroft Road Unit #1 Oakville, Ontario L6L 6R5 T+1 905 827 0005 www.vsmabrasives.ca

USA

VSM Abrasives Corp. 1012 East Wabash St. O'Fallon, Mo. 63366 T+1 636 272 7432 us.vsmabrasives.com

Czech Republic

VSM Abrasives s.r.o. River Garden, 5th Floor Rohanské nábřeží 678/23 18600 Praha T+420 277 015 300 www.vsmabrasives.cz

Poland

PFERD-VSM Sp. z o.o. Ul. Polna 1A 62-025 Kostrzyn Wielkopolski T+48 61 8970 480 www.pferdvsm.pl

Switzerland

Latin America

PFERD-VSM (Schweiz) AG Zürichstr. 38 B 8306 Brüttisellen T+41 44 805 2828 www.pferd-vsm.ch

VSM Latinoamérica S.A.S.

Edificio Tierra Firme Piso 17

Carrera 9 No. 115-06

Bogota, Colombia

T +57 1 639 8489

M +57 316 8311705

www.vsmabrasives-

latinamerica.com

Asia

China

VSM Abrasives (China) Co. Ltd.

Rooms 203/205, Building C, No. 38, Xuxiang Road, Qingpu District, Shanghai, P.R. China Postal Code: 201702 T+86 21 5976 2011 www.vsmabrasives.com.cn

Great Britain

VSM Abrasives Ltd. Unit 5, Joplin Court Sovereign Business Park, Crownhill Milton Keynes, MK8 0JP T+44 19 0831 0207 www.vsmabrasives.co.uk

Spain

VSM · VITEX ABRASIVOS IBERICA, S.A.U.

Ctra. de Molins de Rei, 79A, Nave 8 08191 Rubí (Barcelona) T+34 93 697 3411 www.vsmabrasives.es

Turkey

France

Russia

VSM Impavide S.A.S.

52 Avenue Marcel Paul

T +33 1 4151 0300

VSM AG · Russian

T +7 499 346 35 27

www.vsmabrasives.ru

Representative Office

141006, Moscow region

c. Mytishchi Volkovskoe

roadway vl. 5a, str. 1, of. 208

www.vsmabrasives.fr

93297 Tremblay en France

STARCKE VSM VITEX Zimpara Teknolojisi Sanayi ve Dis Ticaret Ltd. Sti. Yan Sanayi Sitesi Nubuk Cad. No: 8, Kat 1-4 34953 Istanbul/Tuzla T +90 216 591 07 01 www.starckevsm.com

Thailand

VSM AG · Thailand **Representative Office**

444 Olympia Thai Tower, 13th FL Ratchadaphisek Rd., Samsennok Huay Kwang, Bangkok 10310 T+66 2 513 7441 www.vsmabrasives-apac.com



Visit our website at www.vsmabrasives.com