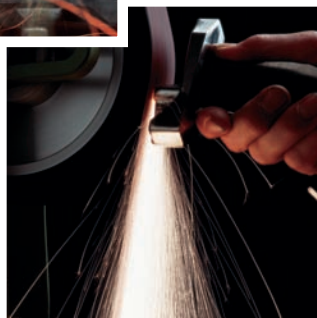
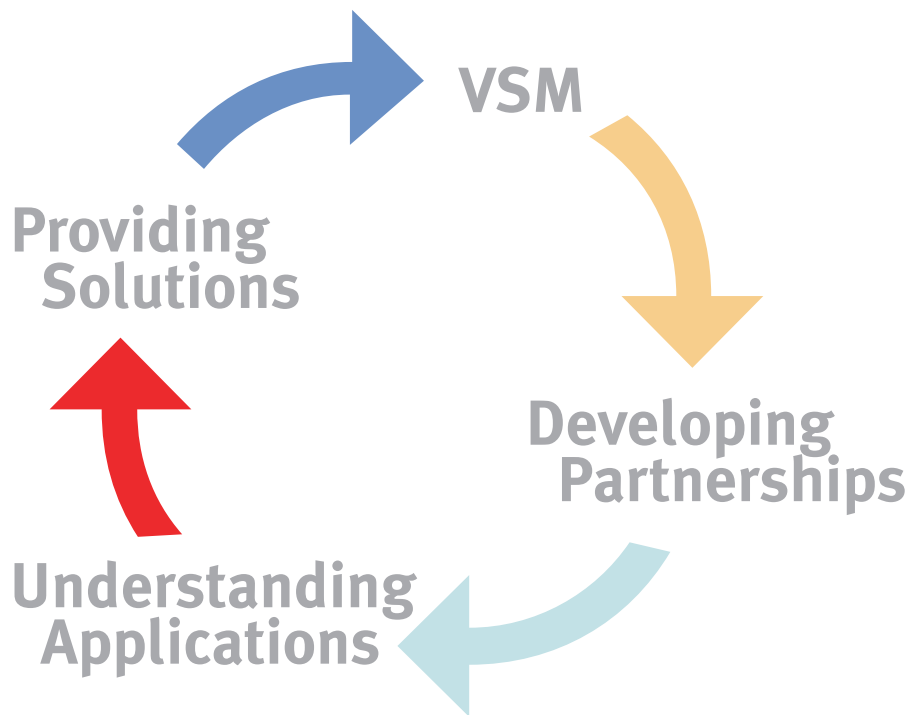


Application Guide for Metal





VSM - Modern Outlook Born of Tradition

For over 130 years, VSM has established itself as a leader in the coated abrasives industry. With an expansive Technical Services team and Research and Development department constantly working on new and innovative products, VSM focuses on being a pioneer in abrasive technology.

Developing Partnerships

The concept of service takes center stage at VSM! Working closely with customers to understand their unique processes allows VSM to evaluate more accurately which abrasive product would be best suited to a specific application. Through this close working relationship VSM is able to help customers improve productivity and decrease manufacturing costs. VSM's intent is to develop a close working partnership with each and every customer.

Understanding Applications

VSM's highly trained technical experts are glad to assist with any application concerns or questions. They are recognized as one of the most highly trained and knowledgeable technical groups in the coated abrasive industry. Along with VSM local sales personnel and distributors, they develop a strong understanding of their customer's processes and product needs. This in-depth understanding allows them to choose the best product for your process.

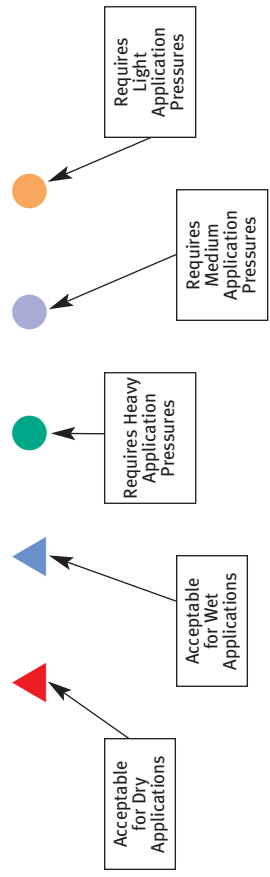
Providing Solutions

The following pages were designed to provide VSM's customers with guidelines in determining the best VSM product available for a specific metal application. Please note however, that before purchasing a specific product for an application, a test should be conducted by VSM's trained application experts.

CARBON STEEL

VSM Product	Application										Stock Removal						Grain	VSM Product
	Backstand	Wide Belt	Stroke Sanding	Centerless Grinding	Slack of Belt	Right Angle	Disc Sanding	Dynafle	Coarse (20-50 grit)	Medium (60-80 grit)	Light (100-120 grit)	Finish (150-220 grit)	Pre-Finish (240-400 grit)	Polish (500-1200 grit)				
SK750X	▲ ●	▲ ●	▲ ●	▲ ●				▲ ●							CG-S, Z/A, A/O, S/C,)	SK750X		
SF750						▲ ●									C/A	SF750		
LK719X		▲ ●													CG-A	LK719X		
KK718X		▲ ●		▲ ●											CG-A	KK718X		
KK712X		▲ ●		▲ ●											CG-A	KK712X		
KK712J	▲ ●				▲ ●										CG-A	KK712J		
KF736															CG-A	KF736		
CK918X		▲ ●													CG-S	CK918X		
KK716	●	▲ ●		▲ ●											Z/A	KK716		
KK715X	●	▲ ●		▲ ●											Z/A	KK715X		
ZK713X	●	▲ ●	▲ ●	▲ ●											Z/A	ZK713X		
ZK713T	●		▲ ●												Z/A	ZK713T		
ZF713															Z/A	ZF713		
KK711Y	●	▲ ●	▲ ●	▲ ●											A/O	KK711Y		
KK711X	●	▲ ●	▲ ●	▲ ●											A/O	KK711X		
KK711T	●		▲ ●												A/O	KK711T		
KF708															A/O	KF708		
KK511J	●														A/O	KK511J		
KK511F	●														A/O	KK511F		
KK114F															A/O	KK114F		

C/A - Ceramic Alumina
 CG-A - COMPACTGRAIN Aluminum Oxide
 CG-S - COMPACTGRAIN Silicon Carbide
 Z/A - Zirconia Alumina
 A/O - Aluminum Oxide

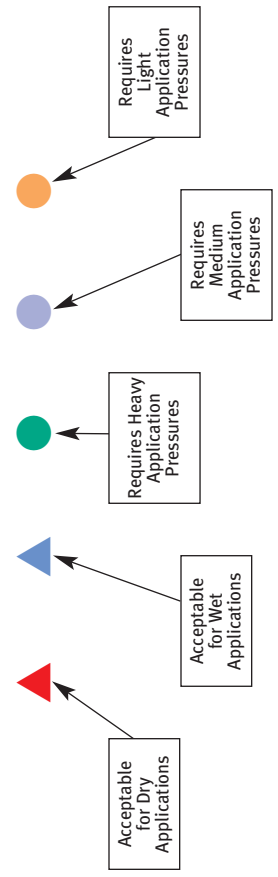


- Instructions for Use:
1. Locate your application.
 2. Is application Wet or Dry?
 3. What is your pressure (Light, Medium, or Heavy)?
 4. Determine Stock Removal Rate.
 5. Determine VSM Product.

STAINLESS STEEL AND EXOTIC METAL

VSM Product	Application						Stock Removal Grain						VSM Product	
	Backstand	Wide Belt	Stroke Sanding	Centerless Grinding	Slack of Belt	Right Angle	Dynaflex	Coarse (20-50 grit)	Medium (60-80 grit)	Light (100-120 grit)	Finish (150-220 grit)	Pre-Polish (240-400 grit)		Polish (500-1200 grit)
SK840X	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	C/A
SK847	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	C/A
SK750X		▲		▲				●	●	●	●	●	●	C/A
SF840								▲	●	●	●	●	●	C/A
SK840J	▲				▲			▲	●	●	●	●	●	C/A
SK840F	▲				▲			▲	●	●	●	●	●	C/A
KK834X		▲				▲			●	●	●	●	●	CG-A
LK719X		▲		▲					●	●	●	●	●	CG-A
KK718X		▲		▲					●	●	●	●	●	CG-A
MK748X		▲		▲					●	●	●	●	●	CG-S
CK748X		▲		▲					●	●	●	●	●	CG-S
CK918X		▲		▲					●	●	●	●	●	CG-S
CK742J	▲							▲	●	●	●	●	●	CG-S
ZK744X	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	Z/A
ZK813T	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	Z/A
ZK844J	▲							▲	●	●	●	●	●	Z/A
KK715X		▲		▲					●	●	●	●	●	Z/A
KK815Y	▲	▲						▲	●	●	●	●	●	Z/A
ZF714									●	●	●	●	●	Z/A
KK812X	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	A/O
KK841F	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	A/O
CK721X	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	S/C
CK721J	▲							▲	●	●	●	●	●	S/C

C/A - Ceramic Alumina
 Z/A - Zirconia Alumina
 A/O - Aluminum Oxide
 S/C - Silicon Carbide

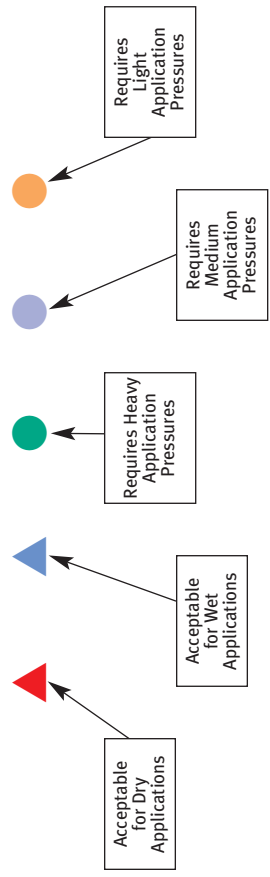


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 4. Determine Stock Removal Rate.
 5. Determine VSM Product.

NON-FERROUS METALS & CAST IRON

VSM Product	Application					Stock Removal	Grain	VSM Product
	Backstand	Wide Belt	Slack of Belt	Right Angle	Dynafile			
SK750X	▲ ● ●	▲ ● ●			●	Coarse (20-50 grit)	SK750X	
SF750				▲ ●		Medium (60-80 grit)	SF750	
KK717	▲ ●	▲ ●				Light (100-120 grit)	KK717	
KK716	▲ ●	▲ ●				Finish (150-220 grit)	KK716	
KK715X	▲ ●	▲ ●				Pre-Finish (240-400 grit)	KK715X	
ZK713X	▲ ●	▲ ●			●	Polish (500-1200 grit)	ZK713X	
ZK713T	▲ ●		●	●	●		ZK713T	
ZF713				▲ ●			ZF713	
KK711Y	▲ ●	▲ ●					KK711Y	
KK711X	▲ ●	▲ ●			●		KK711X	
KK711T	▲ ●		●		●		KK711T	
KK511J	▲ ●		●				KK511J	
KK511F	▲ ●		●				KK511F	
KK532F	▲ ●		●				KK532F	
CK721J	▲ ●		●				CK721J	

C/A - Ceramic Alumina
 Z/A - Zirconia Alumina
 A/O - Aluminum Oxide
 S/C - Silicon Carbide



- Instructions for Use:
1. Locate your application.
 2. Is application Wet or Dry?
 3. What is your pressure (Light, Medium, or Heavy)?
 4. Determine Stock Removal Rate.
 5. Determine VSM Product.

THE PRODUCT

VSM realizes you are looking for more than grinding and finishing products; you are looking for an abrasive that can most effectively reduce finishing costs while increasing production efficiencies.

For all types of applications and tasks, VSM supplies the right abrasive tools: belts, discs, sheets, rolls and other abrasive products in a wide range of dimensions.

CERAMIC ALUMINA (C/A)

High stock removal products used in moderate to high-pressure applications.

SK847

Top-sized product with an extremely heavy backing. *Grits available: 24 - 60*

SK840X

Top-sized product with outstanding cutting performance. *Grits available: 24 - 120*

SK750X

Heavy cloth product used for high stock removal. *Grits available: 24 - 120*

SF840

Top-sized Resin Fiber disc made from SK840X Ceramic with excellent cutting performance. *Grits available: 24 - 120*

SF750

Resin Fiber disc made from SK750X used for high stock removal applications. *Grits available: 24 - 120*

SK840J

Flexible top-sized product used for cool cutting on profiled parts. *Grits available: 50 - 120*

SK840F

Very flexible top-sized product used for cool cutting on profiled parts. *Grits available: 80 - 180*

COMPACTGRAIN ALUMINUM OXIDE (CG-A)

Multi-layer product that provides a uniform finish and long life on a variety of metals.

LK719X

Aggressive product with an exceptionally long life. *Grits available: P120, P180*

KK718X

Robust product with a consistent finish. *Grits available: P60, P80, P120, P180, P240, P320, P400, P600*

KK712X

Good stock removal and finishing product for moderate pressures. *Grits available: P80, P120, P180, P240, P320, P400, P600*

KK712J

Flexible cotton cloth backing great for contoured work pieces in moderate to light pressures. *Grits available: P80, P120, P180, P240, P320, P400*

KF736

Resin Fiber disc with excellent finish characteristics. *Grits available: P120*

KK834X

Top-sized heavy-duty product used for grinding heat sensitive metals. *Grits available: P80, P120, P180, P240*

COMPACTGRAIN SILICON CARBIDE (CG-S)

Multi-layer product that provides a uniform finish and long life on a variety of metals.

MK748X

Aggressive cut with long life. *Grits available: P120, P180, P240, P320, P400*

CK748X

Robust product with long life. *Grits available: P80, P120, P180, P240, P320, P400*

CK742J

Aggressive cut on hard metals. *Grits available: P80, P120, P180*

CK918X

Heavy cloth product for extremely fine finishing. *Grits available: P400, P600, P800, P1000, P1200*

ZIRCONIA ALUMINA (Z/A)

High stock removal grain best used in abusive applications.

KK717

Extremely heavy reinforced cloth product providing high stock removal and long life under high-pressures. *Grits available: 20 - 36*

KK716

Extra stiff heavy reinforced cloth product for high stock removal under high pressures. *Grit available: 24 - 60*

KK715X

Strong cloth product used for heavy stock removal and long life under high pressures. *Grits available: 24 - 80*

ZK713X

Heavy cloth product with aggressive cutting capabilities and long life for lighter pressures. *Grits available: 24 - 120*

ZK713T

Flexible cloth backed product with aggressive cutting capabilities for lighter pressures. *Grits available: 40 - 80, 120*

KK815Y

Top-sized heavy cloth product used for cool cutting and high cut rates at high pressures. *Grits available: 36 - 80*

ZK744X

Heavy cloth top-sized product used for cool cutting and high stock removal. *Grits available: 24 - 80*

ZF713

Resin Fiber disc that provides a high cut rate. *Grits available: 24 - 120*

ZF714

Top-sized Resin Fiber disc with an aggressive cut rate and long life. *Grits available: 24 - 80*

ZK813T

Strong flexible top-sized product used for cool cutting on moderately profiled parts. *Grits available: 36, 50 - 80*

ZK844J

Flexible top-sized product used for cool cutting on profiled parts. *Grits available: 50 - 100*

ALUMINUM OXIDE PRODUCTS (A/O)

General-purpose grain used on a variety of metals.

KK711Y

Heavy weight cloth product with high stock removal and long life. *Grits available: P36 - P240, P320, P400, P500*

KK711X

Heavy weight cloth with high stock removal and long life. *Grits available: P24 - P320, P400*

KK711T

Strong flexible product with good running properties. *Grits available: P50 - P240, P320, P400, P500*

KK511J

Flexible product used on profiled parts. *Grits available: P60 - P320, P400, P500*

KK511F

Very flexible cloth used on a variety of profiled parts. *Grits available: P60 - P400, P600, P800*

KK532F

Very flexible sterated product that resists loading in profile sanding applications. *Grits available: P80 - P240, P320, P400*

KK711E

Extremely flexible product used on profiled parts. *Grits available: P80 - P220, P320*

KK114F

Very flexible product used as discs, sheets and shop rolls. *Grits available: P40 - P320, P400*

KK812X

Heavy cloth product utilizing grinding additives to reduce work piece temperatures. *Grits available: P36 - P120*

KK841F

Very flexible top-sized cloth product used for heat sensitive profiled parts. *Grits available: P80, P120 - P320, P400*

KF708

Resin Fiber disc with high stock removal properties. *Grits available: P16 - P150*

SILICON CARBIDE (S/C)

General-purpose grain mainly used on non-ferrous metals.

CK722Y

Extremely heavy weight product with a high cut rate. *Grits available: P24 - P150*

CK721X

Heavy weight product with a high cut rate. *Grits available: P24 - P240, P320, P400, P600*

CK721J

Flexible product for grinding profiled parts. *Grits available: P80 - P220, P320*

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