



Decoating / Descaling / Smoothing & Polishing / Fettling





KRAMPEHAREX® – KNOW WHY EVERY ABRASIVE IS A PLEDGE.

KrampeHarex® is a specialised manufacturer of abrasives with operations all over the world. Our know-how when it comes to blasting processes has grown steadily broader and deeper ever since we were first founded in 1982. Today, first-class precision instruments for a variety of industrial applications are produced at three different locations – built to the highest quality, compliant with international standards and routinely checked and documented in our own QM laboratory.

We offer premium-quality abrasives for every application, guaranteed to be safe and reliable and neither toxic nor silicogenic or carcinogenic. For numerous regular customers, the biggest and most convincing argument for KrampeHarex® is our above-average service. Our aim: to provide you with a tailor-made solution that reconciles your company's specific requirements with economic demands.

Efficient and customised abrasives with precisely matched technology – that's why manufacturers around the world put their trust in Krampe-Harex®. Let's get together to optimise your products and your production processes!

THE KRAMPEHAREX® **QUALITY PLEDGE:**



ISO certified quality management



Every stage of production subject to inspection



Guaranteed safe - from raw material to abrasive

THE KRAMPEHAREX® **ENVIRONMENTAL PLEDGE:**



100% green power in all processes



Highly efficient intersectional technologies



Eco-friendly production and disposal

4 KRAMPEHAREX®

WE TEAM UP BLASTING PROCESSES WITH ABRASIVES.

Our abrasives portfolio includes two product series – Peenox® and Blastex® – for shot peening and shot cleaning. If the abrasive is precisely matched to the blasting process, you profit from high efficiency and perfect results.

A Shot peening

Shot peening is used to harden or shape the surfaces of a workpiece (peen forming); the abrasive particles are rounded due to the hammer effect. Compressive residual stress is induced in the workpiece, so that the initiation of fatigue cracking is significantly delayed. This means more durable components, enhanced fatigue strength under constantly alternating stress conditions and higher dynamic strength in combination with lightweight materials.

- Hardening
- Shaping

Shot cleaning

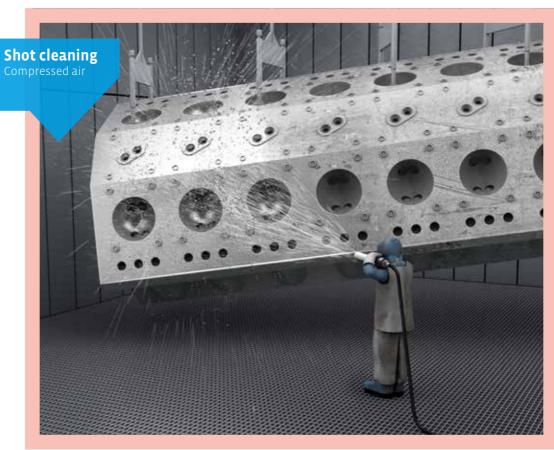
Surfaces which are blasted with round or angular abrasives are cleaned and prepared for downstream coating processes. Descaling and deburring of cast or forged components, descaling of and rust removal from steel profiles or the removal of old paint and other coatings are just a few typical examples. Especially when angular abrasives are chosen, shot cleaning alters specific properties of the surfaces. It can be used to roughen brake pad mounts, for instance, create a positive fit with brake pads or roughen surfaces in preparation for a subsequently applied metallic coating, e.g. prior to galvanising.

- Roughening/tarnishing
 - Descaling
- Deburring
- Smoothing/polishing
- Decoating

Rust removal

- Fettling
- 511100111111









Above: shot peening of coil springs

Shot cleaningShot-blasting wheel



Right: rust removal from, and descaling of, steel girders

Left: manual blasting of a large cast workpiece

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Compressed air system Shot-blasting wheel system

OUR ABRASIVES -YOUR APPLICATIONS.

STEEL CUT WIRE SHOT

STAINLESS STEEL CUT WIRE SHOT

NON-FERROUS METAL CUT WIRE SHOT

		COT WIKE SHOT												
		Peenox® CS	Peenox® CS (as cut)	Peenox* PERFORM+	Peenox® PERFORM+ (as cut)	Blastex [®] CS	Peenox® ST	Peenox® ST (as cut)	Blastex® ST	Blastex ® AL	Blastex® ZN	Blastex® CP	Blastex ® BS	Blastex® BZ
	PRODUCTS	(a)		3	0								3	
	Special properties & usage	Steel cut wire shot, rounded. For hardening and shaping iron and steel workpieces, especially in vehicle manufacturing, the aviation and aerospace industries and mechanical and apparatus engineering.	Steel cut wire shot, cylindrical. For cleaning and hardening iron and steel workpieces in special applications.	Long-life steel cut wire shot, rounded. For hardening and shaping iron and steel workpieces, especially in vehicle manufacturing, the aviation and aerospace industries and mechanical and apparatus engineering.	Long-life steel cut wire shot, cylindrical. For cleaning and hardening iron and steel workpieces in special applications.	Steel cut wire shot, cylindrical. High blasting performance for efficient cleaning of iron and steel workpieces, especially cast or forged components.	Stainless steel cut wire shot, rounded. For hardening and shaping stainless steel and non-ferrous metal workpieces, especially in vehicle manufacturing, the aviation and aerospace industries and mechanical and apparatus engineering.	Stainless steel cut wire shot, cylindrical. For cleaning and hardening stainless steel and non-ferrous metal workpieces in special applications.	Stainless steel cut wire shot, cylindrical. For efficient cleaning of stainless steel and non-ferrous metal workpieces, especially cast or forged components.	Aluminium cut wire shot, cylindrical. For gentle cleaning and deburring of die-cast aluminium and magnesium workpieces.	Zinc cut wire shot, cylindrical. For gentle cleaning and deburring of die- cast zinc workpieces.	Copper cut wire shot, cylindrical. For gentle cleaning and deburring of copper workpieces as well as for special applications.	Brass cut wire shot, cylindrical. For gentle cleaning and deburring of cast brass workpieces.	Bronze cut wire shot, cylindrical. For gentle cleaning and deburring of bronze workpieces.
	Shape	0	0	0	0	0	0	0	0	9	0	0		0
	Blasting system	AB/WB	AB/WB	AB/WB	AB / WB	AB/WB	AB / WB	AB / WB	AB / WB	AB / WB	AB/WB	AB / WB	AB / WB	AB/WB
HOI PEENING	Hardening	+	+	+	+		+	+						
	Shaping	+	+	+	+		+	+						
^	Roughening													
	Deburring					+			+	+	+	+	+	+
	Rust removal					+			+					
	Decoating					+			+					
	Descaling					+			+	+	+	+	+	+
	Smoothing, Polishing													
	Tarnishing													
	Fettling					+			+					
	Cleaning					+			+	+	+	+	+	+
	Structuring								+					
	Sweeping													
	Other applications													

SHOT CLEANING

Shot-blasting wheel system

CAST ABRASIVES

YOUR APPLICATIONS.

OUR ABRASIVES -

NON-METALLIC ABRASIVES

		Steel Shot LC	Steel Shot HC	Steel Grit	Stainless Steel Shot	Stainless Steel Grit	Chilled Iron Shot	Chilled Iron Grit	Ceramic Beads	Glass Beads	Glass Granulate	Fused Alumina	Synthetic Abrasive
	PRODUCTS								2	Q.	The state of the s		A
	Special properties & usage	LC cast steel, round. Long service life, low consumption. For economical cleaning and surface preparation of iron and steel workpieces, especially cast components.	HC cast steel, round. High blasting performance. For economical cleaning and surface preparation of iron and steel workpieces, especially forged components, steel objects and structural steelwork.	Cast steel, angular. For economical clean- ing and surface finish- ing of iron and steel workpieces, also in preparation for coating.	Cast stainless steel, round. For economical cleaning and surface preparation of stainless steel and non-ferrous metal workpieces, especially cast components.	Cast chrome steel, angular. For economical cleaning and surface finishing of stainless steel and non-ferrous metal workpieces, also in preparation for coating.	Chilled iron, round. Not an abrasive. For gravity cleaning, as filling material, for backfilling moulds and as an aggregate for concrete in special applications in industry.	Chilled iron, angular. Hard abrasive for cleaning and surface finishing of iron and steel workpieces with compressed air, also in preparation for coating.	Ceramic beads, round. Very hard abrasive for cleaning, hardening and shaping of work-pieces, especially in the aviation and aerospace industries and medical technology.	Glass beads, round. Hard, non-ferrous abrasive for economical cleaning of fragile components and for hardening and shaping workpieces.	Glass granulate, angular. Non-ferrous abrasive for cleaning and roughening the surfaces of metallic and non-metallic workpieces.	Fused alumina, angular. Brown or white fused alumina. For cleaning and roughening surfaces in medical and industrial applications, especially for in the manufacture of laminate.	Synthetic abrasive, angular. Fine abrasive for gentle cleaning and deburring of injection moulded components, paint removal and cleaning of moulds and tools.
	Shape	\circ	0		0		0	\boxtimes	0	0		\boxtimes	
	Blasting system	AB / WB	AB/WB	AB / WB	AB/WB	AB/WB		АВ	AB / WB	АВ	АВ	AB	АВ
PEENING	Hardening		+						+	+			
SHOT PE	Shaping		+						+	+			
У [Roughening			+		+		+			+	+	
	Deburring	+	+		+					+			+
	Rust removal	+	+	+				+				+	
	Decoating	+	+	+	+	+		+	+	+	+	+	+
	Descaling	+	+	+	+	+							
פט	Smoothing, Polishing								+	+			
CLEAN	Tarnishing			+		+		+			+	+	
SHOT	Fettling	+	+		+								
	Cleaning			+		+		+	+	+	+	+	+
	Structuring				+					+		+	
	Sweeping			+		+		+					
	Other applications						Ballast Filling & backfilling Radiation protection					• Wear protection	

KNOW WHY

PEENOX® IS PERFECT FOR SHOT PEENING.

The choice of abrasive is a critical factor in shot peening – regardless of whether the aim is to optimise the load-bearing capacity and durability of safety-relevant components or to enhance the dynamic strength of springs, for example. Our Peenox® product series demonstrably achieves superior shot peening results.

Cut wire shot is a quality product which enhances a workpiece's fatigue strength better than any other metallic abrasive. Peenox® PERFORM+ is a particularly durable material for users seeking a cost-efficient solution.

Cylindrical steel cut wire shot

Rounded steel cut wire shot with 3 grades of roundness

Z

G1

G2

G3







Peenox® CS (to VDFI)



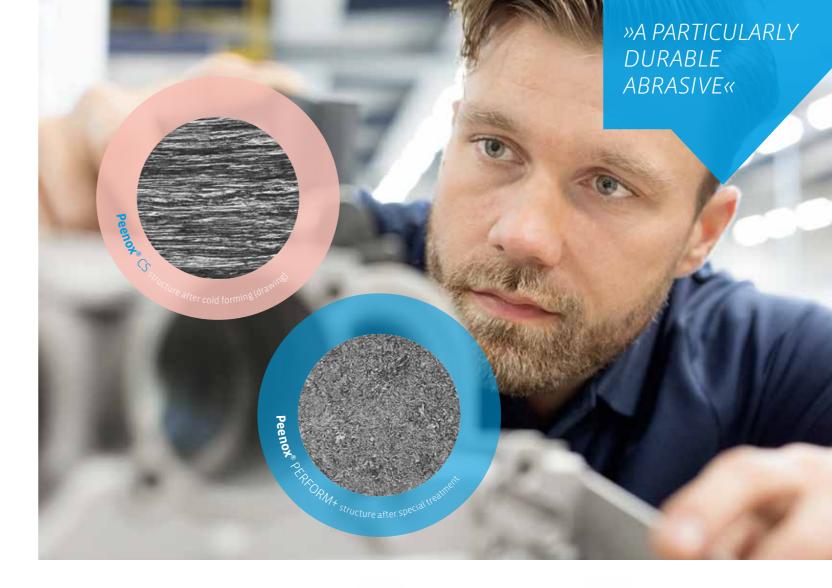
Peenox® CS (to SAE AMS)







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Type of abrasive Steel cut wire shot		Steel cut wire shot	Stainless steel cut wire shot			
Grain shape	Rounded	Rounded	Rounded			
Usage	Surface hardening (shot peening), surface shaping (peen forming)	Surface hardening (shot peening), surface shaping (peen forming)	Surface hardening (shot peening), surface shaping (peen forming)			
Standards	VDFI 8001	SAE AMS 2431/3: Designation AWCR SAE AMS 2431/8: Designation AWCH	SAE AMS 2431/4			
Hardness	HV 640: 610–670 HV1 (56–59 HRC) HV 670: 640–700 HV1 (57–60 HRC) HV 700: 670–730 HV1 (59–61 HRC)	SAE AMS 2431/3: 45-52 HRC (450-550 HV1) SAE AMS 2431/8: 55-62 HRC (600-750 HV1)	Min. 45 HRC (450 HV1)			
Grain size	0.20 mm	AWC 12: 0.012" (0.30 mm) AWC 14: 0.014" (0.35 mm) AWC 17: 0.017" (0.40 mm) AWC 20: 0.020" (0.50 mm) AWC 23: 0.023" (0.60 mm) AWC 28: 0.028" (0.70 mm) AWC 32: 0.032" (0.80 mm) AWC 32: 0.032" (0.80 mm) AWC 96: 0.096" (2.40 mm)	AWS 12: 0.012" (0.30 mm) AWS 35: 0.035" (0.90 mm) AWS 14: 0.014" (0.35 mm) AWS 41: 0.041" (1.00 mm) AWS 17: 0.017" (0.40 mm) AWS 47: 0.047" (1.20 mm) AWS 20: 0.020" (0.50 mm) AWS 54: 0.054" (1.40 mm) AWS 23: 0.028" (0.60 mm) AWS 80: 0.080" (2.00 mm) AWS 32: 0.032" (0.80 mm) AWS 96: 0.096" (2.40 mm)			
	Other grain sizes and mixes on request	Other grain sizes and mixes on request	Other grain sizes and mixes on request			
Packaging	Bag BigBag Drum 25 kg 1000 kg 907 kg	Bag BigBag Drum 25 kg 1000 kg 907 kg	Bag BigBag Drum 25 kg 1000 kg 907 kg			



Peenox® PERFORM+



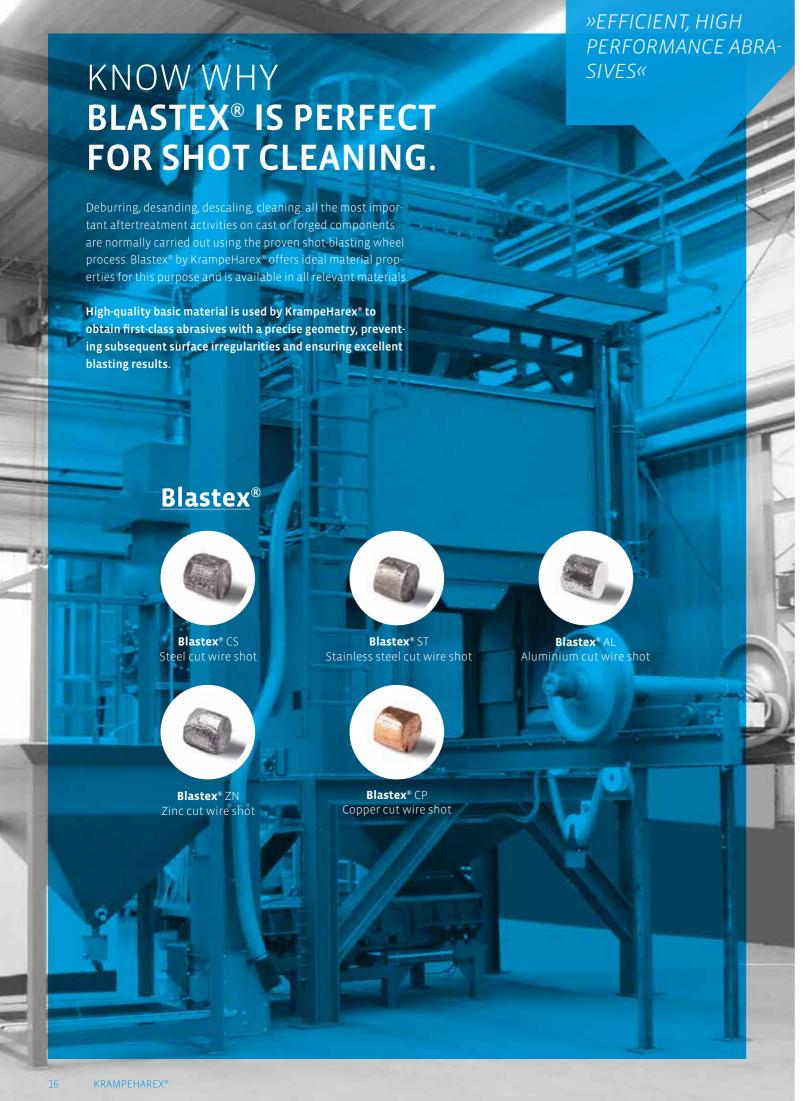


Peenox® PERFORM+ (to SAE AMS)



	,			· ·				
Type of abrasive	Steel cut wire shot			Steel cut wire shot				
Grain shape	Rounded			Rounded				
Usage	Surface hardening (sh surface shaping (peer			Surface hardening (shot peening), surface shaping (peen forming)				
Standards	VDFI 8001 Customer-specific rec	quirements		SAE AMS 2431/3: Designation AWCR SAE AMS 2431/8: Designation AWCH Customer-specific requirements				
Hardness	HV 640: 610–670 HV1 (56–59 HRC) HV 670: 640–700 HV1 (57–60 HRC) HV 700: 670–730 HV1 (59–61 HRC) HV 800: 770–830 HV1 (63–65 HRC)				SAE AMS 2431/3: 45–52 HRC (450–550 HV1) SAE AMS 2431/8: 55–62 HRC (600–750 HV1) SAE AMS 2431: 63–65 HRC (770–830 HV1)			
Grain size	0.30 mm 0.35 mm 0.40 mm 0.50 mm	0.70 mm 0.80 mm 0.90 mm 1.00 mm 1.20 mm		AWC 12: 0.012" (0.30 mm) AWC 14: 0.014" (0.35 mm) AWC 17: 0.017" (0.40 mm) AWC 20: 0.020" (0.50 mm) AWC 23: 0.023" (0.60 mm) AWC 28: 0.028" (0.70 mm)	AWC 32: 0.032" (0.80 mm) AWC 35: 0.035" (0.90 mm) AWC 41: 0.041" (1.00 mm) AWC 47: 0.047" (1.20 mm) AWC 54: 0.054" (1.40 mm) AWC 62: 0.062" (1.60 mm)			
	Other grain sizes and mon request	nixes		Other grain sizes and mixes on request				
Packaging		BigBag 1000 kg	Drum 907 kg		gBag Drum 00 kg 907 kg			

PEENOX® ABRASIVES 15





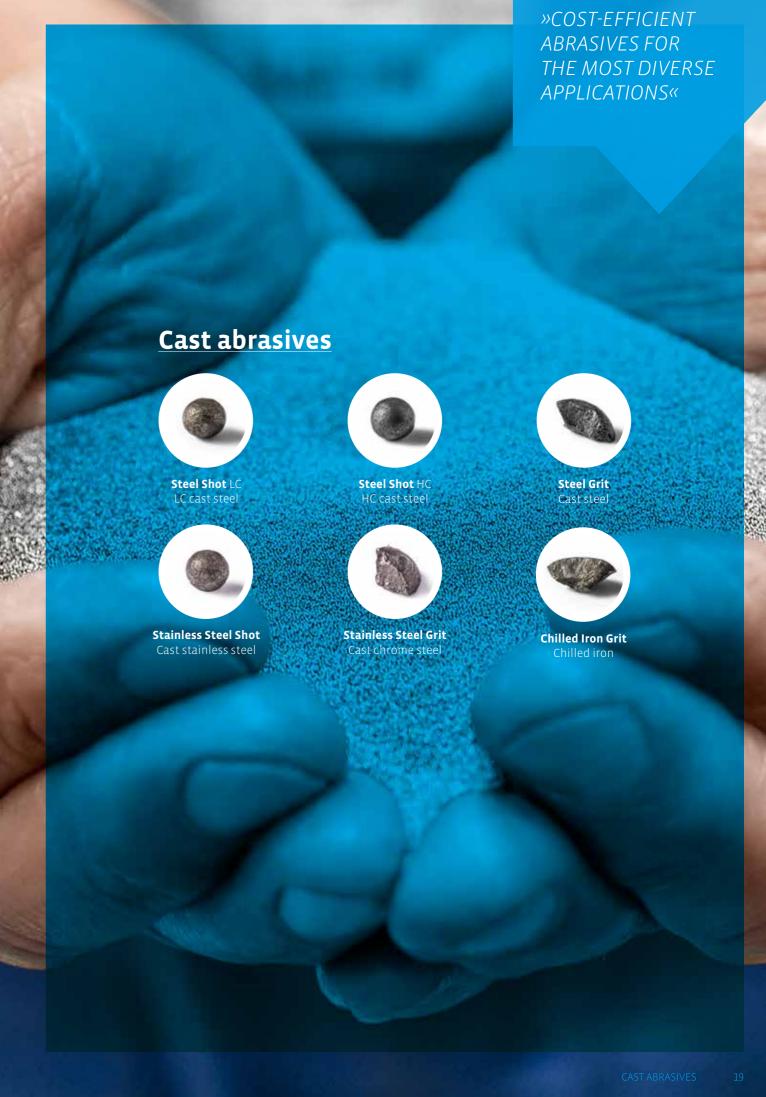
	Top-quality basic materials
+	High performance
+	Optimal blasting results
+	Long service life
+	Low system wear
+	No contact corrosion if identical materials are used

	Blastex® AL	8	Blastex® ZI	V Q	Blastex® Cl		
Type of abrasive	Aluminium cut wire shot		Zinc cut wire shot, Zi	ncPlus cut wire shot	Copper cut wire shot		
Grain shape	Cylindrical		Cylindrical		Cylindrical		
Usage	ge Deburring, descaling, cleaning, fettling		Deburring, descaling	g, cleaning, fettling	Deburring, descaling, cleaning, fettling		
Standards	Standards Based on DIN 8201-4		Based on DIN 8201-4		Based on DIN 8201-4		
Hardness	90-140 HV0.5 (depending on material grade)		Zinc cut wire shot: 35–40 HV0.2 ZincPlus cut wire shot: 40–45 HV0.2		110-140 HV0.5		
Grain size	0.40 mm 0.50 mm 0.60 mm 0.70 mm 0.80 mm	0.90 mm 1.00 mm 1.20 mm 1.40 mm 1.60 mm	0.50 mm 0.60 mm 0.70 mm 0.80 mm 0.90 mm	100 mm 120 mm 140 mm 1.60 mm	0.40 mm 0.50 mm 0.60 mm 0.70 mm 0.80 mm 0.90 mm	1.20 mm 1.40 mm 1.60 mm 1.80 mm 2.00 mm 2.20 mm 2.40 mm	
	Other grain sizes and mixes on request		Other grain sizes and mixes on request		Other grain sizes and mixes on request		
Packaging	Bag 8 kg	BigBag 400 kg	Bag 25 kg	BigBag 1000 kg	Bag 25 kg	BigBag 1000 kg	

BLASTEX® ABRASIVES

Steel Shot HC Steel Grit **Steel Shot** LC Type of abrasive LC cast steel HC cast steel Cast steel Grain shape Round Round Angular Usage Deburring, rust removal, decoating, Hardening, shaping, deburring, rust Roughening, rust removal, decoating, descaling, fettling removal, decoating, descaling, fettling tarnishing, sweeping Standards SAE J444 Works standard, Works standard, ISO 11124-4 SAE J444, SAE 1444. ISO 11124-3 ISO 11124-3 (DIN 8201-2) (DIN 8201-2) Hardness New material: 40-50 HRC (400-520 HV1) 46-51 HRC (450-535 HV1) 46-52 HRC (480-550 HV1): type GP Operating mix: 46-50 HRC (460-520 53-57 HRC (570-650 HV1): type GL Min. 64 HRC (min. 800 HV1): type GH Grain size S 70: 0.12-0.43 mm S 390: 0.85-1.70 mm S 70: 0.12-0.50 mm S 390: 0.85-1.70 mm S 110: 0.18-0.60 mm S 460: 1.00-2.00 mm S 110: 0.18-0.71 mm S 460: 1.00-2.00 mm G 80: 0.12-0.50 mm G 16: 1.00-2.00 mm S 170: 0.36-0.85 mm S 550: 1.18-2.00 mm S 170: 0.42-0.85 mm S 550: 1.18-2.36 mm G 50: 0.30-0.85 mm G 14: 1.18-2.36 mm S 230: 0.50-1.00 mm S 660: 1.40-2.36 mm S 230: 0.50-1.00 mm S 660: 1.70-2.80 mm G 40: 0.50-1.18 mm G 12: 1.40-2.80 mm G 25: 0.60-1.40 mm S 330: 0.71-1.40 mm S 330: 0.71-1.40 mm Other grain sizes and mixes Other grain sizes and mixes Other grain sizes and mixes on request on request on request **Packaging** Bag BigBag Bag 25 kg BigBag Bag BigBag





CAST ABRASIVES



Alumina Beads **Beads** Glass beads Brown fused alumina, Type of abrasive Ceramic beads white fused alumina Grain shape Angular Hardening, shaping, decoating, Hardening, shaping, deburring, Roughening, rust removal, decoating, Usage smoothing, polishing, cleaning decoating, smoothing, polishing, tarnishing, cleaning, structuring, cleaning, structuring wear protection Standards SAE J1830 DIN 8201-7 DIN 8201-6 SAE AMS 2431/7 Hardness (Mohs): approx. 7-7.5 Mohs Hardness (Mohs): approx. 6-7 Mohs Hardness (Mohs): approx. 8-9 Mohs Hardness Hardness (Rockwell): approx. 60 HRC Hardness (Rockwell): approx. 58 HRC Hardness (Vickers): approx. 700 HV Hardness (Vickers): approx. 645 HV Grain size B 205: 0-63 μm 40-70 μm F 12: 1400–2000 μm F 54: 300–425 μm B 125: 0-125 μm 70-110 μm F 14: 1180-1700 µm F 60: 212-300 µm B 120: 63-125 μm 90-150 μm F 16: 1000–1400 μm F 70: 180–250 μm B 60: 125-250 μm 100-200 μm F 20: 850-1180 μm F 80: 150-212 μm B 40: 250-425 μm 150-250 µm F 22: 710-1000 μm F 90: B 30: 425-600 μm 200-300 μm F 24: 600-850 μm F 100: 106-150 μm B 20: 600-850 μm 300-400 μm 500-710 μm 400-850 μm 425-600 μm F 40: 335-500 μm F 180: F 46: 300–425 μm F 220: 53-75 μm

Other grain sizes and mixes

on request

25 kg

Glass

Fused

Other grain sizes and mixes

on request

Ceramic

Other grain sizes and mixes

Packaging



KNOW WHY WE ACCOMPANY YOU THROUGH EVERY STEP. THAT'S SERVICE+

The significance of abrasives is growing steadily as the demands facing manufacturers in the global market increase. A fundamental analysis of the blasting processes is vital for efficient and cost-effective working. That's why we offer you not only premium-quality abrasives for any application but also a comprehensive package of services.

In direct interaction with you, we share our know-ledge, discuss questions, resolve problems and develop new ideas. We accompany you from the identification of the optimal abrasive all the way to the impeccably blasted workpiece. We search for solutions until we find the one that meets your requirements perfectly. We want you to understand what you have to gain from entering into a partnership with us.

Service+ solutions for your project:

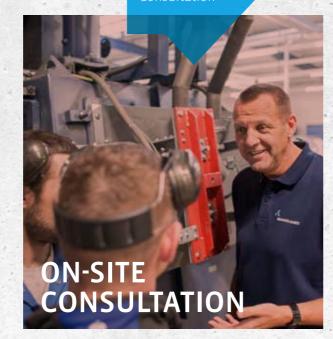
Consultation
Measuring
System check
Abrasive media test
Customised mixes
Quality system



For premium quality.

We examine the quality of your abrasives for you and determine their durability by means of an Ervin test. That way, you can be certain that the abrasives you choose also satisfy your cost-efficiency requirements.





For optimal processes.

By taking samples directly on your site, we can test the composition of the operating mix in the blasting system and identify possible malfunctions before they have a chance to occur. If a more in-depth investigation is necessary, this is done in our own lab using the latest measuring and inspection technology.

For the right abrasive media.

Material, specific weight, grain shape & size, hardness: starting with the customer's blasting requirements, we identify the optimal abrasive for your application - precisely matched to the blasting time and intensity as well as the conditions in the works. From screen analyses to abrasive media tests, we master all relevant methods.



Service + Custom-made



For customised mixes.

We are the only provider to offer three metallic abrasives – steel cut wire shot as well as high-carbon and low-carbon cast steel – which are represented equally in our portfolio. We are thus also in a position to offer special mixes of cast steel and steel cut wire shot.



For the optimal configuration.

During the blasting process we carry out system checks on-site at your facilities, inspecting process-relevant system components such as turbines, air separators and filters in order to determine whether your system is optimally configured.

»We inspect all abrasives in our own laboratory at every stage of production, based on the most stringent criteria.«

Marita Lenkenhoff, Test Lab



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