

Technical Data Sheet

Material: Steel Shot SAE J444 & WAE

Product Name: Steel Shot; **Identifier:** S1110, S930, S780, S660, S550, S460, S390, S330, S280, S230, S170, S110

Shot blasting – rust, scale, and coating removal. Shot peening – improves metal durability. Casting cleanup – defect and sand removal. Surface roughening – enhances coating adhesion.

Storage & Logistic: Dworska 8, 23-206 Stróża-Kolonia, POLAND

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1. Product Description

Steel Shot is a high-carbon cast steel abrasive consisting of spherical particles produced by atomization and subsequent heat treatment of molten steel. Due to its rounded shape and uniform microstructure, steel shot provides efficient impact energy transfer, controlled surface treatment, and consistent blasting performance across various industrial processes.

The abrasive is intended for use in shot blasting and wheel blasting applications for the removal of mill scale, rust, sand residues, and other surface contaminants, as well as for surface preparation prior to coating, painting, galvanizing, or metallization. It is also widely used for shot peening processes to improve fatigue strength and durability of metal components.

Steel shot is manufactured in accordance with SAE particle size classifications and complies with the requirements of SAE J444 and ISO 11124-3 standards for high-carbon cast steel shot, ensuring consistent particle size distribution, hardness, density, and operational performance. Grades S1110, S930, S780, S660, S550, S460, S390, S330, S280, S230, S170, and S110 are available to meet different cleaning intensities, surface finish requirements, and processing conditions.

2. Chemical Composition (Typical values, %)

Fe, %	C, %	Mn, %	Si, %	S, %	P, %	According to standard SAE J827
96,5-98,0	0,8-1,2	0,6-1,2	0,5-1,0	≤ 0.05	≤ 0.05	

All chemical elements in chilled Steel Grit are in an alloyed form, not in a free form.

3. PHYSICAL AND CHEMICAL PROPERTIES

Shape	-	Solid, spherical particles		
Hardness	-	390-530 HV ; 40-51 HRC		
Density	-	7.0 g/cm ³		
Microstructure x500	-	Tempered martensite with 15% residual austenite		
Conductivity	-	< 30 μS/cm		
Colour	-	grey metallic		
Melting Point	-	approx. 1 535 °C / not usefully applicable		
Odour	-	None		
Odour Threshold	-	Not applicable	Upper/Lower Flammability or Explosive Limits	- Not
pH	-	Not applicable	Solubility	- Insoluble in water
Flash Point	-	Not applicable	Explosive Properties	- Non-explosive



4. Size characteristics

Grain size specifications in accordance (with SAE J444)

Type	Sieve size (mm) / Accumulated mass values (%)																			
	4,75	4,00	3,35	2,80	2,36	2,00	1,70	1,40	1,18	1,00	0,85	0,71	0,60	0,50	0,43	0,36	0,30	0,18	0,12	
S1110		0		90 % min	97 % min															
S930			0		90 % min	97 % min														
S780				0		85% min	97% min													
S660					0		85% min	97% min												
S550						0		85% min	97% min											
S460						0	5% max		85% min	96% min										
S390							0	5% max		85% min	96% min									
S330								0	5% max		85% min	96% min								
S280									0	5% max		85% min	96% min							
S230										0	10% max		85% min	97% min						
S170											0	10% max			85% min	97% min				
S110													0	10% max			80% min	90% min		
S070															0	10% max		80% min	90% min	

SAE J444

Grain size specifications in accordance (with WAE)

Type	Sieve size (mm) / Accumulated mass values (%)																		
	4,75	4,00	3,35	2,80	2,36	2,00	1,70	1,40	1,18	1,00	0,85	0,71	0,60	0,50	0,43	0,36	0,30	0,18	0,12
W S780				0		90 % min	97% min												
W S660				0	20% max		97% min												
W S550					0	30% max		90 % min	97% min										
W S460						0	30% max		90 % min	97% min									
W S390							0	20% max		85% min	97% min								
W S330								0	10% max		85% min	97% min							
W S280									0	30% max		90 % min	97% min						
W S230										0	30% max		90 % min	97% min					
W S170											0	30% max		90 % min	97% min				
W S110												0	20% max				90 % min	97% min	
W S070														0	5% max			90 % min	97% min

WAE

Explanation:

- The number in the table indicates the maximum or minimum allowable percentage for a given abrasive that passes through the specified sieve opening.
- Symbols such as ">90" or ">85" indicate that more than 90% or 85% of the abrasive should be smaller than the sieve opening.

5. Standards & Compliance

This product fully complies with:

SAE J827 – High-carbon cast-steel shot and grit

SAE J444 – Particle size designations

ISO 11124-3 – Metallic abrasives, steel grit

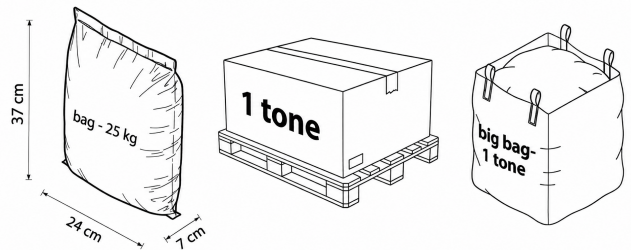
ISO 11125 series – Testing methods

6. Packaging

- 25 kg polyethylene bags, packed in cardboard on a 1000 kg pallet or big bags on a 1000 kg pallet.

- Palletized 1-ton bulk bag (Big Bag)

- Custom packaging available upon request



7. Storage & Handling

Avoid inhalation of dust (use PPE, ventilation)

Follow local occupational safety standards

MSDS (Material Safety Data Sheet) available upon request

8. Applications

Typical applications include:

- Surface preparation prior to coating, painting, or metallization
- Removal of scale, rust, paint, and casting residues
- Cleaning of castings, forgings, and welded structures
- Roughening of surfaces for improved coating adhesion
- Shot blasting of steel plates, profiles, and structural components
- Use in wheel blasting and air blasting systems
- Foundry applications — cleaning and deburring of cast parts

Industries served:

- Foundry and steel fabrication
- Shipbuilding and offshore structures
- Automotive and railway industries
- Heavy machinery manufacturing
- Construction and bridge maintenance
- Energy, pipelines, and metal processing sectors

NOTE:

The results of chemical analysis and indicators of physical and mechanical properties are listed in the account books of the plant.

No materials and raw materials of Russian production were used in the production of shot.



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