

## STEEL ABRASIVES

Shot Blasting and Shot Peening



## Steel Abrasives for Shot Blasting

**SINTO BRASIL PRODUTOS LIMITADA** belongs to one of the biggest steel shot and grit manufacturing group in the world, with plants in Asia's most important countries and Brazil. Subsidiary of Sintokogio Ltd. company, from Japan, Sinto has several decades of research and experience that guarantee the best steel abrasives and the right choice for each application.

**SINTO BRASIL** also manufactures shot blasting machines and equipment for foundries and air pollution control, and spare parts.

### SAE J444 shot and grit size specification with suggested removal sizes

**Screen Opening Sizes and Screen Numbers with Maximum and Minimum Cumulative Percentages Allowed on Corresponding Screens**

**SHOT**  
STEEL ABRASIVE



Screen N°	Screen Size	Metric Size Std. mm	S-780		S-660		S-550		S-460		S-390		S-330		S-280		S-230		S-170		S-110		S-70	
			NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM
7	0,1110	2,80	✓																					
8	0,0937	2,36		✓																				
10	0,0787	2,00	85% min		✓																			
12	0,0661	1,70	97% min		85% min		✓																	
14	0,0555	1,40			97% min		85% min		✓															
16	0,0469	1,18					97% min		85% min		5% max	✓												
18	0,0394	1,00							85% min		96% min		5% max	✓										
20	0,0331	0,850							85% min		96% min		85% min		10% max	✓								
25	0,0280	0,710									85% min		96% min		85% min		10% max	✓						
30	0,0232	0,600											85% min		96% min		85% min		10% max	✓				
35	0,0197	0,500													85% min		97% min		10% max	✓				
40	0,0165	0,425															85% min		97% min		10% max	✓		
45	0,0138	0,355																	85% min		97% min		10% max	✓
50	0,0117	0,300																			80% min		90% min	80% min
80	0,0070	0,180																			90% min		90% min	80% min
120	0,0049	0,125																					90% min	80% min
200	0,0029	0,075																						80% min. thru
<b>SUGGESTED REMOVAL SIZE</b>																								
Cleaning			0,0232	0,0165	0,0165	0,0138	0,0117	0,0117	0,0082	0,0070	0,0059	0,0049	0,0029											
Peening - 85% min. thru			0,0661	0,0555	0,0469	0,0394	0,0331	0,0282	0,0232	0,0197	0,0117	0,0049	0,0049											

**Screen Opening Sizes and Screen Numbers with Minimum Cumulative Percentages Allowed on Corresponding Screens**

**GRIT**  
STEEL ABRASIVE



Screen N°	Screen Size	Metric Size Std. mm	G-14		G-16		G-18		G-25		G-40		G-50		G-80		G-120	
			NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM	NM	OM
10	0,0787	2,00	✓															
12	0,0661	1,70		✓														
14	0,0555	1,40	80%		✓													
16	0,0469	1,18	90%		75%		✓											
18	0,0394	1,00			85%		75%		✓									
20	0,0331	0,850							85%		70%		✓					
25	0,0280	0,710											85%		70%		✓	
30	0,0232	0,600															85%	
35	0,0197	0,500																
40	0,0165	0,425																
45	0,0138	0,355																
50	0,0117	0,300																
80	0,0070	0,180																
120	0,0049	0,125																
200	0,0029	0,075																
325	0,0017	0,045																
<b>SUGGESTED REMOVAL SIZE</b>																		
Cleaning			0,0165	0,0138	0,0117	0,0082	0,0059	0,0049	0,0029									

**SAE International Standards J827 & J1993 - Jul/05**

**Chemical Composition (%)**

C	0,80 ▶ 1,20
Mn	(*) 0,60 ▶ 1,20
Si	≥ 0,40
S	≤ 0,05
P	≤ 0,05

(\*) %Mn 0,35 ▶ 1,20 (S-70 & S-110)  
0,50 ▶ 1,20 (S-170)

**Technical Specification**

Properties	(*) Shot	Grit
Hardness	40-51 HRC	GS 40-51 HRC GL 54-61 HRC GH ≥ 60 HRC
	SAE J827 - Jul/05	SAE J1993 - Jul/05
Density	≥ 7,0 g/cm³	≥ 7,3 g/cm³
Microstructure	GL,GP: Finely tempered martensite GH: Martensite	

(\*)Peening: Hardness according to customer specification

✓ - ALL PASS  
NM - NEW MATERIAL  
OM - SUGGESTED OPERATING MIX

**Steel Shot Applications**

- ✓ Sand removing of casting parts
- ✓ Descaling of forging parts and heat treated parts
- ✓ Deburring
- ✓ Shot peening

**Steel Grit Applications**

- ✓ Descaling of heat treated parts
- ✓ Surface roughness before painting and coating
- ✓ Granite cutting



**Key Points to Achieve the Perfect Balance**

**1 Steel abrasives operating mixtures - OPERATING MIX**

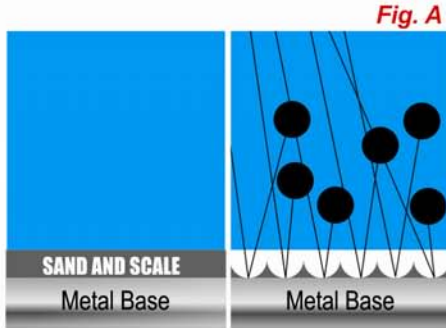


Fig. A

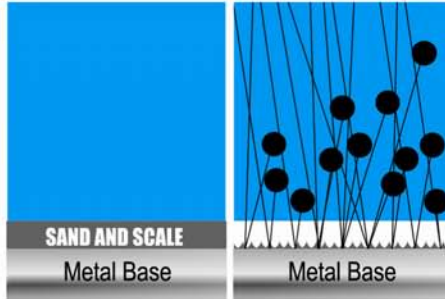


Fig. C

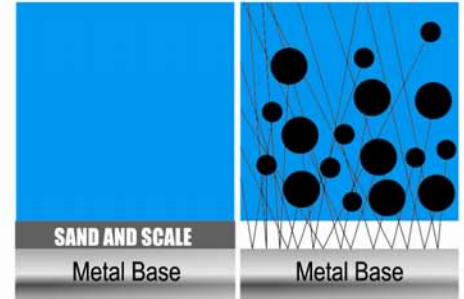


Fig. E

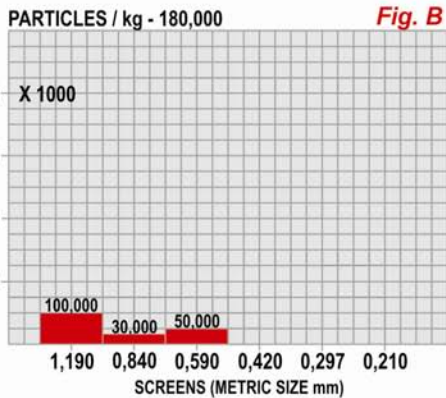


Fig. B

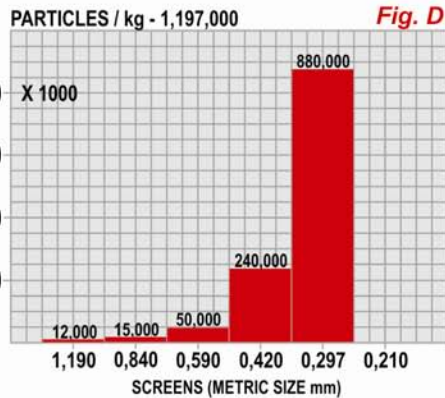


Fig. D

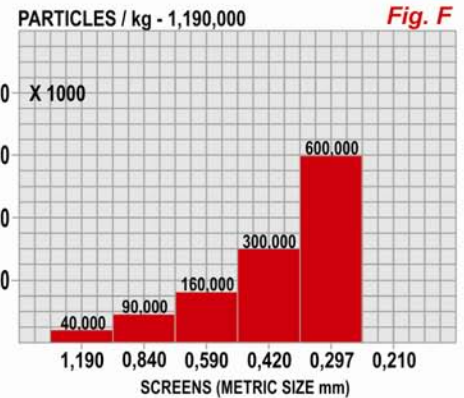


Fig. F

OPERATING MIX compound of large grains having mass to remove contaminants. However, it creates coverage failure (Fig. A) due to the low number of particles/ kg (180,000 Fig. B). The blasting cycles become longer trying to get an adequate coverage which causes high consumption of steel abrasive, energy, spare parts and productivity dropping.

OPERATING MIX compound of small grains provides surface coverage due to the high number of particles/ kg (1,197,000 Fig. D) but do not have sufficient mass to remove contaminants (Fig. C). Also in this case, blasting cycles become longer trying to get an adequate removal of contaminants, however the consequences are inadequate cleaning, costs increasing and productivity dropping.

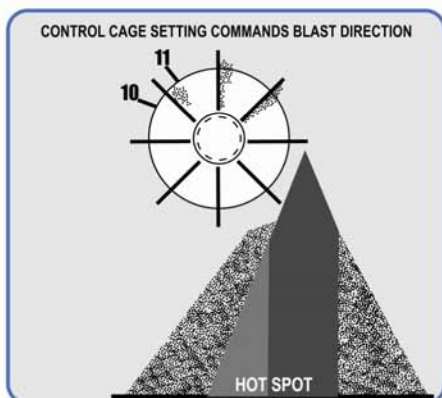
OPERATING MIX compound of all grain sizes and a large amount of particles/ kg (1,190,000 Fig. F) by removing all contaminants in surface coverage (Fig. E) can reduce the blasting cycles. Results: lower consumption of steel abrasive and energy, longer life of spare parts and productivity gains.

The shot blasting machine is designed to form the OPERATING MIX if it is properly operated:

- ✓ Supply of new steel abrasive: Frequent additions according to the proportional consumption
- ✓ Adequate exhaustion in order to remove only steel abrasives below the smallest size contained in the OPERATING MIX (see chart for sizes)
- ✓ Prevention of losses due to the accumulation of steel abrasive inside the processed parts
- ✓ Prevention of losses due to leakage in the equipment

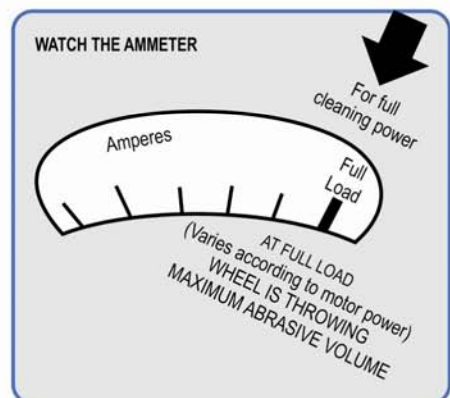
**2 Controlling the blasting work**

The material to be blasted should get the abrasive blasting.



**3 Blasting at full load**

The total use of steel abrasive flow thrown by the wheel results in perfect cleaning and less blasting cycles.



SINTO BRASIL, through its recognized expertise in blasting applications, has developed a steel abrasives PREMIUM line.



**Steel Grits that Combine High Performance, Economy and Quality**



## The Perfect Mixture for a Perfect Cleaning

Specially heat-treated steel grit allowing take a form particularly suitable for sand removal of castings during work.

The results are exactly what is expected from an efficient blasting operation:

- ✓ Surface totally free of contaminants
- ✓ Shining finishing

Less blasting cycles resulting in:

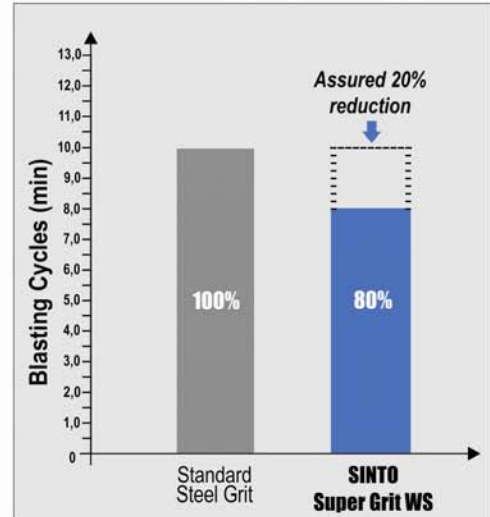
- ✓ Reduction of steel grit consumption
- ✓ Increase of blasting equipment capacity
- ✓ Reduction of energy consumption
- ✓ Reduction of equipment maintenance

### Available Sizes

**WS-1** Specially developed for small parts

**WS-2** Suitable for medium parts

**WS-3** Ideal for large parts



## The Perfect Mix for the Best Performance in Air Blasting

### Benefits

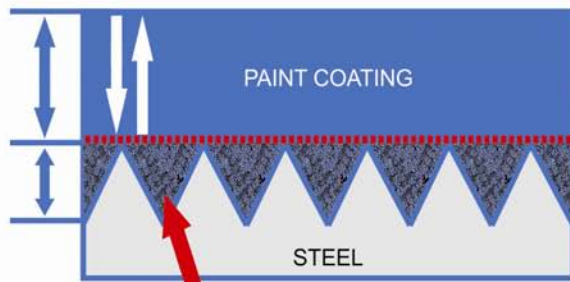
- ✓ Perfect cleaning
- ✓ High performance
- ✓ Low steel grit consumption
- ✓ Lower operating cost
- ✓ Surface profile suitable for receiving paint or coating with reduced consumption of deposited materials

### Available Sizes

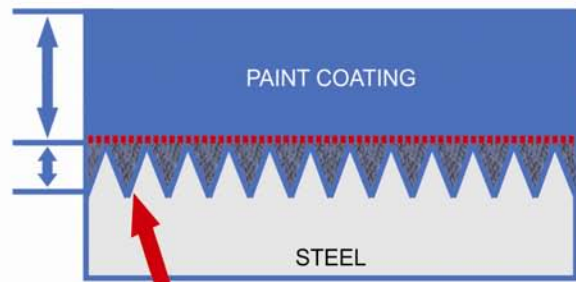
**RS-23** Requirement for high rugosity profile

**RS-45** Medium rugosity

**RS-58** Low rugosity



loss of paint using standard steel grit



less loss of paint using SINTO Super Grit RS



Our technicians put into practice all the know-how acquired through years of experience. Call us and ask for a visit!