

STEEL SHOT SCREEN ANALYSIS (SAE J444)

ASTM mesh No.	Opening	Shot Number										
	mm	5780	5660	5550	5460	5390	5330	5280	5230	5170	5110	570
7	2.83	All pass										
8	2.38		All pass									
10	2.00	%85 min		All pass	All pass							
12	1.68	%97 min	%85 min		%5 max	All pass						
14	1.41		%97 min	%85 min		%5 max	All pass					
16	1.19			%97 min	%85 min		%5 max	All pass				
18	1.00				%96 min	%85 min		%5 max	All pass			
20	0.84					%96 min	%85 min		%10 max	All pass		
25	0.71						%96 min	%85 min		%10 max		
30	0.60							%96 min	%85 min		All pass	
35	0.50								%97 min		%10 max	
40	0.42									%85 min		All pass
45	0.35									%97 min		%10 max
50	0.30										%80 min	
80	0.18										%90 min	%80 min
120	0.12											%90 min
200	0.07											

% : min. and max. cumulative percentages allowed on corresponding screens.

DURABILITY TEST K50

Producer Test Material S 390 MTS-Reference LC 390	Lab. No: 65 m/sec							
	Date: 20.01.2009							
Sample	Density	%Splats	%C	HV1	St. Dev.	K 50	K 100	
S 390	4,50	.	0,780	479	25	1444		
LC 390	4,52	.	0,099	403	18	2238		

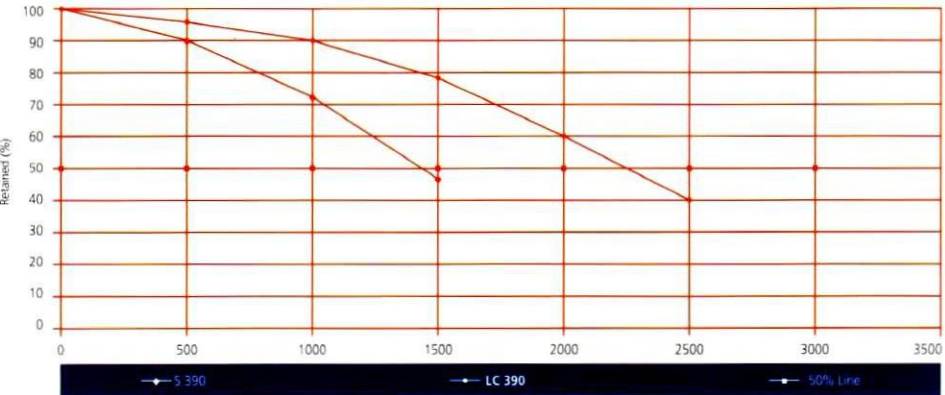
Wheel Speed: 65 m/sec
Takeout Sleeve: 0,40 mm

500 Passes per Test Run, Reference Material of same Grain Size

Sieve (mm)	S 390	LC 390
Operational Mix (%)		
1,12	70	70
1,00	30	30

55% better

Passes	S 390			LC 390			50% Line
	Retained (%)	Loss (%)	Accum Loss (%)	Retained (%)	Loss (%)	Accum Loss (%)	
0	100	0	0	100	0	0	50
500	91,1	8,9	8,9	96,0	4,0	4,0	50
1000	72,0	19,1	28,0	89,4	6,6	10,6	50
1500	47,2	24,8	52,8	78,1	11,3	21,9	50
2000				59,7	18,4	40,3	50
2500				39,4	20,3	60,6	50
3000							50
3500							50





S 930



S 780



S 660



S 550



S 460



S 390



S 330



S 280



S 230



S 170



S 110



S 70

Bainite structure is the ideal microstructure both for surface cleaning and surface preparation applications and also shot peening operations. Bainite microstructure has a greater impact value, hammering effect, rebound effect, maximum coverage on the surface of metal being treated and doesn't contain random and high internal stress. Hence heat treatment is not necessary.

During the operational time the hardness value of bainite shots can reach 45 HRC. This effect can be explained by the cold working process caused by 1.2 - 1.5% manganese in the chemical composition of the shot. As a result the service life of low carbon steel shot is approximately 25% longer than other types of shot. It also causes less wear on the shot blasting machine and the workpiece.

LOW CARBON STEEL SHOT SPECIFICATIONS

CHEMICAL COMPOSITION (SAE-J2175)

Carbon	: 0.10 - 0.15 %
Manganese	: 1.20 - 1.50 %
Silicon	: 0.10 - 0.25 %
Sulphur	: 0.035 % max
Phosphorus	: 0.035 % max

GENERAL APPEARANCE

The Cast Steel Shot shall be as uniform as commercially possible with a minimum of elongated or compound particles, tails hollows, broken pieces, slag or dirt.

MICROSTRUCTURE

Intermediate structure (bainite), a mechanical mixture of Ferrite and Cementite particles, Random feather-like appearance (upper bainite) and acicular (lower bainite) with little or no free carbon particles.

SHOT PERFORMANCE

Life Test: The amount of sample retained on 0.40 mm screen after 1000 cycles of 100 g sample is minimum 80 g

Ervin Test: The number of cycles after which sample loses 50 percent of its original weight of 100 g is 2000 - 2500 cycles.

DENSITY

Minimum density is 7.0 g/cc

HARDNESS

The hardness of 90 % of all tested shot particles shall be within the range of 40 - 50 Rockwell C.

PACKAGING

Standard form of packaging in 25 kg polyethylene - polypropylene bags onto 1, 1.5 and 2 tons of pallets shrink - wrapped.

GENERAL APPLICATIONS

PRODUCTION	PRODUCTS	PURPOSES
Foundry	<ul style="list-style-type: none">• Iron and Steel Casting Products• Non-Ferrous Casting Products	<ul style="list-style-type: none">• Desanding• Deburring
Steel Works & Rolling Mill	<ul style="list-style-type: none">• Blooms and Billets• Hot and Cold Rolled Products• Drawn and Extruded Products• Steel tubes	<ul style="list-style-type: none">• Descaling
Metal Working	<ul style="list-style-type: none">• Metal Construction & Shipbuilding• Forging, Stamping, Die-Work• Spring, Gears, Sundiers	<ul style="list-style-type: none">• Descaling• Surface Preparation• Shot Peening
Miscellaneous	<ul style="list-style-type: none">• Drums, Wagons, Site Equipment• Graphite, Electrodes• Heavy Concrete• Stone Dressing	<ul style="list-style-type: none">• Reconditioning• Surface Preparation• Shot Peening