



SAE Shot and Grit Specifications (SAE J827 & J1993)

| PROPERTIES | SHOT | GP | GB | GL | GH |
|--|--|--|--|--|--|
| SIZE | All material is screened to meet or exceed SAE J444. | | | | |
| CHEMISTRY Carbon Sulfur Phosphorus | 0.80 –1.20 Less than 0.05 Less than 0.05 | 0.80 –1.20 Less than 0.05 Less than 0.05 | 0.80 –1.20 Less than 0.05 Less than 0.05 | 0.80 –1.20 Less than 0.05 Less than 0.05 | 0.80 –1.20 Less than 0.05 Less than 0.05 |
| A.V. HARDNESS | 40–51 Rc | 40–51 Rc | 47–56 Rc | 54–61 Rc | min 60 Rc |
| HARDNESS DEVIATION* | Maximum average deviation is ± 3.0 Rc | | | | |
| MICROSTRUCTURE | Highly refined and homogeneous tempered martensite | | | | Martensite Homogeneous |
| MINIMUM DENSITY (as determined by displacement of alcohol) | 7.0g/cc | 7.3g/cc | 7.3g/cc | 7.3g/cc | 7.3g/cc |

* Hardness is tested with a Microhardness Tester with Knoop Indenter, 1000 gram load or equivalent.

W Abrasives steel abrasives sizes and general applications

(Based on results obtained with a 1 9/16" dia. wa at 2250 R.P.M.)

| W ABRASIVES STEEL SHOT | APPROX SIZE OF ABRASIVE | "ARC HEIGHT" EXPECTED IN PEENING APPLICATION | SHOT FINISH PRODUCED | GENERAL APPLICATIONS | CORRESPONDING SAE GRIT SIZE | GRIT FINISH PRODUCED |
|-------------------------------|-------------------------|--|--|--|-----------------------------|---------------------------------------|
| (none) (none) | .002" .004" | | | Blasting of small ferrous & non-ferrous work & machined parts. Removal of very light scale. | * G-120 | Very light etch-Matte or satin finish |
| • S-70 • S-110 • S-170 | .007" .011" .017" | .004 to .007 A .007 to .011 A .012 to .015 A | Fine, smooth shot finish. Excellent coverage. | Blasting of relatively small ferrous and non-ferrous castings. Removal of light scale from forgings & heat treated parts. Blasting of machined parts. Removal of mill scale, rust and other deposits. | G-80 G-50 G-40 | Medium etch |
| • S-230 • S-280 • S-330 | .023" .028" .033" | .016 to .019 A .020 to .024 A .024 to .028 A | Medium, light shot finish. Good coverage. | Blasting of grey iron, malleable iron, light steel castings, medium forgings, heat treated parts & heavy mill scale, - rust & other deposits. | G-25 | Sharp etch |
| • S-390 • S-460 • S-550 | .039" .046" .055" | .007 to .011 C .012 to .016 C | Average to heavy shot finish. Average coverage. | Blasting of steel, heavy malleable iron and grey iron castings. Removal of scale from large billets, slabs - rust & other deposits. | G-18 G-16 G-14 | Deep etch rough |
| • S-660 • S-780 | .066" .078" | | Rough coverage. Adequate for most applications. | Heavy steel castings. Removal of tough heavy scale. | * G-12 | Very rough |

The above chart lists the abrasive sizes most commonly used in blasting operations - the encircled dots to the left of the SAE number represent the approximate shape and size of actual abrasive pellets. The round W Abrasives Steel Shot is heat treated and drawn to a hardness of 40 to 51 Rockwell "C". W Abrasives angular products are available in various degrees of hardness.

* Not often used



S H O T

| product | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 80 | 120 | 200 |
|----------------------|-------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------|--------|
| S780 | AP | | 85% min | 97% min | | | | | | | | | | | | | |
| S660 | | AP | 85% min | 97% min | | | | | | | | | | | | | |
| S550 | | | AP | 85% min | 97% min | | | | | | | | | | | | |
| S460 | | | AP | 5% max | 85% min | 96% min | | | | | | | | | | | |
| S390 | | | | AP | 5% max | 85% min | 96% min | | | | | | | | | | |
| S330 | | | | | AP | 5% max | 85% min | 96% min | | | | | | | | | |
| S280 | | | | | | AP | 5% max | 85% min | 96% min | | | | | | | | |
| S230 | | | | | | | AP | 10% max | 85% min | 97% min | | | | | | | |
| S170 | | | | | | | | AP | 10% max | 85% min | 97% min | | | | | | |
| S110 | | | | | | | | | | AP | 10% max | 80% min | 90% min | | | | |
| S70 | | | | | | | | | | | | AP | 10% max | 80% min | 90% min | | |
| Screen Number | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 80 | 120 | 200 |
| Screen Size (mm) | 2.80 | 2.36 | 2.00 | 1.70 | 1.40 | 1.18 | 1.00 | 0.85 | 0.71 | 0.60 | 0.50 | 0.425 | 0.355 | 0.30 | 0.180 | 0.125 | 0.075 |
| Screen Size (inches) | 0.111 | 0.0937 | 0.0787 | 0.0661 | 0.0555 | 0.0469 | 0.0394 | 0.0331 | 0.0278 | 0.0234 | 0.0197 | 0.0165 | 0.0139 | 0.0117 | 0.007 | 0.0049 | 0.0029 |

G R I T

| product | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 80 | 120 | 200 |
|----------------------|-------|--------|------------|------------|------------|------------|------------|------------|--------|------------|------------|------------|------------|------------|-------|--------|--------|
| G.12 | | AP | 80% min | 90% min | | | | | | | | | | | | | |
| G.14 | | | AP | 80% min | 90% min | | | | | | | | | | | | |
| G.16 | | | | AP | 75% min | 85% min | | | | | | | | | | | |
| G.18 | | | | | AP | 75% min | 85% min | | | | | | | | | | |
| G.25 | | | | | | AP | | 70% min | | 80% min | | | | | | | |
| G.40 | | | | | | | AP | | | 70% min | 80% min | | | | | | |
| G.50 | | | | | | | | | AP | 65% min | 75% min | | | | | | |
| G.80 | | | | | | | | | | | AP | 65% min | 75% min | | | | |
| G.120 | | | | | | | | | | | | AP | 60% min | 70% min | | | |
| Screen Number | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 80 | 120 | 200 |
| Screen Size (mm) | 2.80 | 2.36 | 2.00 | 1.70 | 1.40 | 1.18 | 1.00 | 0.85 | 0.71 | 0.60 | 0.50 | 0.425 | 0.355 | 0.30 | 0.180 | 0.125 | 0.075 |
| Screen Size (inches) | 0.111 | 0.0937 | 0.0787 | 0.0661 | 0.0555 | 0.0469 | 0.0394 | 0.0331 | 0.0278 | 0.0234 | 0.0197 | 0.0165 | 0.0139 | 0.0117 | 0.007 | 0.0049 | 0.0029 |

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