

# Bulk Density Abrasives

- All Direct Pressure Blast Machines are filled by “volume”, not “pounds” of abrasive.
- The weight of each type of abrasive is different per cubic foot of “volume”.
- The weight is called the “bulk density” of that abrasive.

It just so happens that the most common of all Blast Cleaning Abrasives, Silica Sand, weighs 100 pounds per cubic foot, and a 6.5 cubic foot machine could “theoretically” hold 650 pounds of sand, if it could be totally filled. The chart below shows the “Bulk Density” (weight per cubic foot) of several common Blast Cleaning Abrasives.

ABRASIVE TYPE	BULK DENSITY
Silica Sand	100
Mineral Sands	127
Flint	80
Garnet	147
Coal Slag	85
Copper Slag	112
Nickel Slag	85
Sodium Bicarbonate	61

ABRASIVE TYPE	BULK DENSITY
Nut Shells	45
Corn Cobs	35 to 42
Aluminum Oxide	120
Silicon Carbide	106
Steel Shot/Grit	250
Glass Shot	100
Plastic Grit	45 to 48
Ferric Oxide	172

As a general rule, it can safely be figured that a typical Blast Machine can only hold abrasive in about 75% of its inside space. So, a typical 650 pound (6 cubic foot) machine will only freely hold 488 pounds of Silica Sand which happens to weigh 100 pounds per cubic foot (bulk density). But, that same machine can hold 1219 pounds of Steel Grit, but only 219 pounds of Nut Shells. But it is still as full as it possibly can be due to its filling angle of repose.

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