

## Abrasives Characteristics Comparison

| Material               | Mesh Size | Shape | Density lbs/ft <sup>3</sup> | Mohs    | Friability | Initial Cost | No. of Cycles | Per Use Cost | Source | Typical Applications                      |
|------------------------|-----------|-------|-----------------------------|---------|------------|--------------|---------------|--------------|--------|---|
| Sil. Sand †            | 6-270     | ★     | 100                         | 5.0-6.0 | high       | low          | 1             | med.         | nat.   | Outdoor blast cleaning                    |
| Min. Slag              | 8-80      | ★     | 85-112                      | 7.0-7.5 | high       | med.         | 1-2           | med.         | b-p    | Outdoor blast cleaning                    |
| Steel Grit             | 10-325    | ★     | 230                         | 8.0     | low        | high         | 200+          | med.         | mfg.   | Removing heavy scale                      |
| Steel Shot             | 8-200     | ●     | 280                         | 8.0     |            | high         | 200+          | low          | mfg.   | Cleaning, peening                         |
| Al. Oxide              | 12-325    | ★     | 125                         | 9.0     | med.       | high         | 6-8           | med.         | mfg.   | Cleaning, finishing, deburring, etching   |
| Silicon Carbide        | 12-325    | ★     | 110                         | 9.5     | med.       | high         | 5-6           | med.         | mfg.   | Surf. prep on extremely hard substrates   |
| Glass Bead             | 10-400    | ●     | 85-90                       | 5.5-6.0 | med.       | med.         | 8-10          | low          | mfg.   | Cleaning, finishing                       |
| Plastic                | 12-80     | ★     | 45-60                       | 3.0-4.0 | low/med.   | high         | 8-10          | med.         | mfg.   | Paint stripping, deflashing, cleaning     |
| Wheat Starch           | 12-80     | ★     | 45                          | 3.0     | med.       | med.         | 12-15         | high         | mfg.   | Paint, adhesive removal; composites       |
| XL-Corn Hybrid Polymer | 16-60     | ★     | 45                          | 3.0     | low        | high         | 14-17         | med.         | mfg.   | Composite paint removal, adhesive deflash |
| Corn Cob               | 8-40      | ★     | 35-45                       | 2.0-4.5 | med.       | low          | 4-5           | low          | b-p    | Removing paint from delicate surfaces     |

★ = Angular   ● = Spherical   nat. = Natural   b-p = By-product   mfg. = Manufactured  
 † Consult OSHA regulations before using silica sand as a blast abrasive.

## Compressed Air and Abrasive Consumption

| Nozzle Orifice           | Pressure at the Nozzle (psi) |       |       |       |       |       |       |       | *Consumption based on abrasives that weigh 100 pounds per cubic foot. |
|--------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|---|
|                          | 50                           | 60    | 70    | 80    | 90    | 100   | 125   | 140   |   |
| <b>No. 2<br/>(1/8")</b>  | 11                           | 13    | 15    | 17    | 18.5  | 20    | 25    | 28    | Air (cfm)   |
|                          | .67                          | .77   | .88   | 1.01  | 1.12  | 1.23  | 1.52  | 1.70  | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 67                           | 77    | 88    | 101   | 112   | 123   | 152   | 170   | Compressor hp   |
|                          | 2.5                          | 3     | 3.5   | 4     | 4.5   | 5     | 5.5   | 6.2   |   |
| <b>No. 3<br/>(3/16")</b> | 26                           | 30    | 33    | 38    | 41    | 45    | 55    | 66    | Air (cfm)   |
|                          | 1.50                         | 1.71  | 1.96  | 2.16  | 2.38  | 2.64  | 3.19  | 3.57  | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 150                          | 171   | 196   | 216   | 238   | 264   | 319   | 357   | Compressor hp   |
|                          | 6                            | 7     | 8     | 9     | 10    | 10    | 12    | 13    |   |
| <b>No. 4<br/>(1/4")</b>  | 47                           | 54    | 61    | 68    | 74    | 81    | 98    | 110   | Air (cfm)   |
|                          | 2.68                         | 3.12  | 3.54  | 4.08  | 4.48  | 4.94  | 6.08  | 6.81  | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 268                          | 312   | 354   | 408   | 448   | 494   | 608   | 681   | Compressor hp   |
|                          | 11                           | 12    | 14    | 16    | 17    | 18    | 22    | 25    |   |
| <b>No. 5<br/>(5/16")</b> | 77                           | 89    | 101   | 113   | 126   | 137   | 168   | 188   | Air (cfm)   |
|                          | 4.68                         | 5.34  | 6.04  | 6.72  | 7.40  | 8.12  | 9.82  | 11.0  | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 468                          | 534   | 604   | 672   | 740   | 812   | 982   | 1,100 | Compressor hp   |
|                          | 18                           | 20    | 23    | 26    | 28    | 31    | 37    | 41    |   |
| <b>No. 6<br/>(3/8")</b>  | 108                          | 126   | 143   | 161   | 173   | 196   | 237   | 265   | Air (cfm)   |
|                          | 6.68                         | 7.64  | 8.64  | 9.60  | 10.52 | 11.52 | 13.93 | 15.6  | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 668                          | 764   | 864   | 960   | 1052  | 1152  | 1393  | 1,560 | Compressor hp   |
|                          | 24                           | 28    | 32    | 36    | 39    | 44    | 52    | 58    |   |
| <b>No. 7<br/>(7/16")</b> | 147                          | 170   | 194   | 217   | 240   | 254   | 314   | 352   | Air (cfm)   |
|                          | 8.96                         | 10.32 | 11.76 | 13.12 | 14.48 | 15.84 | 19.31 | 21.63 | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 896                          | 1032  | 1176  | 1312  | 1448  | 1584  | 1931  | 2,163 | Compressor hp   |
|                          | 33                           | 38    | 44    | 49    | 54    | 57    | 69    | 77    |   |
| <b>No. 8<br/>(1/2")</b>  | 195                          | 224   | 252   | 280   | 309   | 338   | 409   | 458   | Air (cfm)   |
|                          | 11.60                        | 13.36 | 15.12 | 16.80 | 18.56 | 20.24 | 24.59 | 27.54 | Abrasive (cu.ft./hr & Lbs/hr)   |
|                          | 1160                         | 1336  | 1512  | 1680  | 1856  | 2024  | 2459  | 2754  | Compressor hp   |
|                          | 44                           | 50    | 56    | 63    | 69    | 75    | 90    | 101   |   |

**Minimum Air Volume Table**  
 Air Volume Requirements at 100 PSI for a Complete Blast System

| Nozzle | Size of Orifice | Volume of Air | Plus Helmet | Plus 50% (reserve) | Minimum Air Required     |
|--------|-----------------|---------------|-------------|--------------------|--------------------------|
| No. 4  | 1/4"            | 81            | 20          | 50                 | 151 cfm                  |
|        | 6.5mm           | 2.3           | 0.5         | 1.4                | 4.2 m <sup>3</sup> /min  |
| No. 5  | 5/16"           | 137           | 20          | 79                 | 236 cfm                  |
|        | 8.0mm           | 3.9           | 0.5         | 2.2                | 6.6 m <sup>3</sup> /min  |
| No. 6  | 3/8"            | 196           | 20          | 108                | 324 cfm                  |
|        | 9.5mm           | 5.5           | 0.5         | 3.0                | 9.0 m <sup>3</sup> /min  |
| No. 7  | 7/16"           | 254           | 20          | 137                | 411 cfm                  |
|        | 11.0mm          | 7.2           | 0.5         | 3.9                | 11.6 m <sup>3</sup> /min |
| No. 8  | 1/2"            | 338           | 20          | 179                | 537 cfm                  |
|        | 12.5mm          | 9.6           | 0.5         | 5.0                | 16.1 m <sup>3</sup> /min |