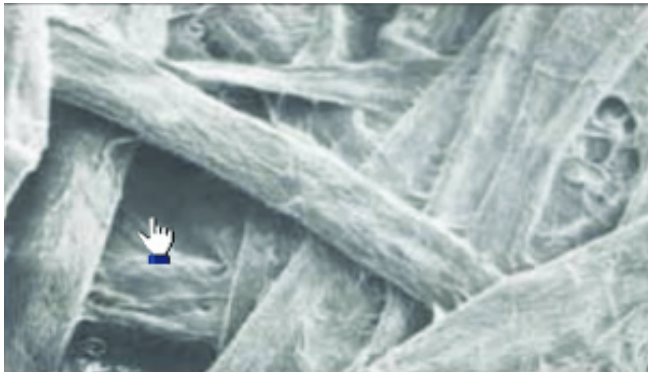# How Filters Trap More Dirt

As illustrated below, the finer the fiber in a filter weave, the greater the ability to trap dirt and other particles, thus decreasing blow-by. The photomicrographs show that the filter has a more effective weave than that of a conventional filter bag. This increases the ability to trap dirt and virtually eliminates blow-by.



Photomicrograph of the fiber weave of a conventional filter bag (500x)
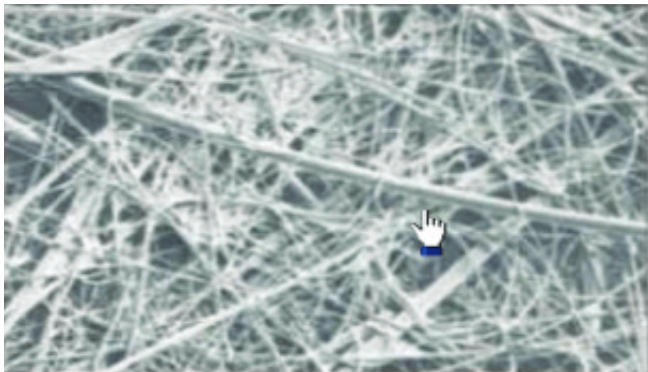


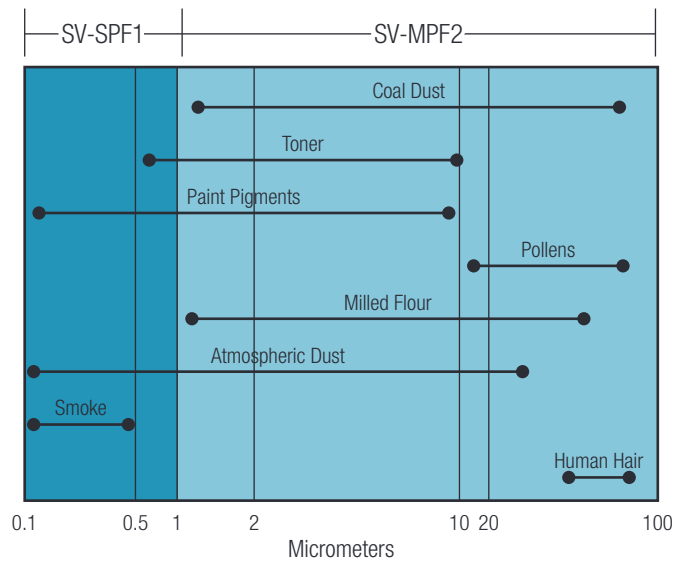Photomicrograph of the fiber weave of a SCS filter (500x)

### Filter, Type 1 SV-SPF1 Fine Particle Filters

A thinner, more concentrated weave (HEPA media) for trapping extremely fine particles. Typical applications: color laser printers, color copiers and highly sensitive equipment.

### Filter, Type 2 SV-MPF2 High Performance Filters

Specially designed for trapping unwanted toner from copiers and laser printers. Also ideal for cleaning keyboards, fans and other household dust collections.

## Typical Particle Sizes



SV-SPF1     SV-MPF2

Coal Dust
Toner
Paint Pigments
Pollens
Milled Flour
Atmospheric Dust
Smoke
Human Hair

0.1    0.5   1    2       10   20      100

Micrometers

SCS

# Efficiency

| Date : | August 20, 2008 |
|---|---|
| Filter ID : | Type 2 Filter |
| Test Type : | Fractional Efficiency |
| Test Aerosol : | KCl, Neutralized |
| Flow rate(cfm) | 40 cfm (Type 2) |
| Dp (" H2O) | 3.079 |
| Size Range (mm) | Fractional Efficiency (%) |
| 0.3-0.5 | 47.0 |
| 0.5-0.7 | 64.9 |
| 0.7-1.0 | 76.9 |
| 1.0-2.0 | 90.7 |
| 2.0-3.0 | 96.7 |
| 3.0-5.0 | 99.4 |
| >5.0 | 100.0 |

| Date : | August 20, 2008 |
|---|---|
| Filter ID : | Type 1 Filter |
| Test Type : | Fractional Efficiency |
| Test Aerosol : | KCl, Neutralized |
| Flow rate(cfm) | 40 cfm (Type 1) |
| Dp (" H2O) | 3.157 |
| Size Range (mm) | Fractional Efficiency (%) |
| 0.3-0.5 | 99.980 |
| 0.5-0.7 | 99.991 |
| 0.7-1.0 | 99.999 |
| 1.0-2.0 | 100.000 |
| 2.0-3.0 | 100.000 |
| 3.0-5.0 | 100.000 |
| >5.0 | 100.000 |

| Date : | August 20, 2008 |
|---|---|
| Filter ID : | Type 1a Filter (HEPA) |
| Test Type : | Fractional Efficiency |
| Test Aerosol : | KCl, Neutralized |
| Flow rate(cfm) | 40 cfm (Type 1a) |
| Dp (" H2O) | 3.157 |
| Size Range (mm) | Fractional Efficiency (%) |
| 0.3-0.5 | 99.988 |
| 0.5-0.7 | 99.995 |
| 0.7-1.0 | 100.000 |
| 1.0-2.0 | 100.000 |
| 2.0-3.0 | 100.000 |
| 3.0-5.0 | 100.000 |
| >5.0 | 100.000 |



Fractional Efficiency versus Particle Diameter
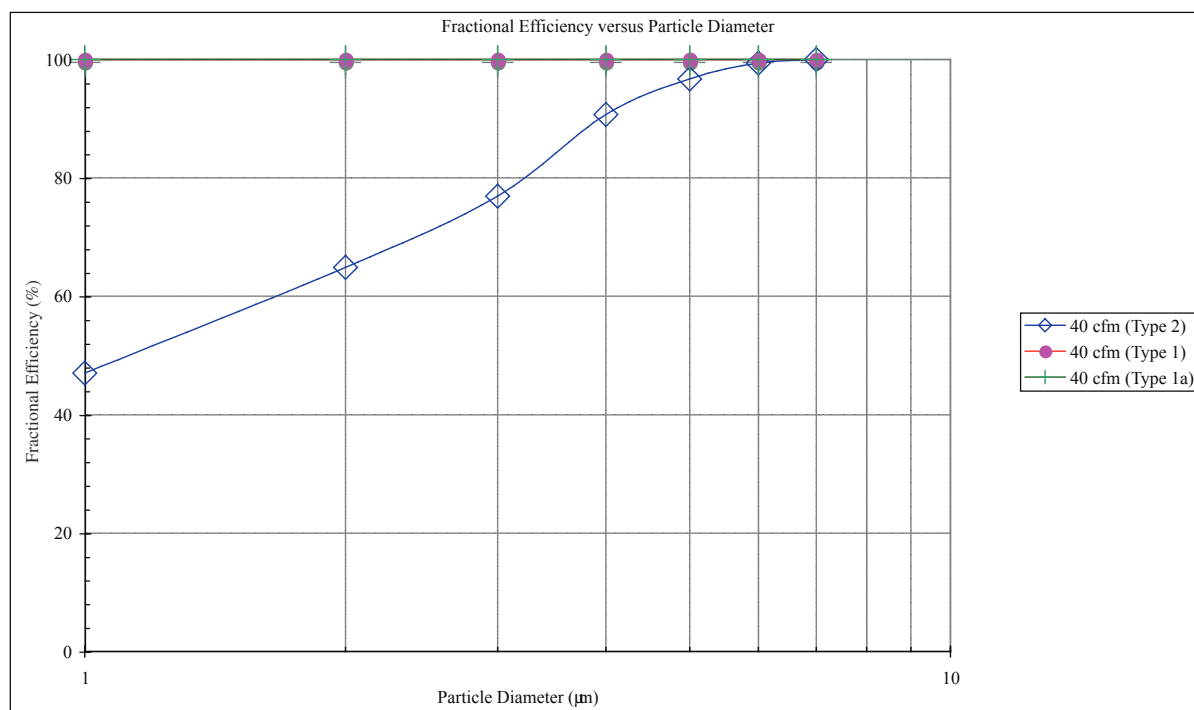
# Typical Loading

| "Weight Gain (gram) Alumina Fines" | "Pressure Drop (mm H2O)" |
|---|---|
| 0.0 | 655.7 |
| 454.0 | 358.0 |
| 908.0 | 168.0 |
| 1362.0 | 70.6 |
| 1816.0 | 5.1 |
| 1828.3 | 2.2 |

SCS

Loading versus Pressure Drop

SCS