

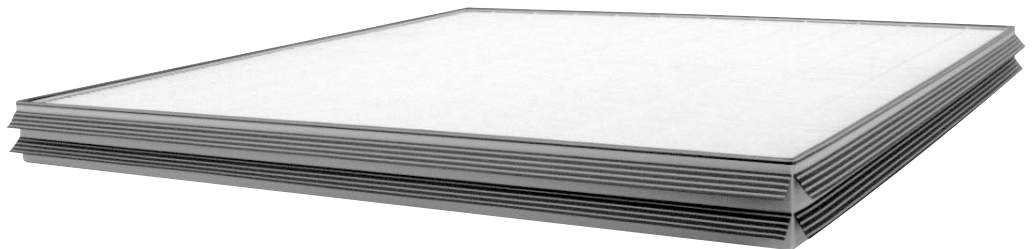


Commercial Mid-Performance HVAC Filter



- **Physical Characteristics**
 - 2" deep mini-pleat design
 - 100% synthetic media - resists moisture and common chemicals
 - 100% synthetic frame - lightweight, resists moisture
 - Integral gaskets - provide an effective seal
 - High durability - no special handling required
 - Continuous pleat spacing glue bead
 - Electrostatically charged media (refer to Performance Data on next page)

- **Performance Notes**
 - Typical initial resistance: 0.26 inches of water (64 Pa) @ 492 fpm
 - UL 900, Class 1 flammability rating (US)
 - UL 900, Class 2 flammability rating (Canada)
 - Operating temperature range: 122°F (50°C), -22°F (-30°C)



Performance Data

IMPORTANT NOTICE:

Efficiency During Use:

Particle capture efficiency of electrostatically charged filters has been shown to decrease during actual use. The timeframe and the extent to which this decrease occurs depend on particle size and loading conditions as shown in the graph and table below. This effect has been observed in as little as one week to six weeks of actual use. Actual particle efficiencies during use may be lower than those shown below, also depending on particle size and loading conditions.

Service Life: Filter should be replaced before reaching a final resistance of 1.4 inches (3.6 cm) of water (350 Pa) to maintain design performance of the filter. Certain system designs may require filter replacement at lower resistances.

Independent Laboratory

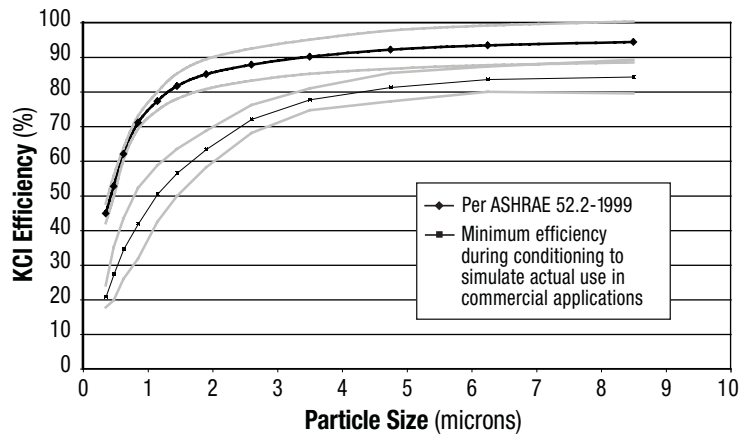
Testing: Filtrete™ Commercial High Performance Filters have been tested by an independent laboratory in accordance with ASHRAE or EN779-2002 standards. Performance ratings are based on testing of new filters with a +/- 95% confidence interval of the average.

Filtrete™ Commercial Mid-Performance HVAC Filter

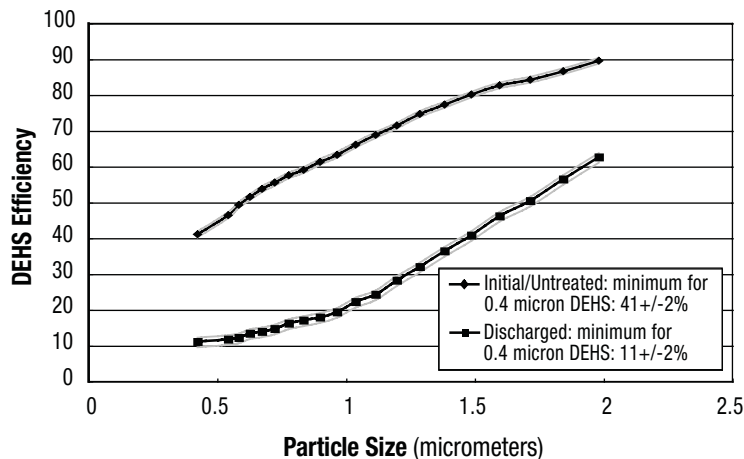
| | |
|--|--|
| Air Velocity for ASHRAE Testing | 492 fpm (1968 cfm for 24" x 24" filter) |
| Air Velocity for EN779 Testing | 2.5 m/s (3400 m ³ /hr for 0.6m x 0.6m filter) |
| Initial Resistance | 0.26 +/- 0.01 inches of water (64 +/- 3 Pa) |
| Recommended Final Resistance | 1.4 inches of water (350 Pa) |
| Average Dust Spot Efficiency per ASHRAE 52.1-1992 | 60-65% |
| Initial Efficiency per ASHRAE 52.2-1999 ¹ | MERV-11 |
| Minimum Efficiency Rating After Conditioning to Simulate Actual Use in Commercial Applications | Corresponds to MERV-8 |
| Filter Class per EN779-2002 | F5 |
| Average Efficiency per EN779-2002 | 52 +/- 3 % |
| Average Dust Holding Capacity at 1.4 inches of water | 90 +/- 15 g |
| Average Arrestance at 1.4 inches of water | 95 +/- 2 % |

¹Basis for MERV rating per ASHRAE 52.2-1999.

Filter Efficiency vs. Particle Size at 492 fpm (2.5 m/s)



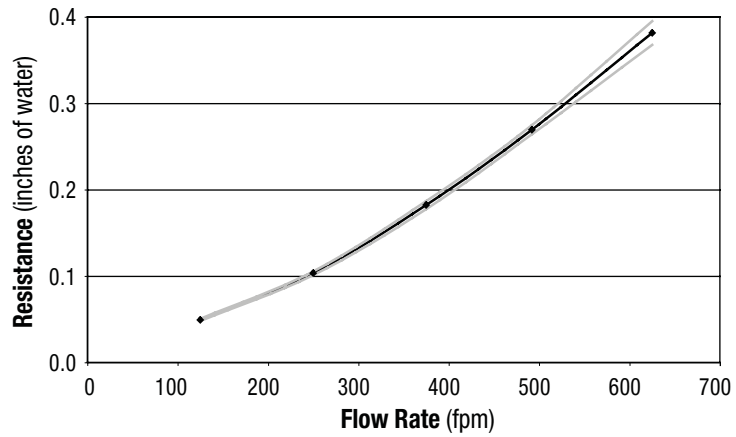
Efficiency vs. Particle Size per EN779-2002 (3400 m³/hr)



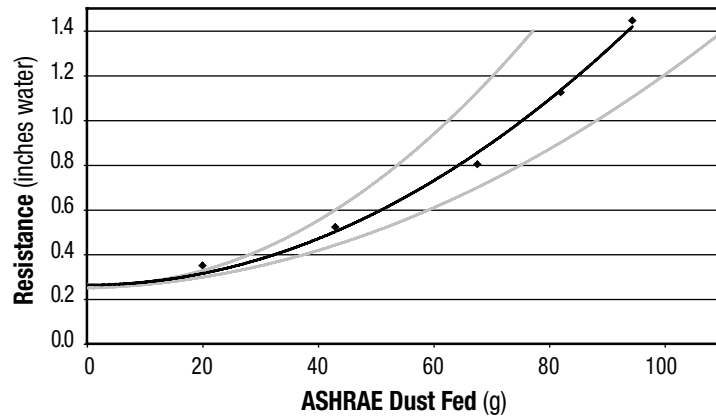
■ **Performance Data**
(continued)

| Particle Size Range | Average Particle Efficiencies (492 fpm) | |
|-----------------------|---|---|
| | Minimum efficiency per ASHRAE 52.2-1999 | Minimum efficiency after conditioning to simulate actual use in commercial applications |
| 0.3-1.0 μm | 58 \pm 2% | 31 \pm 7% |
| 1.0-3.0 μm | 83 \pm 4% | 60 \pm 6% |
| 3.0-10 μm | 92 \pm 6% | 81 \pm 4% |

Initial Resistance vs. Air Velocity¹

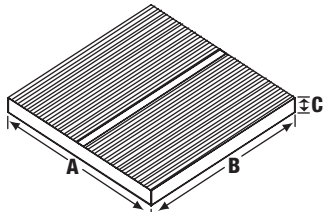


Resistance vs. Dust Loading @ 492 fpm (2.5 m/s)¹



¹ Filtrete™ Commercial Mid-Performance HVAC Filters have been tested by an independent laboratory in accordance with ASHRAE standards. Performance ratings based on testing of new filters.

Filter Measurements



| Product No. | Stock No. | Nominal Dimensions inches (mm) | Width "A" inches (mm) | Height "B", inches (mm) | Depth "C" inches (mm) |
|-------------|----------------|-----------------------------------|--------------------------|----------------------------|--------------------------|
| E276 | 70-0712-4438-1 | 10 x 10 x 2 (254 x 254 x 51) | 9 3/8 (238) | 9 3/8 (238) | 1 7/8 (48) |
| E277 | 70-0712-4439-9 | 10 x 20 x 2 (254 x 508 x 51) | 9 3/8 (238) | 19 3/8 (492) | 1 7/8 (48) |
| E278 | 70-0712-4440-7 | 12 x 20 x 2 (305 x 508 x 51) | 11 3/8 (289) | 19 3/8 (492) | 1 7/8 (48) |
| E279 | 70-0712-4441-5 | 12 x 24 x 2 (305 x 610 x 51) | 11 3/8 (289) | 23 3/8 (594) | 1 7/8 (48) |
| E280 | 70-0712-4442-3 | 14 x 20 x 2 (356 x 508 x 51) | 13 3/8 (340) | 19 3/8 (492) | 1 7/8 (48) |
| E281 | 70-0712-4443-1 | 14 x 25 x 2 (356 x 635 x 51) | 13 3/8 (340) | 24 3/8 (619) | 1 7/8 (48) |
| E282 | 70-0712-4444-9 | 15 x 20 x 2 (381 x 508 x 51) | 14 3/8 (365) | 19 3/8 (492) | 1 7/8 (48) |
| E283 | 70-0712-4445-6 | 16 x 16 x 2 (406 x 406 x 51) | 15 3/8 (391) | 15 3/8 (391) | 1 7/8 (48) |
| E284 | 70-0712-4446-4 | 16 x 20 x 2 (406 x 508 x 51) | 15 3/8 (391) | 19 3/8 (492) | 1 7/8 (48) |
| E285 | 70-0712-4447-2 | 16 x 24 x 2 (406 x 610 x 51) | 15 3/8 (391) | 23 3/8 (594) | 1 7/8 (48) |
| E286 | 70-0712-4448-0 | 16 x 25 x 2 (406 x 635 x 51) | 15 3/8 (391) | 24 3/8 (619) | 1 7/8 (48) |
| E287 | 70-0712-4449-8 | 18 x 20 x 2 (457 x 508 x 51) | 17 3/8 (441) | 19 3/8 (492) | 1 7/8 (48) |
| E288 | 70-0712-4450-6 | 18 x 24 x 2 (457 x 610 x 51) | 17 3/8 (441) | 23 3/8 (594) | 1 7/8 (48) |
| E289 | 70-0712-4451-4 | 18 x 25 x 2 (457 x 635 x 51) | 17 3/8 (441) | 24 3/8 (619) | 1 7/8 (48) |
| E290 | 70-0712-4452-2 | 20 x 20 x 2 (508 x 508 x 51) | 19 3/8 (492) | 19 3/8 (492) | 1 7/8 (48) |
| E291 | 70-0712-4453-0 | 20 x 24 x 2 (508 x 610 x 51) | 19 3/8 (492) | 23 3/8 (594) | 1 7/8 (48) |
| E292 | 70-0712-4454-8 | 20 x 25 x 2 (508 x 635 x 51) | 19 3/8 (492) | 24 3/8 (619) | 1 7/8 (48) |
| E293 | 70-0712-4455-5 | 20 x 30 x 2 (508 x 762 x 51) | 19 3/8 (492) | 29 3/8 (746) | 1 7/8 (48) |
| E294 | 70-0712-4456-3 | 24 x 24 x 2 (610 x 610 x 51) | 23 3/8 (594) | 23 3/8 (594) | 1 7/8 (48) |
| E295 | 70-0712-4457-1 | 25 x 25 x 2 (635 x 635 x 51) | 24 3/8 (619) | 24 3/8 (619) | 1 7/8 (48) |



Additional Information

For questions or to place an order in the U.S., contact your local 3M Filtration distributor or 3M Customer Service at 1-800-648-3550 or 651-737-2433.

IMPORTANT NOTICE: The information in this literature is based on tests 3M believes are reliable. It is not and should not be relied on as a product or technical specification. We do not guarantee the accuracy of this information. If any products described in this literature are defective, 3M will replace them at no charge. THERE ARE NO OTHER EXPRESS OR IMPLIED WARRANTIES FOR THESE PRODUCTS, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. You are responsible for determining whether products described in this literature are fit for a particular purpose and suitable for your application. Because there are many factors within your knowledge and control that might affect the use and performance of these products, you must evaluate these products to determine whether they are fit for a particular purpose, are suitable for your application, and meet your performance expectations. 3M IS NOT LIABLE FOR ANY LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL ARISING OUT OF THE USE OF OR INABILITY TO USE ANY OF THESE PRODUCTS.

CAUTION: USED FILTERS MAY CONTAIN CONTAMINANTS FROM OPERATION OF THE HVAC SYSTEM. FOR PROPER HANDLING OF USED FILTERS, CONSULT APPLICABLE HEALTH AND SAFETY STANDARDS OR CONTACT AN INDUSTRIAL HYGIENIST. TO REDUCE RISK OF ILLNESS OR INJURY, ALWAYS USE APPROPRIATE RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING WHEN REMOVING OR HANDLING USED FILTERS. DISPOSE OF USED FILTERS ONLY IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

IMPORTANT USE RESTRICTIONS: DO NOT EXPOSE THIS FILTER DIRECTLY TO UV RADIATION FROM A UV PURIFICATION SYSTEM. EXCESSIVE UV EXPOSURE MAY LEAD TO A REDUCTION IN THE MECHANICAL INTEGRITY AND PERFORMANCE OF THE FILTER. THIS FILTER MUST NOT BE USED FOR THE FOLLOWING UNAUTHORIZED USES: A) ASBESTOS REMEDIATION; B) BIOTERRORISM PROTECTION; C) LEAD REMEDIATION; OR D) APPLICATIONS IN BUILDINGS THAT REQUIRE OR ARE UNDERGOING AIR HANDLING SYSTEM REMEDIATION OF HAZARDOUS SUBSTANCES.



Filtration

3M Center, Building 223-6S-04
St. Paul, MN 55144-1000
1-800-648-3550

Issued: 8/2006
© 3M 2006
3M and Filtrera are trademarks of 3M Company.

5366 (HB)
70-0713-8939-2