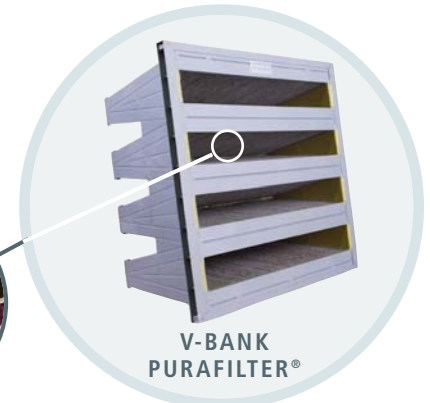
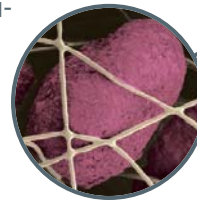


PRODUCT BULLETIN 4

THE V-BANK PURAFILTER®




THE V-BANK PURAFILTER® is a combination chemical and particulate filter designed to replace existing particulate filters in retrofit or rework applications. Purafil engineers are the first to successfully suspend sodium permanganate adsorbents in a bi-component fiber matrix.



STANDARD FEATURES

- Purafil SP Blend Media which contains a 50:50 blend of Purafil SP (sodium permanganate) and Purakol (activated carbon) media
- Bi-component fiber matrix
- Airflow: up to 500 ft./min (2.54 m/sec)
- Temperature Rating: -4° F to 125° F (-20° C to 51° C)
- Packaged individually and factory sealed in a non-porous bag to insure manufacturing integrity
- Plastic, header frame

PRODUCT DESCRIPTION

The V-Bank Purafilter is a combination pleated media filter that integrates our patented impregnated adsorbents to remove gaseous *and* particulate contaminants simultaneously. Through our unique manufacturing process, we can combine media to provide superior removal capacity and broader contaminant control.

Chemical filtration systems utilizing sodium permanganate remove a broader range of contaminants than carbon-only filters and exhibit higher efficiencies. Because of the Purafilter's broad-spectrum removal capabilities, it is the only chemical filter capable of meeting the stringent requirements of ASHRAE 62's Indoor Air Quality Procedure.

Adsorbents are evenly distributed throughout the filter structure to assure the highest filtration efficiencies. The V-Bank Purafilter offers a higher media loading than other chemical filters, allowing for a longer service life and reduced maintenance.

The V-Bank Purafilter's bi-component fiber matrix does not use adhesives, so media particles are fully available to react with gaseous contaminants and odors. To ensure high filtration efficiency, adsorbent particles are uniformly distributed throughout the filter structure.

MEDIA TYPES

The V-Bank Purafilter is available in SPB™ and SPB/95™ media types to remove specific gases in commercial environments such as hotels, airports, office buildings, schools, casinos, restaurants, museums and athletic stadiums.

SYSTEM ADVANTAGES

LONGER SERVICE LIFE: The V-Bank Purafilter offers a higher media loading capacity and up to ten times the removal capacity of other chemical filters.

SUPERIOR EFFICIENCY: The V-Bank Purafilter removes a broader range of odors and common indoor pollutants than activated carbon alone.

EASY LIFE TESTING: The V-Bank Purafilter can be tested to determine remaining service life.

Purafil's filter monitoring program assures ongoing compliance with ASHRAE 62's Indoor Air Quality Procedure.

PERMANENT ODOR REMOVAL: The V-Bank Purafilter will not desorb like traditional activated carbon filters and removes gases through an irreversible chemical reaction process.

PRODUCT BENEFITS

- Contains up to 10 times the media of activated carbon filters.
- Removes more gaseous contaminants and odors than activated carbon.
- Removes gaseous contaminants and solid particulates.
- Adhesive-free filter design
- Minimized air bypass and high removal efficiency
- Low pressure drop
- Long filter life
- Reduced maintenance
- Improved Indoor Air Quality (IAQ)

V-BANK PURAFILTER®



SIZES AVAILABLE:

SIZE (inches)	(millimeters)
24 x 24 x 12	(610 x 610 x 305)
12 x 24 x 12	(305 x 610 x 305)

MEDIA WEIGHT* BY FILTER SIZE:

SIZE (inches)	WEIGHT (lbs / kgs)
24 x 24 x 12	10.25 / 4.65
12 x 24 x 12	5.14 / 2.33

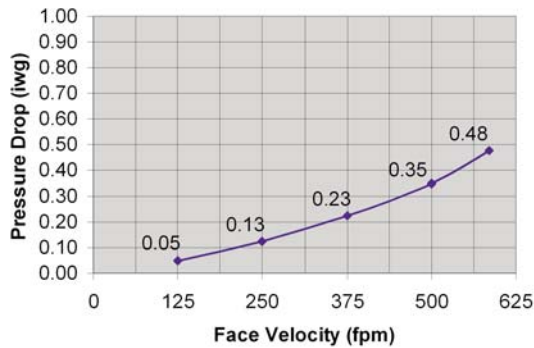
*Media weights with a 50:50 volume blend of Purafil SP and Purakol media. Call factory for weight using other Purafil-brand patented media.

SINGLE HEADERED - 24x24x12

NOMINAL SIZE: 24 x 24 x 12 in
ACTUAL SIZE: 23 ³/₈ x 23 ³/₈ x 11 ¹/₂ in
 (594 x 594 x 292 mm)

SURFACE AREA: 98 ft²
AIRFLOW CAPACITY: 2,000 cfm

MEDIA: 95%
PRESSURE DROP:



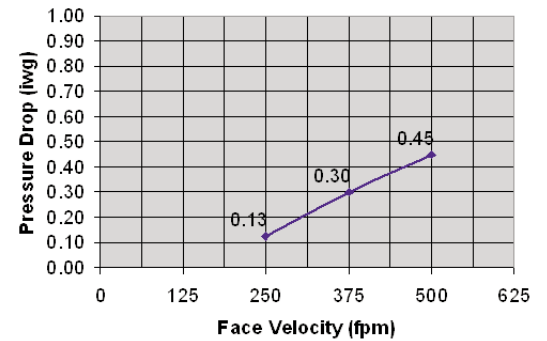
PRESSURE DROP
 500 FPM (2.5 M/S): 0.35 iwg (88 Pa)

SINGLE HEADERED - 12x24x12

NOMINAL SIZE: 12 x 24 x 12 in
ACTUAL SIZE: 11 ¹/₂ x 23 ³/₈ x 11 ¹/₂ in
 (292 x 594 x 292 mm)

SURFACE AREA: 49 ft²
AIRFLOW CAPACITY: 1,000 cfm

MEDIA: 95%
PRESSURE DROP:



PRESSURE DROP
 500 FPM (2.5 M/S): 0.45 iwg (113 Pa)

PURAFILTER CASE STUDY: OZONE AND VOC EFFECTIVENESS



An office building located in the southeastern United States was going “green” in order to attract and hold tenants. Part of this effort included the use of enhanced air cleaning for both indoor and outdoor air. The primary contaminants of concern in the outdoor air were ozone and volatile organic compounds (VOCs). Historically, ozone had averaged 30-50 ppb (60-100 $\mu\text{g}/\text{m}^3$) with peaks up to 150 ppb (300 $\mu\text{g}/\text{m}^3$) and VOC levels ranged from 80-150 $\mu\text{g}/\text{m}^3$ with peaks as high as 210 $\mu\text{g}/\text{m}^3$ during the months of May – September (GA DNR 2009).

MERV 6 and MERV 11 particulate filters were already in use in building’s air handling equipment and there was no room for additional hardware to accommodate the use of media modules, so 4” (100 mm) combination particulate / chemical filters were recommended. These were accepted as replacements for the MERV 6 filters with conditions that a minimum 90-day filter life was achieved. If these filters proved effective, meaning $\geq 50\%$ removal for VOCs and $\geq 40\%$ removal for ozone, they would be used on a continuing basis from April to September and then replaced with the MERV 6 filters from October to March.

Upstream and downstream ozone and VOC concentrations were measured nearly daily from May to September of 2007 to gauge the effectiveness (efficiency) of these filters. At the end of 90 days the VOC efficiency had dropped to ~45%, but the ozone removal was still above 95% (Figure 1). This convinced the owner that these combination filters were effective and their use would result in improved IAQ. It was felt that the very high effectiveness for these filters against ozone – even as the effectiveness for VOCs approached zero – meant that the potential for adverse respiratory health effects due to ozone would be significantly reduced or eliminated. Also, the formation of new chemical species due to reactions between VOCs and ozone, many of which would be considered highly irritating, would be similarly reduced or eliminated.

