

# Activated Carbon Adsorption Products

For HVAC applications, adsorption products can be divided into several categories:

## PADS AND PANELS

Pad and panel filters come in a variety of sizes. They typically have a depth of 1" or 2". Both are manufactured with either 100% activated carbon or 50/50 blends of activated carbon and impregnated alumina media.



Pads can be cut to various sizes and can be used with or without a die cut frame. Pads in die cut frames come in 1" and 2" and carbon weight ranges from 200 g/sqft up to 1000 g/sqft. 6x8 and 6x12 mesh carbon is the standard carbon used, but there are some variations that utilize the 20x50 mesh carbon.

Ring panel filters are designed with an internal ring support and are self-sealing in the filter housing. These also are available in depths of 1" and 2". The carbon loading ranges from 45 g/sqft up to 500 g/sqft.

## RIGID CELL FILTERS

Deep pleat, rigid cell filters are applied in many normal HVAC applications where the filter housing allows for a 6" or 12" depth. These filters use both 100% carbon and carbon blended thin bed media, formed into deeper pleats that are sealed into a metal or plastic frame that can be box style or with a header.



The thin bed CarbonWeb media used in rigid cells uses the 20x50 high activity carbon or blends and ranges between 500-650 gsm carbon loading. This media targets a variety of gases including most Volatile Organic Compound (VOC) contaminants, diesel fuel exhaust and some soft acids.

Particulate layer is applied to aid in dirt holding capacity and allows for an efficiency range between MERV 8 to MERV 15.

## PLEATED FILTERS

Pleated filters utilize thin pleated CarbonWeb media targeted to remove unpleasant odors and gaseous pollutants that enter HVAC systems. CarbonWeb is a patented media that suspends activated carbon and blends within a fibrous structure to maximize the surface of the carbon particles and allow for good airflow through the structure resulting in low pressure drop. They are manufactured in standard sizes to fit into any HVAC filter housing and come in depths of 1", 2" and 4".



Carbon loading in pleated filters range from 200 gsm up to 650 gsm for 100% activated carbon with a 600 gsm version using the 50/50 blend of carbon and impregnated alumina. The pleats are self-supporting, do not need a wire support and are sealed in a heavy-duty beverage board for industrial applications.

The CarbonWeb media can be manufactured with a filter media to capture airborne particulates. Efficiencies range from MERV 7 up to MERV 13.

## V-CELL STYLE FILTERS: There are two primary styles of V-Cell Filters:

### 1. VMP Series

The VMP series is a mini-pleat style V-Bank filter constructed in a high strength plastic frame, V-design for industrial applications. The V-design allows for minimal resistance to airflow and a higher amount of media area for better first pass efficiencies and higher capacities to certain gases.



The media used in the VMP is the CarbonWeb thin bed design using 20x50 mesh carbon and blends. There are various grades of media targeting a variety of gases along with particulate efficiencies that range from MERV 8 to MERV 15. Gases targeted include a variety of Volatile Organic Compounds (VOC's) that cause odors and harmful pollution found in HVAC systems. Also, gases found in diesel exhaust, soft and hard acids such as H<sub>2</sub>S, SO<sub>2</sub> and acetic acid and nitrogen oxides that off gas in many systems.

## HC MINIPLEAT FILTERS

The HC-Mini filters are heavyweight carbon or carbon/blend media in a compact mini-pleat design to provide high carbon weight and surface area for limited space applications.



These filters are available in 2" and 4" depths and come in many standard sizes to fit most applications. The thin bed CarbonWeb media has a loading that ranges from 600-650 gsm and are designed to target a broad range of organic odors and harmful gases generated during diesel and aviation fuel combustion.

The compact design uses a double wall high strength plastic frame and fits in most side access or holding frame HVAC applications.

### 2. Adsorbball Series

The Adsorbball Series is a bulk carbon V-Bank design that allows high volume of activated carbon and blends of carbon and impregnated alumina. The carbon or blends are in a 1" honeycomb panel design that are placed in a V configuration to allow for 8 panels per finished V-bank.



Adsorbball V-banks are designed for higher concentrations of unwanted gases. The industrial strength frame holds between 24-35 lbs of activated carbon or impregnated granules for commercial or industrial environments.

The honeycomb panel design results in minimal resistance to airflow while providing large amount of carbon to mitigate unwanted gases.

## Product Application

The application of these products can be divided into two areas – either new construction or retrofitting existing installations.

When a new structure is being designed, the engineer has the option of utilizing any of the above products.

When adsorption applications arise in existing installations, these filters mentioned above can be installed into existing housings or retrofitted along with other particulate efficiency filters.