CALGON

CALGON CARBON CORPORATION

Activated Carbon Filters for Indoor Air Quality

INDOOR AIR QUALITY
INDOOR AIR QUALITY
INDOOR AIR QUALITY

CALGON

CALGON CARBON CORPORATION

Indoor air quality is a serious concern

Ninety percent of the average person's life is spent indoors. Studies have shown that in many commercial and public buildings, levels of pollution can be two to five times higher indoors than outdoors. Irritants and odors take their toll on the workforce through productivity losses, sick days, and medical expenses.

There are many contributors to poor indoor air quality:

- Neglected or malfunctioning building systems.
- Changes outside the building (new roadways, industrial plants, transportation terminals, treatment facilities, etc.).
- Poor air system design.
- "Sick building syndrome", where proper ventilation has been compromised due to concerns over energy costs.
- Emissions from building materials (VOCs, microbials, formaldehyde, etc.), particularly in newer buildings.

The Clean Air Act and other environmental regulations together with updated ASHRAE standards have begun to define new indoor air quality requirements. Many building managers are recognizing that the systems considered adequate just a few years ago will not meet today's stricter guidelines.

Carbon Adsorption: the preferred control technology

Activated carbon can be manufactured from a number of substances that contain a high carbon content, such as coal, wood, and coconut shells. While activated carbon is an almost pure form of carbon like graphite, activated carbon differs from graphite in that it has a random, imperfect structure that is highly porous. The pore size in different types of activated carbons range from visible cracks and crevices to the molecular scale. Depending upon the requirements of the application, activated carbon can be impregnated with a variety of different impregnants to attract different contaminants.

At Calgon Carbon, we offer a full range of coal- and coconut shell-based activated carbon products for standard indoor air treatment applications such as odor and organic compound removal. We can also custom manufacture a range of specialty impregnated carbons to handle lighter molecular weight gases, acid gases, and other contaminants. To find the best carbon for a given application, we select the base starting material, manufacturing process, final product mesh size, and pore size distribution to ensure the carbon performs to your specifications.

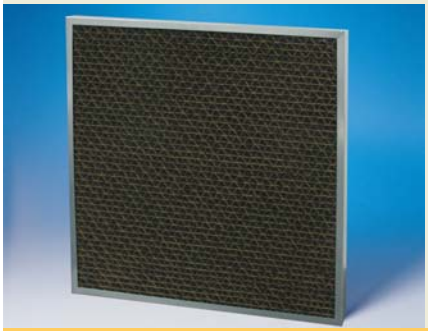
Filters and Equipment

Activated carbon products and equipment from Calgon Carbon have been specified in thousands of buildings for high-efficiency removal of odor and gaseous air contaminants. The benefits are immediate: improved comfort, higher productivity, lower absenteeism, and lower energy costs through greater recirculation of heated and cooled air. In a published study by a municipal health agency and the EPA, activated carbon units were found to significantly outperform ion exchange and bag filters in the reduction of monitored vaporous contaminants.

The following selections illustrate some of our standard products available for new and retrofit building ventilation systems. Specifications must consider variables such as air flow minimums, pressure drop, contaminants (to determine carbon type, bed thickness, and required residence time), and space constraints. Adequate recirculation is important for satisfactory performance.

Please consult Calgon Carbon for assistance in selecting proper configurations of standard equipment to suit your application. To meet unusual requirements, we can use our experience and engineering skill to design and manufacture customized, yet cost-effective, systems.

Disposable Carbon Panels and Adsorbers



Disposable Panels

- Lightweight, inexpensive DACOR® panels designed for easy replacement and disposal.
- Honeycomb structure maximizes exposed carbon surface area.
- Available in 1″ and 2″ nominal thickness.
- Standard sizes:

12″ x 24″	20″ x 20″
16″ x 20″	20″ x 25″
16″ x 25″	24″ x 24″

- Custom sizes also available.

Standard Panels (FJI and FJH Series)

- Available in 3/4″ and 2″ nominal thickness.
- Can be refilled with fresh activated carbon.
- Frame is galvanized 28 gauge carbon steel.
- Painted steel or stainless steel frame option.
- FJH series standard sizes:
  - 12" x 24" x 3/4"
  - 12" x 24" x 1 7/8"
- FJI series standard sizes:
  - 24" x 24" x 3/4"
  - 24" x 24" x 1 7/8"
- Custom sizes also available.

Pur Air® Combo

- 3/4″ carbon bed with particulate filter for odor and dust control.
- Particulate filter media is cotton fiber with 25–35% efficiency per ASHRAE test method 52-76.
- Arrestance value in excess of 90%.
- Media is treated with a fire retardant additive.
- Standard thickness is 2″ nominal.
- Standard sizes:

12″ x 24″	20″ x 20″
16″ x 20″	20″ x 25″
16″ x 25″	24″ x 24″

Canister Adsorbers

Compact adsorbers control medium to heavy odor loads by forcing air through two perforated metal walls enclosing an annular bed of activated carbon.

Model CMA/CMB
Closed top (CMB) or open top available. Flows to 25 scfm, 4 3/8″ dia. x 11" long.

Model CCJ
Maximum rated airflow of 200 scfm. 10" dia. x 24" long.

Adsorber Assemblies

Calgon Carbon adsorber assemblies feature a modular design compatible with nearly all air handling and particulate filtration equipment.

- Standard sizes accommodate systems from 2,000 to 30,000 scfm. Custom configurations available.
- Use 12″ x 24″ and 24″ x 24″ carbon panels.
- Foam gasketing on doors and between panels to limit bypass.
- Built-in track for particulate pre-filter.
- Durable stitch welded 14 gauge galvanized steel housing.
- Available in side-loading and end-loading configurations for easy filter installation and change-out.
- Options:
  - Painted carbon steel and 304 stainless steel housings.
  - Match-up transitions and fans for special applications.
  - Weather cap for outdoor installations.

Commercial Duty (FJ Series)

- Accepts 3/4" thick carbon panels (FJI75).
- Also accepts half size panels (FJH75).
- Nominal face velocity up to 500 fpm.
- 2" pre-filter track.

Industrial Duty (FL Series)

- Recommended for more severe applications.
- Uses 2" thick carbon panels (FJI200).
- 2" or 4" pre-filter track.

Utility Model (FA Series)

- Light duty applications where operational economy is important.
- For use with 2" lower volume carbon panels.

GDC (Granular DACOR® Cartridge)

- Lightweight and low-cost.
- Angled carbon panels to maximize exposed surface area.
- Easy handling and quick change out.
- 2,000 scfm (500 fpm) rated air flow.
- 11 1/2" deep adsorber designed to fit standard ASHRAE housings.
- Side-loading and end-loading housings are available depending on airflow.
- Standard cartridge sizes:
  - 24″ x 24″ x 12″ nominal
  - 12″ x 24″ x 12″ nominal

Outstanding Service and Technical Support

Customers at thousands of installations across the globe trust Calgon Carbon's extensive network of skilled service technicians to provide the support they need every day. If you have service needs related to any Calgon Carbon system, technology, or type of equipment, we'll handle them for you.

In addition, our customer service group provides help 24/7. Whether it's assisting with project quotations, handling spare part requests, providing equipment maintenance information, or facilitating real-time answers to technical questions, we'll get you the answers you need to keep on track and on schedule. Services for our IAQ line of panels and adsorbers include:

- Bulk carbon for on-site regeneration of panels with virgin or reactivated carbon.
- Carbon reactivation service.
- Carbon life testing using advanced computer models.

About Calgon Carbon

Calgon Carbon Corporation (NYSE: CCC) has been a global leader in services and solutions for making water and air safer and cleaner and for purifying food, beverage, and industrial process streams. Headquartered in Pittsburgh, Pennsylvania, Calgon Carbon employs more than 1,200 people at 18 carbon manufacturing, reactivation, and equipment fabrication facilities and 27 sales and service centers. Calgon Carbon is known as Chemviron Carbon in Europe, the Middle East, and Africa. Calgon Carbon serves more than 4,000 customers around the world. In 2003, the company's sales totaled $278 million.

Calgon Carbon's expertise spans many fields, including activated carbon, UV technology, continuous ion exchange, and chromatography. For any application from drinking water purification to pharmaceutical manufacturing, Calgon Carbon technologies are designed to enhance production efficiencies, minimize waste, and remove pollutants — in short, making the world a cleaner, safer place.

CALGON

CALGON CARBON CORPORATION

Making Water and Air Safer and Cleaner

Calgon Carbon Corporation
P.O. Box 717
Pittsburgh, PA USA 15230-0717
1-800-422-7266
Tel: 412-787-6700
Fx: 412-787-6713

www.calgoncarbon.com

SPIAQ-0106