

PRODUCT DATASHEET

THE FP/BCP BONDED CARBON PANEL: GAS PHASE FILTRATION

Carbon filtration is ideal for removing unpleasant or even dangerous odours and gases from a wide variety of sources. The ever increasing awareness of this problem from public health authorities and environmentalists has resulted in an increase in the use of the unique properties of activated carbon filtration. Carbon will adsorb chemical molecules in the airstream in varying degrees according to the type of contaminant and the period of time the air remains resident in the carbon.

Typical applications for carbon include:

- incoming air in industrial plants
- airports
- art galleries etc. or
- outgoing air in kitchens
- industrial processes
- sewage plants etc.



Applications

Activated Carbon in its loose granular form can present problems as there is a tendency for the granules to abrade one another. This causes both settlement of the carbon creating potential bypass voids and produces carbon dust that can be re-entrained into the air-stream. The unique bonding method eradicates these problems by producing a solid and stable biscuit of consistent quality and dimensional stability that produces an even resistance.

Operational Criteria

In order to ensure a carbon filter operates satisfactorily certain criteria need to be met which do not apply to particulate filters. The most important aspect is the "dwell time" (the period of time the air is in contact with the carbon). The minimum dwell time used is 0.1 seconds, this relates to 0.19m/sec through a 25mm nominal thickness panel. The dwell time may vary considerably according to the contaminant to be removed. In order to be able to present adequate surface area to the airstream, the panels will normally need to be mounted in 'V' formation within a casing or housing.

As far as possible, water vapour should be eradicated from the air-stream to eliminate condensation within the filter that could cause porous blockage causing a dramatic increase in resistance. This also applies to loose carbon. However, humidity levels as high as 80% RH are normally acceptable providing no interstitial condensation takes place.

Air-stream temperatures entering the filter in excess of 40°C should be avoided. In the case of anticipating temperatures above this level, steps should be taken to reduce the temperature to an acceptable level by fresh air bleed, cooling coil or heat exchanger. In catering and food preparation applications, smoke and grease must be removed from the air-stream prior to entry into the carbon.

The product is available either unframed or framed in Aluminium, Galvanised or Stainless steel channel.

Performance

Due to the complex nature of adsorption carbon filters are generally designed to suit the application, however, the following information is given as an indication of the physical requirements for its use:

Typical Panel Size (HxWxD) - Carbon Unframed	Rated Airflow (m ³ /hr) at 0.1sec dwell	Resistance at 0.1 sec (pa)	Rated Airflow (m ³ /hr) at 0.2 sec dwell	Resistance at 0.2 sec (pa)
600x600x19mm	246	65	123	23
600x600x22mm	285	110	143	37

Maximum Temperature: 40°C Maximum Humidity: 80% RH

Please note: In their continuous search for product improvement Westbury Filtration reserve the right to change materials and specifications without prior notice.