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ESS - Activated Carbon

ESS Corp. Coal Based Activated Carbon

Surface Area

ESS Corp. coal based activated carbon has approximately 150 sq meters per gram while lignite carbon, For example, has approximately 650 sq meters per gram a canister containing 1 cubic foot of carbon that means that the lignite based canister, with 24 pounds, would have about 7 million square meters. The ESS Corp. coal based canister at 31 pounds delivers about 16.1 million square meters, more than double that of the lignite equivalent.

Pore Size

According to the manufacturer's published data, lignite carbon has an average pore size of 28—30 angstroms while coal based carbon has an average pore size of 23—25 angstroms. While most carbon is used in water treatment, the job of these carbon canisters is to remove long chain hydrocarbons with a mol weight in excess of 225. In this application ESS Corp's coal based carbon will retain 240 milligrams per gram of carbon compared to 120 milligrams per gram for the lignite based canister.

Capacity

By combining the weight factor in paragraph one with the capacity per gram in paragraph two, the coal based canister has a capacity advantage of 2.6:1

In an effort to reduce costs, many manufacturers have begun to use regenerated carbon in place of the virgin carbon that was previously the industry standard. **The regeneration of activated carbon does not return it to its original capacity. Losses depend on the original use and regeneration method. For these reasons, ESS Corp. does not use regenerated carbon and does not recommend its use**

Operating Parameters

Factors affecting carbon performance include temperature and contact time in addition to the type of carbon and the target contaminant. Operating temperatures exceeding 150°F reduce carbon capacity in hydrocarbon capture to levels that make their application practically ineffective. Similarly, high flows and the resulting reduced contact time reduce the ability of carbon to capture and retain contaminants and can cause abrasion within the bed. The carbon filter should be protected upstream and down by adequate particulate filtration to prevent fouling of the bed and to prevent any carbon fines from entering the system. In a properly configured system, the carbon filter should not develop any significant differential pressure over time.

ESS Corp Coal Based Carbon

8x30 Mesh
Surface Area : 1150 M2/gram
Weight per FT3= 31 LBS
Iodine No. : 900
Molasses RE : 60
Average Pore Size : 24 Angstroms

Lignite Based Carbon

8x30 Mesh
Surface Area : 650 M2/gram
Weight per FT3= 24 LBS
Iodine No. : 650
Molasses RE : 90
Average Pore Size : 29 Angstroms



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ESS - Activated Carbon

EVF Series Activated Carbon Canisters

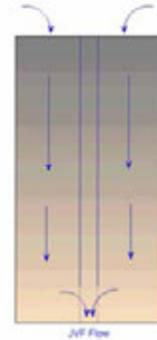
ESS Corp Vertical Flow Activated Carbon Canisters increase fluid contact by eliminating the potential by-pass in using the relatively thin bed available in a radial flow configuration. ESS Corp. EVF 1120 and 1122 canisters outlast the radial flow design by 45%.



Solid sidewalls indicate vertical flow construction

Dimensions

Model	OD	HT	ID
EVF 1120-C	10.75	20.25	2.06
EVF 1122-C	10.75	22.25	2.06
EVF 636	6	36	
EVF 636-610	6	36	



ERF Series Activated Carbon Canisters

Ess Corp Radial Flow Activated Carbon Canisters present a greater superficial area to the process fluid, lowering velocity to better deal with high solids contamination.

Dimensions

Model	OD	HT	ID
ERF 1120-C	10.75	20.25	2.06
ERF 1122-C	10.75	22.25	2.06
ERF 720	7	20	1.5
EVF 722	7	22	1.5



Perforated sidewalls indicate radial flow construction

ERF Series Bulk Activated Carbon

Ess Corp Activated Carbon is specially selected to maximize performance in gas processing applications where the target contaminant is long chain hydrocarbon molecules. Used in all ESS Corp. Carbon Canisters, it is also available in bulk form, in **100 lb bags and 1000 lb super sacks**.

