

Depth Filtration
BECO® ACF 07 (Food Grade)

Activated Carbon Depth Filter Sheets with Protective Paper

BECO ACF 07 depth filter sheets are ideal for the demanding liquid filtration applications of the beverage and food industries.

The specific advantages of BECO ACF 07 depth filter sheets:

- High adsorption power for decolorizing and aroma correcting.
- Complex fiber and cavity structure with a large interior surface for the widest range of applications and operating conditions.
- BECO ACF 07 depth filter sheets with protective paper are easy to use and allow dust-free handling.

Adsorption through Activated Carbon

The activated carbon of BECO ACF 07 depth filter sheet is a micro-porous inert material, which is acid-washed and steam-activated. When products are cleaned or decolorized, a physical bond is created between the interior surfaces of the activated carbon and the unclean or colored substances. Since this bond is largely non-polar, there is a great affinity to organic molecules.

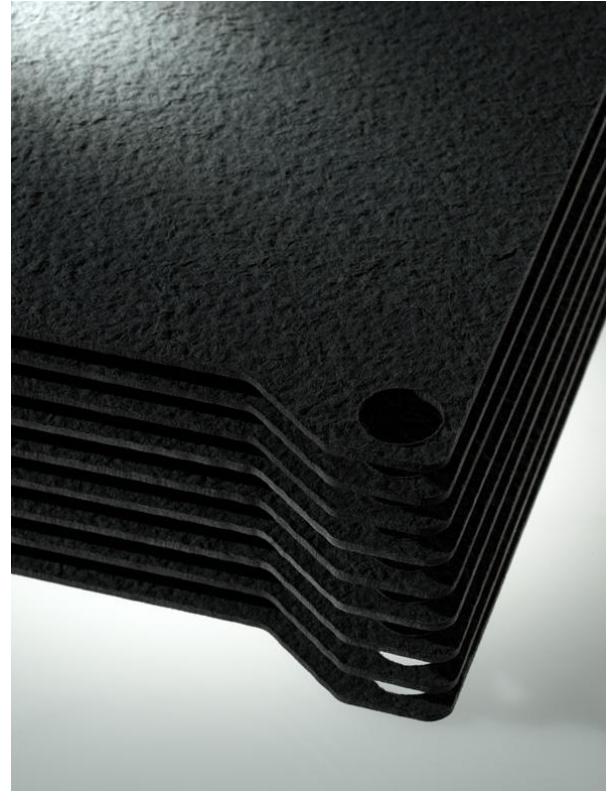
Factors Affecting the Adsorption Capacity

Filtration temperature

The quantity of adsorbed substances increases at lower temperatures and the thus decreasing diffusion rate because the adsorption balance ensues more slowly. The adsorption capacity can likewise be increased if the properties and structure of the substances to be filtered are changed by rising temperatures.

Filtration Speed

Adsorption processes are decisively affected by the contact time between the product and the adsorbing substance. The adsorption performance can thus be controlled by the speed of filtration. Slow filtration speeds and extended periods of contact result in optimum utilization of the adsorption capacity.



Water throughput BECO ACF 07 (Food Grade)



Conditions: Δ p = 14.5 psi (100 kPa, 1 bar), Medium: Water at 68 °F (20 °C)

Application Examples

Taste and color correcting of beverages, spirits, and fruit juices.

Components

BECO ACF 07 depth filter sheets are made from particularly pure natural materials using finely fibrillated cellulose fibers and cationic charge carriers as well as high quality diatomaceous earth, and acid-washed, steam-activated carbon.

Physical Data

This information is intended as a guideline for the selection of BECO depth filter sheets.

Type	Article no.	Thickness		Ash content		Bursting strength wet		Water throughput at	
		in	(mm)	%	psi	(kPa)	$\Delta p = 14.5 \text{ psi}$ gpm/ft ²	$(\Delta p = 100 \text{ kPa}^*)$ l/m ² /min	
ACF 07 (Food Grade)	19307	0.14	(3.6)	16.0	> 4.3	(30)	14.7	(600)	

The water throughput is a laboratory value characterizing the different BECO depth filter sheets. It is not the recommended flow rate.

* 100 kPa = 1 bar

BECO ACF 07 depth filter sheets meet the requirements of LFGB (German Food, Commodity, and Feed Act), Recommendation XXXVI/1 issued by BfR (Federal Institute of Risk Assessment), and the test criteria of FDA (Food and Drug Administration; USA) Directive CFR 21 § 177.2260.

Instructions for Correct Use

BECO depth filter sheets require careful handling when inserting them into the plate and frame filter. Avoid banging, bending, and rubbing the sheets. Do not use damaged depth filter sheets.

Inserting

Each BECO depth filter sheet has a rough side and a smooth side. The rough side is the unfiltrate side; the smooth side is the filtrate side. Always ensure that the filtrate side is in contact with the clear filtrate plate when inserting the sheets.

Filter Preparation

Unless already completed after sterilization, Eaton recommends pre-rinsing the closed filter with 1.23 gal/ft² (50 l/m²) of water at 1.25 times the flow rate prior to the first filtration. Depending on the application, this usually equals a rinsing time of 10 – 20 minutes.

Test the entire filter for leakage at maximum operating pressure.

High-proof alcohol solutions and chemical products that do not allow pre-rinsing with water should be circulated for 10 to 20 minutes. Dispose of the rinsing solution after rinsing.

Differential Pressure

Terminate the filtration process when a differential pressure of 43.5 psi (300 kPa, 3 bar) is reached.

Sterilizing (Optional)

The wetted BECO ACF 07 depth filter sheets may be sterilized with hot water or saturated steam up to a maximum temperature of **250 °F (121 °C)**. The pressed filter package should be loosened slightly. Make sure to sterilize the entire filter system thoroughly. Do not apply final pressure until after the filter package has cooled down.

Sterilizing with Hot Water

The flow velocity should at least equal the filtration capacity. The water should be softened and free of impurities.

Temperature: 185 °F (85 °C)

Duration: 30 minutes after the temperature has reached 185 °F (85 °C) at all valves.

Pressure: At least 7.2 psi (50 kPa, 0.5 bar) at the filter outlet.

Sterilizing with Steam

Steam quality: The steam must be free of foreign particles and impurities.

Temperature: Max. **250 °F (121 °C)**
(saturated steam)

Duration: Approx. 20 minutes after steam escapes from all filter valves.

Rinsing: After sterilizing with 1.23 gal/ft² (50 l/m²) at 1.25 times the flow rate.

Important notice:

All vent and discharge valves must be slightly opened for optimal sterilization effect and to avoid the steam shock.

Safety

When used and handled correctly, there are no known unfavorable effects associated with this product.

Further safety information can be found in the relevant Material Safety Data Sheet, which can be downloaded from our website.

Waste Disposal

Due to their composition BECO ACF 07 depth filter sheets are biodegradable. Comply with relevant current regulations, depending on the filtered product.

Storage

BECO ACF 07 depth filter sheets are comprised of strongly adsorbent materials. The product must be handled carefully during shipping and storage.

Store the BECO depth filter sheets in a dry, odor-free, and well-ventilated place.

Do not expose depth filter sheets to direct sunlight.

BECO depth filter sheets are intended for immediate use and should be used within 36 months after production date.

Available Formats

All common square filter sizes are available for delivery.

200 x 200 mm

400 x 400 mm

600 x 615 mm

Quality Assurance According to DIN EN ISO 9001

The Quality Management System of Eaton Technologies GmbH has been certified according to DIN EN ISO 9001.

This certification verifies that a fully functioning comprehensive Quality Assurance System covering product development, contract controls, choice of suppliers, receiving inspections, production, final inspection, inventory management, and shipment has been implemented.

Extensive quality assurance measures incorporate adherence to technical function criteria and chemical purity and quality recognized as safe under the German legislation governing the production of foods and beverages.

All information is given to the best of our knowledge. However, the validity of the information cannot be guaranteed for every application, working practice and operating condition. Misuse of the product will result in all warranties being voided.

Subject to change in the interest of technical progress.

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