

Precoat Filtration

BECO ENDURA® –

DE Support Sheets for Precoat Filtration

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Sterilization with hot water or saturated steam

BECO ENDURA® is a new type of washable, reusable support sheet for pre-coat filtration in kieselguhr frame filters that you can use to achieve particularly high performance. Due to its improved wet strength and optimized surface, a service life of up to 30 pre-coating cycles is possible irrespective of the liquid to be filtered and the filter aids used.

Insertion of the Support Sheet

The outlet side of the filter sheet is smooth and is marked by the pattern impression of the production screen, with the BECO sheet type and batch number. The outlet side of the support sheet should show against the filter plate outlet side for the filtered liquid. The rough surface of the inlet side is then pointing into the direction of the kieselguhr frame.

The support sheets must be well moistened after insertion and before closing the kieselguhr-frame-filter. Support sheets have a sensitive structure which require extremely careful handling during transportation, storage and insertion in the kieselguhr-frame-filter. Their structure can be destroyed by jerring, bending or scraping. Thus, the sheets should always be inspected for possible damage before being put to final use in the kieselguhr-frame-filter.

Filter Preparation

Prior to the first filtration, it is recommended to pre-rinse the closed filter with 50 liters of water per square meter at 1.25 times the flow rate. As a rule, this equals a rinsing time of 10 to 20 minutes depending on the application. Test the entire filter for leakage at maximum operating pressure.

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

Sterilization

BECO ENDURA® support sheets can be sterilized with saturated steam up to 121 °C (250 °F) or hot water at 85 °C (185 °F). For the purpose of energy conservation during hot water sterilization, the filter should be switched to circulation as soon as clear sterilization water emerges. Final pressing of the plate packet should be delayed until the filter has cooled down.

Performance of Precoat Filtration

Body feed with approx. 400 – 600 g/m² coarse kieselguhr, e.g. BECOGUR® 3500 or BECOGUR® 4500, alternatively perlite, e.g. BECOLITE® 4000.

Uniform precoating of kieselguhr or perlite on the support sheet must be ensured through sufficiently high flow velocity. The optimum approach velocity is 5 – 7 hl m⁻²h⁻¹.

To ensure complete venting, a counterpressure of approx. 0.5 bar (7.25 psi) should be set at the outlet valve. During precoating of the filter complete venting must be ensured.

Precoating with approx. 500 – 800 g/m² of filter aids or a mixture corresponding to the current dosage. Here too, the optimum approach velocity is 5 – 7 hl m⁻²h⁻¹.

The dirt holding capacity of the cake frames should be considered during filtration. The mixing ratio of the filter aids and the dosage should be set such that optimum filtration results in terms of haze reduction and total throughput are achieved. BEGEROW application engineers will be happy to assist with this task.

Regeneration

After completion of filtration and/or filling of the kieselguhr frames, the used filter aids and sediments are removed by washing this support sheets with a gentle water jet, or by careful use of compressed air, or by careful scraping off from the BECO ENDURA®/BECO ENDURA® G support sheet. Care must be taken that the support sheets are not damaged.

The filter can be regenerated by rinsing with cold, warm or hot water. The optimum regeneration effect is achieved with hot water at 80 °C (176 °F). The water should be of suitable quality and biologically sound, and it should be free from other forms of contamination.

The filter should be rinsed in filtration direction. The approach velocity should be at least 1.25 times the filtration velocity, but no higher than twice that value. Rinsing is complete once clear water emerges at the filter outlet. The kieselguhr frame filter can then be sterilized again.

Product Characteristics

Chemical and technical data:

Dry material:	> 96 %
Residue on ignition:	< 1 %
Thickness:	3.4 mm (0.13 in)
Bursting strength wet:	> 700 kPa (101.53 psi)
Water flow rate, Δ p = 100 kPa (14.5 psi):	4290 l m ⁻² min ⁻¹

Chemical Resistance

Impervious to organic, aqueous liquids in a pH-value range between 2 – 10 not impervious to cellulose dissolving liquids.

Safety

There are no known harmful effects when used according to instructions.

An EC safety data sheet is available on request.

Waste Disposal

The BECO ENDURA® support sheets can be disposed of with domestic waste or organic waste. Regional regulations may apply. Certain ingredients of the filtered liquids may lead to disposal restrictions.

Storage

The BECO ENDURA® support sheets are intended for immediate use and should be used within 36 months after delivery.

BECO ENDURA® support sheets consist of adsorptive materials. The product must be handled carefully during transport and storage. It should be stored in a dry, odor-free, and well ventilated place, under no circumstances together with, or in the vicinity of evaporating chemicals, oils, fuels, etc

Do not expose the depth filter sheets to direct sunlight.

Forms of Supply

The article number for BECO ENDURA® support sheets is 29.200.

They can be supplied for all common types of kieselguhr (DE) frame filters. Special formats are available at request.

H.S. Customs Tariff No.: 4812 00 00

Quality Assurance according to DIN EN ISO 9001:2000

The comprehensive Quality-Management-System of BEGEROW has been certified from DQS according to DIN EN ISO 9001:2000.

The certification confirms the functioning of the total system of Quality Assurance from product development through contract controls, choice of suppliers as well as acceptance controls, production and final examination all in the way to storage and dispatch.

Extensive quality assurance measures comprise the adherence to technical criteria regarding the function as well as the confirmation of chemical purity and quality recognized as safe under the German law governing the production of foodstuffs and beverages.

All information is given to the best of our knowledge. BECO depth filter sheets meet the requirements of recommendation XXXVI/1 regarding the LFGB (German Food, Commodity and Feed Act) by the BfR (Federal Institute of Risk Assessment), and the test criteria of FDA directive CFR 21 § 177.2260.



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