

# DEPTH FILTRATION RANGE

## Description

AEB Depth Filtration Range filters are designed for the filtration of liquids such as wine, oil, beer and juices.

The range effectively satisfies all retention levels between 35 and 0,2  $\mu\text{m}$ , in order to be able to respond adequately to any filtration requirement.



## Filter sheets

# DEPTH FILTRATION RANGE

|   | PRODUCT                                       | FILTRATION  |
|---|---|---|
| 1 | AEB DFR<br>100 / 110<br>130 / 140             | Sterilizing action and<br>reduction of microorganisms |
| 2 | AEB DFR<br>40 / 40 HF / 50<br>70 / 85 HF      | Reduction of microorganisms<br>and microfiltration    |
| 3 | AEB DFR<br>06 / 09 / 12 HF<br>15 / 20 HF / 30 | Coarsening and brightening                            |

## Size

AEB filter sheets are available in the standard size 40x40. Special sizes can be produced on request.

## Advantages of AEB filter sheets

- **Effective retention of contaminants to be separated, due to the porosity of the filter media**
- **High clarification ability thanks to high quality raw materials**
- **Excellent ratio cost-benefit for high yields and high turbidity absorption capacity**
- **Excellent control quality standard on all raw materials**
- **Constant quality of the finished product**

## 1 AEB DFR 100 / 110 / 130 / 140

Sterilizing filtration with reduction of microorganisms

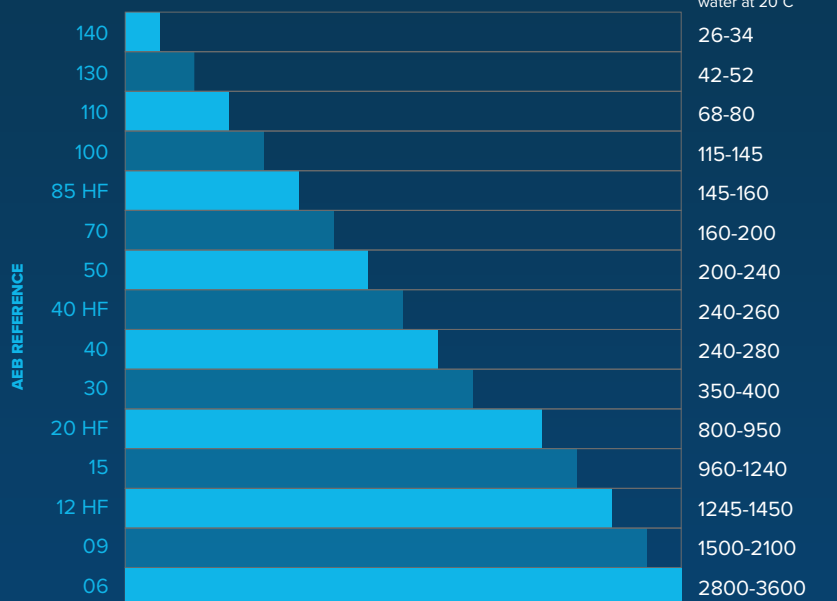
### Description

AEB DFR 100, 110, 130 and 140 depth filters are characterized by a high degree of microbiological retention, which is possible thanks to the narrow pore structure of the filter medium, combined with an electrokinetic potential with adsorption action.

### Applications

Their ideal application is in sterile cold bottling, aimed at improving the preservation of wines, beer and juices. Due to the high retention capacity of the colloidal components, these sheets can also be used as prefilters upstream of the membrane filtration.

### Water flow rate AEB DEPTH FILTRATION RANGE



## 2 AEB DFR 40 / 40 HF 50 / 70 / 85 HF

Reduction of microorganisms and microfiltration

### Description

AEB DFR 40, 40 HF, 50, 70, 85 HF depth filters provide a high level of clarification due to their effective retention capacity of the finest particles, combined with microbiological retention.

### Ideal application

They are particularly suitable for the storage and bottling of microbiologically stable wines.

## 3 AEB DFR 06 / 09 / 12 HF 15 / 20 HF / 30

Coarsening and brightening filtration

### Description

AEB DFR 06, 09, 12 HF, 15, 20 HF, 30 filter sheets have a high-volume hollow structure and a high turbidity absorption capacity.

### Ideal application

They are specially designed to ensure the brightening of the product, be it wine, beer, oil or juices.

The following indications are fundamental in the choice of the sheets AEB DEPTH FILTRATION RANGE.

| INDICATION OF THE TYPE | ARTICLE NUMBER | NOMINAL FILTRATION RATE $\mu\text{m}$ | THICKNESS mm | ASH RESIDUE % | TEAR RESISTANCE IN WET STATE kPa* | Water flow rate $\Delta p = 100 \text{ kPa}^*$ l/m <sup>2</sup> /min |
|------------------------|----------------|---------------------------------------|--------------|---------------|-----------------------------------|--|
| AEB DFR 140            | 033741         | 0.2-0.4                               | 3.9          | 58            | >50                               | 26-34  |
| AEB DFR 130            | 033731         | 0.4-0.6                               | 3.9          | 58            | >50                               | 42-42  |
| AEB DFR 110            | 033710         | 0.5-0.8                               | 3.8          | 55            | >80                               | 68-80  |
| AEB DFR 100            | 033700         | 0.6-1.5                               | 3.8          | 50            | >50                               | 115-145  |
| AEB DFR 85 HF          | 030144         | 2.0-3.0                               | 3.8          | 50            | >50                               | 145-160  |
| AEB DFR 70             | 033770         | 1.5-3.0                               | 3.8          | 49            | >50                               | 160-200  |
| AEB DFR 50             | 033750         | 3.0-6.0                               | 3.8          | 48            | >50                               | 200-240  |
| AEB DFR 40 HF          | 030143         | 6.0-8.0                               | 3.8          | 50            | >50                               | 240-260  |
| AEB DFR 40             | 033740         | 4.0-9.0                               | 3.8          | 50            | >50                               | 240-280  |
| AEB DFR 30             | 033730         | 5.0-12                                | 3.8          | 50            | >50                               | 350-400  |
| AEB DFR 20 HF          | 030141         | 15-20                                 | 3.8          | 50            | >50                               | 800-950  |
| AEB DFR 15             | 033715         | 8.0-20                                | 3.8          | 50            | >50                               | 960-1240   |
| AEB DFR 12 HF          | 030140         | 8.0-10                                | 3.8          | 50            | >40                               | 1245-1450  |
| AEB DFR 09             | 033749         | 10-30                                 | 3.8          | 46            | >50                               | 1500-2100  |
| AEB DFR 06             | 033745         | 15-35                                 | 3.8          | 42            | >60                               | 2800-3600  |

The water flow rate is a laboratory value that characterizes the different types of AEB depth filters. It is not the recommended flow rate.

\* 100 kPa = 1 bar

## Components

AEB depth filter sheets are made of natural, first choice and particularly pure materials, carrying a cationic charge. They are made of cellulose finely shined broadleaf and conifer fibres, kieselguhr and perlite at different concentrations.

## Directions for use

The manipulation of filter sheets must be done:

- with extreme care when they are placed in the press filter;
- avoiding impacts, bending and abrasions.

Do not use damaged or altered filter sheets.

## How to use

Each AEB sheet consists of:

- a rough side, representing the entrance of the filtered product;
- a smooth side, representing the exit of the filtered product.

## Sterilization (optional)

AEB depth filters:

- 1) must be sterilised with hot water or saturated steam at a maximum temperature of 134°C
- 2) it is necessary to loosen the compressed filter pack slightly and make sure that the complete sterilization of the entire filter system is carried out.
- 3) Final compression should only be performed after the cooling of the filter pack.

### Sterilization with very hot water

- The flow rate must correspond at least to the speed in use during filtration.
- The water must be demineralised and free of impurities

|             |  |
|-------------|--|
| Temperature | 85°  |
| Duration    | 30 minutes, after the temperature has reached 85°C in all valves |
| Pressure    | At least 50 kPa (0,5 bar) at the outlet of the filter.           |

### Steam sterilization

The steam must be free of impurities

|             |  |
|-------------|--|
| Temperature | 134 °C max. (saturated steam)  |
| Duration    | Approx. 20 minutes after the steam has been discharged from all the valves of the filter |
| Washing     | 50 L/m <sup>2</sup> at 1,5 times the flow rate after sterilization.                      |

## Filter preparation and filtration

### Recommendations

- During the first filtration, it is necessary to wash the filter sheets with water at a speed of 1,5 times that of filtration. This step is only necessary if this has not already happened after sterilization.
- Check the tightness of the entire filter at the maximum working pressure.
- Solutions with a high alcohol content, as well as products not allowing washing with water, must be circulated in the circuit. The solution must then be disposed of.

### Pressure difference

According to the standard operating mode, filtration must be terminated when the maximum permissible pressure difference of 300 kPa (3 bar) is reached.

To work under maximum safety conditions, a pressure difference of 150 kPa (1,5 bar) must not be exceeded during filtration for retention of microorganisms.

### Regeneration/counterflow washing

The performance of AEBB filters can be increased by counter-current washing with mineralized water. This makes a significant contribution to reducing filtration costs.

| Parameters and regeneration mode |                  |
|----------------------------------|------------------|
| Temperature                      | 15 – 20 °C       |
| Duration                         | About 5 minutes  |
| Hot washing                      | counterflow      |
| Temperature                      | 60 – 80 °C       |
| Duration                         | About 10 minutes |

### Safety

No adverse effects are known when used in accordance with the requirements and processing according to the parameters and protocol specified in this document.

For further information on safety, please refer to the EC declaration (always download the latest version from [www.aeb-group.com](http://www.aeb-group.com)).

### Disposal

Thanks to their composition, AEB depth filter sheets are biodegradable. However, the requirements of the respective competent authority must be observed depending on the filtered product.

### Handling and storage

AEB depth filter sheets are made of highly adsorbent materials, therefore:

- they must be handled with care during transport and storage;
- they must be stored in a dry, odour-free and adequately ventilated place;
- they must not be exposed to direct sunlight.

AEB filter sheets are intended for immediate use and must be used within 36 months from the date of production.