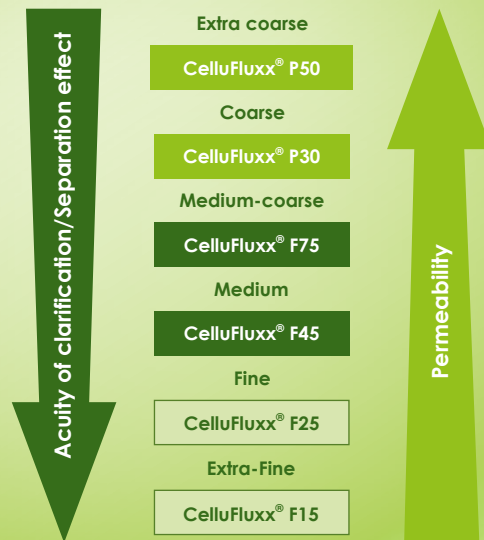


Filter cellulose fibres for filtering wine and fruit juice



Six product types for a comprehensive range of uses:



CelluFluxx® offers:

- **Aroma retention** – as a result of a gentle filtration process
- **Economy** – as a result of reduced product loss
- **Environmentally friendly product** – compostable, made from 100% biomass



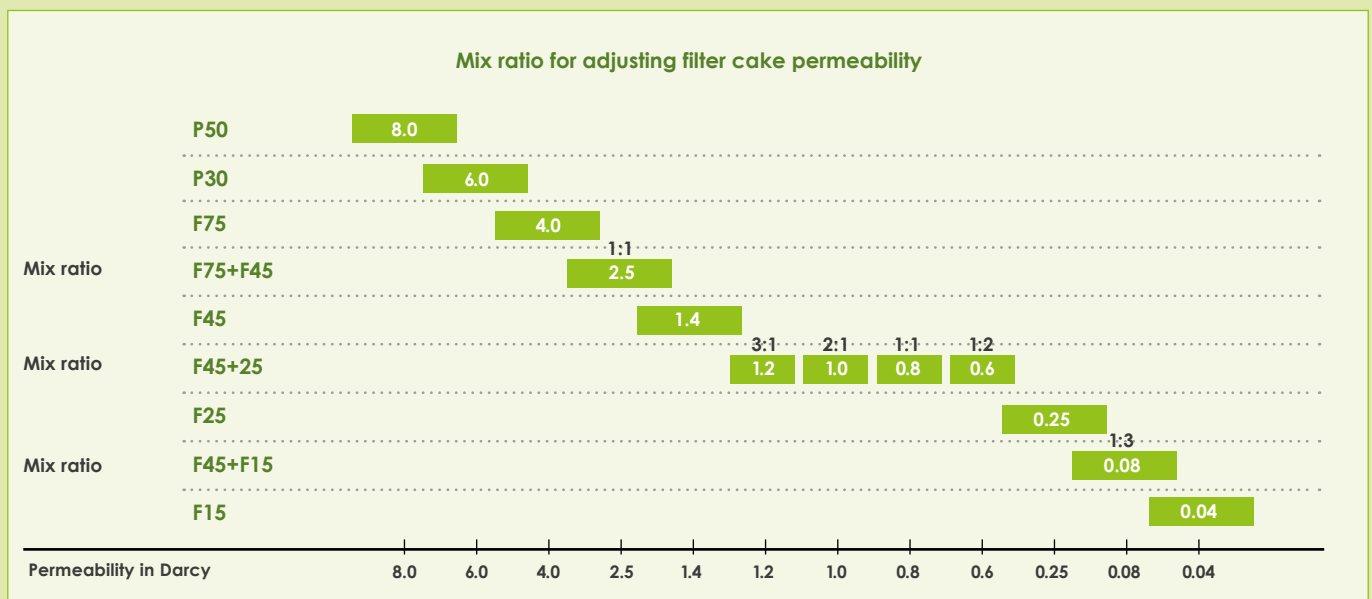
Progress is our future

CelluFluxx® filter cellulose consists of specially prepared cellulose fibres from deciduous and evergreen trees and possesses a high level of chemical and organoleptic purity. Fibres of varying degrees of fineness with an individually adjusted degree of fibrillation are created using special grinding techniques. It is possible to form a highly

individual filter cake to meet specific requirements by mixing different types of fibres. Consequently, in practice the filtration accuracy can be adjusted to meet requirements, from coarse filtration for clarification to fine filtration for sterilisation.

CelluFluxx®-product type	Fibre characteristics	Applications
P50	Extra-long fibres with low water absorption capacity <ul style="list-style-type: none"> • Bridging on screen cloths and in filter cakes (filter cake reinforcement) • Intentional formation of drainage channels in the filter cake 	<ul style="list-style-type: none"> • Admixture to other filtration aids if there is a problem with the filter screen cloth • Admixture to perlite when processing must sediment (VarioSan process) and filtering must • Increased performance and improved degree of clarification in the rotary vacuum filter
P30	Long fibre with a particularly smooth surface <ul style="list-style-type: none"> • Easy and complete discharge (cleaning) of used filter cakes 	<ul style="list-style-type: none"> • Specifically for pre-coating in pre-coat filtration - to develop a thin layer of filter cake directly on the screen cloth
F75	Long, slightly fibrillated fibre <ul style="list-style-type: none"> • Formation of a loose filter cake with a high sediment absorption capacity 	<ul style="list-style-type: none"> • For coarse filtration of very turbid beverages • As an initial filtration stage in two-stage pre-coat filtration
F45	Medium-length fibre with marked fibrillation <ul style="list-style-type: none"> • Development of a large volume space in the filter cake 	<ul style="list-style-type: none"> • Base fibre in the filter cake for fine filtration and sterilising filtration
F25	Short, slightly fibrillated fibres <ul style="list-style-type: none"> • Compaction of the space in the filter cake for an intentional increase in the degree of clarification 	<ul style="list-style-type: none"> • For admixture during fine filtration
F15	Very short fibres with no fibrillation <ul style="list-style-type: none"> • Formation of a compact filter cake with a high retention characteristic 	<ul style="list-style-type: none"> • For admixture during fine filtration for sterilisation

Ideally, CelluFluxx® can be used as an alternative filtration aid to kieselguhr or perlite. By mixing the different product types it is possible to intentionally adjust filter cake permeability to suit requirements.



It is only possible to determine the Darcy value for filter cellulose with difficulty and imprecisely, so this merely serves as a guide value for correlation with other filtration aids.

CelluFluxx® - the contemporary, alternative filtration aid for high-quality wine

Pre-coat filtration is in direct competition with crossflow filtration. Both technologies have their strengths and their use is heavily dependent on the user's individual requirements and their operational philosophy. Pre-coat filtration offers the possibility of selecting filtration aids such that important colloidal contents remain in the filtered beverage. This is particularly important during clarification following malolactic fermentation. The colloidal substances obtained in this way facilitate the formation of secondary aromas

during maturation, which has an extremely positive effect on the wine's organoleptic properties.



Cellulose fibres form a loose, voluminous filter cake. The quantity of filtration aid used can be significantly

reduced for formation of the cake thickness required to achieve the filtration effect.

White wine	up to 50% less filtration aid
Red wine	up to 30% less filtration aid

A smaller quantity of filtration aid used has a direct impact on the necessary sediment volume in the filter. The filter's maximum sediment absorption capacity is reached much later, thus increasing the total throughput volume. This also causes a considerable time saving due to the reduced cleaning intervals and time saved for starting up the filter again.

A reduced quantity of filtration aid also results in reduced product loss, as 1 kilogram of filtration aid binds around 2 litres of product. If one looks at all these factors, they offset the filtration aid's much higher price and, in many applications, represents the more economic option.

Price difference compared to alternative filtration	-
Higher total throughput performance	+
Fewer interruptions to work	+
Reduced product loss	+
Reduced quantities of waste and lower waste disposal costs	+
Total	+

Filter cellulose is made from deciduous and evergreen wood and comes 100% from biomass. Wood is a sustainable commodity with a positive eco balance. Every year more trees are planted worldwide than are felled.

The used filter cake from wine production can be applied to agricultural land throughout the year as biomass and does not have to be worked into the soil, like kieselguhr.

Not only is filter cellulose good for the environment - it also protects pumps, pipes and filters, as this filtration aid is not abrasive. The plant's waste water system is protected as the cellulose fibres rinse away well and do not build up in the system. This is an important plus point for many plants!!



Fig. 1: CelluFluxx® filtration aid

VarioFluxx® - filtration aid - mixed product

In addition to the pure filter cellulose from the CelluFluxx® product range, Erbslöh offers three mixed filtration aid products composed of specially prepared cellulose fibres combined with selected perlite of varying degrees of fineness, as an alternative to kieselguhr. The advantage lies in the comparatively easier use, without having to independently mix the fibres.

Specific characteristics

- Easy to use
- Dense, compact filter cake
- High clarification performance

Product type	Uses
VarioFluxx® P	For coarse filtration - for intentional increase of filter cake permeability
VarioFluxx® M	For clarification and fine filtration - for a high throughput rate with a good clarifying effect; to be used 1:1 like "standard" kieselguhr (white)
VarioFluxx® F	Very fine filtration aid for intentional filter cake thickening; to be used like fine kieselguhr (brown).

Clarification and filtration using the eSan filter cloth®

Introduction of the VarioSan process means that many chamber filter presses have been equipped with eSan filter cloths. The eSan filter cloth's fabric structure is very suitable as a backing fabric for filter cake formation during pre-coat filtration. The application furthermore offers significant advantages compared with the vessel filters habitually used. Key information about this application and the specific advantages can be found in our brochure "Filtration using the eSan filter cloth®", available to download from our website.

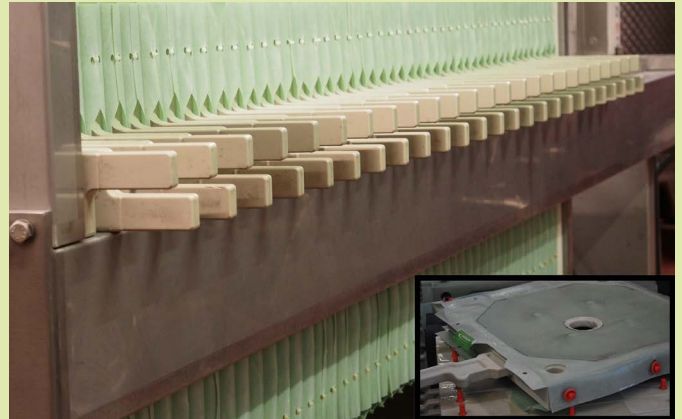


Fig. 2: Chamber filter press lined with eSan filter cloths

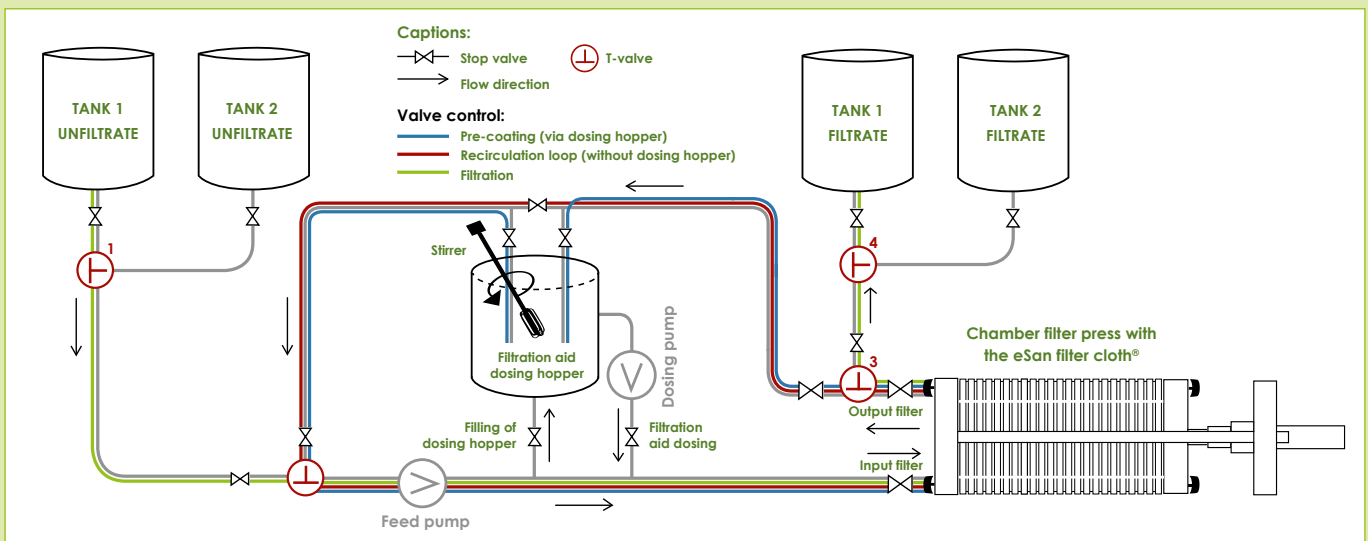


Fig. 3: Process route diagram Filtration using chamber filter presses and eSan filter cloth®

Technical recommendations for use and support

Pre-coat filtration is a complex stage in the wine-making process, because the filtration result is influenced by many parameters. Filtration aids of varying fineness, or mixtures thereof, are used in different quantities throughout the wine-making process, from the grape harvest health to storage conditions during the maturation stage. This requires

a certain experience in filtration. When cellulose fibres are used there is also the fact that several fibres can be used in a specific mix ratio. To help you Erbslöh provides detailed "Technical recommendations for filtration using CelluFluxx® and Variofluxx®" on its website. You are also welcome to contact our Technical Support department.