

Technical Data

polyfelt.F

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polyfelt.F is a **two-layer continuous filament nonwoven**, one layer designed as **filter**, the other layer as **protection** against damage of the filter. This construction allows an **optimum number of constrictions** in the filter layer, resulting in an extremely **low clogging risk** and high soil retention security.

Properties <i>[Standard]</i>	Unit	F 60	F 70	F 80
Product Description				
Type of product	-	Two-layer mechanically bonded PP continuous filament nonwoven		
Raw material	-	100 % UV stabilized polypropylene		
Hydraulic Properties				
Number of Constrictions <i>[acc. Giroud]</i>	-	25-40	25-40	25-40
Opening size O ₉₀ <i>[EN ISO 12956]</i>	Tolerance µm	80 +/-24	80 +/-24	80 +/-24
Permeability normal to the plane <i>[EN ISO 11058]</i>	Tolerance mm/s	60 -18,0	45 -13,5	30 -9,0
Mechanical properties				
Elongation at max. load <i>[EN ISO 10319]</i>	MD/CD Tolerance %	85 / 85 +/-19,6	85 / 85 +/-19,6	85 / 85 +/-19,6
Maximum absorbed energy ** <i>[EN ISO 10319]</i>	kN/m	10	13	15
Tensile strength <i>[EN ISO 10319]</i>	MD/CD Tolerance kN/m	23 / 23 -3,0	30 / 30 -3,9	35 / 35 -4,6
Cone drop test <i>[EN 918]</i>	Tolerance mm	13 +2,6	10 +2,0	8 +1,6
CBR puncture resistance <i>[EN ISO 12236]</i>	Tolerance N	3300 -330	4500 -450	6500 -650
Durability Properties				
UV resistance - strength retained <i>[EN 12 224]</i>	%	> 80	> 80	> 80
Chemical / biological resistance	-	resistant against all chemical agents and microorganisms usually occurring in seas or rivers		
Identification Properties				
Thickness <i>[EN 964-1]</i>	2 kPa mm	3,5	5,0	6,5
Mass <i>[EN 965]</i>	g/m ²	400	600	800

The values given are average values obtained in our laboratories and in testing institutes. The tolerance is indicated according to the 95% confidence level. The right is reserved to make changes without notice at any time.

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Constriction Concept, Forms of Supply

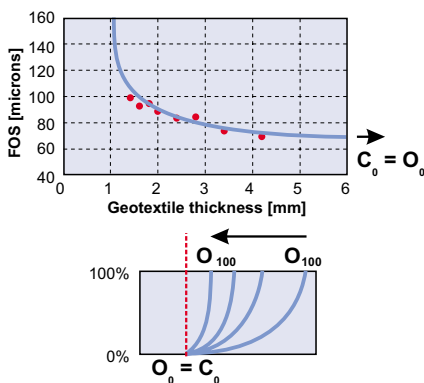
Constriction concept

The number of constrictions “m” is a dimensionless parameter which combines the structural characteristics of the nonwoven (thickness, porosity, fibre size). A filtration geotextile works sufficient with $m = 25$ to $m = 40$ constrictions.

$$m = \sqrt{(1 - \text{Porosity})} \times \frac{\text{Thickness}}{\text{Fibre Size}}$$

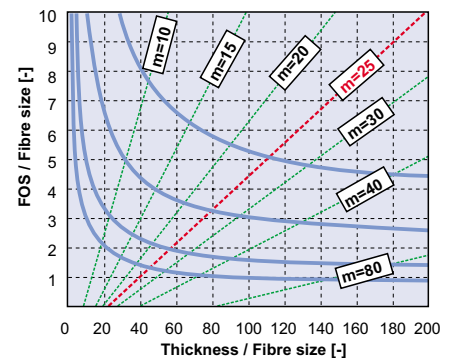
After Dr. J.P. Giroud, International Conference Geofilter'96 Montréal

1. Filter homogeneity - $m \geq 25$



Experimental (left figure): The nonwoven is homogeneous from a given thickness. This optimum thickness depends on its internal structure (density, fibre size).

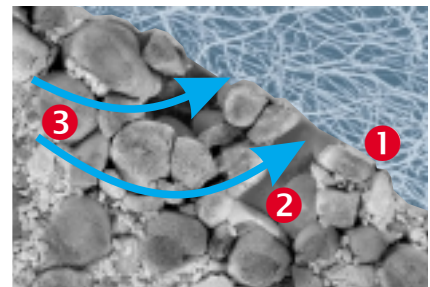
Theoretical (right figure): The nonwoven is homogeneous if its number of constrictions $m \geq 25$ (for all nonwovens).



2. Soil stability (no risk of internal clogging) - $m \leq 40$

The functions of a geotextile filtration system are (see figure to the right):
 (1) Maintain the soil skeleton in place
 (2) Let fine instable particles pass
 (3) Allow a free long-term water flow

To stabilise the soil, the skeleton particles should be maintained near the interface soil/geotextile. A stable filtration is guaranteed when the maximum number of constrictions does not exceed a certain value: $m \leq 40$



Forms of Supply	Unit	F 60	F 70	F 80
Length x Width	m x m	100 x 6	60 x 6	40 x 6
Area	m ²	600	360	240
Weight of roll	kg	252	228	204

Other forms of supply are available on request.

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