

## SYNTHETIC FILTER FABRICS

# MONOFILAMENT FILTER FABRICS

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Monofilament filter fabrics are ideal materials for sieving, straining or filtering most liquids, powders or sludges. The term 'Monofilament' means that each thread used in the construction of the cloth is a single smooth solid strand instead of many smaller diameter threads twisted together, as in a spun or multi-filament material. These monofilament threads are perfectly round in section and are extruded to very precise and uniform diameters.

## THEIR ADVANTAGES ARE:

- A. Due to their uniformity they can be woven with great precision to give exact and regular apertures,
- B. The resulting material has a very smooth surface so that the filtered particles will easily separate from it,
- C. They have great strength and elasticity.

After weaving, our fabrics undergo a finishing process to add the properties required for specific applications. During the finishing process, the fabric is scoured to remove any foreign substances and the yarns are then stabilised within the weave in order to eliminate shrinkage by a process known as 'heat setting'.

# MATERIALS

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## MONOFILAMENT NYLON 6.6 FILTER CLOTH

Monofilament Nylon is a versatile material due to its great strength, flexibility, long life and resistance to abrasion. Nylon has excellent resistance to most common solvents and will operate continuously at temperatures up to 100°C in the chemical pH range 7-14. Its chemical and physical properties are shown in the table below.

## MONOFILAMENT POLYESTER FILTER CLOTH

Monofilament Polyester is particularly recommended for use in manufacturing conditions in excess of 100°C. It is suitable up to a maximum working temperature of 150°C in the chemical pH range 1-7.

## ALTERNATIVE MATERIALS

Although Nylon and Polyester are satisfactory for most screening applications, we also have a range of Polyethylene, Polypropylene, PTFE, Silk, Nomex, etc.

# WOVEN FILTER TUBING, STRIPS (RIBBON) AND PREFORM

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This can be produced either circular woven or with ultrasonic or hot knife welded seams in all synthetic fibres. Preformed inserts may be either ultrasonically welded or hot cut.

# FILTER BAGS, SLEEVES, DISCS AND SCREENS

## NEEDLEFELTS

Manufactured using layers of fiber which are 'needled' through a base scrim to produce a felt for wet and dry filtration. Classified by air permeability, weight in grammes per square metre, or by particle retention (within a range of 1 to 200 micron); Needlefelts are available in the following materials – Polypropylene, Nylon and Polyester. They can be purchased either in roll form or, more commonly, manufactured into filter bags, cloths, sleeves, etc for any make of machinery.

## MONOFILAMENT FABRICS

We produce a wide range of these products, catering for our customers' individual requirements as well as the standard designs. These can be made from any of our range of filter cloths, and we would be happy to quote against your specific drawing, sketch or sample. Some of our typical products are illustrated alongside.

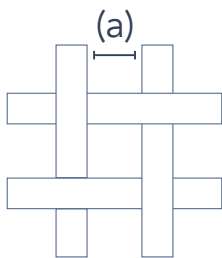
# BAG FILTER HOUSING

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Single and multi-bag filter, housing in high quality stainless steel. Suitable for all commonly used filter bags. With flow rates of up to 160m<sup>3</sup> per hour. Please ask us for a separate brochure.

BOLTING CLOTH		MONODUR® NYLON NORMAL				MONODUR® NYLON LIGHT					MONODUR® POLYESTER NORMAL					MONODUR® POLYESTER HEAVY DUTY						
old fabric no	grit gauge	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m²	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m²	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m²	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m²	
		2000	3.8	58	630	300						2000	4.0	64	500	265	2000	3.8	58	630	363	
		1900	3.9	56	630	290																
	12	1800	4.3	60	530	250																
		1700	4.5	58	530	240																
	14	1600	4.9	62	430	175						1600	4.9	61	430	212						
		1500	5.2	60	430	185																
		1400	5.5	59	430	195						1400	5.5	59	430	236	1400	5.3	55	500	350	
	16	1320	5.7	57	430	200																
		1250	6.2	60	370	174						1250	6.2	60	370	211						
	18	1180	6.4	58	370	177																
		1120	6.7	57	370	181																
		1060	7.0	55	370	185																
	20	1000	7.6	58	315	150						1000	7.6	58	325	182	1000	6.2	39	500	430	
	22	950	7.9	56	315	154																
		900	8.2	55	315	158						900	8.0	52	300	170						
	24	850	8.6	53	315	164																
	26	800	9.4	56	270	140						800	9.4	57	270	169						
		750	9.8	54	270	144																
	28	710	10.2	52	270	149						710	10.2	52	270	188						
	30	670	10.6	51	270	154																
		630	11.1	49	270	160						630	11.1	49	270	181						
	32	600	11.5	48	270	165	600	13.3	64	150	74											
	34	560	13.0	53	210	117						560	13.5	57	215	160						
		530	13.5	51	210	121																
	38	500	14.0	50	210	125						500	14.0	47	230	174						
	40	475	14.7	48	210	132																
		450	15.2	47	210	136																
	44	425	15.8	45	210	140																
	46	400	16.4	43	210	145	400	17.1	47	180	123	400	16.4	43	215	175	400	15.4	38	250	255	
		375	17.1	41	210	155																
	50	355	19.4	48	160	112						355	19.4	48	160	155	355	16.0	32	250	285	
	52	335	20.2	46	160	115																
	54	315	21.0	44	160	120						315	21.0	44	160	145	315	20	39	200	182	
	56	300	23.2	49	130	76																
	58																					
	60	280	24.4	47	130	82						280	24.4	47	130	93						
	62																					
	64	265	25.3	45	130	86	265	26.0	47	100	61	265	25.0	44	130	95						
	66	250	26.3	43	130	89						250	26.3	43	130	99						
	68																					
	70	236	27.3	42	130	92																
	72	224	30.4	46	105	76						224	30.4	46	105	93						
		212	31.5	45	105	78						212	29.0	38	130	108						
		200	32.8	43	105	80						200	32.8	43	105	97						
		190	37.0	50	80	51																
		180	38.5	48	80	53						180	37.0	44	90	90						
		170	40.0	46	80	56																
		160	42.0	44	80	58						160	42.0	45	80	70						
		150	43.5	43	80	59																
		140	45.0	40	80	60						140	45.0	40	80	73						
		132	47.0	39	80	63																
		125	49.0	37	80	66						125	49.0	38	80	80						
		118	51.0	36	80	68						118	56.0	43	60	52						
		112	52.0	34	80	72	112	62.0	48	50	34	112	60.0	45	60	65						
		106	55.0	34	75	60																
		100	56.0	33	75	62	106	60.0	40	60	56	100	56.0	31	70	75						
		95	58.0	31	75	63	95	69.0	48	50	37											
		90	60.5	30	75	65						90	68.0	37	55	68						
LA QUAL.		85	62.0	28	75	67	85	77	43	45	29											
	20	80	64.5	27	75	69						80	77.0	38	48	42	80	73.0	34	55	70	70
		71	86.0	37	45	31						71	90.0	41	40	36	71	80.0	32	55	64	64
		63	93.0	34	45	35	67	104.0	49	30	28	63	92.0	37	40	39	63	90.0	32	48	68	68

BOLTING CLOTH	MONODUR® NYLON NORMAL					MONODUR® NYLON LIGHT					MONODUR® POLYESTER NORMAL					MONODUR® POLYESTER HEAVY DUTY						
	old fabric-no grit gauze	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m <sup>2</sup>	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m <sup>2</sup>	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m <sup>2</sup>	mesh opening in micron	mesh count per cm	open area %	thread diameter in micron	weight g/m <sup>2</sup>	
												60	100.0	36	40	40						
	56	100.0	31	45	38							56	110.0	38	35	33	56	90.0	25	55	72	
	50	111.0	31	40	27							50	120.0	36	35	35	53	80.0	18	70	100	
																	50	110.0	30	40	45	
	45	118.0	28	40	30												45	120.0	29	40	48	
	42.5	122.0	26	40	31																	
						40	143.0	33	30	23							40	125.0	25	40	50	
	37.5	129.0	23	40	34						40	133.0	28	35	39		37.5	90.0	11	70	104	
	35.5	143.0	25	35	25	35.5	153.0	29	30	24	35.5	142.0	25	35	41		35.5	130.0	21	40	52	
	33.5	147.0	24	35	26																	
	31.5	152.0	23	35	27						30	165.0	25	30	40		30	150.0	21	35	38	
	30.0	165.0	25	30	30																	
												22.4	180.0	16	30	53						
	22.4	180.0	16	30	33							20	185.0	15	30	45						
	20	185	14	30	38							15	200.0	9	35	48						
	15	195	9	30	45												10	200.0	4	40	80	
																	5	220.0	1.2	40	88	
																	3	220.0	0.4	42	88	



**APERTURE SIZES** Our standard filter cloths range from 2,000 micron to 3 micron aperture, the measurement being made across the square between the insides of adjacent threads, as shown.

**LENGTHS AND WIDTHS** Full roll length approximately 100 meters but any length can be cut to order. Our standard stock width is 1m and 1.5m but other widths are often available or may be woven to special order.

Please note: 1 micron = 1/1000th part of 1 millimetre



# TECHNICAL FILTRATION FABRICS

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## POLYNOVA® TECHNICAL FILTRATION FABRICS

Polynova® Technical Filtration Fabrics are produced in a wide variety of materials including polyester, polyamide (nylon) and polypropylene. The fabrics are specifically designed to be used in a broad spectrum of applications in industries spanning chemicals, wine and juice production, waste water and sewage treatment, ceramics and food.

Polynova® technical fabrics are made in a variety of weave constructions and permeabilities. Their wide selection makes it possible to provide for any specific application.

## POLYNOVA® FILTER BELTS AND PRESS CLOTHS

Polynova® Filter Belts and Press Cloths were developed in close co-operation with machine manufacturers and end-users especially for applications in liquid/solid separation and dewatering of suspended solids. These applications include the product extraction in the chemical industry and ceramic industries, in metallurgy and mineral mining. They are used for extraction of phosphoric acid and fertilizers, for filtration of aluminium hydroxide, for coal washing, as well as for specific filtration in flue gas desulphurization.

Polynova® fabrics can be converted for use on systems such as vacuum filter belt units, gravity belt thickeners, pan filters, filter presses and fluid bed driers plus many more.

## FILTER BELT JOINTS/FINISHING

We produce a complete range of connecting joints for all fabrics that are designed for use as filter belts. The joints are available in a number of forms and materials ranging from wholly synthetic to stainless steel. The synthetic joints can be produced to match the material of the belt. These are generally used for lighter applications, or where the presence of metal is detrimental to the given process. Stainless steel joints are fitted to the heavier range of fabrics and where physical strength is of importance. They are available in the "clipper" and "alligator" styles with a resin-fill protection layer.

All belts are fitted with the optimum joint for their application and come complete with the appropriate joining/pintle wire.

We can also supply joints which are hand woven together on the ends to produce what is, effectively, an endless belt. Such joints are beneficial in areas where a joint line would compromise the finish of the product. It should be noted that it is only possible to fit these belts to machines with available access.

The edges of the belts are produced with a heat seal plus a neoprene/resin fill band where required, to prevent fraying and reduce wear.

Further information may be obtained by calling our office.



PHYSICAL PROPERTIES	POLYAMIDE (6.6 NYLON)	POLYESTER	POLYETHYLENE	POLYPROPYLENE	POLYVINYLCHLORIDE (PVC)
MAX WORKING TEMP. °C	100	150	60	70	60
SHORT TERM WORKING TEMP. °C	150	180	90	100	70
MELTING POINT °C	255	256	120	165	150
SOFTENING POINT °C	235-240	230	110	150	70
SPECIFIC GRAVITY	1.14	1.38	0.95	0.92	1.38
TENSILE STRENGTH N/mm <sup>2</sup>	70-100	95-130	50-60	22-55	20-40
ELONGATION TO BREAK %	15-25	10-20	15-30	15-30	14-60
MOISTURE ABSORPTION % AT 20 °C	3.5-4.5	0.4	0	0	0-0.2
U.V. RESISTANCE	FAIR	GOOD	POOR	LOW	V. GOOD
ABRASION RESISTANCE	V. GOOD	V. GOOD	POOR	AVERAGE	POOR
CHEMICAL PROPERTIES AT 20 °C					
ACETIC ACID, CONC.	—	✓	✓	✓	✓
SULPHURIC ACID 20%	—	✓	✓	✓	?
NITRIC ACID 10%	—	?	✓	✓	✓
HYDROCHLORIC 25%	—	?	✓	✓	?
SAT. SODIUM CARBONATE	✓	✓	✓	✓	?
CHLORINE CONC.	—	✓	✓	?	✓
CAUSTIC SODA 25%	?	—	✓	✓	?
AMMONIA, CONC.	✓	—	✓	✓	?
POTASSIUM PERMANGANATE	—	✓	✓	?	?
FORMALDEHYDE, CONC.	✓	✓	✓	✓	?
CHLORINATED HYDROCARBONS	✓	✓	?	?	?
BENZENE	✓	✓	?	?	—
PHENOL	—	?	?	?	—
KETONES, ACETONE	✓	✓	?	?	?

✓ = recommended

? = conditional

— = unsatisfactory

\* = resistance is generally lower  
at higher temperature