# **BASICS 2** Filter Cloths



Mesholutions created by PACO

The Filtration Quality is in the Cloth

Whenever reliability and consistently good results are essential to a filtration process, filter cloths made of metal wire cloth are always the filter media of choice. This is the conclusion that has been reached by users in all industries in which filtration plays an important part. For decades PACO has been one of the leading suppliers of high-quality filter cloths with a variety of weaves and precisely defined filtration grades.

### **Cloth perfection in the interests of our customers**

Metal wire cloths and, in particular, filter cloths have a geometric structure that provides exactly the same mesh or pore size over the complete filter area of the cloth right down into the range of a thousandth of a millimetre. That is why extremely high requirements are put on the production of the cloth. These are met at PACO through automated looms that are built by our own mechanical engineers, 100% quality inspection of the component wires and, in particular, through the extensive professional experience of our metal wire weavers.

The perfection of the cloth is complemented by significant benefits that become clearly evident in practical day-to-day use: outstanding mechanical strength, high thermal stability, high resistence against chemicals, long service intervals and product lifetimes as well as extremely good cleaning and regeneration characteristics. This all adds up to convincing advantages with respect to productivity, economic efficiency and the relationship between benefits and costs.

That is why PACO filter cloths are extensively used for surface and depth filtration in a wide range of industries and processes such as:

chemicals, petrochemicals, paints / lacquers, oil / gas production, process water / cooling water treatment, food and beverage production, gas treatment, environmental protection, plastics and synthetic fibre production, aluminium casting, automobile industry, aerospace industry, electronics, information technology, food industry, measuring technology, laboratory / analysis and much more.

### **Filtration:**

### Terminology from Theory to Practice

The filtration of fluids and gases is a field of knowledge that is being steadily expanded and becoming more and more complex while, at the same time, being governed by generally accepted laws as well as established standards, methods and processes. Here is an explanation of some of the commonly used terminology in this field:

Mechanical separation of solids that are distributed in a fluid or gas by means of a filter medium through which the fluid or gas flows.



The filter rating (micron retention) of PACO filter cloths made of metal cloths and metal fibres ranges from  $1 \mu$  to  $500 \mu$ . In addition to the filter medium, filtration results also depend on other factors such as the solids content in the fluid, distribution of particle size and shapes, flow

#### Flow measurement

Exact data regarding the volume of fluid or gas that flows through a defined cross section within a given unit of time (flow rate measurement) is extremely important to filtration technology. That is why PACO uses the lat-est measuring methods in its technical centre to define application-specific require-ments and check that they

#### **Depth filtration**

Depth filtration is a process that uses multilayer filter media (e.g. PACOPLATE, PACOFIL<sup>®</sup>). These filter media have millions of pores of different sizes that range right down to extremely fine pores. The gas or fluid that is being filtered flows indirectly through the filter material, whereby the solid particles are trapped in all of the open-ings in the various layers of the filter cloth right down to the layer bring layers



### The Materials: Specifications Made to Measure

A wide range of materials are used in the weaving of metal wire cloths. Which material is most suitable for which application cannot be determined purely on the basis of knowledge of the physical characteristics. This has to be complemented by the experience gained from applications in as many industries and applications as possible. And finally the possibility of testing the cloth in the laboratory and technical centre as well as through extensive trials at the customer's site.



### Corrosion, acid, and heat-resistant steels

Material

X6Cr17         1.4016         AISI 430           X5CrNi 18-10         1.4301         AISI 304           X2CrNi 19-11         1.4306         AISI 304L           X10CrNi 18-8         1.4310         AISI 304L           X10CrNi 18-8         1.4310         AISI 304L           X10CrNi 18-8         1.4310         AISI 301/302           X5CrNiMo 17-12-2         1.4401         AISI 316           X2CrNiMo 17-12-2         1.4404         AISI 316L           X2CrNiMo 17-13-3         1.4435         AISI 316L           X2CrNiMo 17-13-3         1.4436         AISI 316L           X2CrNiMo 18-15-4         1.4438         AISI 317L           X2CrNiMo 17-13-5         1.4439         -           X2CrNiMo 18-12-3         1.4449         -           X2CrNiMoN 22-5-3         1.4449         -           X2CrNiMoN 22-5-3         1.4449         -           X1NiCrMoCu 25-20-5         1.4539         AISI 904L           X6CrNiTi 18-10         1.4550         AISI 347           X3CrNiko 18-9-4         1.4567         AISI 304Cu           X6CrNiNb 18-10         1.4567         AISI 304Cu           X6CrNiMoTi 17-12-2         1.4571         AISI 304Cu           X6Cr		to EN	according to EN	according to AISI	Size range
X 5 CrNi 18 - 10         1.4301         AISI 304           X 2 CrNi 19 - 11         1.4306         AISI 304 L           X 10 CrNi 18 - 8         1.4310         AISI 301/302           X 5 CrNiMo 17 - 12 - 2         1.4401         AISI 316           X 2 CrNiMo 17 - 12 - 2         1.4404         AISI 316 L           X 2 CrNiMo 17 - 12 - 2         1.4403         AISI 316 L           X 2 CrNiMo 17 - 13 - 3         1.4435         AISI 316 L           X 2 CrNiMo 18 - 14 - 3         1.4436         AISI 317 L           X 2 CrNiMo 17 - 13 - 5         1.4439         -           X 2 CrNiMo 18 - 15 - 4         1.4439         -           X 2 CrNiMo 18 - 12 - 3         1.4449         -           X 2 CrNiMo 18 - 12 - 3         1.4449         -           X 2 CrNiMo 18 - 12 - 3         1.4449         -           X 2 CrNiMo 18 - 12 - 3         1.4452         -           X 10 CrMocu 25 - 20 - 5         1.4550         AISI 904 L           X 6 CrNiTi 18 - 10         1.4550         AISI 304 Cu           X 6 CrNiNb 18 - 10         1.4567         AISI 304 Cu           X 6 CrNiMoTi 17 - 12 - 2         1.4571         AISI 304 Cu           X 6 CrNiMoTi 17 - 12 - 2         1.4571         AISI 304 Cu		X 6 Cr 17	1.4016	AISI 430	
88-3         X2 CrNiMo 17-12-2         1.44306         AISI 304 L           X 10 CrNi 18-8         1.4310         AISI 301/302           X 5 CrNiMo 17-12-2         1.4401         AISI 316           X 2 CrNiMo 17-12-2         1.4404         AISI 316L           X 2 CrNiMo 17-13-3         1.4435         AISI 316L           X 2 CrNiMo 17-13-3         1.4436         AISI 316L           X 2 CrNiMo 17-13-3         1.4438         AISI 317L           X 2 CrNiMo 18-15-4         1.4439         -           X 2 CrNiMo 18-12-3         1.4449         -           X 2 CrNiMo 18-12-3         1.4452         -           X 1 NiCrMoCu 25-20-5         1.4539         AISI 904L           X 6 CrNiNb 18-10         1.4550         AISI 321           X 6 CrNiNb 18-10         1.4567         AISI 304 Cu           X 3 CrNiCu 18-9-4         1.4567         AISI 304 Cu           X 6 CrNiNb 18-10         1.4567         AISI 304 Cu           X 6 CrNiNoTi 17-12-2         1.4567         AISI 304 Cu           X 15 CrNi 20-12 <td< td=""><td rowspan="4"></td><td>X 5 CrNi 18 - 10</td><td>1.4301</td><td>AISI 304</td><td></td></td<>		X 5 CrNi 18 - 10	1.4301	AISI 304	
X 10 CrNi 18-8         1.4310         AISI 301/302           X 5 CrNiMo 17-12-2         1.4401         AISI 316           X 2 CrNiMo 17-12-2         1.4404         AISI 316L           X 2 CrNiMo 18-14-3         1.4435         AISI 316L           X 3 CrNiMo 17-13-3         1.4436         AISI 316L           X 2 CrNiMo 18-15-4         1.4438         AISI 317L           X 2 CrNiMo 18-15-4         1.4439         -           X 2 CrNiMo 18-12-3         1.4449         -           X 2 CrNiMo 18-12-3         1.4462         -           X 2 CrNiMo 18-12-3         1.4462         -           X 1 NiCrMoCu 25-20-5         1.4459         -           X 1 NiCrMoCu 25-20-5         1.4539         AISI 904 L           X 6 CrNiTi 18-10         1.4550         AISI 321           X 6 CrNiNb 18-10         1.4550         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4571         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4567         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4567         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4571         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4828         AISI 309           X 15 CrNi25-20		X 2 CrNi 19 - 11	1.4306	AISI 304 L	
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38-3 95         X 2 CrNiMoN 22-5-3         1.4462         -         0.015-2.00 mm           X 1 NiCrMoCu 25-20-5         1.4539         AISI 904 L           X 6 CrNiTi 18-10         1.4550         AISI 321           X 6 CrNiNb 18-10         1.4550         AISI 347           X 3 CrNiCu 18-9-4         1.4567         AISI 304 Cu           X 6 CrNiMoTi 17-12-2         1.4571         AISI 304 Cu           X 8 CrAI 20-5         1.4767         -           X 15 CrNi 20-12         1.4828         AISI 309           X 15 CrNi 25-20         1.4841         AISI 314           X 12 CrNi 21-25         1.4860         -           X 16 NiCr 30-20         1.4864         -	00.0	X 3 CrNiMo 18 - 12 - 3	1.4449	-	
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X 6 CrNiMoTi 17-12-2       1.4571       AISI 316 Ti         X 8 CrAI 20-5       1.4767       -         X 15 CrNi 20-12       1.4828       AISI 309         X 15 CrNi 25-20       1.4841       AISI 314         X 12 CrNi 21-25       1.4845       AISI 310 S         X 16 NiCr 30-20       1.4860       -         X 12 NiCrSi 36-16       1.4864       -		X 3 CrNiCu 18-9-4	1.4567	AISI 304 Cu	
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X 16 NiCr 30-20         1.4860         -           X 12 NiCrSi 36-16         1.4864         -		X 12 CrNi 21 - 25	1.4845	AISI 310 S	
X 12 NiCrSi 36 - 16 1.4864 -		X 16 NiCr 30-20	1.4860	-	
		X 12 NiCrSi 36 - 16	1.4864	-	

### Non-ferrous metals

Material	Code according to EN	Material no. according to EN	US standard according to AISI	Size range	
	CuZn 10	CW501L	C 22000		
	CuZn 15	CW502L	C 23000		
Brass	CuZn 20	CW503L	C24000	0.04.2.00 mm	
DIN EN 12166	CuZn 30	CW505L	C26000	0.04-2.0011111	
	CuZn 36	CW507L	C 27000		
	CuZn 37	CW508L	C 27400		
	CuSn 14	CW450K	C 51100		
	CuSn 5	CuSn 5 CW451K -			
Bronze	CuSn 6	CW452K	C 51900	0.02-2.00 mm	
DIN EN 12100	CuSn 8	CW453K	C 52100		
	X3CrNiMo18-12-3	1.4449	-		
Copper DIN EN 13602	E-Cu 58	2.0065	-	0.04-2.00 mm	
Nickel DIN 17740	Ni 99,2/Ni 99,6	2.4066	N0 2200	0,04 - 1,00 mm	
Aluminium DIN EN 573-3	EN AW-5019 (AIMg5)	3.3555	5056 A	0,04 - 1,00 mm	

### Special materials

Material	Code according to EN	Material no. according to EN	US standard according to AISI	Size range					
Inconel 600	NiCr 15 Fe	2.4816	N0 6600						
Inconel 601*	NiCr 23 Fe	2.4851	N0 6601						
Inconel 625*	NiCr 22 Mo 9 Nb	2.4856	N06625	0.04 - 1.00 mm					
Incoloy 825*	NiCr 21 Mo	2.4858	N08825						
Nickel-Chrom	NiCr 80 20	2.4869	Nichrome						
Finishaa	Mechanical strength to	DIN EN 12166, DIN EN 10							
Finishes	Tolerance to	ISO 4782, DIN EN 10270							
Other materials on request									

The material that provides the basis for the applicationspecific quality of PACO metal wire cloths for filtration and screening is the purpose-selection of the component wires. PACO covers a wide variety of user requirements with an extensive range of metal wires. The most important groups of materials are:

- Steel bare, tinned, zinc-coated, paint
- Stainless steel chromium steel, nickel chromium steel, nickel chromium molybdenum steel, heat resistant austenitic stainless steel, duplex steels
- Non-ferrous metals nickel, aluminium, copper, brass, tin bronze, MONEL metal
- Special materials e.g. titanium, niobium, vanadium, gold, silver, platinum, hastelloy

We are pleased to provide information about the material that is most suitable for your particular application on request or through a personal meeting with our specialists.

# Six Classic Dutch Weaves for Innovation

From the variety of methods in which metal wire cloths can be theoretically woven, certain weaves have proved themselves in practice to be particularly suitable for filtration. Six of these are presented on the following pages. Further alternatives are available for specific applications or can be to individually implemented as required.

### The particular touch of PACO

As much as certain metal wire cloths are taken for granted for certain filtration applications, if the cloth is from PACO it will always have that particular touch – particularly precisely manufactured, particularly high quality, particularly attractive cost of ownership through the inherent economies of durability and long lifetimes. This is complemented by the particularly extensive practical knowledge that PACO specialists are always willing to share with you. The particular touch of PACO can equally help existing processes to opmized as well as innovative new processes to be developed. The close cooperation and transfer of knowledge between PACO customers and PACO together with its sales partners has continually proved itself as the sure basis for worthwhile improvements.





The automated looms at PACO are built by the company's own mechanical engineering team. There is a constant generation change to ensure that the attainable quality continuously takes another step towards perfection. Another area in which PACO cannot be quickly copied.



### **Plain Dutch Weave**



The plain weave has its natural origins in braiding. With this weave, the material – whether it be willow rods or the metal wires that make up PACO cloths – is interwoven. And there are a number of different ways of doing this. Consequently, the family of plain weaves is extremely diverse with respect to appearance and structure. In the case of a plain dutch weave, the warp wires are thicker than the weft wires. These are arranged very close together so that a so-called zero-mesh structure is formed. Combined this generates a media that has a high inherent stability with a relatively small mesh size. The plain dutch weave has excellent filtration characteristics and can be easily cleaned of filtrate deposits and residual dirt.

#### **Specifications PACO Plain Dutch Weave**

D = Duplex (2 warp wires) Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance.

Standard-No.		Wire D	iameter	Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m <sup>2</sup> ]
120 D	650	2 x 0.05	0.042	38 - 44	35	0.12	43	0.44
80	400	0.125	0.071	40 - 45	40	0.25	55	0.82
80	300	0.125	0.090	45 - 50	45	0.30	51	0.92
50	280	0.140	0.100	50 - 55	50	0.33	61	0.95
50 D	250	2 x 0.112	0.112	48 - 58	50	0.33	47	1.09
50	250	0.140	0.112	52 - 57	55	0.36	61	1.03
40	200	0.180	0.140	70 - 80	70	0.44	59	1.30
30	150	0.220	0.175	90 - 105	90	0.56	60	1.51
28 D	160	2 x 0.250	0.180	70 - 82	60	0.70	44	2.13
30 D	150	2 x 0.230	0.195	95 - 110	90	0.60	43	2.33
24 D	125	2 x 0.250	0.230	105 - 115	100	0.65	45	2.44
24	110	0.320	0.240	110 - 125	105	0.80	49	2.20
24	110	0.360	0.250	115 - 128	110	0.88	49	2.50
20	150	0.250	0.180	155 - 165	120	0.61	63	1.53
16	120	0.360	0.240	180 - 198	150	0.86	62	2.25
16	80	0.430	0.340	210 - 230	260	1.05	57	3.05
14	110	0.360	0.250	220 - 238	200	0.85	62	2.22
14	88	0.500	0.320	255 - 275	250	1.14	48	3.13
12	95	0.500	0.300	220 - 240	220	0.84	63	2.89
12	64	0.600	0.420	260 - 280	250	1.45	57	3.90
10	88	0.500	0.330	270 - 295	265	0.83	63	3.02
10	70	0.600	0.400	310 - 330	300	1.42	61	3.70
10	56	0.710	0.500	300 - 320	305	1.95	58	4.76
	85	0.360	0.330	300 - 320	310	0.99	66	2.57

### **Plain Dutch Weave HF (High Flow)**



This cloth, which is woven in the same way as the classic plain dutch weave, earns the prestigious title "High Flow" through the high flow rates that it allows. These are enabled through the shute wires being considerably thinner than usual which theoretically doubles the pore count. As a result this cloth has a significantly higher contaminant trapping capability. With a free open area of 28-42%, depending on specifications, the PACO HF has an unrivalled position as leader among the filters with a similar mesh count. This optimization of performance is based on the statistically increased probability that the layers of pores can be used for the separation of solids.

### Specifications PACO Plain Dutch Weave HF (High Flow)

Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance.

Standard-No.		Wire Diameter		Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m²]
180	1400	0.056	0.023	13 - 18	10	0.09	42	0.33
165	1200	0.060	0.025	23 - 28	20	0.10	55	0.34
155	1750	0.060	0.020	18 - 23	15	0.09	55	0.31
120	930	0.090	0.030	29 - 34	30	0.13	63	0.45
110	1000	0.080	0.028	30 - 35	30	0.12	61	0.37
80	700	0.100	0.035	35 - 44	35	0.16	64	0.41
70	620	0.150	0.045	45 - 48	45	0.22	59	0.71
60	500	0.165	0.050	48 - 54	50	0.27	61	0.72
50	460	0.200	0.060	60 - 65	60	0.32	65	0.91
45	400	0.240	0.065	65 - 70	65	0.34	50	1.07
40	340	0.250	0.080	78 - 84	75	0.38	59	1.17
30	280	0.280	0.095	100 - 110	100	0.41	63	1.22

### **Twilled Dutch Weave**



As with the plain weave, the weft wires of the dutch twilled weave are arranged as close together as possible. However, this weave has double the number of weft wires than a plain dutch weave. An extremely small aperture (theoretical pore size) is formed by three weft wires which cross in different directions and, together with the warp wires, create a channel that is open on two sides. The characteristic structure of the DTW provides high filtration accuracy, although the active filtration cross section is comparatively small. This results in a relatively low contaminant retention capability, quicker clogging of the filter surface and reduced flow rates.

### **Specifications PACO Twilled Dutch Weave**

D = Duplex (2 warp wires) T = Triplex (3 warp wires)

Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance.

Standard-No.		Wire D	iameter	Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m²]
508	3600	0.025	0.017	2 - 3	1	0.05	34	0.34
450	2750	0.025	0.020	6 - 7	<1.5	0.07	33	0.36
400	2800	0.029	0.023	4 - 5	2	0.07	33	0.45
375	2300	0.032	0.025	6 - 7	3	0.09	35	0.46
325	2300	0.035	0.025	8 - 9	5	0.09	34	0.46
325	1900	0.038	0.028	9 - 10	10	0.09	34	0.49
325	1900	0.035	0.027	10 - 11	7	0.10	39	0.45
250	1370	0.058	0.043	11 - 13	9	0.14	32	0.84
200	1400	0.070	0.040	12 - 14	10	0.15	33	0.77
165	1400	0.070	0.040	16 - 18	15	0.15	30	0.76
165	1100	0.070	0.044	18 - 20	18	0.17	29	0.75
110	850	0.090	0.065	28 - 37	30	0.24	42	1.12
80	700	0.100	0.076	35 - 38	35	0.27	42	1.21
60	700	0.165	0.076	48 - 54	45	0.40	49	1.42
50	250	0.250	0.200	55 - 60	50	0.70	40	3.28
40	550	0.180	0.100	75 - 83	65	0.43	52	1.70
40	250	0.250	0.220	80 - 85	75	0.72	36	3.65
30	360	0.250	0.150	95 - 105	90	0.60	39	2.49
30	250	0.250	0.200	100 - 112	90	0.65	40	3.10
25	160	0.400	0.300	110 - 120	105	1.00	46	4.60
20	260	0.450	0.220	110 - 120	108	1.01	42	4.16
20	250	0.250	0.220	100 - 118	100	0.66	41	3.35
20	216	0.270	0.250	105 - 130	110	0.82	40	3.82
18	330	0.500	0.180	100 - 110	100	1.18	59	3.80
16 D	270	2 x 0.240	0.210	110 - 130	125	0.73	41	3.35
12.7 T	220	3 x 0.280	0.250	120 - 140	105	0.90	44	4.10
18	210	0.457	0.254	195 - 230	200	1.06	51	4.28
14	128	0.500	0.400	220 - 240	200	1.31	43	5.81

### **Broad Mesh Twilled Weave**



To optimize the filtration capacity of the cloth, the weft wires of the broad mesh twilled are arranged loosely instead of being close to each other. This means that the retention accuracy is lower than that of a classic twilled weave. Nevertheless, the accuracy is still sufficient for the requirements of most applications. In addition, this modified weave allows significantly higher flow rates with low loss of pressure and good regeneration characteristics. The surface of the BMT cloth is smooth on both sides, meaning that the filter can be easily cleaned.

### Specifications PACO Broad Mesh Twilled Weave

Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance.

Standard-No.		Wire Diameter		Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m <sup>2</sup> ]
325	1900	0.035	0.025	9-10	13	0.09	40	0.42
325	1600	0.035	0.026	16-20	14	0.09	41	0.44
200	900	0.058	0.040	22-25	20	0.15	53	0.53
200	600	0.058	0.046	28-32	30	0.16	58	0.49
165	800	0.069	0.050	25-29	25	0.19	48	0.70
120	600	0.100	0.058	26-32	32	0.23	56	0.80
120	600	0.100	0.045	39-43	35	0.22	65	0.62
120	400	0.100	0.065	45-52	45	0.24	55	0.72

### **Reverse Plain Dutch Weave**



The term "reverse" describes the fact that the warp wires of this weave are relatively thin and the weft wires are comparatively thick – in other words the exact opposite of the standard dutch weaves. The reverse dutch design produces exactly defined pore openings that run under an angle to the surface of the mesh. The high number warp wires considerably increases the active filtration cross section. Depending on the specifications, this can be approx. 21-25%. This provides RDW filters with a good to very good contaminant retention capability. The reverse dutch weave is available in "heavy" and "light" versions. The light version having a special wire combination that increases the active filtration cross section to 25-38%.

### Specifications PACO Reverse Plain Dutch Weave

Please request detailed data sheets for the individual specifications.

Standard-No.		Wire Diameter		Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m²]
1005 L	200	0.025	0.050	15 - 17	10	0.10	63	0.28
912 L	154	0.028	0.090	18 - 22	13	0.16	57	0.49
720	150	0.035	0.112	16 - 20	15	0.17	48	0.65
720 L	150	0.035	0.100	20 - 24	14	0.16	45	0.60
625	134	0.041	0.130	18 - 23	14	0.20	48	0.85
625	132	0.042	0.130	20 - 26	17	0.20	48	0.84
625	106	0.042	0.140	23 - 28	25	0.23	56	0.85
625	104	0.042	0.150	25 - 32	30	0.24	55	0.87
290	74	0.090	0.200	38 - 45	40	0.36	52	1.27
290	60	0.090	0.230	43 - 51	50	0.40	50	1.36
175	50	0.150	0.300	62 - 68	60	0.56	53	2.14
175	45	0.150	0.320	90 - 102	100	0.62	56	2.16
175	40	0.150	0.350	100 - 112	108	0.55	58	2.24
130	35	0.200	0.400	83 - 90	80	0.75	56	2.70
130	30	0.200	0.450	100 - 108	100	0.82	53	2.82
84	25	0.320	0.400	150 - 180	150	1.09	49	3.09
66	18	0.300	0.400	210 - 230	200	1.07	66	2.22

Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance. Subject to technical change

### **Reverse Dutch Twilled Weave**



An important version of the reverse dutch weave is the reverse dutch twilled weave. With this weave, the warp wires are also relatively thin – as in the case of the normal reverse dutch weave. The difference is the twilled weave pattern of the weft wires. This means that the warp wires are not as heavily deformed and physically stressed as, for instance, in the case of plain weaves. The strength of this weave design is its suitability for applications that are subject to high levels of mechanical stress.

### Specifications PACO Reverse Dutch Twilled Weave

Please request detailed data sheets for the individual specifications.

Standard-No.		Wire Diameter		Micron	Micron	Thickness	Porosity	Weight
Warp per 25.4 [mm]	Weft per 25.4 [mm]	Warp [mm]	Weft [mm]	Retention abs. [µm]	Retention nom. [µm]	[mm]	[%]	[kg/m²]
400	120.0	0.065	0.100	60 - 70	60	0.26	61.00	0.72
325	39.0	0.150	0.300	45 - 75	55	0.70	43.00	2.71
260	40.0	0.150	0.220	80 - 95	125	0.62	53.00	1.98
228	36.0	0.190	0.280	95 - 130	100	0.67	47.00	2.71
160	25.0	0.315	0.400	90 - 125	145	1.10	39.00	4.97
160	24.0	0.305	0.400	95 - 135	150	1.09	42.00	4.68
160	16.5	0.305	0.355	110 - 150	125	1.04	44.00	4.26
152	24.0	0.315	0.355	115 - 130	165	1.20	42.00	4.53
132	18.0	0.355	0.455	180 - 220	200	1.31	57.00	4.65
132	16.0	0.352	0.457	210 - 260	250	1.24	58.00	4.90
132	16.0	0.355	0.560	350 - 300	350	1.25	45.00	5.40
72	15.0	0.450	0.450	400 - 450	400	1.75	58.00	4.43

Note: Values for porosity, thickness and weight are approximates as depending on wire tolerance. Subject to technical change

### **PACO Laminates & Fibre Cloths:**

### Specialists for the Finest Filtration

The PACO range of filter media is supplemented and completed by laminates and fibre cloths. These increase the potential to provide ideal filtration solutions for other important fields, including the most demanding of applications

### **PACOPLATE Metal Cloth Laminates**

PACOPLATE is a composite material that consist of two or more layers of different metal wire cloths that are sintered together to form a permanently fixed laminate. Depending on the exact filtration job, the PACOPLATE range consists of two layer versions with a filter thickness of 0.15 mm through to versions with hundreds of layers for filter thickness up to 100 mm. Between these two extremes are a wide range of versions that are configured to provide the optimum combination of characteristics such as durability, filtration accuracy, flow rates and regeneration capability for each specific application.

The filtration accuracy is generally somewhere between  $1\mu$  and  $200\mu$ .

The characteristics inherent to PACOPLATE laminates are high mechanical loading capability, ease of processing, inherent stability, high scuff resistance, high thermal loading capability (up to 600°C), good contamination absorption and ease of cleaning.

#### **PACOFIL® Metal Fibre Cloths**

The exception to the rule that PACO are the specialists for filters made out of metal wire cloth are PACOFIL<sup>®</sup> metal fibre cloths. These are made up of different layers of randomly oriented metal fibre that are sintered together to form a depth structured filter media.

Filters made of PACOFIL<sup>®</sup> metal fibre cloth not only have extremely fine filtration properties, they also have an extremely high contaminant retention capacity. One reason for this is the inherent increase in porosity (volume of the pores in relation to the total volume of the cloth) without any loss in filtration accuracy. This provides significant advantages that ensure the optimum filtration of fluids and (hot) gases. This ensures that the filtration performance remains unimpaired even at high temperatures and with high differential pressures.



Example of the structure of PACOPLATE cloth laminates: Protective cloth, filter cloth (determines fineness), protective cloth and supporting cloth in various compositions and amounts. The metal fibres in PACOFIL<sup>®</sup> cloths are extremely fine  $(1 \mu \text{ to } 80 \mu)$ and can be made out of a wide variety of materials: stainless steel, high temperature alloys, nickel, nickel alloys and a numerous others.



### PACO Filter Products: Perfectly Made Perfection

In addition to metal weaving, filter production is the second area in which PACO has core expertise. This includes the complete range of filter candles, filter baskets, pressure filters, various versions of flat filters, filter plates, filter disks and filter belts etc. Leading-edge production techniques are used to manufacture the filter elements and filter systems.

#### Material friendly and quality assured

PACO has all of the necessary production technology at its disposal that is necessary to implement their filter products with the minimum of stess on materials as well as consistently high quality standards. This applies to the turning of threaded pins and positive displacement tips as well as the drawing of support elements and seals. Various welding techniques are used to join the components. Other machining and processing methods include crimping, pressing and pleating. For finishing and refining, methods such as calendaring, stabilising (annealing), sintering, ultrasonic cleaning, painting, electro-polishing, and coating are used.

Production technology highlights at the PACO plant include a state-of-the-art production line for pleated filters up to a length of 1380 mm as well as a circular and longitudinal seam welding system for filters up to a length of 4500 mm!



Although PACO employs the latest production and testing technology, it is the skilled, experienced and motivated workforce that is the secret of our mutual success.



### **The Promise:**

### Long-Term Solution Partnership

PACO filter cloths and products are being very successfully used in a wide range of industrial and environmental processes as well as in research and development. They have proved themselves for filtration as well as for separating and throttling, dispersion and equalising, dewatering and purification etc. – just as needed for the specific process.

### From cloths through elements to complete systems

You can talk to PACO about everything: whether it is the need for a sepcific metal wire cloth, interest in a semi-finished product or component or the desire to develop a complete system. In each case you will find a hearing ear, willingness and commitment to cooperation and a high level of problem-solving expertise. In particular, the close working relationship between the specialists at PACO and PACO customers has led to a number of long-term and promising cooperations and business relationships.

### The PACO Group – a force for all-round expertise

PACO has been a commited global player at the forefront of the development of high precision

metal wire products and applications for over sixty years. The company's cloth developments have supported technical advances and innovations in a number of industries and branches and have even made some applications possible in the first place. PACO production plants set the standard for the quality of metal wire cloths, sieves and filter products. And with its subsidiary HETA, the PACO Group can offer the full-range of services of a globally-recognized manufacturer of complete filtration systems for demanding applications in a wide range of industries such as power generation, oil and gas production, chemicals, pharmaceuticals and vehicle manufacturing. That is why PACO is always one of the best addresses whenever you need screening and filtration advice and assistance.

### Whether cloth or complete solution: we look forward to talking to you!

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