

# PROGUARD FILTRATION SYSTEMS

## MEDIA SELECTION GUIDE for ProGuard Backwashable Filter Systems

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**PROGUARD**  
FILTRATION SYSTEMS



# ProGuard Filter Media Characteristics

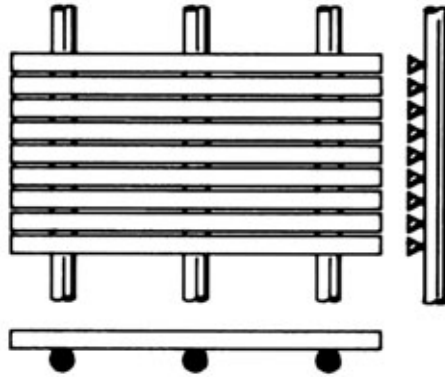
The following descriptions apply to the standard filter media offered by ProGuard Filtration Systems. The information presented with each type of media is intended to be used as a general guideline. Since some characteristics are very similar from

one media to the next, you should familiarize yourself with all of the following descriptions and choose the media with the best fit for your particular filtration requirements. Consult the Technical Sales Department at ProGuard Filtration

Systems for assistance in selecting the proper media for you application. See the Filtration Range Graph located on the back page for a graphical representation of the particle removal ratings for each type of media.

## Profile Wire

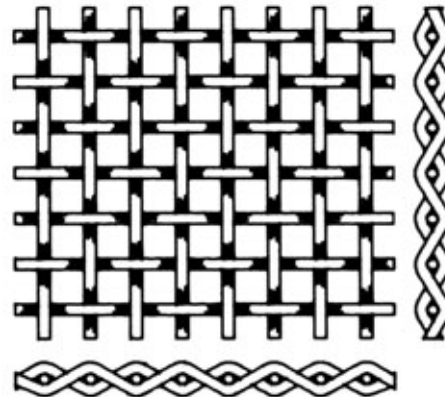
Sometimes referred to as wedge wire or slotted, Profile Wire elements are the most durable of all backwashable media. They are strictly limited to .0008" slot or 20 micron as the lowest retention rating. Profile Wire elements are particularly suited for critical low maintenance applications. As a result of their construction, they are used in many instances where manual cleaning is necessary but might damage other types of media.



FILTER RATING (MICRON)	OPENING (INCHES)	PROFILE WIRE SIZE	% OPEN AREA
20	.0008	.020	3.8
25	.001	.020	4.7
50	.002	.020	9.1
75	.003	.020	13.0
150	.006	.030	16.7
225	.009	.030	23.0
355	.014	.046	23.3
610	.024	.046	34.2

## Square Mesh

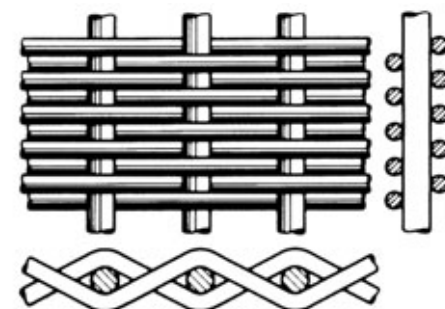
Square woven wire cloth, as the name implies, is woven in a square pattern with warp and shute wires of the same diameter. Finer and finer filtration efficiency requires the use of thinner and thinner wire for weaving. Using thinner wire results in fabrics which can be fragile and easily damaged during fabrication or use as a filter element. Square Mesh fabrics have the advantage of more open area per square inch than all other wire cloths.



MESH COUNT PER INCH	WIRE DIAM. (INCH)	FILTER RATING (MICRON)	% OPEN AREA
325 x 325	0.0014	44	30.5
250 x 250	0.0024	60	36.0
200 x 200	0.0021	75	33.6
150 x 150	0.0026	100	37.4
100 x 100	0.0045	140	30.3
80 x 80	0.0055	175	31.4
60 x 60	0.0075	230	30.5
40 x 40	0.0100	375	36.0
30 x 30	0.0130	500	37.1
20 x 20	0.0160	850	46.2
10 x 10	0.025	1875	56.3

## Plain Dutch Weave

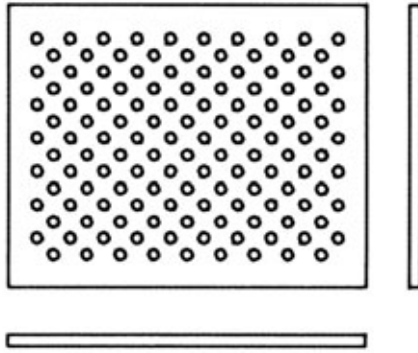
Dutch Weave is a name applied to wire cloths which are woven from 2 different diameter wires. The warp wire is usually larger and runs the length of the cloth as woven. The shute wire is smaller and runs across the width of the cloth. Plain Dutch Weaves can handle high flow rates with relatively low pressure drop. As with all Dutch Weaves, the opening on the surface of the cloth is smaller than the opening through the cloth. This means that more contaminants will be trapped on the surface, making backwashing more efficient.



MESH COUNT PER INCH	WIRE DIAMETER (INCHES)	FILTER RATING (MICRON)
80 x 400	.0049 x .0028	40-45
50 x 250	.0055 x .0045	58-63
40 x 200	.0070 x .0055	70-75
30 x 150	.0090 x .007	95-100
24 x 110	.0150 x .010	115-125
20 x 150	.0098 x .007	150-160
14 x 88	.020 x .013	220-240
12 x 64	.024 x .0165	270-290
8 x 85	.014 x .0126	320-340

## Perforated Tube

The Perforated Tube is the basic ingredient for all ProGuard filter elements except for the Profile Wire element. The Perforated Tube provides structural support for other types of media. Perforated Tube alone should be considered for basic straining applications. It is very durable and easily backwashed.

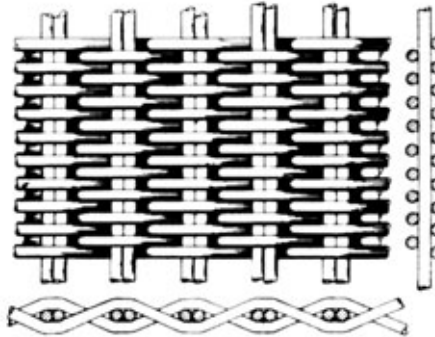


MESH EQUIVALENT	OPENING (INCH)	% OPEN AREA
30	.024	18
20	.045	27
10	.063	30

## Betamesh®

Betamesh is a trade name for a type of Dutch weave filter cloth. Betamesh has superior performance characteristics. A larger portion of solids is retained on the surface of the cloth. This results in higher dirt holding capacity and excellent backflushing properties. Betamesh has more open area which allow higher flow rates than all other Dutch weaves.

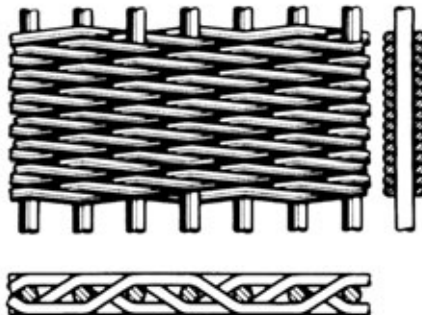
Betamesh® is a registered trademark of G. Bopp and Co. of Zurich, Switzerland.



PRODUCT NUMBER	FILTER RATING (MICRON)
Betamesh 15	15-17
Betamesh 20	18-22
Betamesh 25	22-26
Betamesh 30	27-31
Betamesh 35	30-34
Betamesh 40	34-38
Betamesh 50	42-48
Betamesh 60	52-58
Betamesh 75	66-74
Betamesh 90	81-89

## Twill Dutch Weave

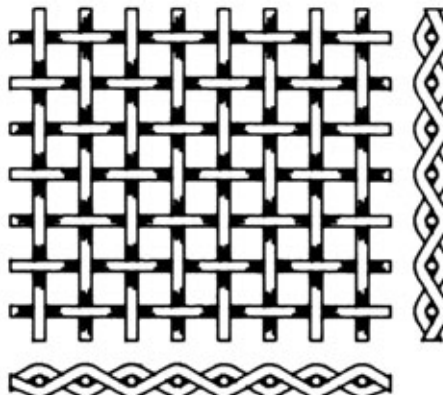
The term "Twill" indicates that the warp and shute wires pass alternately over and under two wires. The finest particle size retention possible in wire cloth is found in the Twill Dutch Weave. In all cases where the retention range overlaps with Betamesh, then Betamesh should be specified. Because of their construction, Dutch Weave and Twill Dutch Weave have greater durability than square weaves or Betamesh but have less open area.



MESH COUNT PER INCH	WIRE DIAMETER (INCHES)	FILTER RATING (MICRON)
510 x 3600	.0010 x .0006	5-6
450 x 2750	.0010 x .0008	6-7
325 x 2300	.0015 x .0010	8-9
250 x 1400	.0022 x .0016	11-12
200 x 1400	.0028 x .0016	12-14
165 x 1400	.0028 x .0016	16-18
165 x 800	.0028 x .0020	24-26
200 x 600	.0024 x .0018	28-32
80 x 700	.0040 x .0030	35-38
120 x 600	.0040 x .0025	40-45
120 x 400	.0040 x .0025	50-55
40 x 560	.0070 x .0040	70-75
30 x 360	.0098 x .0060	90-100
20 x 250	.0098 x .0079	110-120

## Synthetic Fabric

Synthetic Fabric media are available in nylon, polyester and polypropylene, in square or twill weaves. They are woven with monofilament threads to provide the best backwash efficiency. Fabric exhibits the widest range of retention ratings available. Fabric media should be considered for the finer filtration ranges of 5-50 micron. Synthetic Fabric offers the benefit of more open area than comparable wire cloths, thus fewer filter elements are required for the same flow capacity. Fewer filter elements reduces the cost of your filter system.



MESH COUNT PER INCH	WIRE DIAMETER (INCHES)	FILTER RATING (MICRON)
* 685/445	5	2
* 405/460	10	2
508	17	11
470	21	15
421	27	20
382	33	25
329	44	33
302	51	36
227	73	43

\* Indicates two different thread diameters

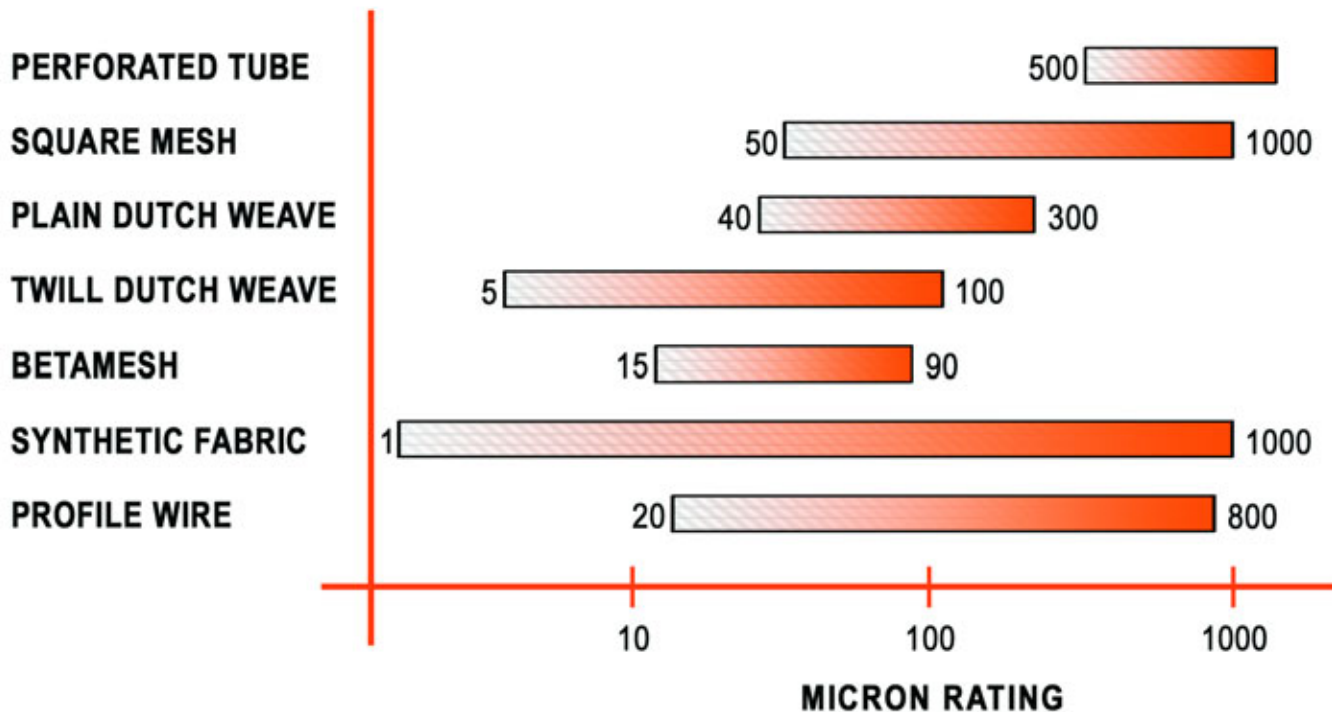
# Filtration Media Ranges

The filtration ranges shown on the graph are representative of the micron filter ratings based on laboratory tests, or the actual size of the opening for the particular media. Synthetic fabrics are deformable and carry nominal ratings only. The retention ratings overlap from one filter media to the next. Therefore, it is necessary to consider several other factors when selecting filter media for a specific application. These include fluid compatibility, nature of the contaminant, durability of the media, frequency of maintenance, and capital expense of the installation.

Tubular backwash filters are best suited for use in pressurized liquid systems where polishing filtration is

required. As a general rule of thumb, 200 ppm is considered the maximum level of contaminants suitable for tubular backwash filters. ProGuard filters have also been successfully used in slurries and classifying operations.

Through experience, ProGuard Filtration Systems has selected those filter media for use in our tubular backwash systems which best meet the requirements of durability and cleanability. The information is intended to be a general guideline. Consult the Technical Sales Department at ProGuard Filtration Systems for assistance in selecting the proper media for your application.



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