Choice of mesh

A general guide to our selection

Mesh selection is one of the most important choices when deciding on the sieving machine requirement. Throughput expectations, machine size and style of sieving are controlled by mesh size selection. Influencing factors are given below to aid customers in the choice of mesh for their application.

We provide a full remesh and meshing service for existing rings or frames in either stainless steel 304/316/318LN or 430CS for magnetic detection.

We can remesh to a wide range of standards such as EC1935/2004 & FDA – no matter who the original supplier or manufacturer.

Stainless Steel Mesh

The most common material choice. It provides strength and is resistant to heat. It is ideal where a hot material is to be sieved or where a large amount of product will remain on the screen. It can be supplied in a variety of weave patterns, the most common being a plain grid type weave stainless steel mesh retains its size integrity even on larger meshes.

Magnetic Mesh

Woven mesh can also be supplied in a special 430CS magnetic stainless version, this mesh has a higher chrome content than standard stainless steel mesh. Whilst still corrosion resistant, it can be picked up easily by rare earth magnet assemblies should any breakages occur in use. Another variant is 318LN mesh which is an austenitic-ferritic steel and is highly corrosion resistant but retains its magnetic properties. This type of mesh is available in a very limited range of apertures.

Nylon & Polyester Mesh

Nylon meshes have a smoother filament than stainless steel and are ideal for sieving fine powders. Nylon has inherent abrasion resistance. They are limited to temperatures up to 60°C and will absorb moisture to create a slack and less efficient screen. It can also be coloured RED or BLUE. Polyester is similar to nylon, but superior in that it has a temperature endurance up to 130° C. It is, however, less resistant to abrasion than nylon.

Phosphor Bronze

Often used where explosive materials are sieved, however stainless steel meshes have surpassed phosphor bronze due to availability.

Perforated Mesh

This mesh is made from sheets punched to either square or round apertures. Supplied in sheet from and cut to size, they can be bonded to rings the same as woven mesh. These mesh types are extremely hard wearing and stable in use. They do have a reduced open area so advice should be sought to ensure capacity rates can still be met. Available in most types of stainless steel, aluminium and carbon steel.

Wedgewire Screens

Wedge-wire screens can be fabricated in a range of both flat panels and tubes. Wedge-wire and support profiles are resistance welded with accurate slot dimensions. The screens can be mechanically and electro-polished and given additional surface hardening treatments. Further support structures and fastening brackets, can be added. Tubes can have various end piece connections and additional internal strengthening.

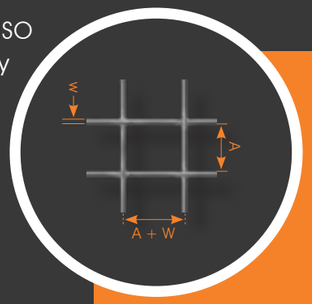
Mesh Service

Most meshes are now a bonded configuration and require a special jig to ensure optimum tension and aperture size integrity – the mesh is stretched along its warp and weft to a precise tension. Hand meshed systems cannot guarantee the size or shape of the aperture due to the stretching of the mesh from differing directions (diamond shaped holes, and irregular hole patterns).

All mesh used by Farleygreene conforms to ISO standards 4782, 4783 and 9044 to ensure quality and accuracy of our meshing service.

Mesh is usually supplied in 1220mm wide rolls and in linear length increments as required. 1020, 1530 & 2000mm wide rolls are available but only in certain apertures.

Farleygreene offer a full re-mesh/meshing service. Please ask for our mesh information charts for more details of mesh apertures available.



OPEN AREA (Fo) = ...%
$Fo = A^2 \times 100 / (A + W)^2$

A = APERTURE SIZE
W = WIRE DIAMETER
A + W = PITCH

APERTURE SIZE X 1000 = MICRONS
MESH COUNT = HOLES PER LINEAR INCH

TABLE SHOWS TYPICAL SIZES ONLY
MANY MORE APERTURES ON REQUEST

Aperture	Mesh	Wire dia	Open area %
0.063	250	0.040	38
0.075	230	0.036	45.7
0.100	165	0.050	44.4
0.150	100	0.100	36
0.200	88	0.090	48
0.250	62	0.160	38
0.400	40	0.220	41
0.500	38	0.160	57.6
0.630	32	0.160	64
0.710	29	0.180	64
0.850	24	0.200	65.5
0.900	23	0.200	67
1.000	19	0.320	57.6
1.250	15.4	0.400	57.6
1.500	12	0.630	49.6
2.000	10	0.560	60
2.500	8.5	0.500	69.4
3.15	6.4	0.800	64
4.000	5.4	0.710	72
5.000	3.8	1.6	57.6
6.300	3.4	1.250	69.4
7.100	3	1.400	69.4
8.000	2.6	1.600	69.4
10.000	2.2	1.400	77
11.200	2	1.600	77
12.500	1.8	1.6	79
16.000	2	2.000	79

Atex Directive

Almost all of our machines conform to the latest ATEX requirements. We can confirm the ratings of each range of our equipment during the design process.

Our technical section at the end of the brochure details which machines are certified for use in explosive atmospheres.

The tables below show some typical zoning and temperature figures.

Zone		A measure of the probability that a hazard may be present		
Hazard present for more than a year		Continuous	>10 < 1000 hours	<10 hours
EU IEC	GAS	0	1	2
	DUST	20	21	22
US NEC	100% Gas	0	1	2
	100 Gas & Dust	Division 1		Div 2

Dust Group	
Dust	Categories
Zone 20	Category 1
Zone 21	Category 2
Zone 22	Category 3

T Class	Classification by surface temp
T Class - IEC	Maximum surface temperature °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85