What are the benefits of KGS Metallized Fabrics ?

Printing of glass (including automotive), ceramics or china ware:

- High flexibility compared to stainless steel
- Hence increased life time of the screens
- KGS Metallized Fabrics can be heated electrically (thermoplastic inks)
- Good lift-off from the glass

Multicolor Flocking:

- No electrostatic charges of the mesh
- Hence no restraint to the passage of the flock
- Less or no arcs of high voltage
- More resistant than stainless steel

Printed Circuit Boards:

- Precision of register higher than for a polyester screen (close to a stainless steel screen)
- Higher damage tolerance
- Easier handling

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KGS

KGS METALLIZED FABRICS

KGS Metallized Fabrics

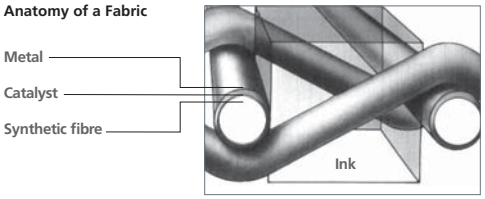
for Screen Printing

KGS Metallized Fabrics

KGS Metallized Fabrics are high precision electrolytically metallized mesh fabrics made from high modulus monofilament polyester fibers. KGS Metallized Fabrics are offered in a wide range of mesh counts and provide significant advantages over traditional monofilament polyester.

The main applications for these fabrics are demanding screen printing jobs covered in this leaflet, filtration, and electromagnetic shielding (EMI/RFI).

Anatomy of a Fabric



KGS Diamond Group SA

The production of KGS Metallized Fabrics was started over thirty years ago.

The parent company, KGS DIAMOND GROUP SA, acquired the plant located in Châtel-St-Denis, Switzerland, in 1998.

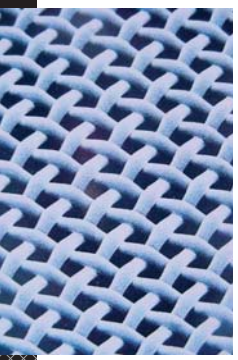
KGS DIAMOND GROUP is the world's leading manufacturer and distributor of flexible diamond tools and abrasives. Since its inception in Switzerland in 1952, the company has been at the forefront of innovation, quality and state-of-the-art technology for a variety of industries including stone, glass, ceramics, construction, steel, automotive and aerospace.

KGS distributes its products in over 70 countries worldwide and has offices and factories in 10 countries including Switzerland, Holland, France, Germany, Hungary, Spain, the UK, China and Australia.

KGS

Characteristics

KGS Metallized Fabrics offer the following properties:



Excellent dimensional stability
The galvanic nickel layer solidly fixes warp and weave of the fabric

High abrasion resistance
Not only for printing with abrasive inks, e.g. ceramic inks, but also during the cleaning process, no formation of ghost pictures

Easy lift-off from the printing stock

Antistatic
Important in the textile industry and for the printing of plastics, including CDs. Static charges can create problems with polyester screens.

Electrically heatable up to 90°C
For the decoration of high quality hollow glass where thermoplastic inks are used. KGS Metallized Fabrics do not only offer the advantage of being heatable but they are also:

More elastic and far more damage tolerant than stainless steel mesh
For example, KGS Metallized Fabrics are much less prone to kinking and follow the curvature of a hollow glass with little risk of damage which leads to:

Enhanced service life of the screens
Depending upon the application

Since the base material for KGS Metallized Fabrics are high modulus/low elongation polyester fibres, usual stretching and processing parameters can be used to a large extent.

A side benefit
Visual inspection for cleanliness is very easy since finger prints show up quite clearly on the surface. This is not the case with polyester mesh.

The Range

KGS Metallized Fabrics are identified by the mesh count.

Mesh Designation	KGS Number	Mesh Opening µm	Open Area %	Mesh Count /cm	Mesh Count /inch	Thread Diameter µm	Fabric Thickness µm ±5%	Weight g/m² ±5%	Theoretical Ink Volume cm³/m²	Weave
24-123	24T	294	50	24	61	123	214	107	106.3	Plain 1:1
32-105	32T	208	44	32	81	105	172	100	75.8	Plain 1:1
55-67	55T	115	40	55	140	67	115	76	45.9	Plain 1:1
62-67	62T	94	34	62	157	67	116	86	39.6	Plain 1:1
71-58	71T	83	35	71	180	58	100	80	34.6	Plain 1:1
77-58	77T	72	31	77	196	58	100	86	30.6	Plain 1:1
90-50	90T	61	30	90	229	50	87	84	26.3	Plain 1:1
95-43	95T	62	35	95	241	43	65	65	22.7	Plain 1:1
100-42	100T	58	34	100	254	42	68	68	22.9	Plain 1:1
110-37	110T	54	35	110	280	37	56	56	19.7	Plain 1:1
120-37	120T	46	31	120	305	37	55	61	17.0	Plain 1:1
140-34	140S	37	27	140	356	34	55	62	15.1	Plain 1:1
140-37	140T/TWL	34	23	140	356	37	64	73	14.9	Twill 2:1
165-37	165T/TWL	24	15	165	419	37	66	88	10.0	Twill 2:2

Standard width 105cm (41"), up to 150cm (59") upon request.

Physical Properties

Tensile strength	12 kg/cm (Average value, according to the mesh number 4 - 18 kg/cm)
Elongation at breaking point	20 - 25%
Recovery	approx. 90% at 2% elongation
Resistance to abrasion	very good
Moisture absorption at 20°C (68° F), 60% rel. humidity	less than 0.4%
Heat resistance	Short term: 120°C (248° F), long term: 90°C (194°F)
Resistance to light	very good
Specific ohmic resistance	approx. 0.09 Ohm/square

Applications

Screen Printing

Owing to their specific properties, KGS Metallized Fabrics are mainly used in the following cases:

- Stringent requirements as to print precision
- Use of abrasive and/or thermoplastic inks (Printing of glass, ceramics or china ware)
- High demand as to service life and ease of cleaning
- All printing jobs affected by electrostatics (which can be a problem in the case of polyester screens)

Other Industries

KGS Metallized Fabrics are also used for filtration and for EMI/RFI shielding of whole rooms, cables, electronic components like cellular phones, antennas, etc. For shielding applications they offer:

- Very high signal attenuation
- Low specific weight
- Flexibility
- Permeability to air
- Transparency to light (depending upon the grade)
- Easy conformability