

PLASMA METAL COATED YARNS

coating filament yarns with the metal of your desire



AN INTRODUCTION TO PLASMA METAL COATED YARNS

Ever imagined what products you could develop if a precious metal like Gold had the properties of a textile filament yarn? Or if a yarn were highly conductive while providing robustness and delicacy as well?

This is no longer fiction - it is reality. It is now possible to coat continuous

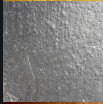
filament yarns with any metal of your desire by the new process called plasma metal coating.

Invented by **EMPA Switzerland** and now exclusively applied by *Serge Ferrari Tersuisse S.A.* located in Emmenbrücke (CH), this unique and patented technology revolutionizes metal coating yarns and opens new markets.

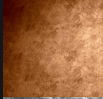
SELECTION OF METALS



GOLD
(SWICOGOLD)



SILVER
(SWICOSILVER)



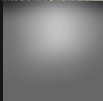
COPPER



PLATINUM



TITANIUM



INOX



ALU

WHAT MATERIALS CAN BE USED?

Plasma metal coating is very adaptable. Not only concerning the count (from a fine dtex 8 mono- or multifilament up to ∞) but also in reference to what material can be coated.

So far, the following materials have been used for this process:

- Polyester PET
- Polyamide 6.6
- Polyamide 6
- UHMWPE
- Viscose CV
- Silk
- Meta-Aramide m-AR
- Para-Aramide p-AR
- Vectran

Also, friction textured HE or Set yarn can be coated, which provides a „geometric“ elasticity to the product.

Everything is possible as long as the yarn is a continuous filament yarn.

STANDARD PROGRAM

Despite the yarn being easily custom tailored up to customers wishes, there are the following standards in polyester PET FDY available:

| dtex / fil. | SwicoGold (Au) | | | | SwicoSilver (Ag) | | | | other metals (Cu, Pt, Ti, Al, ...) | | | |
|-------------|----------------|--------|---------|-----------------------------|---|--------|---------|-----------------------------|---------------------------------------|--------|---------|-----------------------------|
| twist | 0 tpm | 80 tpm | 200 tpm | embroidery x2 high twist | 0 tpm | 80 tpm | 200 tpm | embroidery x2 high twist | 0 tpm | 80 tpm | 200 tpm | embroidery x2 high twist |
| 74 f 24 ht | | ☆ | ☆ | | | ☆ | ☆ | | | | | |
| 78 f 24 | | ■ | ☆ | ■ | | ■ | ☆ | ■ | | ☆ | ☆ | ☆ |
| 125 f 36 | | ■ | ☆ | ■ | | ■ | ☆ | ■ | | ☆ | ☆ | ☆ |
| 150 f 48 | | ■ | ■ | | | ■ | ■ | | | ☆ | ■ | |
| 168 f 24 | ■ | | | | ■ | | | | ☆ | | | |
| 280 f 48 ht | | ■ | ☆ | | | ■ | ☆ | | | ☆ | ☆ | |
| others | | | | | SwicoSilver HiCon for higher counts & very high conductivity values (> 0.1 Ω/cm) | | | | | | | |

ht: yarn is high tenacity

■: small quantity available in stock

☆: production on order

Need higher counts or extraordinarily high conductivity? Contact us for SwicoSilver HiCon.

APPLICATION

Plasma metal coated yarns can be used in various fields as:

- sensors
- high end fashion
- embroidery/sewing
- medical end uses
- electronic components
- defense applications
- computing
- jewellery & luxury
- your idea



SWICOGOLD COATED PET

left: dtex 150 f 48, 60 tpm

right: dtex 125 f 36 x 2 high twist
(for embroidery)

THE BIG ADVANTAGES

Compared to any other metalized yarn, SwicoGold, SwicoSilver and other plasma metal coated yarns convince by their following characteristics:

- **extremely conductive**
SwicoSilver yarns reach conductivity values of $> 1 \text{ ohm/cm}$ - SwicoSilver HiCon values of even $> 0.05 \text{ ohm/cm}$.
- **excellent washing behavior**
After 60 household washing cycles, 90-95% of the metal is still on the yarn according to tests conducted by *EMPA Switzerland*.
- **very regular coating along the yarn**
Ideal in automatisisation applications, where uniform conductivity is important to keep reaction margins extremely narrow.
- **coated with only the metal you want**
There is no layer of any other metal underneath like it is with other metalization processes - SwicoGold yarns (plasma Gold coated yarns) will not start to oxidize as there is no silver, copper or other adhesives involved.
- **tailored upon your requirements**
The yarn can be made with the properties you need, like conductivity, count or twist, so that they are easy to process for you.
- **very fashionable**
Products made by plasma metal coated yarns are wonderfully noble due to the yarn's elegance and fineness.



COMPARISON

- upper: classic process, yarn with Gold foil wrapped around
- lower: new process, SwicoGold yarn (plasma Gold coated yarn)

CONTACT

Interested in highly conductive yarns that still feel like a normal textile one? Looking for 24K Gold coated yarn that does not corrode and provides excellent adhesion of the metal to the yarn? Contact Swicofil:

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