TRANSFER COATING LINE

“NEW ROADS FOR YOUR CREATIVITY”
THE TRANSFER TECHNOLOGY

Rollmac at today is one of the most reputed manufacturers of coating equipments for PU, PVC and PU/PVC artificial leathers.

The technology in use to make such product is the transfer application. The name transfer is there because the coating layer is not directly applied on a fabric, but using a matrix called “release paper”. This special siliconed paper is available in a large range of finish and aspects (smooth, embossed, gloss, mat etc.) and has the function to support the coated resin until the gelification by giving to the film its own surface aspect.

The product is manufactured by coating several layers one above the other and finally by laminating a textile baking, by means of either a wet or a dry system.

Each layer must be coated, dried, jellified and cooled down. Depending on the wanted result, the coated layers can be 3 (2 polymers + 1 glue) or 4 (3 polymers + 1 glue).

At the end of the process the release paper is detached from the coated product and rewound separately for further use. The finished product surface will show the negative pattern (embossing) given by the release paper.

THE TRANSFER COATING SYSTEM:

This is carried out by coating the resin on the release paper by means of a doctor blade or a reverse cylinder and then glueing onto it a textile support (woven or knitted fabric, non-woven or coagulated supports). The release paper is detached at the end and separately rewound for further re-use.

The synthetic leather is composed by:
- a first resin layer (preskin) coated directly onto the release paper; this will be the visible one that must have the highest resistance to scratching, flexion, wear and tear,
- a second and possibly a third resin layer (skin or body), coated directly onto the previous layers
- a final glue layer to stick the textile support whose function is to act as reinforcement.

This provides a range of finishing extremely wide.
TRANSFER COATING PLANTS

Rollmac designs and manufactures modular coating lines, available in many different configurations, up to 4 coating stations and with wet laminator and dry lamination (One coat system).

The drying tunnel are delivered in 4 meters compartments, with simple or double ventilation and independent extraction, inverter controlled. The tunnel are diathermic oil heated for a max inside temperature of the chamber of 220°C, automatically set by thermoregulating devices. Alternatively steam, electric or gas burners heating are available.

Unlike the standard 3 heads plant, the 4 heads plant features an additional coating head and allows, besides the wet coupling system, also the dry coupling system named “one coat”. All this greatly widens the performance possibilities of the line itself, by making it extremely versatile and suitable to producing technical articles with highly elevated chemical/physical standard of resistance.

The Rollmac lines:
- assure the greatest production flexibility
- assure high operating saving
- grant the application of new processes and manufacturing.

Unwinders, accumulators for the non-stop operation of the line, cooling units, detach groups and paper and product rewinders are completing the line.

The coating lines we propose may be arranged according to the particular requirements of the final user.

The speed, synchronisation and setting of the pulls are performed by A/C motors inverter controlled. Upon request the lines can be integrated with automatic coated weight measures and supervision system for the automatized management of the whole line. They may be controlled by electromechanical systems or fully automatized with the control and adjustment of all the variables as speed, coated quantity, drying, coupling parameters etc.
Fig. 1: 3 heads coating line

Fig. 2: 4 heads coating line

Caption

1) release paper unwinding unit
2) table for joining the paper
3) accumulators for release paper
4) driving unit
5) service boards
6) knife coating head by thickness and by scraping (or by cylinder), (see pag. )
7) drying and gelling ovens
8) cooling cylinders
9) knife coating heads by thickness (or by cylinder), ( see pag. )
10) “on wet” coupling calender
11) “on wet” coupling calender with pre-heated cylinder
12) “one coat ”dry coupling calender
13) accumulator for release paper and finished product
14) detachment unit of release paper of the finished product
15) revolver rewinding unit for the finished product
16) precision rewinding unit for release paper
COATING HEADS

The coating heads are the heart of a plant, Rollmac propose three types of coating heads:

- **Uniroll SP**, traditional knife coating head
- **Starline RS**, rollercoater
- **Starline RBS**, multifunction coating head with roller and coating knife

The knife coating head allows applications both by scraping and by thickness, with the maximum repeatability and precision in the coating, quick coating method change and handy control console; the multifunction coating head, for coating by knife and engraved reverse roller, is the only head with five working possibilities.

**STARLINE RBS**: The only machine which enables to match the traditional knife finishing (both on air and by thickness) with the new and advantageous finishing with reverse roller.
Flexible multifunctional head which enables any kind of resin/coating on whatever support.
With STARLINE RBS it is possible to apply any kind of resin (PU, acrylic, silicone, etc.) either on water basis and on solvent basis too. Possibility to apply foamed paste.
TRADITIONAL KNIFE APPLICATION KNIFE “ON AIR” (BY SCRAPING)

FABRIC

COATING GUIDE KEEPER

COATING KNIFE

COATED RESIN

DRYING UNIT

COUNTERPART AND GUIDING ROLLER

RESIN TO BE COATED

TRADITIONAL KNIFE APPLICATION KNIFE ON CYLINDER (BY THICKNESS)

FABRIC

COATING GUIDE KEEPER

COATING KNIFE

COATED RESIN

DRYING UNIT

COUNTERPART AND GUIDING ROLLER

RESIN TO BE COATED
What is the REVERSE application?

It is an application made through an engraved cylinder which rotates rapidly on the opposite direction to the support feeding, the colour (paste) is inside a wiping knife which pushes the colour itself inside the engraving by cleaning in this way the cylinder surface. In contact with the support (fabric), the colour is deposited and the square pyramid of the engraving makes a strong action of mechanical coating of the colour, enabling the maximum uniformity of coating with whatever applied quantity.

According to the engraving depth and to the speed of the engraved cylinder, it is possible to determine exactly the quantity applied which is equal and constant on the whole width of the material. The reverse roller application grants:

- Perfect coating uniformity on the whole width of the material either with large and small quantities of coated paste;
- Application of paste from very liquid up to very viscous ones (up to 45,000 cps);
- Minimum quantity of paste to start the application (1-5 kg.);
- Paste impurities which may eventually be formed are stopped after at most one roller turn (no scoring defects);
- 30% of release paper saving;
- Possibility to stop the production without removing the colour from the head
- Possibility to heat the engraved cylinder to enable the decrease of viscosity of paste to be coated;
- Minimum capacity 10 g. sq/ft, maximum capacity 430 g. sq/ft;
- Possibility to determine and reproduce exactly the quantity of paste applied
ENGRAVED ROLLER COATING APPLICATIONS
REVERSE CYLINDER “ON AIR”

REVERSE CYLINDER OVER COUNTER-ROLLER
SYNCHRO CYLINDER OVER COUNTER-ROLLER

- Coating Guide Keeper
- Resin to be Coated
- Coating Roller
- Countertart and Guiding Roller
- Coated Resin
- Drying Unit

Fabric