

ROLL COVERING FOR THE FILM & FOIL INDUSTRY PLASTIC FILM SPREADING

The number one enemy encountered while producing plastic film is the appearance of wrinkles. Avoiding wrinkles does not only allow waste reduction, it also creates the possibility to produce thinner films and to speed up the production process.

OUR SOLUTIONS

- Cambered geometry
- Simple spreader
- « Flex Spreader »
- « TendiGraf » spreader
- Curved spreader rolls (*Banana rolls*)
- Low hardness (*up to 20 shore*) possible
- Antistatic qualities
- Rubber and polyurethane coverings
- Cellular coverings
- Full maintenance on your banana rolls

Wrinkles can be caused by :

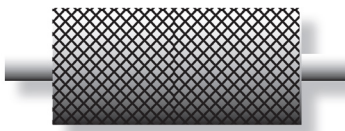
- Air caught between the guiding rollers and the film
- Roller deformation as a result of film width and roller mass
- Static discharges causing an undesirable attraction between film and roller
- Diamond and spreader grooves that evacuate the air while stretching the film
- Cambered profiles and curved spreader rollers ("banana" roller)
- Anti-static or conductive roller coverings

A combination of these solutions is possible to further enhance the web control and to assure an equal tensioning during winding.

In order to avoid wrinkles during plastic film production, Hannecard proposes 3 solution levels:

DIAMOND GROOVES

Diamond shaped profiles work like the crampons on a snow tire : they assure a perfect contact between the film and the roller. Air captured between the film and the roller will be evacuated. It is recommended to guide the film over a diamond grooved roller just before a winding or slitting operation.



SPREADER GROOVES

Simple spreader groove

These grooves are applied from the center of the roller towards the edges. The air movement tightens the web on the roller. For the best result, the center of the film width should correspond perfectly with the center of the roller.



FlexSpreader groove

This groove type is also applied from the center towards the edges, but the groove shape is oblique (undercut). In combination with a very soft cover (20 to 40 shore A), the surface deformation allows longitudinal tensions to be transformed into lateral tensions.



TendiGraf spreader groove

Again, this groove type is applied from the center towards the edges, but the groove shape is oblique (undercut) with changing depth : the further from the center, the deeper the groove. In combination with a very soft cover (20 to 40 shore A), the surface deformation allows longitudinal tensions to be transformed into lateral tensions, especially for very thin film and stretch film, produced with a low web tension.

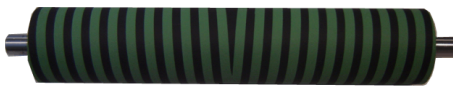




CAMBERED ROLLER SURFACE

A cambered surface finish allows the correction of roller deformation. A roller can deform because of side pressure or even due to its own mass in combination with web tension. The uneven pressure and nip distribution caused can be fully restored thanks to the right surface camber.

The correct value can be measured or even calculated. Your Hannecard partner will help you to define the right camber for your application.



TOPSPREAD-XR

For the transformation and lamination of very thin and delicate substrates, such as polyester and aluminium film, there is a risk that traditional, grooved spreader rolls mark the surface.

TopSpread-XR is a unique concept using a double hardness rubber covering with a spreading effect. It is very effective on thin substrates, even with a limited contact angle. Thanks to the absence of grooves, no marking can occur.

This solution can be used to remove wrinkles while guiding delicate substrates to the laminator and is also recommended for high speed winding and slitting of very thin film and foil.

TopSpread-XR has the further advantage of being regrindable without losing effect. It can be obtained in standard and antistatic version (TopSpread-XR-AS).



CURVED SPREADER ROLLS (Banana rolls)

These rollers consist of a curved metal shaft on which subsequent bushes and bearings are mounted. The whole is covered by a rubber sleeve, which can be textile reinforced. Two clamps at the edges assure that the rubber sleeve is sealed off.

Curved spreader rolls have following functions :

- Film stretching
- Avoid or eliminate wrinkles
- Reduce tension differences between the centre and the edges of the film (floating edges, floating centre)

Because of the sometimes high production speed and low web tension the bushes are mainly made out of plastic to reduce the inertia of the roller. It is also important to mount the rubber sleeve with well controlled dimensional and shape tolerances to guarantee a stable functioning in time.

Standard and antistatic covers, both rubber and polyurethane, can be obtained within a hardness range of 60 to 80 shore A.

The Hannecard workshops are experienced in total repair and maintenance of curved spreader rolls, as such assuring full service and reliability.



ANTI-STATIC AND CONDUCTIVE COVERS

Hannecard proposes a complete range of anti-static and conductive roller coverings, both in rubber and in polyurethane and within a broad hardness range.

The surface or volume resistivity is measured during the final inspection of the covering.

The resistivity values are :

- For anti-static covers : between $10^4 \Omega \cdot \text{cm}$ and $10^8 \Omega \cdot \text{cm}$
- For conductive covers : lower than $10^4 \Omega \cdot \text{cm}$

MORE INFORMATION?

For more information, please contact your local Hannecard partner or visit our website at: www.hannecard.com