



ROLL COVERING FOR THE TRANSFORMATION OF PLASTIC MATERIALS

BLOWN FILM EXTRUSION

Blown film extrusion is the most used process to make plastic film and packaging. A circular extruder casts a film that is blown in to a bubble by means of compressed air. The bubble is then compressed to obtain a thin double-layer film. Two nip rolls are used to seal the film and to assure that the film has constant thickness and properties.

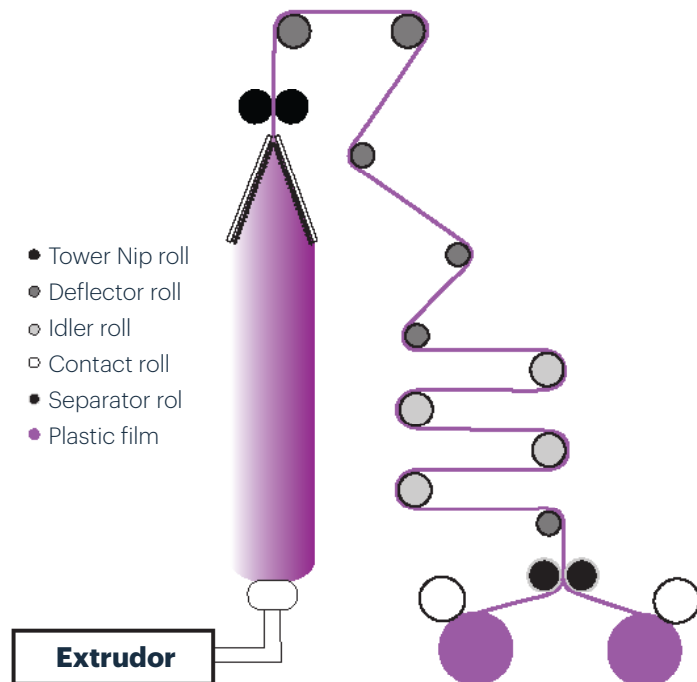
DESIRED PROPERTIES FOR THE COVERED ROLLS

- Ozone resistance
- Abrasion resistance
- Temperature resistance
- Dimensional stability
- Air-tight
- Non-marking
- No wrinkles and other film defects
- Excellent mechanical conditions, vibration-free rollers
- Compromise between good grip and non-stick properties
- Neutral towards the plastic film
- Excellent purity and homogeneity
- High precision grinding

After tensioning and guiding the film, it can be wound or transformed in plastic bags.

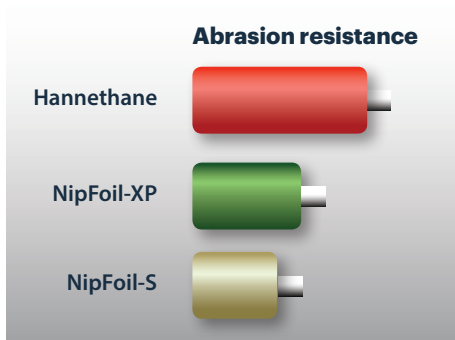
In order to make simple film, the two layers can also be separated. The use of a Corona treater is also possible, in case the film is due to be printed, coated or laminated.

To improve the grip and the tension, one or both tower nip rolls are generally elastomer covered. Also for spreading, separating, winding and Corona treatment, rubber and polyurethane covered rolls are often used.



Extruder

Blaasextrusie



Abrasion properties

Type	Solution	Characteristics
Standard	NipFoil-S Grey - Rubber 40-80 shore A	<ul style="list-style-type: none"> • Excellent ozone and temperature resistance (up to 125°C) • Good abrasion resistance • Good physical properties
Standard Anti-static	NipFoil-S-AS Black - Rubber 50-90 shore A	<ul style="list-style-type: none"> • Excellent ozone and temperature resistance (up to 125°C) • Good abrasion resistance • Good physical properties
High-end	NipFoil-XP Green, Grey - Rubber 55-80 shore A	<ul style="list-style-type: none"> • Excellent ozone and temperature resistance (up to 125°C) • Improved abrasion resistance • Very good physical properties
High-end	NipFoil-XP-AS Black - Rubber 50-80 shore A	<ul style="list-style-type: none"> • Excellent ozone and temperature resistance (up to 130°C) • Improved abrasion resistance • Very good physical properties
Anti-static	NipFoil-XPE-AS* Black - Rubber 65-90 shore A	<ul style="list-style-type: none"> • Excellent ozone and temperature resistance (up to 140°C) • Very good abrasion resistance • Very good physical properties *
Standard	Hannethane Blue, Brown - PU 25-60 shore A	<ul style="list-style-type: none"> • Very good ozone resistance • Temperature resistance up to 80°C • Outstanding abrasion resistance • Excellent physical properties
	Hannethane-XP Brown - PU 70-90 shore A	<ul style="list-style-type: none"> • Very good ozone resistance • Temperature resistance up to 90°C • Outstanding abrasion resistance • Excellent physical properties
Standard Anti-static	Hannethane-AS Black - PU 40-90 shore A	<ul style="list-style-type: none"> • Very good ozone resistance • Temperature resistance up to 80°C • Outstanding abrasion resistance • Excellent physical properties • Slightly antistatic
Semi-conductive	Hannethane-SC Black - PU 40-85 shore A	<ul style="list-style-type: none"> • Very good ozone resistance • Temperature resistance up to 80°C • Outstanding abrasion resistance • Excellent physical properties • Surface resistivity 10-1000 kΩ
Special solution "High Release"	HanneRelease Black - PU 40-85 shore A	<ul style="list-style-type: none"> • Very good ozone resistance • Temperature resistance up to 80°C • Outstanding abrasion resistance • Excellent physical properties • Improved release and non-stick properties • Anti-static

* New generation Hannecard ECO quality

RELATED DOCUMENTS

- Solutions - **'Plastics industry'**
- Solutions - **'Winding & Slitting'**
- Solutions - **'Bi-oriented plastic film'**
- Solutions - **'Corona treatment'**
- Solutions - **'Plastic film spreading'**
- Solutions - **'PVC & other soft plastics'**
- Solutions - **'Flat cast extrusion'**

NIP AND CONTACT ROLLS

Depending on the sense of the bubble, two bottom or top rolls will be used to assure an air-tight compression of the bubble and to control the film stretching. By assuring a constant pressure, thickness variations can be minimized and the double film will have homogenous aspect and properties. At the same time, crushing of the film edges needs to be avoided.

Hannecard offers a range of both rubber and polyurethane coverings that meet all the requirements and that guarantee a perfect compression of the film. Both ranges can be obtained in a standard and in an antistatic version. We also offer assistance to define the right surface finish and shape (cylindrical or cambered) in order to assure a parallel contact nip between the rolls and the film.

Depending on the process and film type, a broad hardness range is available for every covering solution. However, 70 shore A can be recommended in most cases as the optimum hardness.

DEFLECTOR, IDLER, TRANSPORT AND SEPERATOR ROLLS

These rolls are generally metallic and chrome plated. However, sometimes elastomer coverings are used to improve the grip and the film tensioning.

The possible covering solutions are similar to the ones proposed for the tower nip rolls.

Generally the covering hardness will be higher and special profiles, as well as spreader or diamond grooves are sometimes required.

SPREADER ROLLS

Spreader rolls are used to avoid the appearance of wrinkles during the film transport.

They can be metallic or rubber coated and they generally contain a spreader type groove profile.

Also curved (banana) rollers are often used. Hannecard proposes multiple covering and finishing types.

Our solutions can be found in the leaflet "Roll covering for plastic film spreading".

WINDING & SLITTING ROLLS

To improve the winding quality, elastomer covered contact, lay-on and drum rolls are used in contact with the film bobbin. Their composition and finishing is highly critical in order to assure the absence of wrinkles and a correct bobbin shape.

We refer to our leaflet "Winding and slitting" for detailed information on the Hannecard range.

CORONA ROLLS

By means of the Corona treatment, an electrostatic discharge is applied on the film surface in order to improve the printability and the adherence during a following lamination and/or coating process.

The back or detour roll needs to have very stable electrical insulating properties and needs to resist to high ozone concentrations.

See our leaflet "Corona treatment" for more info on our solutions.

MORE INFORMATION ?

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