

ROLLER COVERING FOR CAST FILM EXTRUSION



DESIRED PROPERTIES

- Abrasion resistance
- Temperature resistance
- Résistance strong dynamic stress

In the last few years, the film market requirements have led to intensive developments within the extrusion technology of cast film, which these days enables us to obtain films of highly dimensional precision.

The Hannecard group has developed from its side a number of coverings that meet the requirements in the cast extrusion field.

THE EXTRUSION PROCESS

Extrusion of bidirectional film

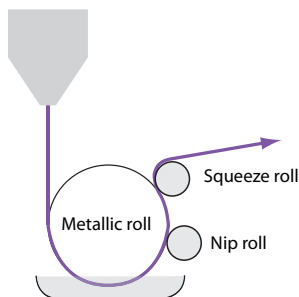
In this case, the melted plastic passes between two « laminator » rollers that enable film forming. Then stretching in length and width is performed in large ovens, which enables to obtain the required density and, at the same time, awards the film some interesting mechanical characteristics.

Cast section

The cast section is in fact the so said film extrusion. When leaving the extruder, the melted plastic falls on a large cooled metallic roller. In this phase of the film manufacturing, there are 2 types of covered rollers :

- **The roll for evacuating water** out of the film
- **The tensile roll**

For both roller types, we recommend the covering quality **NipFoil-XP 60 Shore A**.



Cast Section

MDO section (Machine Direction Orienting)

In this section, the length extrusion of the film (following the direction of the machine) is being done. The film passes through several rolls that create a certain tension on the film and enable the length extrusion.

For these types of rolls, we have developed the following qualities:

Product	Type	Name	Characteristics
Rubber	High performance solution for temperatures < 140 °C)	Nipfoil-XP 70 Green/Grey, 50, 60 & 70 Shore A	<ul style="list-style-type: none"> • Very good ozone, oxidation and temperature resistance (up to 140 °C) • Exceptional abrasion resistance
	High temperature solution	Nipfoil-HT 70 Red, 50, 60 & 70 & 80 Shore A	<ul style="list-style-type: none"> • Very good temperature resistance (up to 200 °C) • Anti-stick covering
	Special bicomponent solution	EDELWEISS White, Surface hardness 25 to 55 Shore A	<ul style="list-style-type: none"> • Temperature resistance up to 200°C • Surface hardness between 25 & 55 Shore A • Possible to reuse the sublayer

LDO Section (Length Direction Orienting)

It's the feeding extrusion of the film in large ovens. At this line stage, one only sees metallic rollers and partly high temperatures. When leaving this extrusion section, the film width can achieve very large dimensions.

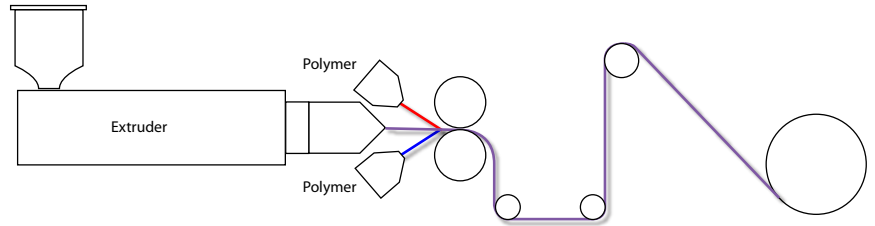
Hannecard can meet demands up to 12 m roll width.

Cast film extrusion



In this case, the film directly leaves at the extruder head with the correct width and falls upon a metallic cylinder. The process is performed with only 2 metallic rollers. Co-extrusion with 2 or 3 extrusion heads does also exist.

Co-extrusion



DESIRED PROPERTIES

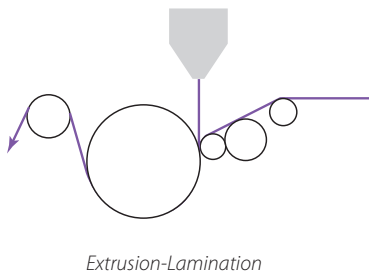
- Abrasion resistance
- Temperature resistance
- Good elastic response

Extrusion-Coating, Extrusion-Embossing, Extrusion-Lamination

In this case, casting is performed with a casting head over the whole width of a cooled metallic cylinder, either directly on the metallic cylinder or between the metallic cylinder and a covered cylinder.

In this case, the covered roller can be used for laminating, coating (one casts the plastic on a substrate) or for embossing (then the metallic roller is engraved and enables the direct embossing of the plastic film).

For these rolls, Hannecard recommends the following qualities:



Product	Type	Name	Characteristics
Rubber	Standard solution (Temperature < 140 °C)	BupFoil-S 65 Black, 65 Shore A	<ul style="list-style-type: none"> • Very good abrasion resistance • Temperature resistance up to 140 °C • Excellent dynamic response • Particularly interesting for embossing
	High temperature solution	BupFoil-XP Red, bi-hardness	<ul style="list-style-type: none"> • Applied when metallic roll is non-cooled • Temperature resistance up to 250 °C (280 °C peak) • Very anti-adhesive

TRANSFER SECTION

Nip rolls

As from there, speeds are generally very important. The below mentioned qualities are those recommended by Hannecard. For more specific applications, we can propose other suitable qualities.



DESIRED PROPERTIES

- Abrasion resistance
- Ozone resistance
- Neutral behaviour in contact with film
- Temperature resistance

RELATED DOCUMENTS

- Solutions - 'Corona treatment'
- Solutions - 'Spreading'
- Solutions - 'Winding & Slitting'
- Solutions - 'Blown Film Extrusion'

- Data sheet - 'Corona-XP70'

To obtain a copy, please get in touch with your contact person at Hannecard. These documents are also available in PDF-format on our website at www.hannecard.com



Winding process

Product	Type	Name	Characteristics
Rubber	Multi-performing solution	Nipfoil-S Grey 40, 50, 60, 70 & 80 Shore A	<ul style="list-style-type: none"> • Excellent ozone resistance • Good abrasion resistance • Good mechanical properties • Temperature resistance up to 130 °C
	Standard antistatic solution	Nipfoil-S-AS Black 50, 60, 70, 80 & 90 Shore A	<ul style="list-style-type: none"> • Excellent ozone resistance • Very good ozone resistance • Temperature resistance up to 125 °C • Good mechanical properties • Antistatic
	High end solution	Nipfoil-XP Green or grey 50, 60 & 70 Shore A	<ul style="list-style-type: none"> • Excellent ozone resistance • Temperature resistance up to 130 °C • Excellent abrasion resistance • Good mechanical properties • Remarkable dynamic properties
	High-end antistatic solution	NipFoil-XP-AS Black 50, 60 & 70 Shore A	<ul style="list-style-type: none"> • Very good ozone and oxidation resistance • Temperature resistance up to 130 °C • Très bonne résistance à l'abrasion • Antistatic
	High temperature solution	NipFoil-XP AS Black 50, 60 & 70 Shore A	<ul style="list-style-type: none"> • Temperature resistance up to 125 °C • Excellent ozone resistance • Excellent abrasion resistance • Good mechanical properties • Exceptional dynamical properties • Antistatic
	High temperature/antistatic solution	NipFoil-HT Red 50, 60, 70 & 80 Shore A	<ul style="list-style-type: none"> • Temperature resistance up to 200 °C in continuous service (250° C peak) • Excellent ozone and oxidation resistance • Good anti-adherent properties
Polyurethane	High-end solution	Hannethane Blue, Brown, Black 20 - 90 Shore A (*)	<ul style="list-style-type: none"> • Very good ozone and oxidation resistance • Excellent abrasion resistance • Excellent dynamical properties
	High-end antistatic solution	Hannethane AS Blue, Green, Black 40 - 90 shore (**)	<ul style="list-style-type: none"> • Very good ozone and oxidation resistance • Excellent abrasion resistance • Excellent dynamical properties • Anti-static
	Antistatic & anti-stick polyurethane solution	HanneRoll Black 70 & 80 Shore A	<ul style="list-style-type: none"> • Very good ozone and oxidation resistance • Excellent abrasion resistance • Excellent dynamical properties • Antistatic • Anti-stick

(*), (**): Recommended in 60, 70 or 80 Shore A for plastic film applications

Corona Rolls

On the blown film extrusion lines, we can be confronted with a corona treatment. This kind of treatment consists in applying an electrostatic discharge which modifies the surface of a film in order to improve its printability and its adherence during the lamination processes.

The rolls used in the area of this corona treatment are subjected to harsh ozone attacks because of the electric discharges they are confronted with. Here again the Hannecard Group can propose you high-end qualities.

Spreader rolls & winding rolls

As on the majority of the plastic film's production, production is ending up with the spreading and the winding up of the film.

The Hannecard Group is there to offer you a whole range of solutions in order to solve any problem you may face.