IPRV

IMPROVEMENTS

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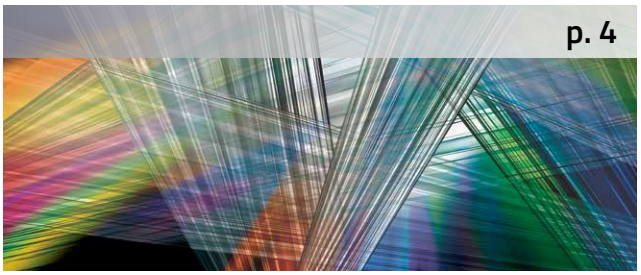
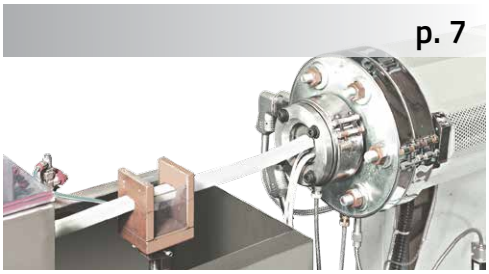
Latest news on COLINES® technological developments

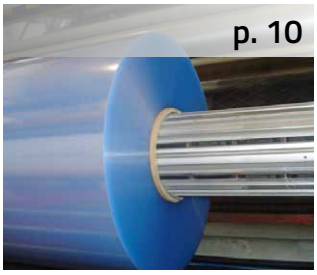
COLINES® ALWAYS A STEP AHEAD
AIRBUBBLE

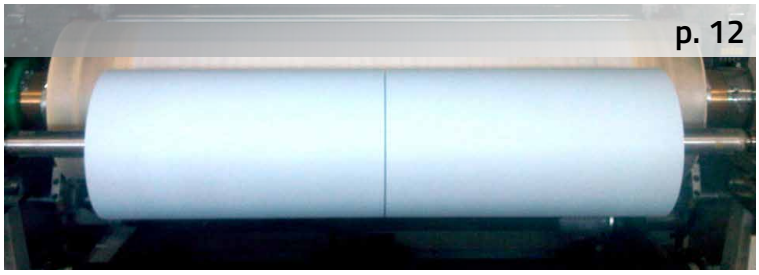
A NEW CAST STRETCH FILM GENERATION
ALLROLLEX®

IN-LINE EMBOSSING BLOWN FILM
DIAPERBLOWN®









K2013
SPECIAL EDITION

Dear Customers,

the appointment with the K2013 exhibition is very significant for our sector, which comes from a long period of recession, above all in the countries historically more devoted to development and therefore to investing in new lines. Nevertheless our company has succeeded in balancing the latest years' books and above all the year 2012 with a turnover increase.
As a logic consequence and to reassure our Customers, we would like to point out the further strengthening of COLINES®'s assets and finances, unlike many competitors of ours, essentially achieved not by increasing our prices but by carefully managing our resources without penalizing the quality of our products or our after-sales service.
This is the result of our approach to the business: offering innovative and reliable lines, an effective after-sales service and correct quality/price ratio.
Another factor of our success is the proactive assistance to our customers in the commissioning phase of our lines, thanks to the original and unique verticalization between COLINES® HOLDING and B-PACK® HOLDING.
The long experience helped us time ago in this choice; in fact we come from afar. Founded by Mario Zorloni and Francesco Lombardini and through several changes, which reinforced in the course of time its presence on the market, COLINES® reached 40 years of activity consolidating its own know-how, its very original structure and the consideration on the market.
At K2013 Show we will present the new ALLROLLEX®-1500 line, the evolution of a major success line as HANDROLLEX® 1000 mm.
The new ALLROLLEX®-1500, covered by some patents, allows very high outputs in the production of stretch film, with an investment which is in proportion very restrained, along with very low specific energy consumptions.
Above all it permits the production of top quality manual, automatic and jumbo reels, without any tail and any sacrifice in the performances.
From K2010 to date, we have been developing and innovating many other extrusion lines. We would like to highlight the most significant achievements, such as:

a) The novelty of the DIAPERBLOWN® line for the production of hygienic film with in-line embossing;
b) The new series of HIGH PERFORMANCE CPP film lines;
c) The further progress in the technology of our BubbleGuard® Board lines (whose process is patented worldwide and for which we are struggling to ward off various attempts of plagiarism);
d) The further improvement of our technology in air bubble film production, now produced in structures up to 14 layers;
e) Significant technical, technological and process details in the last lines designed for production of multi-layer barrier film with cast and blown technology, viewable in operation also at B-PACK®;
f) An intense effort in the reduction of energy consumption, through deep experimentation on extrusion screws, heating systems and motor drives, carried out especially in the companies of B-PACK® HOLDING;
g) The extremely helpful apparatus called "WORLD OF AUTOMATION" developed by our partner company ELAV®, which permits to provide our Customers with all the elements needed to understand, manage and control the course and the quality of production, even in remote mode.

In order to take on the new challenges with greater resources, we have further enlarged our real estate structure, and we have reinforced the after sales service, already very reliable, as well as the technical division, more and more involved in the design of tailored lines aimed at optimizing our Customers' ROI.

...There is a lot more to be said, so please visit us and we will speak face to face.

Eraldo Peccetti
CEO & Partner

NEW CAST STRETCH FILM GENERATION

The K2013 exhibition is the occasion for COLINES® EXTRUSION LINES to introduce the brand new cast film line series ALLROLLEX®. In the spotlight at our stand 16 A39 you will find our ALLROLLEX® 1500 mm line in operation. ALLROLLEX® represents the real technological revolution in the sector for stretch film production.
The R&D department developed with the technical staff of COLINES® the new series of cast stretch film lines with finished web width of 1 m, 1.5 m, 2 m, 3 m, 4 m, 4.5 m driven by the following targets:

- Production efficiency and flexibility;
- Reduction of energy consumption;
- Footprint reduction and rationalization;
- Excellent winding quality with very thin films (typically 8-10 µm) at very high speeds;
- Use of common "project platforms".

Production efficiency and flexibility

The ALLROLLEX® series is equipped with the new series of PERFORM-EX® extruders, designed to offer an exceptional production efficiency.
COLINES® has succeeded in boosting the total throughput of the PERFORM-EX® extruders up to 15% with respect to a conventional extruder with the same diameter, thanks to the development of new grooved bushes and to specific screw profiles with a high L/D ratio that prevent any stress to the extruded resins, maintaining at the same time a great flexibility in the range of processable raw materials and/or blends of PE/PP, always optimizing the mixing operation.
A special mention goes to the use of a thickness measuring system with infrared rays by reflection or with optical system, perfectly integrated in the line, which permits to detect the film thickness immediately after the chill roll, thus dramatically shortening the feedback time of the system and significantly reducing the production scraps in the fine-tuning phase of the line.

Reduction of energy consumption

The reduction of energy consumption is the result of the development and improvement of several components of the ALLROLLEX® lines.
One of the sections most involved in the upgrading are the new extruders PERFORM-EX®, equipped with infrared heaters (with an energy saving up to 22% versus conventional ceramic heaters) and insulating mattresses on the melt pipes as standard equipment (with a saving up to 31.5%); a further energy saving - up 8.6% can be obtained by installing torque motors instead of the traditional a.c. motors.
It is also worth mentioning the edge trim recovery system BIGMOUTH® working with a cold method (without using any additional extruder or pelletizer!) consisting in a rotary channel feeder driven by an a.c. motor with an extremely low power consumption (4.5 kWh only).
The BIGMOUTH® system allows to recycle an amount of edge trims up to 50% of the instantaneous capacity of the extruder, as it is capable of compressing the "fluff" up to a density very close to the virgin pellet. Thanks to this method the new PERFORM-EX® extruders do not show any performance decrease in terms of mixing or hourly throughput even when processing fluff. On the contrary, the use of traditional refeeding systems causes problems with the mixing of fluff and virgin material and is subject to decreasing in hourly throughput.
Another benefit resulting from the use of the BIGMOUTH® system is a very evident improvement in the film quality, in particular when producing very thin films (typically made with metallocene based resins), as the edge trims do not undergo a further extrusion process, which – in traditional repelletizer/ side extruders - inevitably deteriorates or at least modifies the rheological characteristics of the materials.
The optimization of the energy consumption will be in the limelight at the K2013 exhibition with the ALLROLLEX® 1500 mm running in the COLINES® booth, equipped with torque motors, new PERFORM-EX® extruders and the chill-roll!

Footprint reduction and rationalization

The ALLROLLEX® lines are studied to have extremely compact layouts and, above all, in case of 1000 mm and 1500 mm wide line, in order to have a total footprint (even including the grinding mill and the HMI operator panel) of less than 90 m^2! Furthermore the technical staff of COLINES® focused on the rationalization of the line layout, especially regarding the 1000 mm and the 1500 mm wide lines, characterized by an L shaped layout that can be easily managed and is more functional towards the ordinary maintenance operations.

Boosting the total throughput of the PERFORM-EX® extruders up to 15%

INFRARED HEATERS
up to 22%

INSULATING MATTRESSES ON THE MELT PIPES
up to 31,5%

ENERGY SAVING

Excellent winding quality with very thin films (typically 8-10 µm) at very high speeds

ALLSPEEDY® II and ALLSPEEDY® III represent the fourth generation of the COLINES® winders for stretch film.
COLINES® developed two different models at the same time: ALLSPEEDY® II, for hand reels (2" and 3") and machine reels, and ALLSPEEDY® III, for hand reels (2" and 3"), machine reels and jumbo reels up to a diameter of 400 mm.
In particular, the goal was the capability to wind-up reels of extremely thin film (down to 6 µm!) without damaging the film at all, thanks to an accurate tension control guaranteed by the motorization of all the back-up rollers; similar attention was paid to the study of the winding axis, equipped with a contact cylinder whose pressure is hydraulically controlled, thus preventing any air entrapment in the reel during the winding process.
The change over time for the complete cycle of the ALLSPEEDY® II and ALLSPEEDY® III winders has been made even quicker (down to 14 seconds), also thanks to a "smart" core loading system, which automatically adapts itself to the diameter and the length of the core, really minimizing the operator's intervention.
This makes it possible to vary the single reel width format very quickly from 150 mm to 750 mm, according to the Customer's requirements.
Similarly, we have perfected a reel unloading system that automatically adapts itself to finished roll size in order to avoid any possible damage of the roll edge during the unloading sequence, besides an optional weighing unit appliance that discards the non-standard reels out of weight range requested by the operator.
The reels produced by the ALLSPEEDY® II and ALLSPEEDY® III winders can boast a perfect geometry regardless of the thickness of the wound-up film, and these machines can reach extremely high working speeds (more than 700 m/min!) with no vibration, thanks to the deep analysis of the critical resonance speeds of the shafts and of all the rollers involved in the winding process.

Common "project platforms"

The last interesting aspect concerns the study of modular layouts for the whole range of the ALLROLLEX® machines, realizing some common or modular parts, such as the recovery system for edge trims, and the adoption of uniform extruders sizes and common or modular supporting frameworks. This mainly gives COLINES® the chance to easily manage the delivery time and to supply and ship spares in extremely short lead-times.

BARRIERBLOWN® & BARRIERCAST® in B-PACK®

The extrusion lines to produce barrier film are part of COLINES® core business. COLINES® was a pioneer in this field, manufacturing their first extrusion line to produce barrier film in 1992, installed in China. They realized the potential of the barrier film produced with in-line coextrusion (beforehand this product was obtained by converters with a technique involving lamination of different materials).
In 1994, COLINES® decided to aim at strengthening the technology of the extrusion lines to produce barrier film by establishing the company B-PACK®, now counted amongst the main European film producers, mainly in the fields of lamination, hot lamination, medical, processed meat, bread, cheese and special products with a portfolio of more than 400 formulations covering every specific application. Inter alia B-PACK® was the pioneer to use EVOH in Italy and now is in the top five in Europe.
Thanks to the synergy with B-PACK®, barrier film producer, COLINES® is continuously developing the cast and blown extrusion lines to produce barrier film according to the state-of-the-art, based on a strong direct experience as film producer.

The COLINES® lines in production and visible at B-PACK® are:

- *A BARRIERCAST® 5-layer extrusion line with edge encapsulation;*
- *A BARRIERCAST® 7-layer extrusion line with edge encapsulation;*
- *Four 5-layer blown film lines;*
- *A 7-layer blown film line;*
- *A 5-layer laboratory extrusion line, also operating with one extruder only, to test new materials.*

boasting a continuously growing yield.

Among the installations mentioned above, two blown film lines have been put in production in the current year, with a production growth of the total B-PACK® production to 17,000 tons per year.

All the above lines are equipped with the most advanced technologies, such as:

- *New sophisticated winders permitting an accurate tension control which is essential for the precise winding of films with different characteristics such as: slippery, blocking and sticky materials.*
- *Two thickness measuring systems: one for the total thickness and one for measuring the internal EVOH and/or PA layer only.*
- *A particular attention has been dedicated to energy saving, for example using extruders with an infrared heating system. Always with a view of reducing energy consumption, new cooling systems have been adopted, which taking advantage of the "total free cooling" technique, permit a saving over 300,000 Euro per year in comparison with the former systems, thus involving also remarkable benefits with a lower environmental impact.*

Last but not least, noteworthy to mention the installation of new storage silos for polyolefines such as PP and PE and the related state-of-the-art feeding system of the blend preparation room.

CONTINUOUSLY GROWING YIELD

LATEST DEVELOPMENTS IN BARRIERCAST® LINES

BARRIERCAST® is the series of lines dedicated to the production of medium and high barrier multilayer films.
COLINES® was the first company that believed in the potential of barrier film produced with cast technology mainly for the medium/long term preservation of food and for the protection (with sterilized packaging) of products of the medical sector, and as a matter of fact our first lines of this type were delivered more than 20 years ago!

The BARRIERCAST® lines are designed and tailored according to the Customer's specifications, or, in case the Customer is approaching the sector, COLINES® can help him and follow him in the choice of the most appropriate layout, thanks to a wide experience developed with the partner company B-PACK® (operating in the barrier film sector since 1993 in Italy with a production of 17,000 tons/year, the biggest producer of high barrier film and the biggest consumer of EVOH in Italy).
In addition, COLINES® is the only company able to propose a complete package including not only the extrusion line, but also the production know-how, the formulations, the brand name of raw materials, etc.
Much more than merely purchasing a machine, the customer takes delivery of a complete package based not only on the many decades of engineering experience of COLINES®, but also on the vast hands-on processing experience. Our partner company B-PACK®

produces a wide variety of cast barrier films for food and medical applications and therefore can assist in reaching the highest possible product quality with the most cost-effective structure, straight from the onset of commercial production on a newly installed machine. In fact, practice has shown that it can take a lot of months of trials and errors before a complex production machine like a multilayer barrier cast line, with the many intricate resin formulations involved, starts to earn some payback. The COLINES® concept virtually guarantees a very smooth and rapid transition from the commissioning to the revenue earning phase.
In developing the specific technology of its BARRIERCAST® lines COLINES® has set as an essential target the minimization of the in-line edge trim scraps, and in effect, thanks to the Dittering® and Refesave® systems it is presently possible to limit the scraps to values of 3-5% of the gross product.
In particular, the Dittering® system allows to obtain a sliding effect of the "virtual" film that minimizes the use of the side-slip unit, integrated with the encapsulation system in the extrusion die, which permits to extrude the web side bands in mono-resin (typically PP or PE) recyclable in line, thus assuring a remarkable reduction of the in line scraps. The edge trims are then recovered by the Refesave® cold system, equipped with grinding mill and re-feeder. The extrusion section is realized with dedicated extruders studied according to the resin to be processed. Therefore the configuration of the BARRIERCAST® lines includes extruders with different sizes and L/D ratios and screws with specific profiles to provide the maximum flexibility in terms of multilayer structures. Another essential aspect is the winding-up.
The BARRIERCAST® lines can be equipped with various typologies of winders: COMBIWIND®, working in contact, motorized contact and gap mode, JUMBOWIND®, two-shaft turret winder, and the latest model FLEXIWIND® independent rotary arm turret winder.
The variety of the installable winders grants the customer the opportunity to use the BARRIERCAST® line also for the production of different types of films such as CPP or cast PE.
The latest evolution of the BARRIERCAST® series consists in the development of a special line that permits to produce PA/PE film with one extrusion die only, without the necessity of the lamination process.
PA/PE film finds application in food packaging, more precisely vacuum-packaging and vacuum bags, as well as thermoformed packaging. This line with its special technology reduces or even cancels the curling effect, as you can do only with the traditional tandem lines, made up by 2 cast extrusion units and by an extrusion/lamination unit.

*Rapid transition **from** the commissioning **to** the revenue earning phase*

Complete refrigerators' technology

COLINES® is a leader in the design and manufacture of complete lines for the production of magnetic gaskets for household, industrial refrigerators and freezers including lines for the production of soft PVC and magnetic profiles.
The extensive market of the beverage sector and industrial and domestic refrigeration systems, as well as the new industrial applications such as shower doors with magnetic closure, permitted the installation of over 250 lines with the engineering of over 200 different molds.

The complete package consists in two extrusion lines and two ancillary machines. The extrusion lines are used for the production of the soft PVC gaskets and for the production of the magnetic strips to be inserted inside the gaskets. The ancillary machines are the inserting unit and the welding machine for gasket closing.
Both the extrusion lines and the ancillary machines are equipped with Siemens touch screen with integration of all the parameter settings.

Soft PVC line

The feeding of PVC resin (also in powder form) is through the hopper loader that equips the extrusion group. The extrusion group, equipped with a specific screw, a.c. drive and 4-zone temperature control with ceramic heating elements, allows a perfect homogenization of the melt and a very low energy impact. The die mounted on the screen-changer is placed before the double calibration unit for a better control of the tension of the gasket. The sprayed water present in the cooling tunnel allows gasket stabilization before it is conveyed to the drying unit. All the water is removed by means of comb type nozzles and automatically recovered to be recirculated. To complete the line there are two haul-off units with buffer station for the control of the gasket by means of the cutting unit. The double cut at 45 degrees is automatically effected with transverse movement of two circular blades. The scrap resulting from this operation is recovered and can be reused after regrinding/drying processes. The line can be equipped with automatic stacker for the produced gaskets.

Ancillary machine: inserting unit for magnetic strip

This unit is equipped with an unwinder for the magnetized profile, haul-off unit and 45 degree cutting unit. The line operates in semi-automatic mode (production of about 1000 pieces per hour) and provides that the magnetic profile, properly conveyed for coinsertion with the PVC gasket, is sized and threaded for subsequent welding to get the closed frame.

Magnetic strip line

The extruder, whose cylinder, screw and die are manufactured with special treatment resistant to erosion, is fed with PE/barium ferrite compound for the production of the magnetic strip. The cooling bath at the exit of the die allows the drying and stabilization of the extruded profile while the following magnetization unit provides the magnetic charge with a range of 30/35 grams per linear centimeter in compliance with the most severe European standards. The line is completed by the winding unit, either horizontal (the standard version) or vertical, for the winding of coils with many more meters of strip.

Ancillary machine: welding machine

This unit features a tilting table for the production of all frame sizes for refrigerators (both with vertical and horizontal closure). The semi-automatic mode with self-burring double mold permits 2 welding operations contemporaneously under complete safety conditions. The machine is equipped with Siemens control panel with temperature settings and is provided with the fume suction hood. The average production is of 30/40 pieces/h.

CPP FILM

The right way through each converting activity

The global consumption of PP cast film has constantly increased in the last few years; just think, in particular, that Europe only has got a volume of 500,000 tons/year and in Asians countries, within the year 2015, the estimated growth will range from 7 to 13% according to the applications.
COLINES®, more than any other company, has considered the market of CPP film as potentially very interesting since the early 90's, investing in the development of high-performance cast film lines.
As a result, presently the lines of the POLYCAST® series represent the undisputed market benchmark globally.
The brand name POLYCAST® identifies the series of COLINES® lines for the production of CPP film combining extremely high performances with a high quality of the coextruded film produced.
The R&D division and the engineering department of COLINES® realized technical solutions to perfect the key components such as extruders, the extrusion screws, the die internal design, the air-blade, the chill-roll unit, as well as the layout, focusing also on the reduction of energy consumption, in order to guarantee a fully customized solution for the final customer, with guaranteed performances up to 400 m/min and a specific consumption of less than 0.38 kWh/kg.
The layouts of our POLYCAST® lines are studied so as to optimize the production of any type of cast PP film, therefore the range of solutions for the extrusion section offers the possibility to equip the line with either 3 extruders (3- or 5-layer structure) or with 4 extruders (5-layer structure).
The standard solution, i.e. 3 extruders for a 3-layer structure, offers a production range covering the most common and demanded products worldwide (film for lamination, metallizable, etc.) granting at the same time a very good hourly net output.
With this configuration, the line is equipped with one cold recovery system (with a re-feeding hopper placed on the main extruder) boasting a very low energy consumption, specifically designed for the production of CPP.
A further step in the CPP production is represented by the solution 4 extruders and a 5-layer structure, which, thanks to the presence of a double cold recovery system of trimmed edges placed on the two main extruders, permits to reprocess a higher quantity of fluff material; as a consequence, it's possible to produce different final net widths without the necessity to reduce the die width by means of the well-known deckle system, therefore without stopping the production!
The COLINES® cast machines for production of PP film distinguish themselves by the solution adopted for the air suction under the die, completely different from the traditional vacuum boxes. This is a very critical area, essential to obtain a product with excellent characteristics. COLINES® developed the so-called air-knife technology, which presents the following strong points:

- Complete removal of fumes and waxes, thus better cleaning of the chill-roll;
- Better adhesion of the film on the chill-roll, thus greater thermal exchange, which results in better haze and gloss values;
- Possibility to vary the position of the chill-roll with respect to the die and consequently great production flexibility;
- Possibility to create the ideal working conditions for every product;
- Reduction of the melt instability;
- Better control of the edges;
- Better optical/mechanical characteristics of the film and higher production capacity of the line.

Thanks to COLINES® technology it's possible to produce different final net widths

The range of POLYCAST® extrusion lines is definitely the most complete on the market, thanks to a variety of finished web widths

RANGE
from 1200 mm
to 6000 mm

In addition, for the purpose of making the line even more user friendly, a very intuitive management software have been studied, as well as a complete diagnostic system.
The winding system deserves a special mention: besides the more traditional turret winder JUMBOWIND®, COLINES® has recently developed an independent rotary arm FLEXIWIND® winder that can make multiple in-line cutting of the reels with "zero tail" thanks to sophisticated electronic and mechanical specific solutions.
The essential feature of the independent rotary arm winder is the couple of double arms bearing the winding shafts, which can rotate independently around a common rotation centre. This makes it possible for the free shaft to get very close to the shaft in winding (which remains in its position) during the reel change phase, thus radically reducing the so-called tail, i.e. the stretch of film wound-up without contact, which is notoriously very long with the traditional turret winders.
Our independent rotary arm FLEXIWIND® winder is also characterized by the presence of an additional contact roller, which permits to keep the film being wound-up guided up to the transversal cutting, annulling in fact the winding without contact; the result is a perfect final quality of the wound-up reels, from the first up to the last meter, with zero scrap and the possibility, for specific kinds of film, to produce finished reels directly in line.
The range of POLYCAST® extrusion lines is definitely the most complete on the market, thanks to a variety of finished web widths from 1200 mm to 6000 mm.
COLINES®, on the strength of more than 100 lines installed, has delivered in this last year 12 lines for the production of CPP film, most of which in Asia.

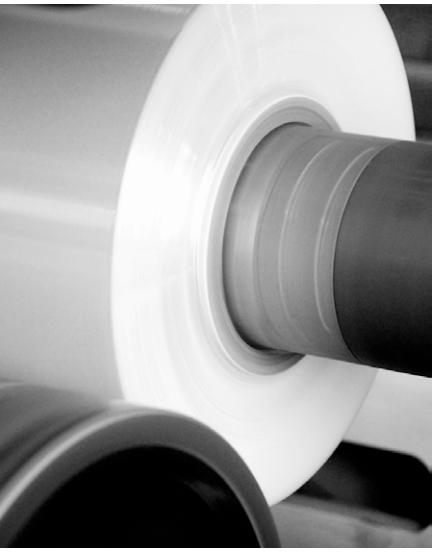
COLINES® ALWAYS A STEP AHEAD

For almost fifty years COLINES® has stood for the best technology on the market for the production of air-bubble film for protective packaging, positioning itself as a reference point for the development of state-of-the-art technical solutions.
Also recently, driven by the spirit of innovation that has always distinguished us and working for more than one year in close contact with an important international player, among our long-standing customers, we have placed another milestone in the technological progress for this sector.
The need to produce a high added-value film (to differentiate it from pure commodities present on the market) required the study of a new system to realize a coextruded material capable of combining barrier effect, stiffness and sealability mainly with low grammage, which typically results in low mechanical strength. The solution consisted in creating a coextrusion structure with 14 layers (7+7) guaranteeing the above properties at line speeds up to 120 m/min!
The extrusion dies are equipped with encapsulation (a technology conceived for the production of cast barrier film, and realized by COLINES® also thanks to our synergy with B-PACK®) to ensure the recycling of edge trims in line avoiding the formation of gels due to reprocessing of the barrier material.
The focus of attention was also on production costs and on their control. A continuous gravimetric multi-component dosing system was adopted for the extruders together with a very complex design of the gear pumps, to check with great precision the quantity of material processed.
Another focal point in the development of this project was the maximum productive flexibility. To meet this requirement various technical solutions have been adopted, among which an immediate web width change system without the need to install a deckling system on the two extrusion dies, a double in-line cutting station with multiple pressure blades, automatically positionable, managed by the operator's panel,

THE SPIRIT OF INNOVATION HAS ALWAYS DISTINGUISHED US

and an in-line perforator for the pre-cutting.
The line is equipped with a winding station and is completed with a system for removing the electrostatic charges, capable of producing reels with diameter of 2500 mm, as well as with a double combined recovery system, managed by the operator's panel.
Thanks to the HMI interface realized by ELAV® - company of the GRUPPO COLINES® HOLDING – and specifically fine-tuned for this project according to the requirements of our expert customer, it was possible to integrate all the data and settings in 19" color touch screen operator panels, placed in the strategic points of the line. The software manages all the settings of all the component according to every single filed recipe, thus ruling out the possibility of human errors in the production phase.

NEW ALLSPEEDY® & FLEXIWIND® WINDERS



Starting from last year, COLINES® decided to develop a new generation of winders to be installed in our extrusion lines. The previous generation of winders already offered excellent performances, but the new process requirements, the new products and above all the new electronic solutions available led us to have our technical department focus on the implementation of absolutely innovative winding equipment.
COLINES®, unlike many of its competitors, even bigger, can boast a technical mechanical department composed of 14 designers, as well as a technical electrical/electronic with 2 designers and 7 software specialists.
Such a structure gives COLINES® the potential to design and manufacture pioneering equipment for the most peculiar and innovative applications.
In particular, two generations of winders have been perfected:
- Winding units for stretch film and in general for very thin films and for extremely high speeds. The essential project features are the following:

a) Possibility to process very thin films, with thickness even lower than 8 µm;
b) Winding-up at a working speed of more than 700 m/min;
c) Production of reels ready for use on 2" and 3" cores with a single width ranging from 150 to 750 mm;
d) Maximum automation, i.e. extraction of finished reels and loading of new cores in a minimum cycle time of 14";
e) Possibility to produce finished reels with diameter from 80 to 400 mm (from the hand to the jumbo format);
f) Net total winding width from 1000 to 4500 mm with either single or combined winders (from 2 to 9 reels contemporaneously).

The first winders of this generation are already in production, in particular:
ALLSPEEDY® II for hand and machine reels, on 2" and 3" cores, for reels with diameter 80÷260 mm, working at speeds up to 700 m/min, minimum cycle time 14", automatic unloading of reels and loading of the new cores. This winder is available for web widths of 1000, 1500, 2000, 3000, 4000, and 4500 mm.

- Independent rotary arm axial FLEXIWIND® winders for various types of film such as PP, hygienic, embossed, barrier and others.

A well-known demand of film-makers is to be able to wind up reel without contact, i.e. in gap, yet with the necessity to cut in line in order to produce more reels on the same shaft.

BASIC CHARACTERISTICS

- **Useful width up to 2600 mm;**
- **Winding speed up to 450 m/min;**
- **Diameter of finished reels up to 1000 mm;**
- **3" and 6" shafts;**
- **Multiple in-line cutting;**
- **Automatic repositioning of shaft (on request);**
- **Shaft extraction trolley (on request).**

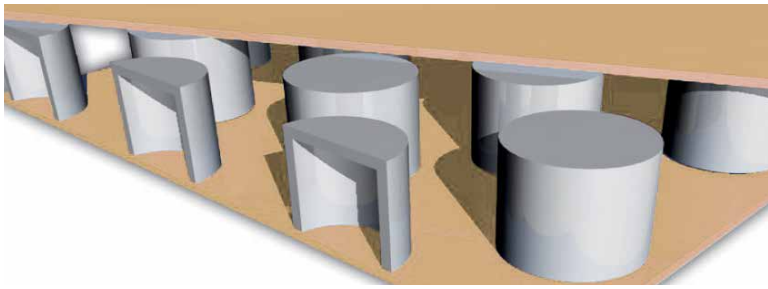
Since modern lines run at speeds approaching 500 m/min, it is essential to solve the reels change issue with the in-line cutting. The ideal technical solution is the independent rotary arm winder: the winding arms, during the change phase, get close to one another thus dramatically reducing the so-called tail, the final, critical, part of film wound up without contact.
In addition, COLINES® has patented a change system without adhesive tape, which avoids damaging the last meters of the reel and the first meters of the new one.
Besides the necessary stratagem of the independent rotary arms, innovative winding concepts characterize the new winders:

a) The contact pressure of the pressure roller is electronically managed according to the variation in the reel diameter;
b) Possibility to wind-up in contact mode and in GAP mode;
c) Electronically variable winding characteristics; the tension variation upon the diameter variation can be determined as required (linear, concave, convex, etc).

All these features are indispensable to achieve an optimum winding-up of every type of film, especially CPP and hygienic (breathable and embossed) film.

Film with thickness lower than 8 µm
Winding-up speed more than 700 m/min
Max automation

BUBBLE GUARD® BOARD GROWS



The latest developments of the BUBBLE GUARD® BOARD have been focused on lines boasting high production, management efficiency and reduction of energy costs.

Thanks to the collaboration with our associated company IMBALLAGGI PROTETTIVI, which we call "Power of Synergy" COLINES® has the opportunity of developing new technologies with a business unit expanding its own business directly based upon market requirements. The innovative extrusion line for BUBBLE GUARD® BOARD which has recently been put in production has reached saturation even though with a double capacity than the former lines. This means that in a short time, against a growing demand, the production was tripled and this is even more significant at this moment of worldwide economic crisis.

FOCUS ON

Printing and Advertising

BUBBLE GUARD® BOARD for printing applications is available in different typologies:
PRINTOLYTE, a low-cost material with corona treatment, is used for silk-screen printing and is appropriate for high volume printing.
The printing substrates for BUBBLE GUARD® BOARD are cloth, ceramic, aluminium, glass and paper.

Thickness range:	*2,4 mm*	*2,6 mm*
	450 g	*600 g*

BUBBLE GUARD® MATT is used for digital printing.
This board is used also for application of adhesive films, internal and external advertising panels with corona, anti UV and FR treatments.
BUBBLE GUARD® MATT is therefore destined not only to printers but also to converters, stand builders, stylists and designers.

Thickness range:	*3 mm*	*5 mm*	*8 mm*	*10 mm*
	900 g	*1600 g*	*2000 g*	*3000 g*

The peculiarities of this line are:

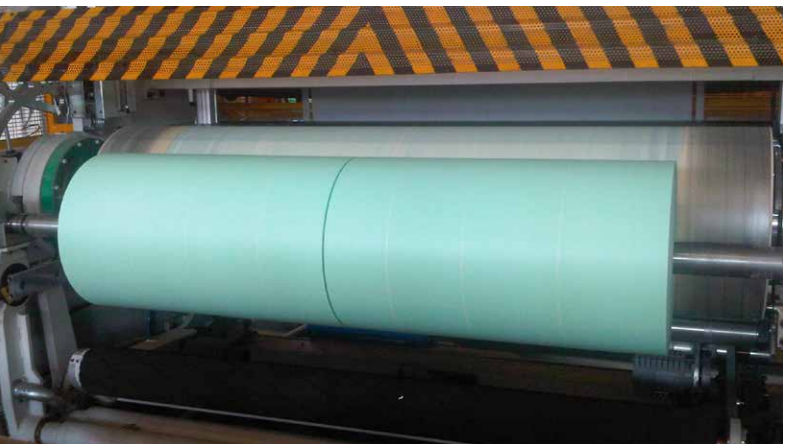
- Configuration with 3 extruders, permitting to use 3 different materials. One of the main advantages is the possibility of using raw materials which can differentiate the product by improving its quality according to the application, as well as using cheaper raw materials to reduce the production costs.
- The layer percentage of the board can vary upon final applications. Typically to modify a layer distribution, it is necessary to replace the selector plug of the stratification plates. To facilitate these changes a valve feedblock has been used, which permits a much quicker modification of the stratification without any requirement of additional selector plug of stratification plate.
- The machine is equipped with two unwinding units for hot lamination of the third and fourth layer (top and bottom of the board) of materials such as woven-non-woven, needled material, Dilour, Tegris, foam, carpet, metallized PP, BOPP printed film, even embossed film to obtain for example a wood effect.
- Double shear cutting.
  With this system it is possible to produce simultaneously boards of different width and length.
- Trim recovery system with direct in-line trim refeeding.
- Corona treatment, permitting to change the board surfaces with the purpose of receiving and holding back the printing inks. The main operation modes are:
  - BUBBLE GUARD® BOARD with direct substrate for silk-screen and digital printing;
  - BUBBLE GUARD® BOARD to be converted for visual communication.
- The BUBBLE GUARD® BOARD as printing substrate is taking the most advantage from the use of 3 extruders, because the use of a raw material softer characteristics in one of the central layers guarantees a better printing quality.
- Efficiency and management: The control of all production parameters is performed by the most modern technology devices and it is mainly committed to PLC and HMI software. COLINES® BGB software gives a friendly approach to the operator because it simplifies the management of a very large amount of the parameters to be entered; most of them are calculated by the software itself or "factory tuned", thus the operator will enter the well-known parameters only: weight per sqm, layer percentage, layer components percentage, total throughput, shearing length. An accurate diagnostic section warns immediately the operator of all the abnormal situations, red or yellow flashing the improper operating component on a plant rendering. A wide management of recipes is the obvious completion of our effort to simplify a really complicate production.
  Our ergonomics concept foresees a 19" colour touch screen monitor as HMI main entering point, several local operator panels as auxiliary entering devices, "fast-adjust" hand-wheel as a step-less entering device, "easy-Key" badge reader as a HMI privilege access port.
- The BUBBLE GUARD® BOARD demand is continuously increasing and there is also a major interest in expanding markets such as Far East.
- A brand-new BUBBLE GUARD® BOARD line has been started up in September at one of our customers in Europe and is mainly destined to the production of boards for protective packaging.
- BUBBLE GUARD® BOARD is an exclusive COLINES® product with worldwide patented process.

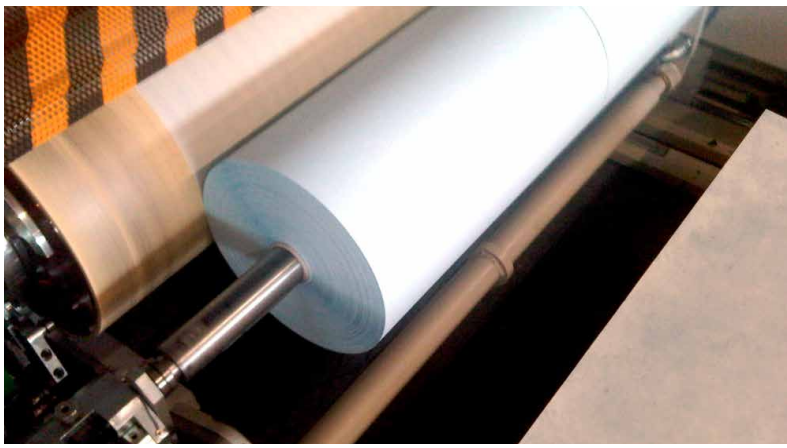
IN-LINE EMBOSSING BLOWN FILM FOR HYGIENIC APPLICATIONS

The new generation die is available in the diameters from 250 to 500 mm

One of the recent novelties presented by COLINES® that has met with more success, even beyond expectations, is the series of 3-layer blown film DIAPERBLOWN® lines for hygienic film. These lines are equipped with new generation low energy consumption extruders and screws optimized for the extrusion of resins for hygienic film (added with mineral charges); of course it is possible to outfit the single extruders with various accessories, among which it is worth mentioning the gravimetric dosing station, either batch or continuous (up to 6 components), the torque motors that ensure low energy costs, and infrared heaters for the extruder barrels.
The new generation die with spiral internal distribution of the layers (up to 1.5 kg /mm of the die) is available in the diameters from 250 to 500 mm and allows to work on structures from 15%-70%-15% to 25%-50%-25%, thus covering an enormous range of products.
The line is of course equipped with an IBC system with no. 3 ultrasound sensors to manage and maintain the bubble diameter automatically.
The cooling ring can be either single or double according to the output requested and above all to the desired film characteristics, for net productions up to 800 kg/h on a useful width of 2000 mm.
However, the real innovation of the DIAPERBLOWN® line consists in the possibility of impressing a texture on the film by passing it through an embossed cylinder, directly in line before the final winding-up; this process results in a noteworthy saving in the film production, which traditionally involves a second off-line process in an embossing equipment, with consequent higher costs for storing, processing time, scraps due to starts and stops, employed staff, power and amortization of the embossing machine.

Furthermore, the possibility of using a part of the residual heat from the extrusion for the embossing process, together with the use of very small pressure rollers with a special rubber coating, permits to reach better gloss values than with the off-line method, a very important parameter in the hygienic film sector.
The line is also provided with the corona treatment station to prepare the film for the later printing or lamination operations.
The winding stations can be realized either in the front-to-front or in the back-to-back version, according to the Customer's requirements. The available models are the COMBIWIND®, working in contact mode, and the new FLEXIWIND® winder with independ rotary arm for winding of reels with a diameters up to 1200 mm.
The product obtained with our line boasts better mechanical and functional properties than the similar films produced on cast lines, especially in terms of balancing of the breaking stresses in MD and in TD, thanks to the biorientation typical of the blown technology and to the possibility of using resins suitable to give the film the most valuable characteristics for the final application.





«COLINES® Platinum Sponsor and Speaker at 2nd Speciality Films and Flexible Packaging Global Conference 2013»

Chemicals & Petrochemicals Manufacturers Association (CPMA) along with Elite Plus Business Services Pvt. Ltd. organized «2nd Specialty Films and Flexible Packaging Global Conference 2013», a two-day conference held at Hotel Grand Hyatt in Mumbai on 29th and 30th August 2013.
The conference was attended by approximately 700 participants representing 337 Companies from over 21 Countries.

Plastics plays a very important role in the packaging sector by offering solutions to virtually every industrial and consumer activity. Flexible packaging provides content protection, anti-pilferage, extended shelf life, pleasant feel, consumer convenience and most importantly improved health and hygiene.
The conference provided an excellent common platform and opportunity to all stake-holders to interact, exchange notes and discuss their products, ideas and challenges.
Global giants in the manufacture of plastic converting machinery were present in full force and demonstrated new range of high throughput machines, which are now available.
Our Sales Area Manager, Mr. Saša Davidović, presented a speech on "The latest technology, applications and current trends in hygienic film", dwelling in detail on the current trends in hygienic film and the consumer revolution taking place in India concerning the same product.
Mr. Davidović pointed out the latest technological development reached by COLINES® in the same technology and also illustrated how innovative our technology is in helping to reduce wastages as well as conserve energy and provide better quality characteristics to the finished product.
He also underlined and remembered that COLINES®, the only one among all manufacturers, engineered and sold blown film lines for the production of embossed hygienic film directly in-line.
COLINES® CEO & Partner, Mr. Eraldo Peccetti, our Sales Area Manager for India Mr. Francesco Peccetti and our local organization represented by Mr. Himanshu Engineer and his team also attended the conference.

COLINES®, the only one among all manufacturers, engineered and sold blown film lines for the production of embossed hygienic film directly in-line.

COLINES® NEWS

COLINES® SERVICE IN INDIA, SAUDI ARABIA, ASIA AND TURKEY

COLINES® strengthens the after-sale service in India, Kingdom of Saudi Arabia, Asia and Turkey reconfirming a non-stop assistance to customers. A designated local team of electronic, mechanical and process engineers coordinated by COLINES® After-Sale Service manager Eng. Nicola Lombardini, takes care of assisting customers in the commissioning of the line and in case of quick interventions.

COLINES® HEADQUARTER GROWS LARGER

COLINES® headquarter in Nibbia grows larger. Thanks to a recent buyout of an area equal to 7,000 sqm next to the production site, the overall surface raises over 17,000 sqm. The development area of the HQ in Nibbia, including also B-PACK® amounts to over 30,000 sqm in a single and unique 'extrusion pole' in which it is possible to see an extrusion line from its engineering to its real use 365 days a year, round the clock.

The new area will be destined to the enlargement of the production workshop and will host the new offices assigned to the engineering of our lines.

NEW COO AT COLINES®

Mr. Marco Curioni is the new Chief Operating Officer at COLINES®. Born in 1973 in Milan, after graduating in mechanical engineering, he started his career in the field of machinery for glass processing, gradually taking care of engineering, quality control and production.

In COLINES® Mr. Curioni coordinates all the operative activities of the two factories in Nibbia and Azzate from the order to the after-sale assistance.
Should you be interested in contacting Mr. Curioni, you will find here below his contact details:
Ph. +39 0321 486311
E-mail: info@colines.it

ELAV®

THE WORLD OF AUTOMATION

Our "world of automation" gives several chances to improve the control of your line as much as your business. "World of automation" starts from a basic package to be considered as our entry level product. It can be upgraded to the advanced package that allows several tailor-made customizations in order to follow your business organization and improve the performance of your plant.

Item	Basic Package	Advanced Package
HMI - Friendly Human-machine Interface	■	■
Fast-Adjust	■	■
Live Check	■	■
Easy-Key	■	■
Mailing Facility	■	■
Teleservice	■	■
HMI Supervisor 2	■	■
"End-line" Station		■
LIVE Control		■
Video Service		■
Tablet		■

Basic PACKAGE

Advanced PACKAGE

HMI friendly Human-machine interface

The HMI is composed by:

- An industrial PC with wide memory static HD;
- A 19" colour touch-screen monitor;
- UPS and laser printer.

Our applicative software written on a SCADA Siemens WinnCC-flex environment features:

- Displaying line conditions in synthetic pages dedicated to process monitoring: temperatures, web-tension, web-elongation, pressure, speed;
- Gather set-point and actual values data into a report chart;
- Integrate most of the hard key command;
- Gravimetric station management;
- Store and transfer the process parameters and data by means of recipes. "Teach-in" and download function are provided;
- Generate an historical alarm file;
- Generate a current alarm file;
- Manage the pre-heating function;
- Display power consumption parameters drawn from the mains: actual power both active and reactive, power factor, currents, voltages and energy;
- Displays the historical trends of the main process values.

Fast Adjust

Automatic jog-shuttle system feature that performs the micrometric regulation of production parameters; it combines the immediacy and gradualness of the rotary settings to preciseness by using numeric keypad.

Live Check

It generates intuitive diagnostic images/icons immediately accessible. It guides the operator through the plant in case of line malfunction; the faulty element and its position are displayed for an efficient fault tracing.

Easy Key

New HMI supervisor privilege access system is composed by a personalized magnetic badge containing the access code.

- Univocal code guarantees safety;
- Fast access to the line control and supervision;
- Never forget password and never diffuse password.

Mailing facility

It provides line status email reporting directly on your Smartphone. Be always informed about your line production progress or about a line stop or slow down.
It means "immediate events notification", thus "your immediate workability".

Teleservice

Internet-based remote assistance interface. It allows us to assist you from our factory and reach each component on the plant. This is the most efficient "quick problem solving tools" inasmuch as we can "see" your line exactly as if we'd be "on-site".
The service requires an internet line under a static IP public address and it is free of charge along the guarantee period.
Teleservice can be implemented by "Video-service".

HMI Supervisor 2

It duplicates the reliability of your main HMI against monitor or pc faults.
It consists of a duplication of the main HMI PC on the winder operator panel.
Both the PC HMI software can be switched either to "winder HMI", either to "line HMI" functions as to eliminate the consequences of a PC fault event.
It is a standard equipment for ALLROLLEX® plants.

"End-line" station

It is a second PC communicating via Wi-Fi with the line control system. The "end-line" station is a metallic box on which industrial PC, UPS, printer, Wi-Fi device, mouse and keyboard are set, configured and connected.
The box can be placed at the end of the line as to be easily accessed by the operator.
The office station is a desktop PC to be placed in an office and machine connected via Wi-Fi or Ethernet cable.

LIVE Control

Multitasking handling system, it enables time domain line monitoring by storing the production performances data in a dynamic database.
LIVE collects in a database all the sensitive parameters for production and process analysis:

- Power and material consumption;
- Production set and actual values;
- Working time and date;
- Product structure.

Database runs on the most diffused tools, letting you filter data either by pre-configured query (by product characteristics, by production lot, by time period), either by "custom-made" query.
LIVE is an efficient tool for improving cost analysis, monitoring line productivity as much as the scraps.
LIVE guarantee product quality as well as product traceability.
It can be implemented with barcode, QR printer or other product identification devices.
Requires end-line station or office station.

Video Service

It is a logical completion of the devices deputed to remote assistance. It consists of an hand Wi-Fi camera that shows at our technicians the details of your line as to allow us to assist your technicians in real time exactly as to be "on site".
Requires end-line station or office station.

Tablet

Connect the "end-line" station directly to your tablet, iPad or Android. With the machine interface streamed to your personal device, you will always be able to stand "beside" your line operator: it doesn't matter where you are around the world because you only need an internet connection to control your plant.
It is an application implemented by an HMI software license requires end-line station or office station.

High **speed** & real **money saving**

Visit us at K2013, stand 16 A39

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ALLrollEX®

www.colines.it

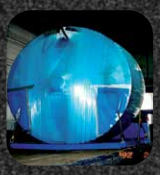
Allrollex® rolls now all-in-one.

Covered by 5 patents.

Applications

Manual

Automatic



Industrial

Cling Food Grade (PVC free)

The revolutionary system for producing stretch film with the lowest cost/benefit ratio of the investment.

What does integrated solution mean?

- *Extrusion*
- *Slitting*
- *Winding*

Why an integrated solution?

- *Money saving*
- *Time and space saving*
- *Productivity increasing*

Subformat production range

1000 mm	450 mm	150 mm
750 mm	300 mm	125 mm
500 mm	250 mm	100 mm

on 2" or 3" cores/format and subformat productions for stretch and cling grade.

The development of high output stretch film lines by COLINES® goes on keeping the maximum performances/price ratio and the lowest energy consumption on the market.
In particular, the new ALLrollEX® line represents the beginning of a new generation of modular lines that can satisfy the requirements of all customers, since they offer web widths ranging from the well-known 1000 mm (with more than 50 lines sold all over the world) to the smart-in-design 4500 mm. A particular emphasis was put on the winding quality of very thin films (down to 6 µm): according to the latest market trends, this is without any doubt the future challenge that COLINES® is ready to take on and win.
The ALLrollEX® line will be in function at our stand 16A39: come to visit us and enjoy this great opportunity!

New modular machine configuration

Hand-machine-jumbo

Best energy saving

COLINES®

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