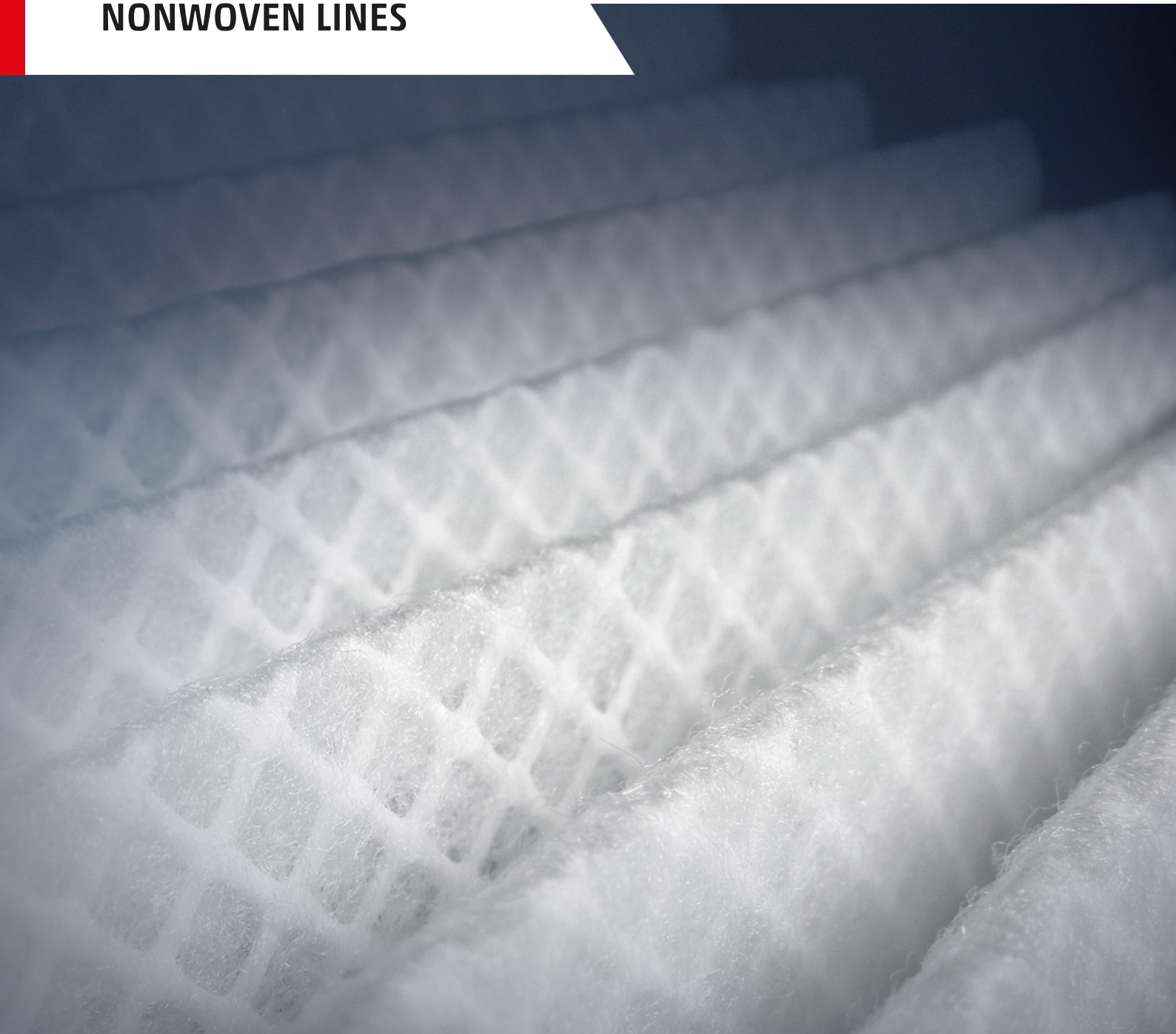


OVERVIEW



MARZOLI NONWOVENS
CUSTOMIZED
NONWOVEN LINES



HIGH QUALITY WEBS

Highest standards for opening
cleaning & carding



In some segments of the nonwoven sector the preparation of a high quality web has become of the utmost importance. The market requires that products at direct contact with the consumer's skin show high standards of softness, tenacity, resistance to pilling. On the other hand these products must also be economic and therefore use the minimum amount of fiber. These market requests have fostered nonwoven producers to increasingly use fibers of finer deniers and natural fibers such as cotton.

Although the products that can be obtained showcase extraordinary properties, the use of these fibers entail challenges on the nonwoven producers that process them. First of all, these fibers need to be finely opened to guarantee a fine carding and consequently the production of an even web, a feature that becomes

more important the lighter the web is. At the same time, Neps, dust and any other impurity (e.g. trash for natural fibers) needs to be removed.

The machines that reach the highest standards for opening, cleaning and carding of the fiber are the ones used in the short-staple fiber spinning process. Truth being told, the adoption of this machinery is not new to the nonwoven industry. Probably the adoption of machinery employed in spinning preparation in the nonwoven industry is just as old as the industry itself. But it is the great growth in flat cards productivity and the outstanding growth in complimentary technologies, such as high-performance cross lappers, that make this technology ideal for some nonwoven producers willing to differentiate along the lines of quality and flexibility.

MARZOLI - ONE PARTNER & THE COMPETENCE OF MANY

KEY POINTS

- ONE PARTNER FOR UNMATCHED QUALITY & FLEXIBILITY
- COMPETENCE OF MARZOLI & PARTNERS



Marzoli, one of the European leaders of spinning technology for short-staple fibers, through its competence in fiber preparation, strategic partnerships with some of the best European producers of downstream machines and through the experience acquired with some pioneering installations, is today capable of offering customized nonwoven lines.

Relying on Marzoli means:

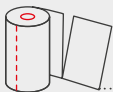
- To rely on just one partner for the supply of a line of unmatched quality and flexibility
- To rely on the competence and technical skills of Marzoli and of its partners for the installation of the best technology and for its synchronization.



WIPES



MEDICAL AND SURGICAL PRODUCTS



DISPOSABLE PRODUCTS



FIBER PREPARATION

Blow room & carding machines for higher quality and flexibility in nonwovens

KEY POINTS

- BLOW ROOM MACHINERY AND FLAT CARDS FOR HIGHER QUALITY ON CARDED AND AIR LAID WEBS
- MACHINES DESIGNED TO BOOST PRODUCTIVITY, QUALITY AND REDUCE WASTE



Industry experts argue that blow room and carding machinery used in the spinning preparation process entail substantial advantages for nonwoven producers working in the hygiene and medical sectors.

Blow room and carding machines allow to:

- Dedust the fiber through mote knives and cage condensers.
- Clean the fiber from impurities that may be contained, especially in natural fibers.
- Grant perfect blending of the raw material which ensures homogeneous properties of the end product.
- Progressively and finely open the raw material up to the fiber stage for a perfectly even card web.

The substantial increase in quality results has fostered nonwoven producers working in the hygiene and medical sector to adopt these machines even with air-laying technology.

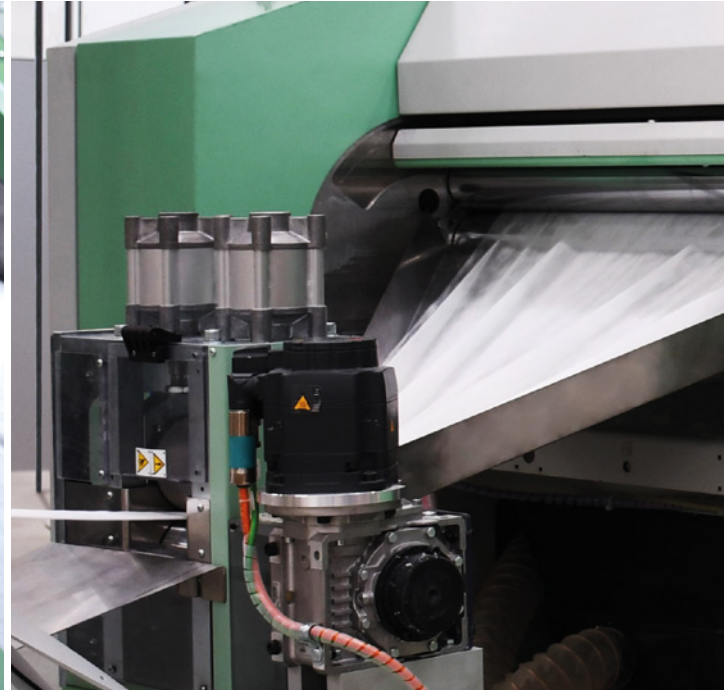
The intensive opening action grants a better distribution of the fiber within the feed chute of the air laying machine and consequently a perfectly even web.

Blow room machines and flat cards have been installed also in combination with cross lappers on mechanical bonding and spunlace lines. The quality and flexibility that these lines have reached remains unmatched.

MARZOLI C702 NW

KEY POINTS

- HIGH PRODUCTION CARD WITH WORKING WIDTH OF 1,500 mm
- STRATEGIC PARTNERSHIPS FOR TURNKEY PLANTS OF HYGIENE AND MEDICAL PRODUCTS



A clear trend in the nonwoven sector is the rise of web quality: nonwoven manufacturers are increasingly required to produce webs with homogeneously-distributed fibers. The machine that entails the highest quality results on nonwoven webs still remains the card with revolving flats.

Marzoli C702 NW is a high production card with a working width of 1,500 mm. The large pre and post carding areas can be equipped with a high number of mote knives and stationary carding flats. 32 revolving flats in working position in the main

carding area guarantee the best carding performance. Marzoli C702 NW can be equipped with a web delivery module with purposely designed applications so that the desired product can be produced in an efficient and automated way. The flexibility of this machine is demonstrated through several options which lead to different configurations at the output of the card.

The customer can choose different card exits based on the production parameters and on the output format (sliver, web, strips, exc.).

NONWOVEN SPECIAL OUTPUT

WEB CONDENSER

One of the main request in nonwoven production plants is to manage heavier webs. Marzoli C702 NW Card can be equipped with web condenser unit that allow to reach increase the standard web weight up to 60 gsm (depending on the type of fiber being processed). Differently from standard C702 NW web output, in this detaching unit 2 cylinders after the doffer give to the web the desired weight thanks to special wires and their fully modulated speed.

The cylinders are driven by independent motors in order to manage their own drafting parameters. 2 further detaching cylinders deliver the web to the metal chute. The application (with its fairing) is retrofittable on existing cards and the overall machine length will increase by only 100 mm respect on the web output exit.

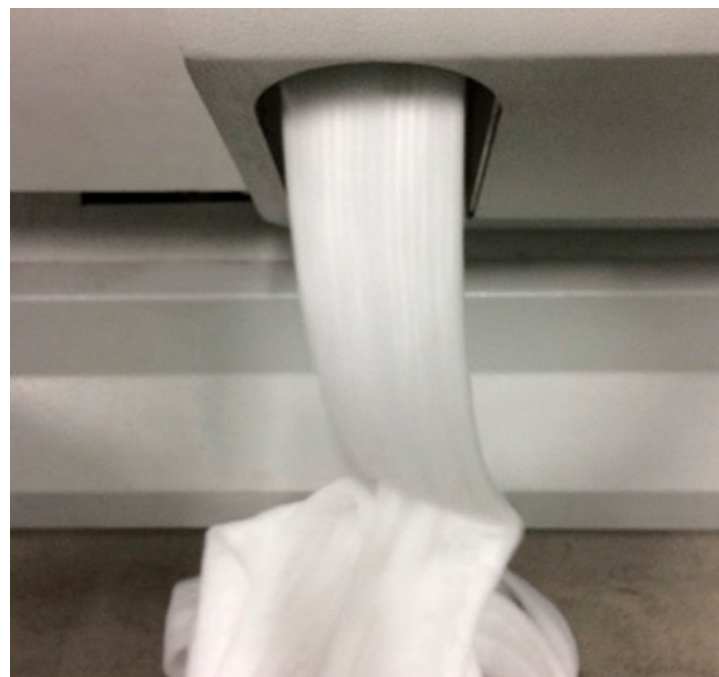
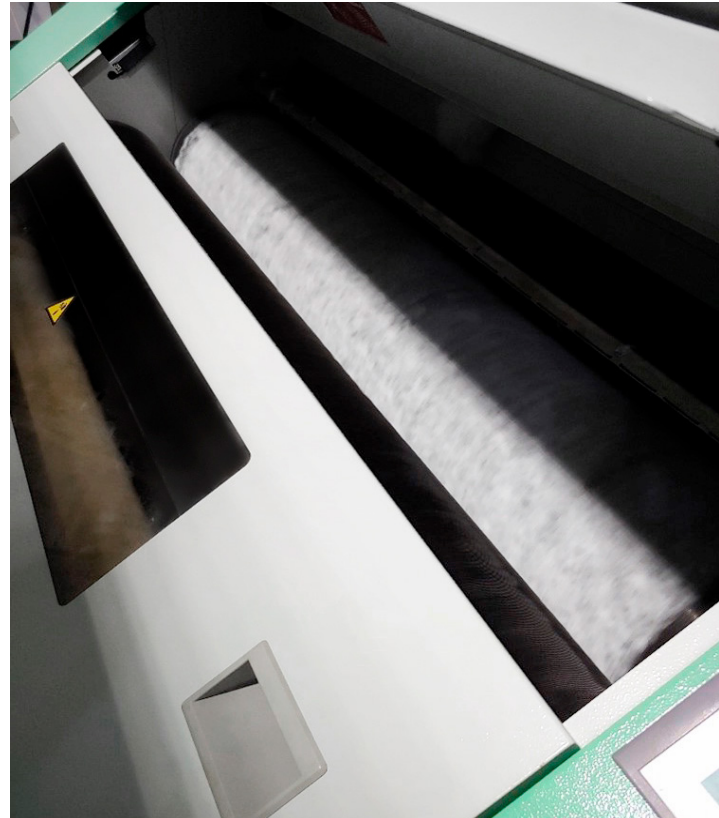
STRIPS OUTPUT

Several applications have been studied for nonwovens and medical sectors. One of these solutions leads to a production, instead of a standard sliver, of a cotton strip which width extends from 60 to 90 mm and can serve production lines which works from 120 to 250 gsm.

This specific output can be extracted directly from a special calender unit and this output constitutes the semi-finished product in most of medical production lines.

KEY POINTS

- HEAVIER WEIGHT UP TO 60 gsm
- FULLY MODULATED CYLINDERS SPEED
- INDEPENDENT CYLINDERS DRAFTS



MARZOLI LINES

HYGIENE AND MEDICAL

Marzoli has developed strategic partnerships with selected partners in order to offer a turnkey plant for the production and packaging of hygiene and medical products. Marzoli partners offer cross lappers, calenders, automated transport systems and other specific machines for the production of:

- **Standard and perforated zig-zag.** These machines, directly connected with Marzoli cards, cut the cotton-wool band, earlier folded and prepared at the desired width.
- **Absorbent cotton rolls.** These machines, directly connected with Marzoli cards, produce rolls from 25 to 1,000 g with or without interleaving paper. They can also be equipped with a special external group to make cotton rolls of precut material so that single pads may be stripped. Embossing units are also available.



- **Cotton pads with standard or special shapes, e.g. rectangular or squared,** to minimize production waste. These machines can cut at the same time 3, 4 or 5 cotton pads.
- **Cotton balls.** These machines can be fed by cans or be directly connected to the card, offering different levels of automation and productivity.

SPUNLACE

Drawing on a full Marzoli line on spunlace projects entails several advantages:

- Unmatched quality, in terms of evenness and cleanliness from any kind of impurity with any kind of fiber.
- High isotropy: MD/CD close to 1:1 thanks to the implementation of state-of-the-art cross lappers.
- High productivity through a card web width of 1,450 mm, high performance cross lappers and drafters especially on light webs.
- Possibility to produce stratified webs. The arrangement of 3 or more cards and the possibility to feed them with separate feed lines allows to process different blends on each card. This allows to process one type of fiber for the external layers, the ones at contact with human skin, and another type of fiber for the inner layers.
- Perfect synchronization of the entire line and easy management through a monitor displaying all relevant production parameters.



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