NSC Nonwoven supplies ProDyn® line for Ahlstrom's new unit

France-based NSC Nonwoven has delivered and installed a ProDyn® needling line for Finland-based nonwovens and speciality papers manufacturer Ahlstrom Corp's new plant in Brignoud, France. The new, ultramodern line — designed for the Brignoud plant — is equipped with state-of-the-art Laroche opening-blending technology, the new Thibeau Excelle® card and a Dynamic Asselin crosslapper & drafter that feeds a set of Asselin A50R needlelooms; and is managed and controlled by an Asselin-Thibeau supervision system.

ProDyn® and Ouat!sys®

NSC's customers, world-leading companies, have expressed such a strong preference for ProDyn® technology over that of our competitors is proof of the great interest in NSC nonwoven's innovation. In Germany and the United States, we have obtained several "repeat" orders. Of our Customers installing the largest number of ProDyn®, German companies are in first and second place, followed by US companies in third and fourth positions.

The ProDyn® is particularly profitable to manufacturers of geo-textiles, health & hygiene products, clothing & fashion, wipes, synthetic leather, coating substrates, floor coverings and carpet backing, stuffing, bedding - and obviously, for many applications in the automotive industry. NSC's customers confirm that ProDyn® economises – at least -3% of the total weight of fibres used every year. Some plants even talk of savings in excess of 5% of fibre weight. To these primary savings should be added the secondary gains which may be achieved during coating, forming and finishing operations. For example, use of a smaller quantity of latex or enhanced productivity - thanks to reduced drying times.

Unanimously NSC's customers add that they observe an undeniable quality advantage in the evenness of the ProDyn® product at the end of the line. Practically, in virtually every case, the coefficient of variation (CV%) read on the NSC nonwoven X-ray scanning gauge is below 1% in MD, and in CD, for products heavier than about 100 gsm - irrespective of the width and speed of line production. This uniformity and flatness are synonymous with the Quality label associated with ProDyn®, but also represent further considerable benefits our customers, who find it a source of major savings during coating, forming and finishing operations.

NSC nonwoven lines are supervised by the VigiSame system. All line adjustments are managed on site using production management tools. These provide all the real time, quality control data which their customers may require. The productivity of nonwoven lines remains – together with the products they manufacture - a major preoccupation for our Customers. NSC nonwoven has made two contributions in the domain of increased productivity. First in carding, and second, in production line speeds. Carding has been the subject of some radical research, with a basic calling into question of the fundamental design of carding machines.
After three years' engineering design studies and a lot of testing, NSC nonwoven today offers a new generation of carding machines called Excelle®. Excelle® is not the subject of this article but we would simply state that the first three customers who tested Excelle®, ordered it - because of its obvious design advantage for the same investment.

The other productivity improvement, another innovation patented by NSC nonwoven, affects the productivity of lines using crosslappers including intermediate lappers and the system of needlepunched mechanical, hydroentanglement, thermal or chemical bonding.

For many years NSC nonwoven has delivered high speed Profile® and Dynamic® crosslappers, with web input speeds in excess of 150 m/min. But there is no point in going fast unless you can control the well-known problems caused by removal of the air trapped in the fibres of the card web. Although for some specific conditions and for specific products such as needlepunched floor coverings made with coarse denier fibres, or PES wadding below 6.6 dtex, the industrial input speed of the crosslappers borders on 135 m/min., this is not true for all fibres and for all products.

In almost all cases, air disturbs movement of the web as it enters the crosslapper and makes it uneven. This is known as the trapped air problem, and generates irredeemable defects in the product output by the crosslapper at input speeds exceeding 80 – 90 m/min. on fine fibres. To cope with the necessary productivity increase following the widening of bonding machines, it was essential to overcome this limitation. NSC nonwoven has perfected a patented system called Ouat!sys®, which removes the trapped air in the card web and so totally eliminates this trapped air defect. Ouat!sys® is the result of simple technology which does not need any special maintenance. Ouat!sys® can be incorporated in the full range of Profile® and Dynamic® crosslappers and can be retrofitted to most existing machines. ProDyn® and Ouat!sys® together effectively achieve a 25% increase in production with improved evenness - a CV of 0.76 is equivalent to a sigma (•) of 1.52 gsm - compared with 6.4 gsm without ProDyn®.

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