

AN IDEAL COMBINATION: ONQ FORMINGSSENS AND PRINTFORM HR

HIGHER QUALITY PLUS ENERGY SAVINGS

A familiar scenario: moisture fluctuations downstream of the former, and as a result, problems in the press. What is the answer? The folding box board producer Mayr-Melnhof Karton AG (MM) worked with Voith to find the ideal solution for its plant in Neuss, Germany. Two OnQ FormingSens units and four PrintForm HR forming fabrics are now giving improved board quality on the BM 5. In addition, installing these products allowed the required drive output in the forming section to be reduced by 13%. This alone represents a cost saving of 87,000 euros per year.

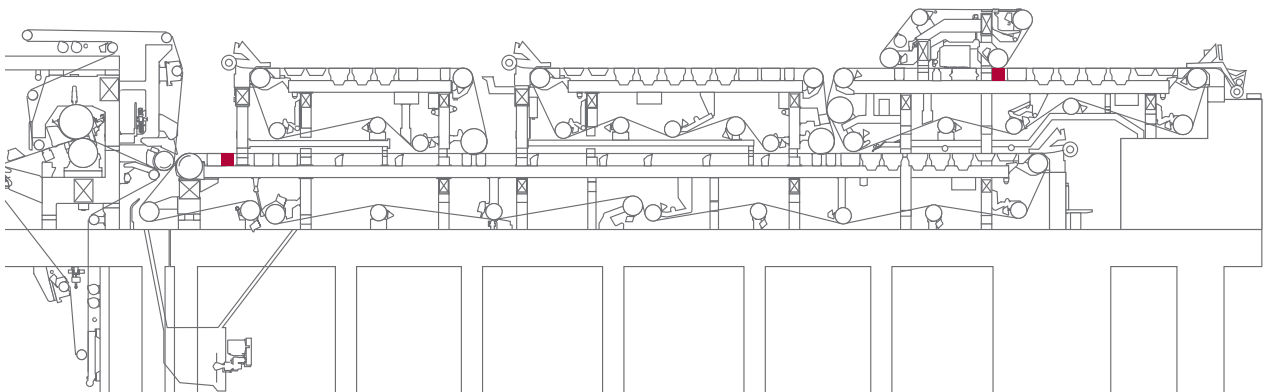
Following a successful startup of the two OnQ FormingSens sensors upstream of the DuoFormer D and suction couch roll, and of the four PrintForm HR forming fabrics, MM and Voith's forming specialists jointly carried out a series of tests, including adjusting the vacuum at various dewatering elements. The aim was to improve board quality and reduce drive power, while maintaining the dry content. The results of all tests were impressive:

- + Output of main drives reduced by 180 kW, equivalent to a cost saving of 87,000 euros/year
- + Dry content downstream of former increased by 1%
- + Formation improved by 7.5%
- + Bursting strength increased by 5%
- + Tensile strength improved by 7% in MD and 2% in CD
- + Reduced fabric wear
- + ROI in less than six months

The tests focused on dewatering of the filler ply and back ply, as this is where the highest absolute water content is introduced to the board. Consequently, these areas have the greatest potential to reduce energy consumption and improve quality. One quality parameter that is particularly significant is board formation. The formation of the filler ply has a decisive impact on the formation of the entire board, so the decision was made to install an

01 Multiply board and packaging machine with two OnQ FormingSens sensors

OnQ FormingSens sensors shown as red squares





“Thanks to the new sensors and forming wires from Voith, we were able to improve our board quality even further and at the same time save costs and energy.”

Dieter Garztecki, Production Manager BM 5 in Neuss, Mayr-Melnhof Karton

OnQ FormingSens there, before entry to the DuoFormer D unit.

In an initial test, the vacuum in the crucial dewatering elements in the back ply was reduced by 15% on average. In the case of the filler ply, the flat suction box was switched off altogether and the vacuum in the OrthoFlow suction box reduced by 50%. Dry content was consistent during this test. The underliner was then included in a second test. In this case the relevant vacuum levels could be reduced by 30% on average with a constant dry content.

Two sensors for optimum results. As every forming wire has different features, repeated resetting is always necessary in order to achieve consistent results. In addition, it takes time to achieve an accurate alignment of all dewatering elements. Thanks to real-time measurement of dry content by the OnQ FormingSens sensor, operating personnel can accurately set and

control the former. A complex forming section with a very large number of dewatering elements always needs at least two sensors to optimize individual dewatering elements and control the entire dewatering performance. OnQ FormingSens has a very compact design, allowing the sensor to be positioned at almost any location in the former.

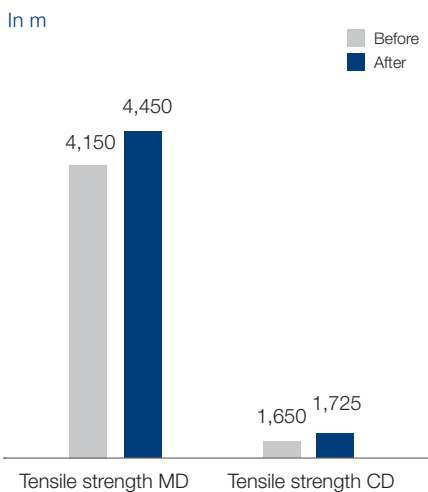
Other applications successfully mastered. At Koehler Kehl GmbH, Germany, OnQ FormingSens was installed downstream of the HiVac, the last dewatering element on the PM 2 thermal paper machine. By reducing the vacuum at a relatively early dewatering element – in this case the wet suction box – the water weight at the end of the former could be reduced. A lower water weight means a higher dry content, and in this case a higher production speed. By reducing the vacuum at the wet

suction box by 20%, the dry content at the end of the former could be increased by 0.4%. This reduced the required drive output and the amount of wear on the forming fabric.

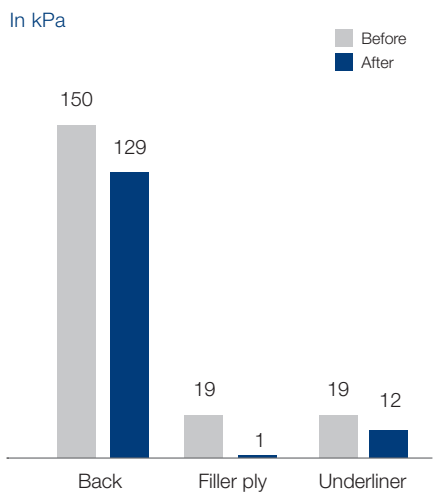
Perfect product combination. By using OnQ FormingSens units and PrintForm HR forming fabrics, Voith was able to offer its clients an ideal solution from a single source. The customers benefitted from having just one point of contact and enjoyed further advantages as a result of Voith’s combined process expertise in clothing and automation:

- + Improved dewatering
- + Less maintenance and wear
- + Improved formation
- + Higher strength qualities
- + Better couching of multi-ply board
- + Reduced power consumption of vacuum pumps and drives
- + Enhanced occupational safety //

02 Tensile strength before and after optimizing vacuum elements



03 Vacuum reduction at various dewatering elements



Contact



Timo Balsler
timo.balsler@voith.com