



## PERMI Application note: **Fabrics, felts & wires** Cost savings for Airlaid nonwoven production



### Case in a nutshell:

#### GRADE:

Airlaid Nonwoven machine fabrics

#### ISSUE:

High consumable costs

#### ROOT CAUSE:

Short life-time of a forming fabric

#### SOLUTION:

PERMI on-line air permeability measurement for fabrics

#### KEY VALUE:

Yearly cost savings estimation ~ 200 000 €

### Problem

We produce and deliver airlaid nonwovens for highly competitive markets, where production costs need to be optimised. Forming fabrics of our machine are the most expensive production consumables and thus the increased life-time of fabrics is always a topic to be researched. As a result of this we can see the wear of our machine fabrics by reduced efficiency and decreased quality of the end product. However, we don't have any process indicator about the degree of wear and thus we cannot optimise the life-time of our machine fabrics. This costs us lots of money!

### Solution

Based on our earlier lab results we knew that the wear is much related to the air permeability of the material. The new fabric has higher air permeability than the used one. The problem is that with lab measurement we see only a very small part of the issue with slow response time. We cannot make any decisions based on that, so we prefer to change wires early or do the measurement directly in the process. So we found the ACA PERMI on-line air permeability analyser and started to measure the air permeability of fabrics directly in the process. First of all, we saw that the correlation between our lab equipment and PERMI was perfect (Figure 1) and then we defined the critical limit for PERMI results (Figure 2) to indicate the change of the fabric. That was really a breakthrough for us to reduce production consumable costs while maintaining good quality!

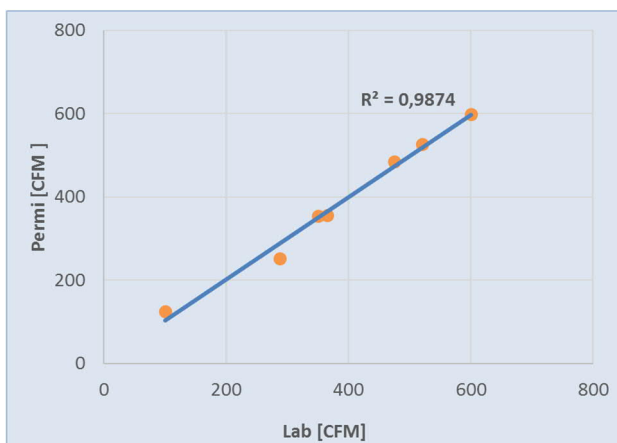


Figure 1 The correlation between PERMI and Lab measurements



Figure 2: Defining critical limit (orange line) based on PERMI results

### Learning

Machine clothing is not only representing a high proportion of our consumable costs of production, but is also responsible for the final quality of the end product. Uneven forming caused by used wire can lead to significant quality defects. The PERMI on-line air permeability measurement provided by ACA is a great new innovation to measure the air permeability of the clothing during the production. The outcome is a very practical tool to monitor the life-time of the clothing and save lots of money while increasing the quality.

### Comment from the mill

"The payback of our PERMI investment was 3-4 months"