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ISSUE 4/2014

World Cup tipping contest

Gold bars awarded

Effective troubleshooting

"Odin" on the track of mass variations

How satisfied are you with Heimbach?

Interview with Rob Howarth on the Heimbach customer survey

"Plant for the Planet"

Heimbach donates 500 trees

Efficiency in the drying section

Heimbach TASK shows savings potential

The service provided by Heimbach TASK generates significant benefits for our customers: in the case in question we show how the proper analysis of hood ventilation combined with perfectly matched optimisation measures avoids disturbances in the drying section and saves resources.

Read more on page 08!

A warm welcome dear readers,

We have gone through exciting times this summer. Germany won the 2014 World Cup and the Heimbach **Tipping Contest** was thrilling right up to the very end – read more about the winners and the prizes.

As we are sure you remember, we asked you for your opinion on Heimbach products and services a few weeks ago. Rob Howarth, Vice President Quality PMC, summarises the main findings of our **customer satisfaction survey**. To mention one important outcome in advance: thanks to your participation **500 new trees** will be planted worldwide!

You will also learn about **potential savings in the dryer section** and see how our experts work with you to determine sources of error. And how mass variations in the sheet can be detected at an early stage with the "Odin" portable measuring device enabling financial loss to be averted – stay tuned!

I sincerely hope that you enjoy this edition.

Managing Director

Effective troubleshooting
Determining mass variations with the "Odin" portable measuring device

Your benefits at a glance:

- Precise error analysis, flexible and efficient,
- quick results, saves time and costs,
- trouble from unusual causes is also detected,
- prevention: identify weak links in the chain **before** they cause damage.

"Odin" doesn't do anything divine, but the portable measuring device used by Heimbach is nevertheless a small marvel of engineering. It is used to locate periodic MD mass variations in the sheet. Heimbach TASK technicians use "Odin" to flexibly and efficiently identify sources of problems and ensure a smooth production process.

Every paper maker has certainly experienced the following: Undesirable variations occur in the paper (mass variations in the sheet or "barring"), but they are unable to determine the root cause. The only certainty is that the quality of the final product suffers – often considerably. This is at the same time annoying and expensive – mainly because it demands the performance of a complex troubleshooting process. In order to investigate the cause of variations, specific measuring and control systems are installed on most paper machines. Those systems detect mass variations across the sheet quite reliably. However, their disadvantage is that they generally only detect values in the production process that change relatively slowly. Rapid and dynamic changes, particularly in the machine running direction (periodic longitudinal variations) are, however, only rarely detected by these systems.

The "Odin" portable measuring fork is able to detect the root cause of vibrations.

On the track of vibrations

One remedy to this problem is the **"Odin" portable measuring device** used by Heimbach TASK service experts. In contrast to static measuring systems this portable measuring device can detect and display very dynamic periodic longitudinal mass variations. Thus, the **root cause of a problem can be accurately located**. The investigation always starts at the end of the paper machine as all mass variations in the sheet are clearly visible before the reel-up irrespective of their cause. In the course of the investigation, Heimbach TASK experts carry out measurements with the "Odin" measuring fork moving backwards step by step along the machine towards the headbox. This allows them to **precisely localise the source of vibrations** and their root cause by evaluating frequency analysis. Mass variations within a frequency range of 0.3 to 3000 Hz can be determined.

Prevention is better than cure

Disturbances such as vibrations can often be traced back to rotating or revolving parts that are malfunctioning. However, the portable measuring fork also often identifies unusual suspects as "troublemakers" – elements that are working but are identified as a probable **source of disturbances in the near future**. "Odin" enables **early detection** of these potential faulty elements so that they can be replaced before any damage occurs. This saves time, effort and expense and actively helps to **avert potential financial loss**.

Make the most of your advantage

Conclusion: A high-quality mobile measuring device can significantly help to quickly and effectively recognise "insidious" causes of mass variations in the sheet. Would you like to optimise your production as well? Please feel free to contact us! Heimbach TASK expert Ralf Schuster will be delighted to help: ralf.schuster@heimbach.com

INFOBOX

Technical background and case studies

A TASK Service article with detailed technical information and case studies is available for download at http://www.heimbach.com/en/paper-machine-clothing/publications/miscellaneous.html. Title: "Determination of periodic MD mass variations in the paper sheet."

Vice President Quality Paper Machine Clothing at Heimbach.

Completing the jigsaw – piece by piece

Interview with Rob Howarth on the subject of Heimbach's recent, bi-annual customer survey

Your honest opinion really matters! This is the only way for us to truly find out what's important to you and how satisfied you are with our performance. We can then better identify the areas in which we need to focus in order to improve your satisfaction. Heimbach has recently completed our 2014 customer survey in collaboration with a UK based, customer experience consultant. Rob Howarth, Vice President Quality – PMC and responsible for the survey, answered our questions on the results.

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Mr Howarth, you have carried out a comprehensive customer survey, working together with the leading, UK based, customer experience consultant. What was the aim of the survey?

Rob Howarth

We perform a similar exercise **every two years**. Our objective is to determine what's important to our customers, what matters most. We want to see things 'through the lens of the customer' not the 'lens of Heimbach'. We can then work towards implementing strategies and actions that best satisfy these needs. What are the most important criteria in the eyes of our customers in order to be seen as a desirable partner in the supply of PMC? Is our performance in important areas such as **product quality, service, pricing** or approach when dealing with problems really satisfactory? Last but not least, what are our customers missing, and where do we have to improve? Although we constantly ask these questions in our daily work with our customers, we also need to

obtain a higher level, broader view. Only then can we draw the most effective conclusions on where we need to best focus our attentions.

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What are the most important results of this survey?

Rob Howarth

High product quality and performance, **speedy and effective problem solving** and complaint handling, excellent service and keeping our delivery promises are the most important elements for our customers (see Figure 1).

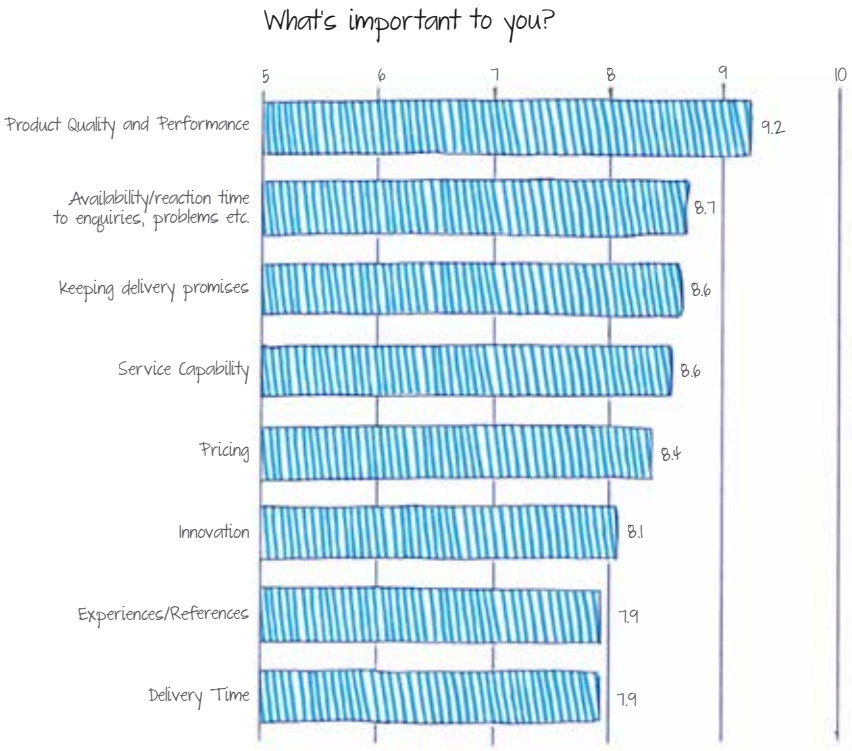

Fig. 1: Customers were asked to rate the personal level of significance of several different criteria such as product quality and performance, speedy and effective problem solving and keeping delivery promises on a scale of 1 to 10.

And it seems as though in these key areas we are well positioned. The capability to provide high level, **machine or process related service**, such as is offered by our **TASK Department**, was also highlighted as being of major importance (see Figure 2).

Numerous customers also underlined that they valued the long-lasting and trustworthy relationships they had with Heimbach. Long standing co-operation built over many years and based around effective communication and partnerships.

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Is there any need to improve? Which points were mentioned critically?

Rob Howarth

Well of course, nobody's perfect!
As part of the survey, not only did we ask our customers to rate us on scales of 1-10 but we also offered them an open opportunity to tell us of specific examples where they had had negative experiences. The feedback was very interesting. For example, comments with regards to packaging – 'More assistance in improving packaging to minimise waste and to help the fitting process' and 'the wrong type of seaming aid on a dryer fabric' make us even more aware of specific customer issues that need to be addressed. Furthermore, feedback with regards to **'greater flexibility and a shorter reaction time'** also featured. You can be sure that we take these comments extremely seriously. We need and use this kind of criticism as a fundamental part of our **continual improvement process**.

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How representative is the survey? Are the results significant?

Rob Howarth

We received close to 300 responses, from across Europe, which is a significant number. In the field of market research it is statistically accepted that a response of 200 or more is sufficient to provide a reliable and meaningful sample, so we are very comfortable that the data we received gives us **a clear picture**. A huge **'thank-you'** at this point to all our customers who participated and, thereby, automatically supported the environmental initiative "Plant for the Planet".

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Are there any other interesting findings?

Rob Howarth

There are! One of the areas that our customers told us was extremely important to them was problem handling so we measu-

"Good products, coming along with competence, honesty and reliable service."

red their overall satisfaction levels along a 'customer journey', a journey where they had experienced a problem with Heimbach during the last two years. The results were 'eye opening'! They told us that if they were very satisfied with the way we handled the problem, their **overall satisfaction** levels towards us were, in the end, much higher than if they'd not had the problem in the first place.So what does that mean? It means if a customer has a problem but we solve it quickly, effectively and **exceed their expectations** we can actually make them even more satisfied towards us than they were before. For this reason, of course, we view every problem as an opportunity.

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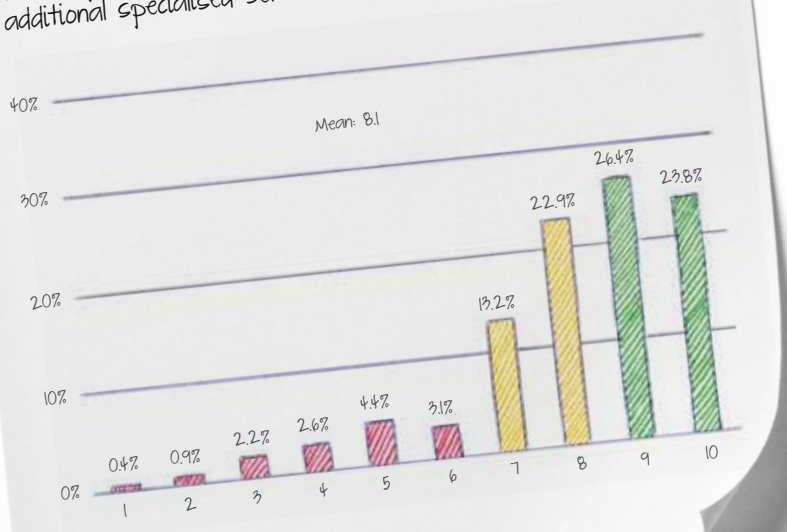
So what happens now?

Rob Howarth

As I stated before, we take the results of the survey extremely seriously. Taking into account already existing business strategies we will now compile an action plan of activities which will allow us to address the key area's identified by our customers. After all, in the end the most important thing is giving our customers what matters most to them. We will perform another survey in two years and benchmark ourselves against this one. With this in mind, clearly, if we want to achieve a positive impact from our actions, we have to act swiftly and effectively. Only then can we ensure we not only meet our customers' demands but clearly exceed them. Our goal is to have highly satisfied customers over many years. Only then will they remain loyal to Heimbach. Watch this space!

"All employees have a high degree of corporate loyalty. This is reflected in the products."

How important is it for you that Heimbach offers additional specialised service and measurements (TASK)?



1 (not at all important) – 10 (extremely important)

Fig. 2

Plant for the Planet
Planting trees the easy way!

Whether for the home or office - whether hygiene products, packaging or printing papers; paper products are an indispensable part of our lives. However, the paper industry is very energy intensive. This means that it is essential to be actively engaged in sustainability projects and climate protection.

By participating in our survey you have not only provided us with valuable information on how we can perform even better, at the same time you have made a positive contribution to the environment. For each questionnaire completed and returned Heimbach made a donation to the "Plant for the Planet" organisation. As a result of this campaign we received a total of 300 responses. This means that **500 new trees** will be planted and contribute to improving the climate.

What is "Plant for the Planet"?
In 2007, 9-year-old Felix Finkbeiner from the Starnberg area (near Munich) wrote a presentation on climate change and decided to take a proactive role. He named the initiative "Plant for the Planet". Today with more than 100,000 members across the globe the objective of the pupils' initiative is to raise awareness of global justice and climate change. Through self-organised tree planting activities the initiative is actively contributing to protect the climate. This deserves a big thumbs up in our opinion. More info at: **www.plant-for-the-planet.org.**

Source: Plant for the Planet.


Source: Plant for the Planet.


URKUNDE

STOP TALKING
START PLANTING

Heimbach GmbH & Co.KG
hat im Rahmen der Schülerinitiative Plant-for-the-Planet
500 Bäume
gespendet.

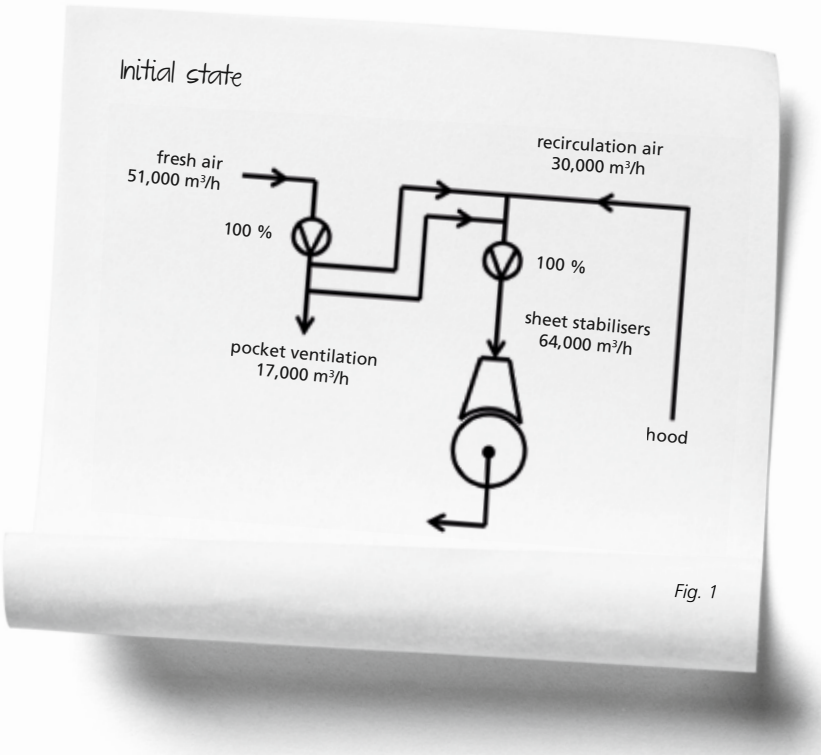
Felix


Source: dpa, 24.04.2009.

Heimbach employees performing measurements on the dryer section.

"Breaks in the dryers from edge cracks or sheet fluttering in many cases can be avoided by conducting dryer measurements, and the regular preventive inspection of ventilation systems by TASK using the appropriate portable measuring device can prevent damage and energy loss."

More than just "hot air"
Heimbach TASK tracks down savings potential in dryer section



First measurement, initial state: Most of the incoming fresh air passes through sheet stabilisers and is not available for pocket ventilation.

Even small improvements in the paper machine often bring significant savings. A recent Heimbach TASK case shows how our experts can help when the focus is on productivity, machine efficiency and resource conservation. In this particular case attention is paid to the hood ventilation in the dryer section; the section of the paper machine that is frequently but mistakenly "neglected".

Approximately **65 % of the energy** in the paper machine is consumed in the dryer section. Reason enough to take a closer look and uncover potential savings. In the case in question the TASK team was called by a customer who was experiencing problems with sheet edge lifting in the dryer section. "We conducted measurements throughout

the entire dryer section and the hood ventilation and analysed the results, from which initial changes were derived and implemented. This brought the customer **immediate energy savings**" said Thomas Fischer, Head of TASK, describing the process.

Joining forces to reach the target

The machine supplier was also brought on board to check the settings on the sheet stabilisers. "As usual our experts worked in close cooperation with the supplier for the good of the customer by investigating possible causes" said Thomas Fischer. These investigations did not impair the normal operation of the paper machine producing newsprint at 1,600 m/min.

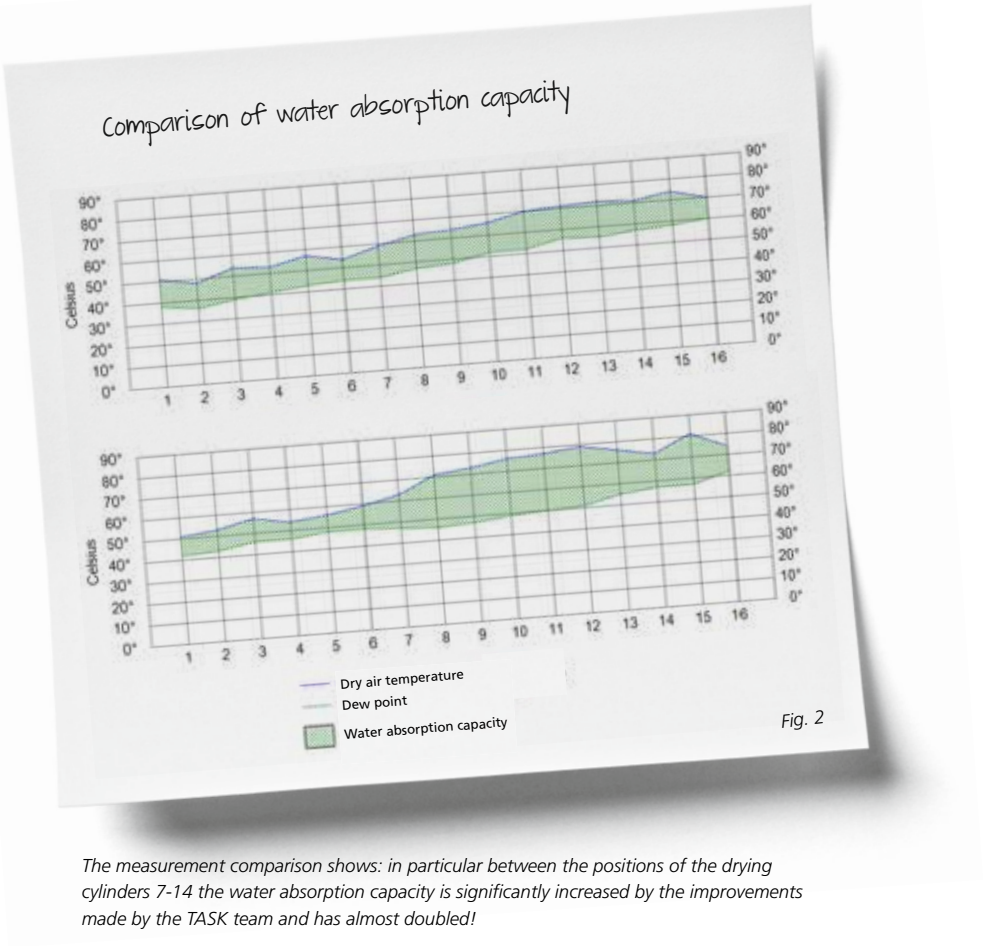


Fig. 2

The measurement comparison shows: in particular between the positions of the drying cylinders 7-14 the water absorption capacity is significantly increased by the improvements made by the TASK team and has almost doubled!

INFOBOX

Pocket ventilation conditions

The temperature difference between the dry air and the dew point is a measure of the ability of the air in the pockets to absorb water. The measurement of the pocket air condition is taken with the hood closed in order to exclude any influence from the indoor climatic conditions. The dew point is determined from the dry and moist air temperature. The resulting measurements diagram (see Figure 2) shows the dry air temperature and the dew point, the difference between the dry air temperature and the dew point temperature is shown hatched within the diagrams. The greater this difference is, the higher the water absorption capacity of the air and accordingly the more favourable the conditions in the pocket.

The following investigations were performed:

- Complete analysis of the drying section (Heimbach TASK)
- Measurement of the supply, circulation and exhaust air flows of the hood (Heimbach TASK)
- Creation of a hood balance (Heimbach TASK)
- Monitoring and reviewing of the sheet stabilisers (machine supplier)

The general situation in the dryer section, based on the water content of the pocket air, (see info box) was good, but the measurements showed the following shortcomings in detail:

- Suboptimal ventilation of the pockets, almost all of the fresh air supply is used to stabilise the sheet and is NOT available as pocket ventilation and therefore for the removal of air laden with water from the pockets was too low. High humidity means low drying under these conditions.
- The channelling structure for different air flows is much too complicated with unnecessary branches and long air paths (resulting in loss of energy).
- The last door of the dryer section must be left open during production, otherwise droplets form in the hood. This generates an additional volume of exhaust air.
- The setting of many stabilisers in both slalom and conventional dryer groups was incorrect, which was the main cause of edge lifting.

Small measures with a large effect
This initial state (p. 8, Figure 1) led to the following preliminary steps:

- Optimisation of the sheet stabilisers for stabilisation rather than for ventilation **eliminates sheet edge lifting!**
- Upgrade of the sheet stabilisers leads to same vacuum with less air and consequently to reduced fan speed and direct energy saving!
- Modification to the channel system by closing off two fresh air channels: In this way stabilisers work with 100% recirculated air instead of a mixture of fresh and recirculated air (see implementation state 2 below). The fresh air saved is used for pocket ventilation which **significantly increases the water absorption capacity** (see Figure 3 and 4).

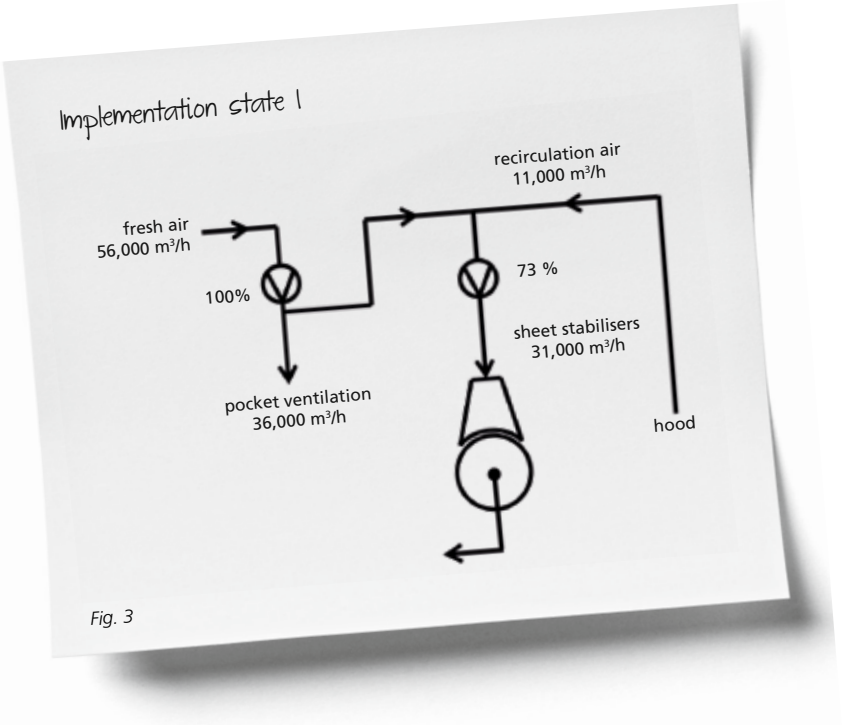


Fig. 3

Second measurement: After implementation of initial measures – stabiliser upgrade and removal of one channel – the volume of fresh air available for pocket ventilation has already doubled with the same total volume of fresh air.

These three measures, implemented during planned downtime, succeeded in reducing the air consumption of the stabilisers and increasing the air available for pocket ventilation. "The customer is saving around **50 000 €/year** by the reduction in the speed of the fan alone" said Thomas Fischer taking stock. "Greater sales profits through increased production speed are not included in this figure. The **early involvement of TASK** not only serves to prevent many disturbances in advance, rather the ideas that our experts bring help to make **real cost savings**".

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Publisher
Heimbach GmbH & Co. KG
52348 Düren
Germany
Phone: +49 (0) 24 21 / 8 02-0
Fax: +49 (0) 24 21 / 8 02-700
email: info@heimbach.com
www.heimbach.com

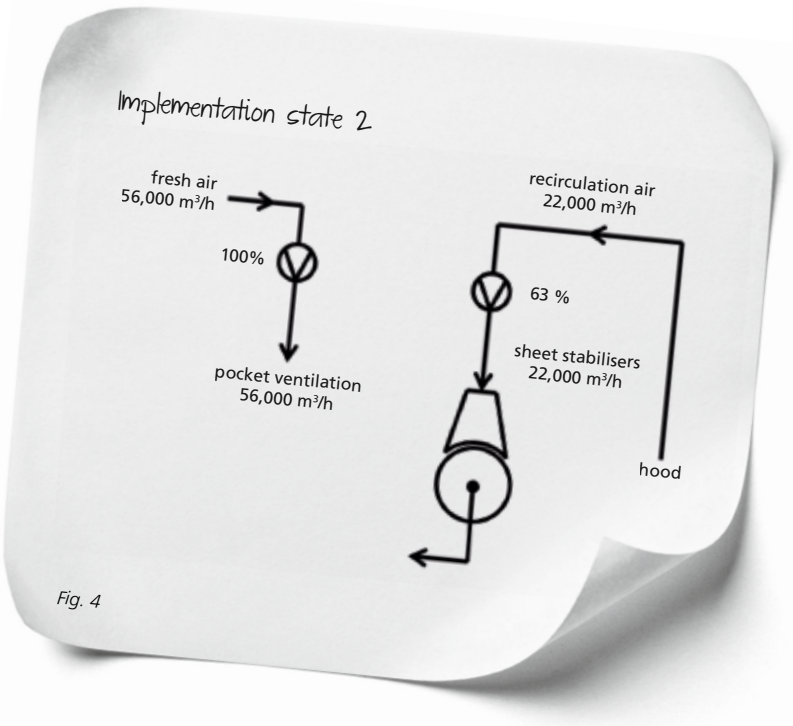

Fig. 4

Third measurement: There are now no open channels, the volume of fresh air fed to the pocket ventilation is optimally increased and water absorption capacity is doubled automatically bringing increased efficiency in the drying process.

Mitsubishi Paper Flensburg stepped up to the winner's podium no less than twice: In the team category, the "MitsuPaperFlens" team was awarded with the first prize, a 10 g gold bar for each team member ...

A 20 g gold bar goes to Andreas Weber, Sappi Alfeld, Germany.

... and Gerdt Hallmann also from Mitsubishi Flensburg, Germany, is ranked second in the individual category.

A Festival of football with many winners

Heimbach's World Cup tipping contest led to some exciting times

That was an exciting summer of football. The World Cup in Brazil had us all captivated. Surprising twists, fantastic fans, controversial refereeing decisions, and great goals. Colourful, diverse and global. And in the end Germany won its fourth star!

The **Heimbach tipping contest** remained exciting right up to the final whistle. With many ups and downs, early favourites and sudden climbers. More than 1,000 participants signed up from around the world. International teams and Heimbach strategists fought for the "Heimbach World Cup title" and delivered a head-to-head race. The race was so close that we had ties for 2nd place in both individual and team categories, with the final places determined by drawing lots: And the winners are ... Andreas Weber of **Sappi Alfeld** and the team MitsuPaperFlens of **Mitsubishi Flensburg** from Germany! Heartfelt congratulations and we already look forward to the next tipping contest for Euro 2016, which will be held in France.

The winners in the individual category at a glance:

- Andreas Weber, Sappi GmbH Alfeld (20 g gold bar)
- Gerdt Hallmann, Mitsubishi HiTec Paper Europe GmbH Flensburg (digital camera)
- Frank Übelacker, Papierfabrik Adolf Jass Schwarza GmbH, Rudolstadt (team jersey)

The team winners:

- MitsuPaperFlens, Mitsubishi HiTec Paper Europe GmbH Flensburg, (10 g gold bar)
- a-team, Kartonfabrik Buchmann GmbH Annweiler (table football)
- Jamaica-Club, Mitsubishi HiTec Paper Europe GmbH Flensburg (team jerseys)

Primoselect

The future for forming fabrics

Primoselect is a unique fabric concept, available for all paper grades:

- **flexible design** to fulfil every requirement,
- **production is optimised** in terms of runability, dryness, energy consumption and efficiency,
- robust machine side for **better stability and longer life**,
- more open structure and low caliper to **improve drainage**,
- **easy to clean**, increased retention, less sheet breaks,
- **less fibre and water carry**.