

# Case Study

## Bauckhof organic mill

Teamwork for sustainable packaging.



## Stand-up paper bags for flours and flakes

**The Demeter farm Bauckhof packs gluten-free flakes and flours in paper bags. With the help of the ROVEMA SBS Twin packaging machine, it is easy to switch between different bag top shapes, packaging materials and format sizes – including block bottom bags.**

A rushing brook. A mill. But it doesn't clatter. According to the company, Bauckhof's new oat mill in Rosche, Lower Saxony, is one of the most modern worldwide. The mill started its production in September 2020, after a 16-month construction period. On seven floors, various raw materials such as oats are turned into fine flakes in several steps. Nothing is being wasted: Flour waste, cleaned seeds or husks, for example, are later processed into animal bedding. In three-shift production, Bauck produces around 160,000 to 170,000 bags of finished product per day.

Bauck now uses paper bags for packaging most of their products. The changeover process began back in 2019. "For a long time, we got a lot of trouble for our plastic packaging. How an organic manufacturer could possibly be responsible," recalls Hannes Öhler, Head of Marketing & Communications at Bauck. In the meantime, however, the fact that the company has switched to a different material has been strongly noted.

 **ROVEMA**

Passion for packaging



# New paths for a sustainable future



Stand-up paper bags with gable top or as a compact block pack.

**“For a long time, we got a lot of trouble for our plastic packaging. How an organic manufacturer could possibly be responsible.”**

“The consumer is now much more satisfied with the paper. At the same time, we are increasingly using alternatives like

mono-PP for those products where plastic has to be used,” says Öhler. Plastic film cannot be

avoided for products like oat pops. Because these absorb moisture and, packed in a paper bag, end up as a big lump on the plate. In such cases, the use of plastic can easily be explained to consumers, says Öhler. Product protection is the number one priority.

But paper packaging also has a disadvantage: it tears more easily than a plastic bag. According to Markus Stahl, Production Manager, Packaging/Mixing at Bauck, the paper bag now works very well for classic transport from the mill via the packaging machine, tray carton, ware-

house and transport to the supermarket. “When it comes to individual shipping units and when the bag is touched, pressed, squeezed several times, then there has to be awareness of the special product characteristics,” according to Stahl’s experience from the past one and a half years.

*“The consumer is now much more satisfied with the paper. At the same time, we are increasingly using alternatives like mono-PP for those products where plastic has to be used.”*

Hannes Öhler,  
Head of Marketing &  
Communications



**The paper bag challenge**

Stahl and his employees use different types of paper bags: Pre-made bags, but also paper bags from the flat film web. The last mentioned are produced with SBS packaging machines from ROVEMA, among others. They can be provided with different head shapes in downstream modules: for example, with gable top or as more compact block-bottom bags.

The pre-made bags have a clear advantage: due to the different composition of the paper and glued areas, they are more stable and sharper in terms of appearance. But they also have a clear disadvantage: "They are a very expensive

alternative," says Stahl. They are expensive to produce and to buy, they also require different machine technology and, according to Stahl, they are no longer that easy to procure on the market. "There are only a few suppliers who can really do this reliably and well," he says.

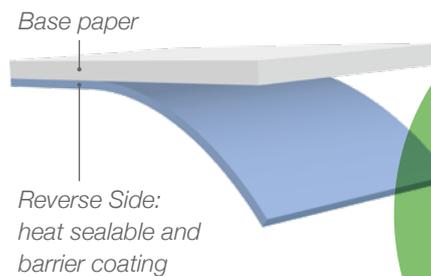
In the first production run with the paper bags from the flat film web with gable top, however, Bauck still had trouble when folding the bag in the machine: tears or holes appeared in various places. Together with ROVEMA and the packaging material supplier Sappi, Stahl managed to get this well under control.



Paper bags formed vertically from the flat film web.

**Paper with integrated barriers and heat-sealable properties**

Sappi Guard Nature 1-MS is a paper based packaging solution with integrated barrier against mineral oil (MOSH/MOAH) and grease and heat sealable properties. This is a sustainable alternative to multi-layer composite packaging. The packaging paper has been designed especially for the food industry, such as pouches and bag applications for dry and slightly oily foods (e.g. pasta, rice, cereals and various powders). The integrated barriers offers excellent food safety.



This makes additional special coatings or laminations superfluous. The paper is recyclable in the paper waste stream.

**Features & Advantages:**

- Integrated paper based solution
- Sustainable barrier against mineral oil (for a minimum of 15 months)
- Heat sealability
- Recyclable in the paper waste stream
- Good printing results and good openability
- Suitable for direct food contact



Implementation time SBS Twin/paper packaging for Bauck.

**ROVEMA Customized Engineering**

At ROVEMA in Fernwald (Germany), new technologies and packaging materials can be tested and optimized in the technical center "Technikum", which has been specially set up for developments and tests and covers an area of over 1,000 m².

In addition, continuous research is carried out here on the mechanical and control implementation of new ideas. This also includes customer-specific performance tests with original product and packing material to validate new packaging tasks before the start of the project.

The machine planning with ROVEMA took about one year. An important part was the test phase in advance with the right machines in an ideal test environment in the ROVEMA technical center. After this very important planning phase, the machine could be installed within one week.

**“Format changes can be carried out in about half an hour and usually take place once a week at the Bauckhof.”**

The packaging machine can be operated via the PC-based P@ck-Control system with touchscreen and integrated help functions. A network connection with the ROVEMA service center is possible as standard, for online diagnosis and maintenance of the control software.

## Block bottom bags as the new standard

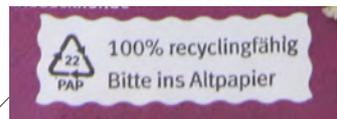
Markus Stahl considers sealing to be the main challenge with paper bags, because the sealing areas must be kept as free of dust as possible for optimum sealed seam quality. “If there is dust in the sealing area, I can’t seal the seam as well as with a plastic film,” Stahl explains. Whereas with plastic you can work well with contact pressures or temperature, with paper you are very limited in this way. So leave more room. All the bags have become a bit longer as a result, says Stahl. “When we talk about marketing, that’s great, but we are also in trouble if the fill level doesn’t match the expectation,” Stahl continues.

*“Even though the external appearance and marketing of the new packaging are great, the filling degree of the bags also had to meet consumer expectations.”*

Markus Stahl,  
Production Manager,  
Packaging/Mixing



And: In some cases, the bags no longer fit properly on the shelf or in the carton. “That’s why we have started to fold the top fin of the flakes. This gives us a compact block-bottom bag,” says the production manager. The paper used, which comes from Sappi, was tested in various grammatures up to “the golden mean”.



100% recyclable. Please dispose into the paper waste.

Filling degree of a block bottom bag with standing fin corresponds to that of the block bottom bag with folded bag top fin. The change to a compact block pack enables transport optimization.



# Successful start of production



Shortly after Easter 2021, production started with block-bottom bags, “completely new for us”, according to Stahl, because something like this has not been available on the market very often so far. A competitor was producing a similar bag shape, but was not folding the top fin all the way through. The technical challenge: a new bag shape requires an adjustment of downstream process steps. However, this is outweighed by the fact that Bauck with the compact block-bottom bags saves transport and storage costs. Bags and cartons become flatter, more units fit on the pallet.

“This is economically and ecologically beneficial,” says Stahl. “And the retailer will get more on the shelf,” Öhler adds. The Sappi paper used has a barrier function to protect the product from mineral oils and grease, and can also be heat-sealed and recycled via the waste paper collection system. In addition to oat flakes, other products such as spelt flakes or 3-, 4- or 6-grain flakes are to be gradually switched to the new packaging.

*Control center of the modern Bauckhof mill in Rosche.*

**“This is completely new for us, because something like this has not been seen on the market so far.”**



**Both paper bags and plastic bags can be produced on the SBS Twin from ROVEMA**, at Bauck in formats from 250 grams to 1-kilogram bags. Before the oat flakes fall into the bags, they are transported directly from the silo to the auger feeder by means of a pipe chain conveyor. According to Stahl, this is a special feature, as flakes are often dosed with multi-head weighers.

*Easier product changeover – both flours and flakes can be dosed safely and gently with the ROVEMA SDH.*



*ROVEMA dosing system SDH – maximum product compaction of free-flowing products.*

# Modular design convinces

The developers at ROVEMA managed to come up with a special design that does not crush the flakes. Bauck wanted only one technology and therefore chose the product-friendly auger dosing system.

two filling tubes for forming, filling and sealing of the bags and then folds the bag shape with a folded fin top. In addition to flakes, it is also suitable for packaging chunky, granulated and powdery products from the food and non-food sectors – such as cereals, pasta, spices or baked goods.



SBS 250 Twin

The SBS Twin block pack machine itself is a combination of a Form Fill and Seal machine with downstream systems for bag head and bag closure design in modular construction. It is equipped with

Stahl and his colleagues have already run 100 paper bags per minute on the SBS Twin, but 90 to 95 are safer, according to the expert. Stahl thinks the machine could run even faster, “but the downstream case packer is no longer fast enough for that,” he smiles.

In the future Bauck wants to make the company CO<sub>2</sub>-neutral. According to Stahl, there is not much left to achieve this goal. In addition, the company plans to further increase its sales growth over the next five years, so production will also have to be ramped up. “There will surely be new machines then, too,” Stahl is pleased to say.

Technical Data	SBS 250 Single	SBS 250 Twin
	1 Form Fill and Seal Machine	2 Form Fill and Seal Machines
<b>Format area</b>	up to 260 mm	up to 260 mm
<b>Output</b>	up to 95 bags/min	up to 160 bags/min
<b>Filling volume</b>	up to 4,000 cm <sup>3</sup>	up to 4,000 cm <sup>3</sup>

*Performance data is dependent on product, packaging material and bag top shapes.*

**Examples Bag Top Shapes:**

- SBS basic styles
- Bag top fin folded and pressed
- Label for reclosure
- Tape for reclosure
- Hot melt glue
- CLIP, also with pendant
- Tin-Tie folded and pressed
- Cap made from cardboard
- Special shapes
- Carry handle

# Sustainable interaction



The Bauckhof mill in Rosche, Germany, has existed since 1969 and started as a processing and marketing company for biodynamic food. However, the roots of the Bauck company lie with the farms in Klein Süstedt (the “nucleus”), Amelinghausen and Stütensen. As early as 1932, founder Eduard Bauck switched to biodynamic agriculture after he noticed that there

were virtually no earthworms left in the soil. Modern pig farms were already using a lot of liquid manure and artificial fertilizers at that time.

Nowadays, Bauck has a unique selling proposition with gluten-free, organic and Demeter quality.

For the flaking of oats, of which around 75 per cent comes from northern Germany, the company built its own mill and invested 25 million euros. This saved about 180,000 kilometres of travelling per year. The mill processes about two tonnes of flakes and three tonnes of flour per day in alternation. In addition to classics such as spelt or wheat flour, Bauck offers numerous gluten-free flours such as buckwheat or chickpea flour. In three laboratories, employees test the products for quality, also in order to ensure that they are gluten-free.



Sappi is a leading global provider of sustainable woodfibre products and solutions, in the fields of packaging and speciality papers, printing papers, dissolving pulp, casting and release papers, biomaterials and bio-energy. As a company that relies on renewable natural resources, sustainability is a core.

Sappi European mills hold chain of custody certifications under the Forest Stewardship Council™ (FSC™ C015022) and/or the Programme for the Endorsement of Forest Certification™ (PEFC/07-32-76) systems.



*“Our success was the result of expertise, testing and many years of cooperation in a spirit of partnership. Always with the goal in mind to lead the packaging task to the ready packaging solution.”*

Jan-Roman Moch  
Owner of VIP  
Verpackungslösungen e.K.  
(ROVEMA Area Representative  
North Germany)



[www.rovema.com/en](http://www.rovema.com/en)  
[www.bauckhof.de](http://www.bauckhof.de)  
[www.sappi-psp.com](http://www.sappi-psp.com)



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#### Subsidiaries

ROVEMA GmbH  
35463 Fernwald  
info@rovema.de

ROVEMA France SAS  
93360 Neuilly-Plaisance  
info@rovema.fr

ROVEMA Benelux bv  
4902 TT Oosterhout  
sales@rovema.nl

ROVEMA Italia s.r.l.  
20026 Novate Milanese (MI)  
info@rovema-italia.it

ROVEMA Packaging  
Machines Ltd  
Gatehouse Close/Aylesbury  
sales@rovema.co.uk

ROVEMA Spain and Portugal S.L.  
08208 Sabadell/Barcelona  
rovema@rovema.es

ROVEMA Makine San. Ve Tic. A.S.  
34870 Kartal/Istanbul  
info@rovema.com.tr

OOO ROVEMA  
196247 St. Petersburg, Russia  
info@rovema.ru

ROVEMA Polska Sp. z o.o.  
02-672 Warszawa  
rovema@rovema.pl

ROVEMA North America Inc.  
Norcross, GA 30093  
info@rovema-na.com

ROVEMA Latinoamérica S.A.  
Panama City  
rlinfo@rovema.com

ROVEMA Asia Pacific  
Corporation  
Makati City/Philippines  
info@rovema.com.ph

#### ROVEMA Affiliates

DL Packaging  
www.dlpack.com

Hassia Packaging Pvt Ltd  
www.hassiaindia.in

inno-tech  
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