

Insulation for comfort and environmental protection

With almost 50 years of experience in injectable insulation, isofloc AG has acquired extensive knowledge and reliable process control. The high-quality insulation materials are made exclusively from renewable raw materials, making them a valuable contribution to environmental protection. Thanks to the control system from SIGMATEK, isofloc machines have operated at a high level of automation since 2013.

Andreas Leu

isofloc AG, founded in 1982 and based in Bütschwil (Canton of St. Gallen, Switzerland), specializes in the development and production of innovative cellulose-based insulation materials. The company offers comprehensive solutions for energy-efficient, ecological construction and holds numerous patents in the field of blow-in technology as well as the development of insulation materials. In addition, isofloc AG has extensive experience in the development and manufacturing of complete systems for the automated

installation of loose insulation materials. Its portfolio also includes modern blow-in insulation technologies and system solutions such as 'easyfloc' and a Europe-wide network of specialist companies. This article presents a practical application at S. Müller Holzbau AG in Wil, ST. Gallen.

Automated material flow

Before the insulation material can be blown into the wooden wall elements at S. Müller Holzbau AG, several upstream

process steps are required. Salomon Zehnder, Head of Production and Logistics at S. Müller Holzbau, explains the process: "First, the insulation bales are delivered and stored. One bale weighs around 350 kg and consists of 92% paper. We can automatically load up to nine bales into the magazine. The insulation material is then also transferred automatically into the so-called bunker, which has a capacity of two bales. In this bunker, the material is loosened using a disintegrator." Since both the magazine



The production hall of
S. Müller Holzbau AG

and the bunker are located in the basement, the insulation material has to be blown up to the ground floor. This involves overcoming a height of 15 meters and a total distance of around 80 meters through a pipe to the blowing plate, which feeds the insulation material into the wooden elements. "For such long distances, it is necessary to install an intermediate bunker. This contains an almost identical machine for feeding in the material," explains Michel Alder, CEO of isofloc AG and one of the pioneers in the field of blow-in insulation technology. To ensure a smooth process, the pressure for material transport can be regulated via the 7-inch ETT 771 panel, which ultimately guarantees high performance at the blowing plates.

The final process step involves the precise blowing of the material into the insulation panels, which are intended either for roof or wall constructions. A five-axis gantry robot is used for this purpose, which operates along the production line and positions the blowing plate. This plate automatically injects the insulation material into the elements via blowing nozzles. The blowing function is implemented by a SIGMATEK control system. The multi-touch operating panel ETV 0833-3 is installed directly on the blowing plate, thus optimizing handling for the assembly personnel. Communication with the Technowood control system, which is responsible for operating the blowing portal, was implemented using the open communication standard OPC UA.

Technology and service that impress

What criteria ultimately led to the decision for SIGMATEK's solution? Michel Alder recalls: "In 2013, we were aware that we were operating in a price-sensitive market. During the evaluation process, we conducted a comprehensive analysis of

Expertise for optimal insulation
isofloc is one of the leading suppliers of injectable insulating materials from renewable resources and offers solutions for the entire injection insulating system. More than thousand specialist companies in Europe successfully rely on the established insulating system from isofloc, which is supported by products, services, and mechanical engineering. isofloc specifically addresses the needs of its customers in the field of loose insulating materials and has continuously optimized this system.



From left to right: Salomon Zehnder, Head of Production and Logistics at Müller Holzbau AG, Michel Alder, CEO of isofloc AG, and Tobias Frech, Sales Engineer for Eastern Switzerland at SIGMATEK. In the background the isofloc industrial large bales.

our processes and compared several system providers in the field of control technology. Factors such as flexibility for different products, uncomplicated integration, energy efficiency, and user-friendliness played a central role in the decision-making process. In addition, service and long-term availability were also very important. Ultimately, isofloc opted for the SIGMATEK system solution and the software services from SIGMATEK Switzerland. In addition to high energy efficiency and local support, the modularity, the consistent, object-oriented engineering tool, and the open interfaces are the convincing features."

The extensive range of blow-in machines from isofloc AG requires high modularity and flexibility at both the hardware and software levels. SIGMATEK's S-DIAS control hardware provides fourteen types of CPU units with varying performance levels and offers a flexible, TÜV-certified safety system and a wide variety of I/O modules that can be individually adapted to different applications. The powerful LASAL engineering tool meets all requirements for flexibility in software development. In particular, the possibility of object-oriented programming is an ideal tool for customer-specific adaptations, as new objects can be easily derived from existing classes. This significantly reduces the programming effort and thus leads to savings in time and costs. Michel Alder also recognizes this advantage: "The object-oriented programming and the clear graphical display in the LASAL engineering tool enable our technicians to perform efficient troubleshooting without extensive programming knowledge." Another benefit is that communication between the individual system components is easily implemented using the LASAL Machine Manager.

Pictures: Lion Communication

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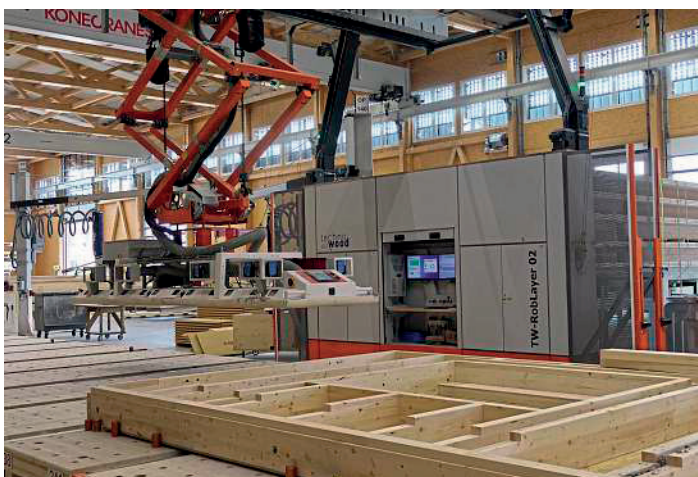
Michel Alder, CEO of isofloc AG



Automated warehouse management with isofloc industrial bales. In the background, the control cabinet for the blow-in module.



Work preparation for the blow-in process.



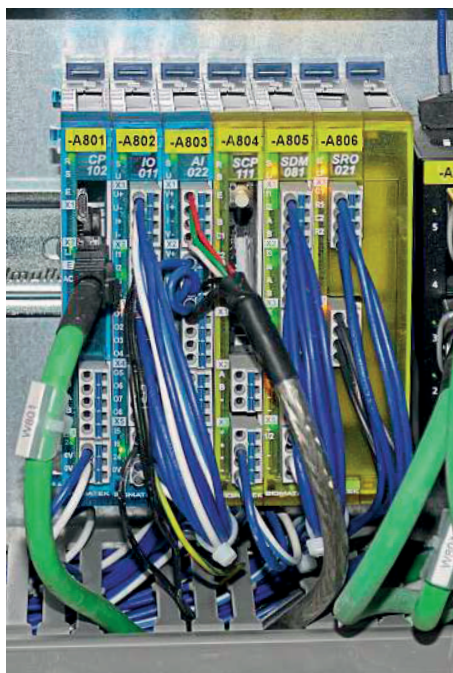
The portal robot moves the blowing plate over the wooden element.



The position has been reached, and the insulation material is being blown in.

Exemplary service and customer focus

Michel Alder speaks positively about the cooperation with SIGMATEK: "The programmers demonstrate a deep understanding of the machines and work closely with our technicians. They contribute to optimization with both innovative ideas and specific suggestions, which leads to efficient and structured program creation. In addition, all SIGMATEK employees show a strong customer orientation and are always available to help. This became particularly clear in the period following the Covid crisis, when resources were scarce; practical solutions were continuously developed and implemented. In summary, we can say that we are experiencing an exceptionally collegial and pleasant customer support, which ensures a quick and uncomplicated response to customer concerns or challenges."



The built-in S-DIAS control system with integrated safety (SIL 3, PL e) from SIGMATEK for the injection module.

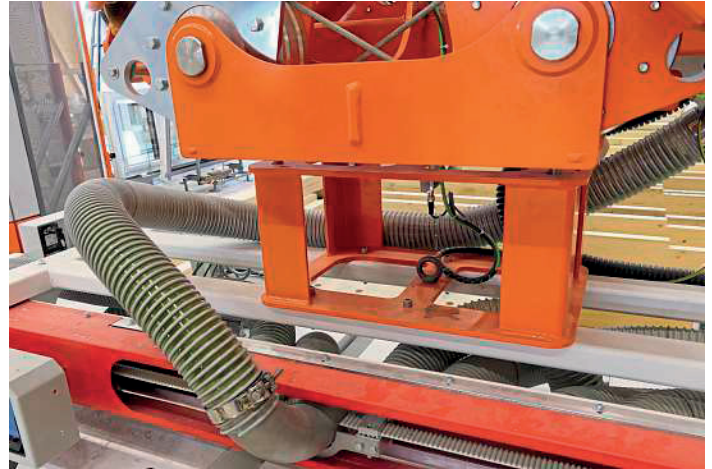


SIGMATEK application engineer Christian Schafflützel has played a key role in the success of isofloc machines thanks to his software engineering and dedicated support.

All Pictures: Lion Communication



Beat Meili, Managing Director of SIGMATEK Switzerland AG, in conversation with Michel Alder.



Close-up of the G3 blow-in plate injection module: The insulation materials are injected through the hoses.



The 8-inch multi-touch ETV 833-3 operating panel is installed directly on the G3 blow-in plate.



Control cabinet of the injection module with the compact 7-inch operating panel from SIGMATEK.

All Pictures: Lion Communication

Vision with confidence

Michel Alder is full of new ideas for the future. He also recognizes that it is necessary to constantly introduce new innovations to remain competitive in the market. His view is: "The competition never sleeps! At isofloc, we are continuously working on the development of new insulation materials. The further development and research of new products is in

our DNA and drives our daily effort to provide our customers with the best solutions and cost-effectiveness, thereby securing our position as an innovative leader in the field of insulation materials and machine technology. Together with SIGMATEK, we focus on continuous development in the field of automation to

development in the field of automation to keep our finger on the pulse and reliably meet increasing market demands. These initiatives will lead to more efficient processes and further simplify both engineering and troubleshooting."

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