

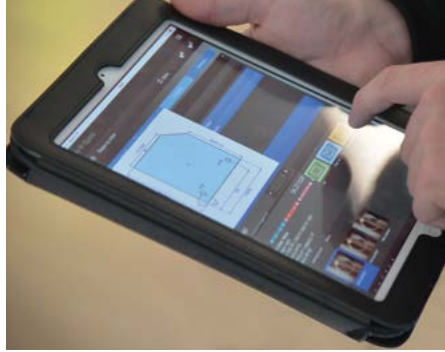
In Molde in the Norwegian Fjordland, a medium-sized company has become one of the state-of-the-art flat glass finishers and insulated glass producers in Norway. To achieve this status, the company relies on state-of-the-art A+W software and universal automation. Founded more than 50 years ago from a glazier's workshop, today Rakvåg supplies the most demanding customers in Norway with highly-specialized glass products produced on state-of-the-art CNC machines. The company is managed by Roy Rakvåg, a member of the second generation of the founding family. His son Petter is the second Managing Director, primarily responsible for IT.



Three state-of-the-art CNC processing centers ensure short production times and the greatest delivery reliability – for large orders and for a lot size of 1.



Thanks to continuous plant data collection, all necessary status information is available on the processing stations and it can be displayed on the A+W Production Monitor.



From the Webshop directly into production: the Rakvåg team is enthusiastic about A+W iQuote and was among the first users of the program.



Consistent digitalization: you will seldom find paper on Roy Rakvåg's desk. Roy has an eye not only on his figures, but also, thanks to A+W Dashboard, on his production in real time; if necessary, he can react immediately.

# Rakvåg: Top Products Thanks to Maximum Automation

The competition is stiff in the Norwegian flat glass industry. There are few qualified workers in this land of five million inhabitants, since many people seek employment in the ubiquitous oil industry. At the same time, quality requirements continue to increase. Consistent readiness to innovate is a prerequisite for successfully conquering this difficult market. The people in charge at Rakvåg understood this early on: the company has been using A+W software since 1999 both in the commercial sector and in production.

## Sophisticated product range

From Rakvåg the demanding customer can get sophisticated building glass and interior products that not just any glass processor can produce: glass elements beyond the mainstream for architects, facade builders, interior designers, and manufacturers of exquisite glass-metal

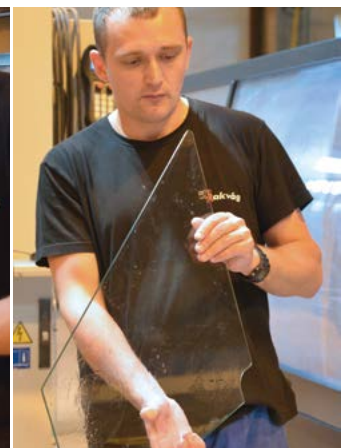
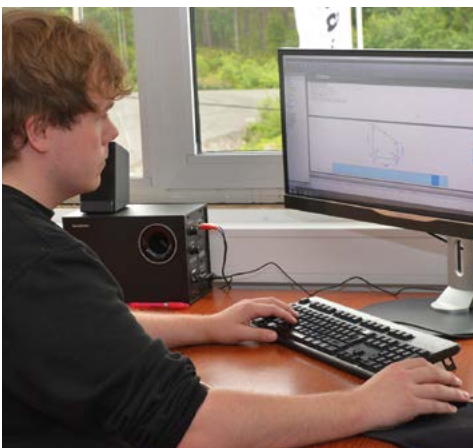
structures. This includes high-quality architectural glass for facades, shop glazing, window and glass/metal systems, and also products for interior design such as showers, staircases, doors, and glass room dividers. The share of safety glass continues to grow. This is why, in addition to toughened glass, Rakvåg produces laminated glass in-house and has therefore become a true full-spectrum manufacturer. Rakvåg's insulated glass products are most certainly high-quality performance glass; they include an increasing number of triple-glazed units.

How is it possible to produce this sophisticated product range profitably at a slim, family-owned company?

## "The focus is always on information"

Petter Rakvåg: "The A+W software controls and checks all processes from entry of the order to

control of the machines, on through to delivery of the finished products. Thanks to consistent bar code control and the A+W Production Monitors, we always know where each sheet is at any point in time. All commercial and technical data is available company-wide – and this without having employees running around all the time with folders and stacks of paper under their arms in order to determine what they must do with which sheet. It is easier to detect errors and initiate reproduction immediately. Since the information gained through plant data collection is also reported back to the A+W Business order system, the critical status information is available everywhere in real time, so that (among other things) we can inform customers about the current status of their orders. All employees work productively! The focus is always on information, all the time and everywhere."



Petter Rakvåg enters a shaped sheet with several processings and marks it as a rush order. The production data is forwarded to the CNC processing center via CAM-DXF; the machine operator uses A+W Production Monitor to trigger the production and print the label here. Within an hour, the sheet is ready for delivery.

### Working toward Industry 4.0 with intelligent interfaces

Thanks to A+W's high-tech data collection and machine control, it does not matter whether the lot size is 1 or 100: Rakvåg's production is always economical, even for extremely exclusive individual products. For when it comes to control of both of their CNC processing centers, Roy and Petter rely on A+W's CAM-DXF interface.

From technical order processing, a CAD file is sent to the CNC machine; in addition to the usual geometric data for grinding, hole drillings, cut-outs, etc., this file also contains all machine parameters, for example for selection of the tools, alignment of the sheet, and suction positioning. The CAM-DXF file is transmitted to the CNC center, where all machine processes are now handled completely automatically. Roy rejoices: "This means that there is no need for time-consuming manual machine programming." This method corresponds to the requirements for a smart factory in the world of Industry 4.0.



In addition to the main plant with over 6,000 m<sup>2</sup> production area, Rakvåg has a second branch in Molde with a glazery, sales of glazier demand and an attractive exhibition.



On the path to Industry 4.0: robot loading the double-sided automatic edging machine.

### A+W iQuote: order entry in the Webshop

Earlier, people said "the money is earned in production." "This is no longer always the case," says Petter, at least since we have been using A+W iQuote. Order entry has changed completely. Customers configure and calculate their products in peace and quiet on the iPad, and we are no longer responsible for the entry work and all of the associated advising services. The data is always correct since customers are working with our current database. In particular, glass workers are happy to take this opportunity. Naturally we still offer personal advising and services such as virtual digitalization in our glazing shop in Molde, but A+W iQuote is available 24/7. In Norway, distances are long, so customers usually don't live just around the corner. Why should someone travel many kilometers by car and ferry because of a broken sheet if he can configure and order it easily from the couch using his tablet? We will take care of the delivery, for service is our business!"



Petter Rakvåg (left) is constantly advancing the digitalization of his family-owned company; as the IT manager, he is the most important contact person for A+W. Right: Pontus Levin, Director A+W Scandinavia and Sales Support Agent for Rakvåg.

► Contact: [www.rakvaag.no](http://www.rakvaag.no)

## ■ INFORMATION

### A+W Service: perfect advising – expert support

All software is only as good as the service for advising, installation, and support that stands behind it. A+W does not seek short-term sales successes; instead, it seeks to build long-term customer relationships that rely on mutual trust: we sell what the customer needs – not more, but if possible, also not less.

At Rakvåg, Pontus Levin and his flexible service team ensure this. Service inquiries are answered quickly and handled on-site in timely fashion if necessary; advising is always done relying on the company's great flat glass and software expertise.

"Other companies that sell software for the flat glass industry in Scandinavia," reports

Pontus, "do not even have Scandinavian employees. Frequently they cannot be on-site when problems occur. We are always on-site, wherever we are needed."

Pontus' team is flexible: if the Swedish specialist for a particular software module is handling an order in Stockholm, if necessary a colleague from the UK or Poland can lend a hand in Finland – this is the advantage of a large, service-oriented company like A+W. We spoke to the technician Steve Mason from Pontus' team, who is currently installing an update and taking care of smaller problems together with Rakvåg's employees. Steve came in from England to help.

"Since our software has been in use and stable for decades," says Steve, "larger errors hardly ever occur. But if there is a problem,

we react right away. We make sure that our customers' systems work reliably 24/7 if necessary."



Steve Mason (left) of the A+W service team with production manager Ernest Mielus: "We make sure that our customers' systems work reliably all the time. If necessary, we react right away."