



Close cooperation on development issues

SCA Timber and Valutec has established long-term cooperation on issues related to timber drying. For Valutec, an important part of the delivery to Bollsta was the establishment of a steering group for development issues.

"We always want to find ways to refine our drying facilities for our customers and this is a good example of cooperation on common development issues", says Robert Larsson, CEO at Valutec

From SCA Timber's side, it involves staff both from the sawmill in Bollsta

and other plants within the group. The partnership works as follows: Valutec upgrades the control system software so that the drying process is constantly being developed, and SCA Timber's staff carry out tests, the results of which are then analysed and discussed.

"This is a great partnership, which enables us to develop our processes and use our equipment in the best way", comments Niclas Larsson.



Katarina Levin

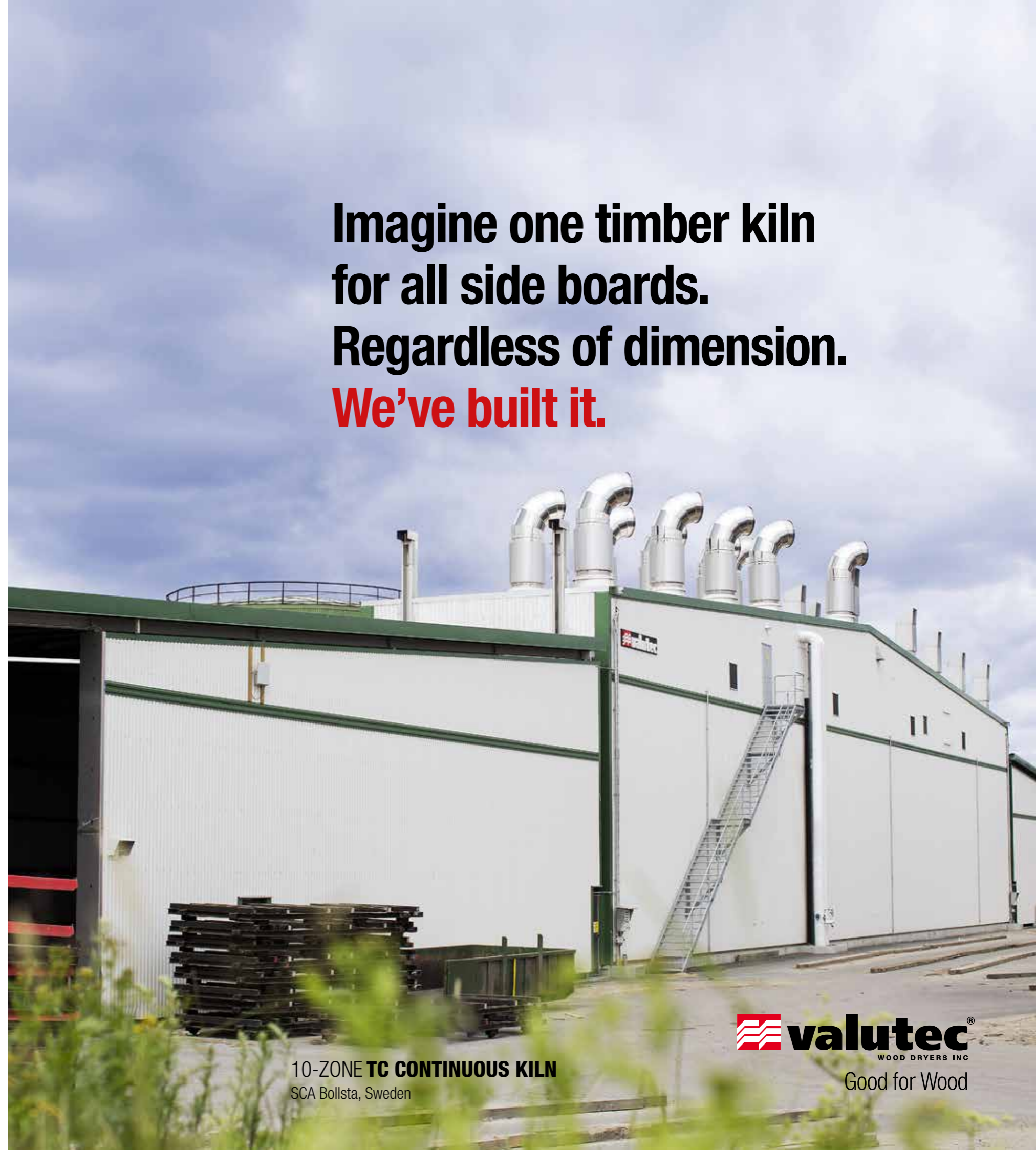
Why Valutec was chosen

When SCA chose to expand its capacity at its sawmill in Bollsta, by investing in a new boiler, an upgrade of the saw line and expanded drying capacity, Valutec won the contract to deliver the continuous kiln and a further six batch kilns.

"We have good experience of previous deliveries from Valutec and it was easy to put trust in them", says sawmill manager Katarina Levin on the choice of supplier.

SCA Timber has five sawmills in Sweden, with a total production capacity of 2.1 million m³ (890 MMBF).

Imagine one timber kiln
for all side boards.
Regardless of dimension.
We've built it.



10-ZONE TC CONTINUOUS KILN
SCA Bollsta, Sweden

TC Continuous kiln



Niclas Larsson

“The most impressive piece of equipment I’ve ever seen”

With 16 years’ experience of timber drying and ten years as a drying manager at SCA Timber in Bollsta under his belt, Niclas Larsson certainly knows what he’s talking about.

“In the TC continuous kiln, it’s the timber that sets the limits, not the machine. This is the most impressive piece of equipment I’ve ever seen,” says Niclas.

In a year, almost 100,000 m³ (43 MMBF) of timber can be dried in the TC model. Mainly 25-millimetre pine side boards, but the record-fast drying times and high flexibility have also enabled Bollsta to choose to dry thinner dimensions using the unique equipment, which was commissioned in 2013.

Customised solution

The kiln is the result of SCA Timber’s specific needs and conditions. When Bollsta decided in 2011 to increase the capacity of its sawmill from 450,000 m³ (190 MMBF) to 525,000 m³ (223 MMBF), Valutec was asked to survey the existing drying stock, logistics and type of timber to be sawn. The conclusion was that the new drying capacity should focus on the drying of 25-millimetre pine side boards down to a final moisture content of 18%.

The solution was a continuous kiln with cross-circulation, a model that is particularly well suited for large volumes of side boards. In order to meet the required capacity, it was equipped with a total of ten drying zones. The estimated

annual capacity on delivery amounted to 86,000 m³ of the selected dimension, but the ultimate annual production after fine-tuning was 100,000 m³ (43 MMBF).

Effective drying

The shortest drying times used for 25-millimetre side boards for a moisture content of 18% are only 20 hours – a Swedish record. Packages with thinner dimensions have, therefore, been mixed into the kiln, as the drying times are very advantageous, even though the coarsest timber determines the drying time.

It has been possible to change the dimensions effectively thanks to the automatic climate control in each zone and the simple procedures for truck drivers. This, together with smart logistics and careful package management, has helped make changing dimensions easy.

Meets quality requirements

A common benchmark for a good-quality drying process is the measure of moisture content distribution throughout the timber – the standard deviation should be less than 10% of the final moisture content. For a final moisture content of 18%, this means a value lower than 1.8%. The results for the TC kiln in Bollsta show standard deviations that vary between 1.2 and 1.5%.

“This is an important factor. Low moisture content distribution enables us to work with more precise measurements that work for both planing and optimised sawing yield,” comments Niclas Larsson.

FED LENGTHWAYS

Timber packages are fed lengthways in a TC model, instead of crosswise. This makes the kiln longer, but offers many practical benefits.

SPRAYING/STEAMING IN THE RIGHT PLACE

The design allows the spraying/steaming to take place where it is most effective.

POWERFULLY DIMENSIONED VENTILATION

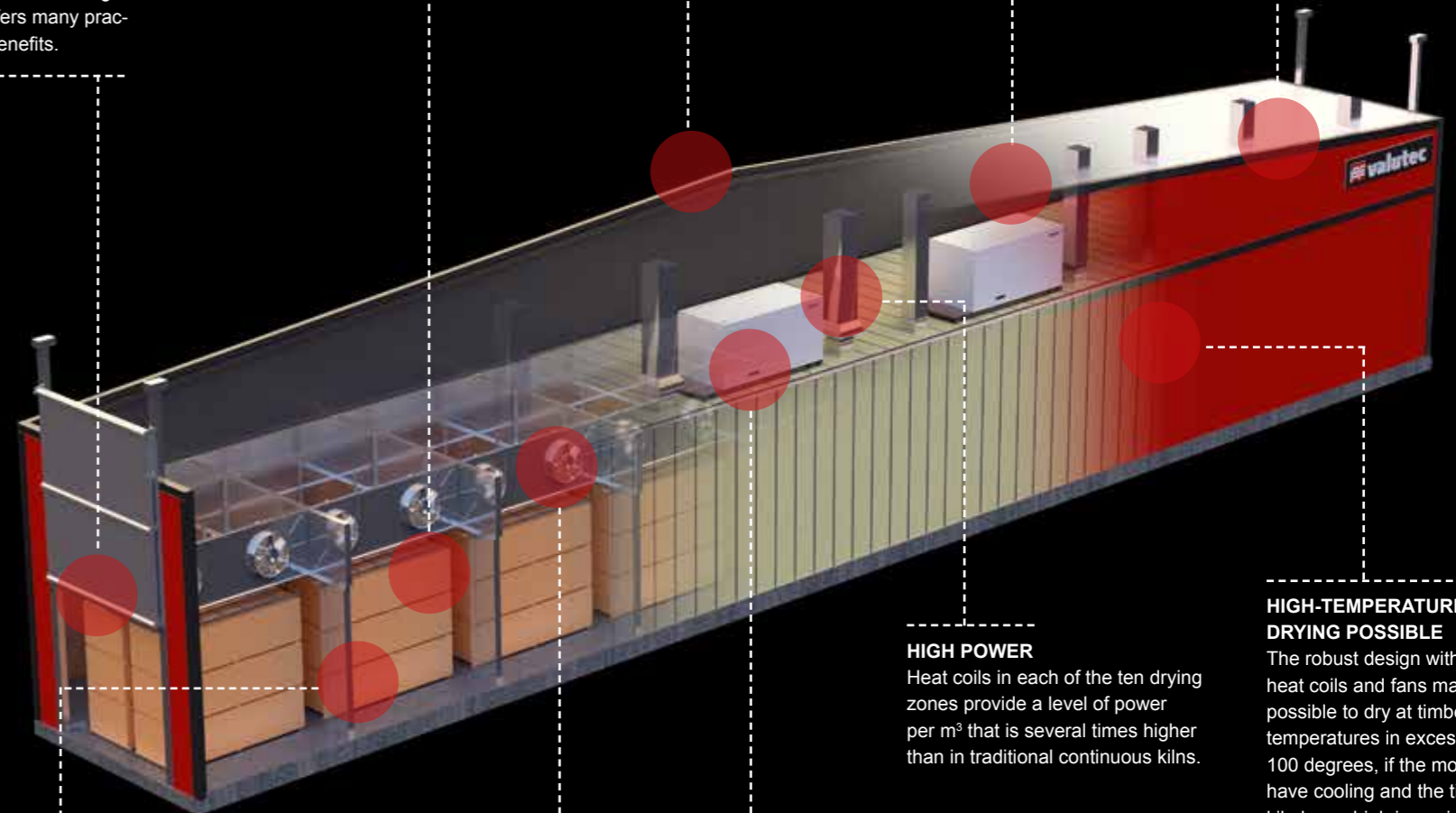
Water vapour is transported effectively out of the kiln, which means that the timber’s moisture release limits the drying time, not the machine.

FEW BOARDS FALL DOWN

The use of shackles and the direction of transport ensure that the few boards that drop down fall out towards the sides instead of onto the rail, thus reducing downtime.

RECORD-FAST DRYING TIME

A batch of 25-mm pine side boards dried to an average moisture content of 18% has a drying time of only 20 hours – a Swedish record.



MIXED DIMENSIONS

The control system keeps track of each position of the package in the kiln, which allows different dimensions to be freely mixed between the zones. This means minimal planning is required.

SHORT AIR-BLOW DEPTH

Transverse axial fans in each zone blow circulation air across the longitudinal direction of the kiln, via heat coils and through the timber. This ensures a similar climate throughout the zone, which provides even drying with short conditioning times.

HIGH POWER

Heat coils in each of the ten drying zones provide a level of power per m³ that is several times higher than in traditional continuous kilns.

HIGH-TEMPERATURE DRYING POSSIBLE

The robust design with large heat coils and fans makes it possible to dry at timber temperatures in excess of 100 degrees, if the motors have cooling and the timber kiln has a high incoming boiler water temperature.

SMART ENERGY USE

The high power and the large volumes of timber being dried mean that energy consumption per m³ is very low.

M³ CAPACITY:
100,000 M³, (43 MMBF)

✓ QUALITY: $\sigma < 1.5\%$
(18% final moisture content)