

HOLZBAU UNTERRAINER

Successful change of adhesive

New PUR adhesive for CLT proves itself in practice

With the introduction of the Elastan TLP adhesive line, BASF and TÜRmerleim quickly attracted the interest of the cross-laminated timber industry. In 2022, Leonhard Unterrainer was one of the first CLT manufacturers to switch his surface and finger-joint gluing system to the newly developed one-component PUR adhesive. Now, he has enough time for laying even in summer, needs only half the pressing time and looks forward to every delamination test.

✍ Günther Jauk 📷 Günther Jauk (3), BASF (1)

Leonhard Unterrainer has dedicated himself to cross-laminated timber since 2007, when the industry was not even in its infancy yet. In 2010, the East Tyrolean entrepreneur invested in a cross-laminated timber press with a production capacity of 20,000 m³ a year. Today, the company's focus is on single-family homes as well as commercial and public buildings. At a local level, the sawmill "rookie" takes on CLT projects from the log to the finished building, and also supplies joined elements to its customers.

In addition to classic CLT, Holzbau Unterrainer is primarily known for its specially developed radius timber, i.e. curved CLT elements with a minimum radius of 2 meters and maximum dimensions of 13.5 by 2.95 meters. These elements are manufactured in the same press as the standard CLT, with special pressure elements ensuring the desired curvature.

Pursuing a new path

Since 2022, Unterrainer has been using products from TÜRmerleim's newly developed Elastan TLP adhesive line to glue its CLT. "We realized that there is no way around one-component PUR adhesives in the cross-laminated timber sector, which is why we launched a large-scale development project together with our partner BASF a few years ago," Rainer Reiterer, responsible for Technical Sales at TÜRmerleim, tells us. At the end of 2021, TÜRmerleim received the first approval for an adhesive line based on moisture-curing, one-component polyurethanes with varying processing times for the gluing of load-bearing timber construction elements, which met the requirements defined in the norm DIN EN 15425.

Only a few months later, Unterrainer started the first test runs with Elastan TLP.

"After a very challenging time, we were looking for a new, reliable adhesive supplier, and the parameters promised by TÜRmerleim fit well into our approach to production," Unterrainer says, explaining the reasons for the change of adhesive.

"The changeover to the new adhesive was smooth and offered us numerous advantages in production."

Leonhard Unterrainer

Smooth changeover

For the test and changeover phase, a strategy which has been tried and tested for years was adopted. "Before we run the first adhesive tests, we take a close look at how the customer works and carry out an analysis of all the relevant factors," Reiterer says, describing the process. At Unterrainer, for example, a water spray system was used to achieve the ideal moisture of the laminations.

Reiterer describes the changeover as a path that is pursued together with the customer. All relevant parameters are set precisely and the adhesive is tailored to production step by step. The possible open time of the Elastan TLP line ranges from five to 100 minutes and the pressing time from eight to 170 minutes. For finger-jointing, Unterrainer uses the TLP 5 adhesive with an open time of

five minutes and a pressing time of eight minutes, while the TLP 40 with an open time of 40 minutes and a pressing time of 60 minutes is used for surface gluing. "Now, we have more time for the laying process, even though the pressing time has halved. This is a huge advantage, especially when it comes to small-format panels. Also, our adhesive consumption has decreased by 10 g/m² in surface gluing," Unterrainer says with satisfaction, adding that the high quality of the gluing process is a major advantage. "Since the changeover, not a single test specimen has failed the delamination test."

Complete package for CLT

One and a half years after the launch of the Elastan TLP line, Reiterer lists numerous other customers from the cross-laminated timber industry in Austria, Germany and throughout Europe, in addition to Unterrainer: "Large and small market participants are equally as interested in our one-component PUR solution as newcomers and veterans." Reiterer sees the coherent overall strategy, the performance of the adhesives, reliable deliveries and the possibility of simple tests as reasons for this popularity: "A key aspect in the development of the adhesive was to make it work with all application systems and to ensure that it can be applied after all common adhesives of other manufacturers. We achieved that and are able to do test runs quickly and easily as a result."

In addition to the Elastan TLP line, TÜRmerleim also offers hotmelt and white glue for narrow-edge gluing in CLT production. "We can offer every customer a complete package, which also includes numerous technical services and PAM, our proven digital assistance system," Reiterer emphasizes in conclusion. //



- 1 The new sawmill hall was one of the first radius timber projects which Holzbau Unterrainer carried out using TÜRmerleim's Elastan TLP adhesive line
- 2 Rainer Reiterer, responsible for Technical Sales at TÜRmerleim (left), and Leonhard Unterrainer are happy about the successful change of adhesive
- 3 Elastan TLP adhesives are suitable for all common application systems
- 4 Depending on the customer's wishes, the adhesive is delivered in single-use or reusable packaging