

KLEIBERIT 510.3.30

1C PUR adhesive

Fields of application

- surface bonding of load-bearing wood components

Properties of the bond

- Tested by the Materials Testing Institute (MPA) University of Stuttgart according to EN 15425:2017 for the adhesive class EN 15425:2017-I-70-GP-0.3-w for the production of:
 - Laminated timber and laminated beams according to EN 14080 and
 - Cross-laminated timber according to EN 16351,
 - made of spruce, fir and pine.
- Tested according to SANS 10183-4:2009 for Service Class S3 according to SANS 10183-2.
- The glue line is inconspicuous (light in color), highly resistant to heat and achieves very high strength values.
- Gluing quality D4 according to DIN/EN 204 (i.f.t. test report no. 221.X.2309.984.DE.01 from 02/09/2023)
- Tested according to DIN EN 14257 (Watt 91) (i.f.t. test report no. 221.Z.2309.985.DE.01 from 25/09/2023)

Properties of the adhesive

Base: polyurethane
Specific gravity: approximately 1.13 g/cm³
Color: white to yellowish
Viscosity at 20°C: approx. 18,500 mPa·s (Brookfield RVT, Sp. 6/20 rpm)

Identification: see our safety data sheet
Note: Intended for commercial use only.

Sustainability: Upon request, production can be carried out using up to approx. 31.5% mass-balanced, sustainably certified raw materials (ISCC+).

Application techniques

General processing conditions:

The room and material temperature should be 20 °C, but must not fall below 18 °C. This must be documented in a traceable manner.

Wood

The wooden surfaces must be prepared by planing or similar at least 24 hours before gluing. The general rule is: The adhesive surfaces must be free of release agents that impair adhesion. Wood moisture requirements for glued laminated timber and laminated beams according to DIN EN 14080:

For untreated wood it must be between 8% and 15% and for pretreated wood between 11% and 18%. The difference in wood moisture between the individual slats must not exceed 5%.

Adhesive application:

The adhesive is processed directly from the original packaging in automated form by means of a processing system that is suitable for this application and continuously moisture-proof.

The adhesive is applied to the wooden surface on one side in bead form. The amount of adhesive applied must ensure complete and even wetting. It depends on the actual surface quality of the wood and the tolerances of the wooden components, which depend on the individual case. For a 0.1 mm joint ("thin joint") it is from 140 g/m² and for a 0.3 mm joint up to 350 g/m². The maximum joint thickness must not exceed 0.3 mm. The adhesive application must be monitored and ensured via an appropriate control loop. A visually determined continuous adhesive leak along the adhesive joints after full pressure has been applied is necessary, but not sufficient.

Maximum waiting time:

It must be ensured that the adhesive is still fully capable of bonding when pressure is applied. In a room climate of 20°C and 65% rel. humidity and 12% wood moisture, the full pressure must be applied to the wood components to be bonded no later than 30 minutes after the start of adhesive application. A higher room temperature, a higher rel. air humidity and a higher wood moisture content shorten this time period.

Pressure:

Note: Before processing, all press elements that come into contact with the adhesive must be treated with release agent KLEIBERIT 885.0.

The crosslinking process of the adhesive must take place at a pressure that ensures sufficient contact between the adhesive surfaces. The pressing pressure must be at least 0.6 N/mm² and must not exceed 1.0 N/mm². It is important to ensure that the adhesive joint fits well and that the adhesive joint is as thin as possible (max. 0.3 mm).

Pressing time:

Due to the influence of moisture (from the room air or the wood), the adhesive hardens, foaming slightly, to form a waterproof, tough adhesive film. The pressing times depend on the temperature, the moisture content and the thickness of the adhesive joint.

For straight wooden components with a wood moisture content of 12% in a room climate of 20 °C and 65% relative. If the adhesive is pressed with humidity, the minimum pressing time is 70 minutes if a thin adhesive joint (max. 0.1 mm) is guaranteed. For thicker adhesive

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joints (max. 0.3 mm), the minimum pressing time is 90 minutes.

If the wood moisture content of straight wooden components is 9%, the minimum pressing time is in a room climate of 20 °C and 65% rel. Humidity with a guaranteed thin adhesive joint (max. 0.1 mm) 105 minutes and with thicker adhesive joints (max. 0.3 mm) 150 minutes.

Exact times for the respective application must be determined according to the actual indoor climatic conditions.

Storage time of bonded wood components

After pressing, with a wood moisture content of 12% and an adhesive joint thickness of 0.1 mm, there is a subsequent storage period in a room climate of 20 °C and 65% relative humidity. Humidity of 140 minutes required. With a thicker adhesive joint (max. 0.3 mm) and under otherwise identical conditions, it is 180 minutes.

If the wood moisture is 9% and the post-curing takes place in the same room climate as above, the post-curing time is 210 minutes for an adhesive joint thickness of 0.1 mm and 300 minutes for a thicker adhesive joint (max. 0.3 mm).

If conditions differ from those described above, the subsequent storage period must be adjusted accordingly.

Further processing of glued wooden components

The wooden components can be further processed during the post-storage period. It must be ensured that no damaging forces act on the adhesive joint until the end of the subsequent storage period listed above. This must be checked and documented through our own tests.

Achieving final strength

At a wood moisture content of 12% and a storage climate of 20°C and 65% relative humidity, this is reached after 24 hours.

Note:

In order to ensure a high bonding quality, we recommend setting up a suitable self-monitoring system. The relevant standard specifications must be complied with.

Cleaning

PUR adhesive that has not yet cured can be removed with KLEIBERIT 820.0.

Already cured PUR adhesive, e.g. on tools or machine parts, can only be removed mechanically.

Packaging

KLEIBERIT 510.3.30:

Carton with 6 dosing bottles at 0.8 kg net each

Metal pail, 20.0 kg net

Metal drum, 210.0 kg net

Cleaner

KLEIBERIT 820.0:

Metal can, 22.0 kg net

Release agent

KLEIBERIT 885.0:

Plastic pail, 5.0 kg net

Additional packaging sizes available upon request.

Storage

KLEIBERIT 510.3.30 can be stored in closed air-tight containers at 20 °C for approx. 12 months.

Keep in a cool and dry place and carefully protect from humidity.

This product is not frost sensitive at temperatures above -20°C.

KLEIBERIT 510.3.30 must be brought to room temperature before processing.

Contents of opened containers should be used as soon as possible.

Version 24.11.25 Iz; replaces previous versions.

Adhesives and Waste Disposal

Waste Code 080501

Disposal of contents and/or containers should comply with all applicable federal, state and local regulations.
Our containers are made of recyclable material.

Service

Our application department may be consulted at any time without obligation. The statements made herein are based on our experience gained to date. They are to be considered as information without obligation. Please test and establish for yourself the suitability of our products for your particular purposes. No liability exceeding the value of our product can be derived from the foregoing statements. This also applies to the technical consultancy service which is rendered free of charge and without obligation.