



PURBOND[®] HB S109

One-component polyurethane adhesive for the production of engineered wood products

PURBOND HB S109_E
Holzleimbau Technik / 10.12.2007

Properties

PURBOND HB S109 is a liquid one-component polyurethane adhesive. The adhesive requires moisture or humidity to cure into a strong, non-brittle adhesive film. A slight foaming effect during curing is a normal side effect of the chemical reaction. PURBOND HB S109 is manufactured solvent- and formaldehyde-free.

Product data

Chemical composition	Isocyanate pre-polymer
Consistence	free flowing
Assembly time¹	10 minutes
Press time/Curing time¹	25 minutes
Viscosity Brookfield	approx. 20'000 mPa.s (Sp. 6 / 20 UpM / 20 °C, Measuring > 8 hours after production)
Color	beige
Density	approx. 1'100 kg/m ³
Solids content	100 %
Flammability	low
Chemical resistance	against weak caustics, acids and solvents
Storage	6 months dry at 20 °C (note expiry date)
Packaging	Drum 200 kg net Container 1'100 kg net
Safety	See Material and Safety Data Sheet (MSDS) of PURBOND HB S109. Available from Purbond

Adhesive systems for engineered wood

¹ More information regarding the assembly time and press time/curing time can be found on pages 2 and 3.

Application

Direction of use for face-joints (lamination)

Preparation

PURBOND HB S109 is a one-component adhesive and can be fed directly into suitable application equipment.

Surfaces must be clean and free from any adhesive-abrasive substances like oil, grease or separate agents.

All machine parts that are in contact with the adhesive should be thoroughly treated with *PURBOND Trennmittel / Release Paste* before using.

Wood moisture content

Wood moisture content at the joint surface should not be below 8 %. The difference in wood moisture between the lamellae should not exceed 4 % according EN 386.

Adhesive application

PURBOND HB S109 is automatically applied in a continuous process. The adhesive is applied on one side with a minimum application weight of approximately 180 g/m².

Assembly time

Coated surfaces should be pressed together immediately but under no circumstances later than 10 minutes after the application of the adhesive. Assembly time depends on the existing climatic conditions: Higher temperatures and humidity lead to shorter assembly times.

It is absolutely necessary that the adhesive is still tacky when pressure is applied.

Press time

Press time depends on the existing climatic conditions of the surrounding and on the present temperature of the material. Minimum press time under conditions of 20 °C, 65 % relative humidity and 12 % wood moisture content is 25 minutes.

Pressure

The applied press force has to guarantee that the joint is pressed together properly. Normally pressure of 0,6 to 0,8 N/mm² is applied.

Processing

Bonded parts can be processed subsequently to pressing.

Final bond

Final bond strength is attained after approximately 12 hours. Until then, it is recommended to store the bonded at an ambient temperature of 20 °C.

Other recommendations

Please consider the following recommendations for the production of structural laminated beams:

1. The wood moisture content according EN 386 and DIN 1052 should not exceed 15 % (for untreated wood).
2. Keep bond-lines as thin as possible (maximum 0,3 mm).
3. The temperature of the production-facility, wood and adhesive should be at least 20 °C.
4. The gluing of larch wood is recommended for use in service class I and II.
5. It is recommended to conduct a suitable quality assurance procedure (for example according EN 386) while production is in progress.

Application

Directions of use for end-joints (finger joints).

Preparation

PURBOND HB S109 is a one-component adhesive and can be fed directly into suitable application equipment.

Surfaces must be clean and free from any adhesive-abrasive substances like oil, grease or separate agents.

Before using all machine parts that are in contact with the adhesive should be thoroughly treated with *PURBOND Trennmittel / Release Agent*.

Wood moisture content

Moisture content at the joint surface should not be inferior to 8 %.

According to DIN 68140-1 the maximum difference of wood moisture between the bonded parts has to be:

- For solid finger-jointed timber: max. 5 %
- For finger-jointed lamellas for laminated beams: max. 4 %

Adhesive application

PURBOND HB S109 is automatically, in a continuous process applied to the finger-jointing line. The adhesive is applied by using a special comb system.

PURBOND HB S109 is applied either on one or on both sides with an application amount of approximately 140 to 180 g/m².

Parts must be pressed together immediately.

Press time

Pressure has to be exerted for at least 2 seconds.

Pressure

The used pressure (depending on the length of finger joint's keys) must guarantee a close contact joint.
In general exerted pressure of 2 to 12 N/mm² be applied.

Processing

Bonded parts can be processed after 25 minutes.

Final bond

Final bond strength is attained after approximately 12 hours.
It is recommended to store the parts until then at an ambient temperature of 20 °C.

Other recommendations

Please consider the following requirements for the production of structural finger joints:

1. Moisture content of wood parts should not exceed 15 % in case that the parts will be processed any further (e. g. finger jointing of glulam laminate). Otherwise moisture content of wood parts should not exceed 18 % (e.g. finger jointing of one-piece timber).
2. Fit of finger joint's keys should be in accordance with the local standard.
3. The gluing of larch wood is only permitted in service class I and II.
4. The temperature of the production-facility, wood and adhesive should be at least 20 °C.

Safety and Clean up

Direction of use for safety and clean up

Safety

Purbond strongly recommends that protective gloves – *PURBOND Arbeitshandschuhe / Handling gloves* – and protective goggles must be worn when handling the liquid adhesive.

Clean up

For the removal of cured adhesive on equipment and machinery, Purbond recommends *PURBOND Löser / Solvent*. Before cleaning, please make sure that the parts are resistant to *PURBOND Löser / Solvent*. When handling the solvent, chemical resistant *PURBOND Reinigungshandschuhe / Cleaning Gloves* and protective goggles must be worn.

Certification and Registration

International Certifications and Registrations

Australia/New Zealand

Classified as Type I structural wood adhesive in accordance with AS/NZS 4364 (Int):2007.

JAIA F☆☆☆☆

Formaldehyde Standard:
JAIA (Japan Adhesive Industry Association) Independent Control Standard against Indoor Air Pollution.

Register Number: **JAIA-008439**

Guarantee

This information is based on the test results of the Otto-Graf-Institute (MPA, University Stuttgart), our Purbond application laboratory and our customers' experience.

Purbond guarantee a consistent quality of this product which is manufactured in accordance with ISO 9001 / ISO 14001 guidelines.

The product was found suitable for all applications and uses listed above; for other uses or applications Purbond strongly suggest you to contact our technical support staff.

In general the sales and delivery conditions of Purbond AG apply.