



PURBOND - a quantum leap in adhesive technology

One-component polyurethane (1C PUR) adhesives are classed as reactive adhesives. The curing of these products - the formation of a strong bond capable of bearing the required loads - involves a chemical reaction.

A modern adhesive must have a long shelf life but must cure in a very short time when used. Reactive adhesives meet this standard because during or just before application, a second component is mixed in to initiate the chemical reaction. This is the case with 1C PUR adhesives as well, but it needs not be a concern for the user, because the second component is moisture, and moisture is normally present in adequate quantity in the atmosphere and particularly in wood. The adhesive can be applied directly from the container, and the curing reaction begins as soon as it comes into contact with moisture.

Polyurethane technology for load-bearing glulam construction was pioneered in the 1980s by Purbond in Switzerland. The first PUR adhesive for producing glulam structural elements have been approved by Purbond in 1994 in Germany. Despite this relatively brief history, the technology has acquired a significant market share in Europe because it offers many advantages over classical formaldehyde-based adhesives:

- One-component system - no need to meter and mix additives
- No formaldehyde or solvents - 100% solids content (satisfies JAIA F****)
- No visible bondlines - excellent aesthetic effect
- Very short curing times - no additional thermal acceleration needed
- Extremely high process reliability - unique temperature and moisture tolerance
- Excellent process economics - small application quantities, gram precision
- First-rate bond strength and reliability - ductile behavior
- No odors - clean work environment
- Less wear on milling tools - prolonged tool life