



News Release

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LIGNA 2017: Adhesives for laminated structural timber take center stage in Henkel's product presentation

Continuing the success story

Appearing in Hall 27, Stand B40 at this year's LIGNA from May 22 through 26 in Hannover, Henkel represented by its business unit Engineered Wood (formerly Purbond) will be showcasing its entire portfolio of adhesives and bonding systems for the manufacture of load-bearing laminated timber under the Loctite Purbond brand. The focus of the product presentations will be the innovative primers for the bonding of hard woods, an area of promising potential in the developing timber construction industry. As adhesion promoters between the wood and the adhesive, they ensure the necessary permanency in glueline strength.

Since their launch in 1988, the innovative Loctite Purbond polyurethane adhesive systems (1-component and 2-component PUR adhesives) from Henkel have set the standard in the manufacture of load-bearing laminated timbers. The success story began when the Swiss parent company Collano AG founded the spin-off Purbond AG. Then, in 2011, Collano AG sold all the shares in this company to Henkel & Cie. AG, Switzerland. The deal included not only patented and certified adhesive systems but also a team of professionals offering many years of experience and proven know-how. Since that time, Henkel has continued the success story with an established concept based on extensive technical customer consultancy combined with ongoing innovation. Users are able to rely both on personnel with whom they have become familiar and on consistently high levels of product quality and security of supply.



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Primers for optimum glueline strength in difficult-to-bond timbers

Load-bearing structures of wood species that are difficult to bond – beech, oak, ash, black locust (false acacia), birch and sweet chestnut, not to mention larch and Oregon pine (Douglas fir) – are constantly gaining in importance. Innovative developments such as the primers of the Loctite Purbond line in adhesive systems have now been available for more than two years, enabling these woods to be bonded into load-bearing laminated timbers. Indeed, various specialty timber structures have since been constructed with some of these wood species.

The most important property in adhesive-bonded load-bearing laminated timbers is their glueline strength. For this, Henkel offers its globally certified 1C (single-component) PUR adhesives in combination with two species-specific primers: Loctite PR 3105 Purbond or Loctite PR 7010 Purbond. The primers serve as adhesion promoters between the surface of difficult-to-bond woods and the adhesive. Even black locust, a wood species which was long regarded as non-bondable, can be reliably laminated with this system.

Shortened process cycles for huge time gains

The established Loctite HB S Purbond line offers open times of anything from two minutes (fast end) to 70 minutes (slow end). These adhesives are also characterized by exceptionally favorable pressing-time-to-open-time ratios, ensuring users maximum flexibility.

Field of application: Any type of load-bearing laminated timber

The viscosity and flow behavior of the adhesives in the Loctite HB S Purbond line provide for optimum wetting of the mating surfaces combined with minimized application quantities. This adhesive system is used for the finger-jointing and full-face bonding processes employed in the manufacture of finger jointed timber (KVH, keilgezinktes Vollholz), cross-laminated timber (CLT or X-lam) and glued laminated timber (GLT or glulam) components, Duobalken® and Triobalken® beams and log house planks – in short, the entire spectrum of engineered timber components.



The Loctite HB S Purbond line for a healthy interior climate

The products of the Loctite HB S Purbond line are free of both solvents and formaldehyde, thus also enabling them to meet the strictest emission guidelines. Producers thus have the ability to offer customers engineered wood that meets the very latest requirements with respect to ensuring a low-emission, healthy enclosed-space atmosphere.

Adhesives on show to include both innovative and proven solutions

Aside from the primers and the Loctite HB S Purbond line, Henkel at LIGNA 2017 will also be presenting long-proven adhesive solutions tailored to its most important markets. These include the classic laminated structural timber regions of Europe, North America and New Zealand/Australia. Consequently, the Loctite HB X Purbond line soon fully licensed for the USA and Canada will also be showcased.

Henkel's experienced team will be available to answer all questions relating to the company's competence in engineered timber construction. Offering the expertise for which Henkel has become famed, they will be keen to discuss in detail not just the manufacture of laminated structural timber products but also the chemical and economic aspects involved in the use of Loctite Purbond high-performance adhesives.

Glued specimens, videos showing application examples, and product information will also be available at the booth, documenting the performance capabilities of the Loctite products on show and demonstrating the degree to which the worldwide trend with respect of load-bearing laminated timber structures is heading toward single-component PUR adhesives.

Adhesives for engineered timber constructions of renown

Without the Loctite Purbond adhesives, laminated timber structures would never have been elevated to the high-tech standing that they enjoy today. They facilitate the creation of extraordinary designs with huge spans and comprised of the most



unusual of component shapes – all thanks to glued laminated and thus highly load-bearing engineered timber components.

An impressive example for ongoing development in engineered timber construction is provided by currently the highest timber building in the world – the 18-storey “Brock Commons” dormitory block at the University of British Columbia (UBC) in Vancouver/Canada. The building is 53 meters high with accommodation for 404 students. During the construction period of just 66 days, a total of 1,302 glued laminated timber supports and 464 cross-laminated beams were joined together around two staircase and elevator shafts of concrete to form the load-bearing structure.

Another project of particular note which appeared at the 2016 London Design Festival was “The Smile,” a visitor-accessible, temporary art installation of exaggerated curved shape made of cross-laminated tulip wood. As the name suggests, it emulates a smiling mouth. The components were bonded with an adhesive of the Loctite HB S Purbond line in combination with Loctite PR 3105 Purbond primer.

As a further example, May 2016 saw the inauguration of the research and accommodation building NEST (Next Evolution in Sustainable Building Technologies) at EMPA (Swiss Federal Laboratories for Materials Science and Technology) in Dübendorf/Switzerland. Here, cross-laminated beech timber elements were constructed for the first time using the Loctite Purbond primer system.

The innovative implementation of all these projects reflects Henkel’s commitment to providing cost-efficient and technically convincing solutions while consistently meeting new requirements on single-component PUR adhesives for load-bearing laminated timber construction.

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About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty



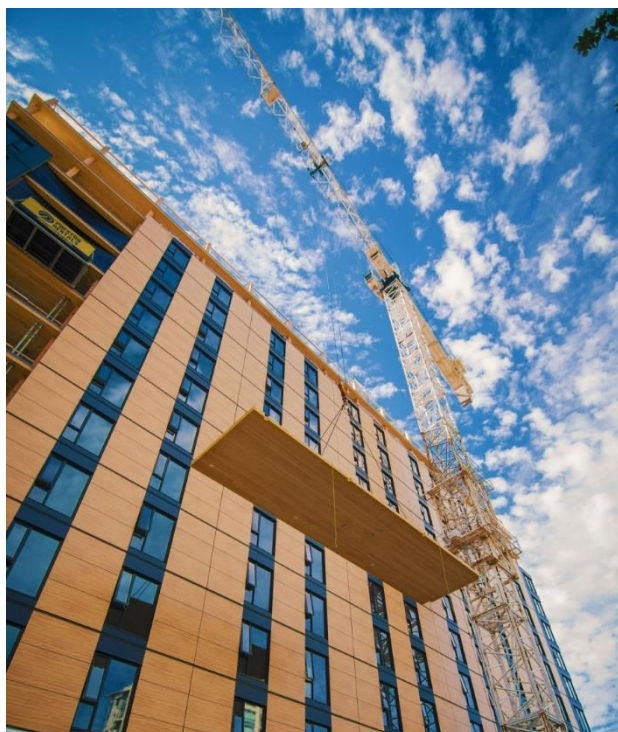
Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2016, Henkel reported sales of 18.7 billion euros, adjusted operating profit of 3.2 billion euros. Its three top brands, Persil (detergent), Schwarzkopf (hair care) and Loctite (adhesive) generated more than 6 billion euros in combined sales. Henkel employs more than 50,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com

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The "Brock Commons" is an innovative hybrid timber-and-concrete building at the University Of British Columbia (UBC). The engineered timber structure was erected in less than 70 days, some four months faster than a typical project of this size. At 53 meters in height once it is completed in May 2017, Brock Commons will

be the tallest timber accommodation building in the world, providing space to 400 students. (Photo: Seagate Structures)



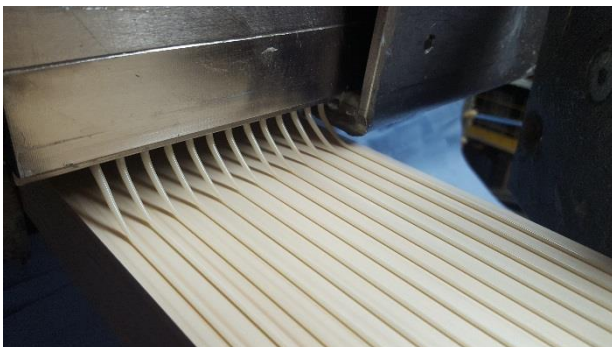
The curved form of the visitor-accessible, temporary art installation “The Smile” of cross-laminated tulip wood, which appeared at the London Design Festival, represents a smiling mouth. The components were bonded with an adhesive of the Loctite HB S Purbond line in combination with the newly developed primer Loctite PR 3105 Purbond. (Photos: Arup, www.thetulipwoodsmile.info)



In May 2016, the research and accommodation building NEST (Next Evolution in Sustainable Building Technologies) was inaugurated at EMPA Dübendorf/Switzerland. Here for the first time, cross-laminated beech timber elements were bonded with the Loctite Purbond primer system to create the load-bearing structure. (Photo: Roman Keller)



The canopy-like freestanding domed roof of the elephant house, which opened at Zurich Zoo in Switzerland in mid-2014, consists of high-load cross-laminated timber elements bonded with an adhesive of the Loctite HB S Purbond line. With this fiber-free adhesive facilitating a production process which is as individual as it is reliable, it was possible to meet the high demands on structural strength and shape stability in the laminated panels employed. (Photos: Jean-Luc Grossmann)



Loctite Purbond adhesives facilitate clean, economical glue application at high laminate feed rates (Photo: Schneider Bestwood)



Henkel has an experienced and motivated team driving innovation and researching the best possible solutions to individual customer requirements.