



FENCELINE



Laminata

Mt Pokaka Timber Products Ltd.

Laminata FENCELINE XLP

Product Technical Statement New Zealand

XLP Plank Product Technical Statement New Zealand



Use of This Product Technical Statement

Thank you for choosing to build with Laminata **FENCELINE XLP** plank. Mt. Pokaka manufacture Cross Laminated Pine planks (XLP) from one hundred percent natural and renewable radiata pine. Each lamella and panel is unique, even with great care by Mt. Pokaka, slight deviations in grain pattern, knot location and colour will occur. By choosing to build with **XLP** timber you are embracing the natural beauty of a renewable building material, it's perfection is in its natural imperfection. The information in this Product Technical Statement applies to Laminata Cross Laminated Pine (XLP) only. The Product Technical Statement is not intended as general information and guidance for all manufactured Cross Laminated Pine or Timber products.

Product Description	Laminata Cross Laminated Pine (XLP) Planks are non-structural timber planks made with layers of solid Radiata Pine lamellas arranged at right angles to one another, laminated together with a moisture cured polyurethane glue applied to the face under pressure. The 90degree cross lamination of alternate layers provides dimensional stability, strength, and rigidity.
Origin of Manufacture	Laminata XLP planks are manufactured at Mt. pokaka Timber Products Ltd. 1213 SH10, Kerikeri, NORTHLAND, 0293, NZ.
Scope of Use	Laminata XLP planks for Outdoor Use - FENCELINE are non-structural building components for fencing and outdoor building. Laminata FENCELINE XLP planks can be used in AS/NZS 4364:2010 Service Class 1,2 &3 environments and must be used only in non-structural applications. XLP planks should not be installed in areas that may be exposed to constant moisture or in contact with ground. FENCELINE XLP planks are kiln dried and should be kept covered at all times during storage outside to avoid getting wet, until installation is completed. Once installed, the use of lamellas treated with MicroPro MCA to H3.2 provides long term durability.
Conditions	Laminata FENCELINE planks can be installed into an outdoor environment. Laminata XLP planks are treated to H3.2 with MicroPro MCA and kiln-dried. FENCELINE XLP planks non-structural. The design of buildings using Laminata XLP panels must be carried out by a suitably qualified structural engineering firm that supplies PS1 and PS4 for any structural or bracing use. A maintenance plan should be devised and followed to ensure the XLP is not exposed to ground contact or prolonged elevated moisture or conditions that would encourage mould and fungi growth.
Limitations	Laminata FENCELINE XLP planks can be used in Service Class 1, 2 or 3 environments. Use in areas where high levels of moisture exposure are anticipated should be avoided. XLP planks are non-structural and should not be used as structural building elements. The use of Laminata XLP planks as structural elements can only be carried out by a suitably qualified structural engineering firm that supplies PS1 and PS4 for any structural or bracing use.



New Zealand Code Compliance: Laminata **XLP** planks when designed and specified by an appropriately qualified person and approval of this design is provided by the Relevant Building Consent Authority can meet the following provisions of the New Zealand Building Code:

NZBC Building Code Clause	Basis of Compliance	References
B1 Structure B1.3.1 B1.3.2 B1.3.3 (a, b, c, f, h, q) B1.3.4 (a, b, d, e)	Design to NZS 3603:1993	SCION Testing to AS/NZS4063.1:2010 and AS/NZS4063.2:2010. P.K. Eng. Deflection Testing for spans for SED.
B2 Durability B2.3.1(a)	Treatment to AS/NZS 3640:2003	Permanent Preservative Treatment Certificate. Mt Pokaka Timber Products
H 1 Energy Efficiency Provisions H1.3.1(a)(c)	The thermal conductivity of Radiata Pine in NZS 4214:2006 at 12% moisture content is defined as 0.12 W/mK	NZS 4214:2006

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Environmental	• Mt. Pokaka sources feedstock from FSC certified suppliers and favours local Iwi owner forest supply to support local economy. • Laminata MiniCLT panel treatment utilises Koppers MicroPro MCA which has been certified by SCS Global Services as an Environmentally Preferable Treated Wood Process based on Life-Cycle Assessment. • MicroPro also has GREENGAURD UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings • Laminata XLP planks are fabricated from renewable plantation timber and are superb long term Carbon Lock.
Dimensional Stability	Across the thickness of a panel the shrinkage/expansion is 0.25% per % change in moisture content, longitudinally the shrinkage/expansion is 0.20% per % change in MC content.
Visual Appearance	Laminata FENCELINE XLP planks has one visual grade: Knot Spec (KW). Knot spec has tight knot specifications for visual appearance. Laminata FENCELINE XLP has a bandsawn finish. SURFACE CHECKING Timber is a natural product and no two pieces are the same. After installation and when the timber has been exposed to the sun, wind and/or rain, the occurrence of 'checking' (or small splits) on the surface of the paling is a normal and natural releasing of tension in the timber.
Warranty	Unless otherwise specified in contract documents, Mt Pokaka warrants Laminata XLP against faulty materials or workmanship for a period of 3 months from the date of delivery of XLP to the Customer.
Maintenance & Operation	All exposed FENCELINE XLP planks should be sealed and protected with a suitable water barrier. To protect your new fence, shed or gate, we recommend coating it with a water based fence stain. Ensure the stain is designed to rejuvenate and transform the colour of exterior timber, delivering a more durable and attractive result. During commissioning of the fence or building the owner should develop a maintenance plan which incorporates measures to ensure the XLP is maintained in dry environment, including but not limited to reviews of: • Ensure no parts of the XLP plank are in contact with the ground. • Scheduled re-coating to protect the planks. • The presence of termites. • The integrity of fasteners.
Timber Treatment	Laminata MiniCLT panels treated to H3.2 with MicroPro MCA are covered by Koppers performance chemicals Treated Wood product Warranty for 50 years.
Durability	MiniCLT panels when installed in accordance with the Laminata Homes factory plans provides sufficient detailing to ensure CLT panels will not be exposed to extended periods of high humidity/moisture without the ability to adequately dry, and maintained in accordance with the recommendations provided here, are expected to have a minimum service life of 50 years.
Adhesion	Mt Pokaka utilises Henkel Loctite-Purbond adhesives which have been confirmed as Type 1 adhesives as defined in AS/NZS 4364:2010 by independent laboratories.
Fixings and Fittings	Use fasteners and other hardware which comply with building code requirements for the AS/NZS 4364:2010 Service Class environment as per fixings and fittings manufacturers specifications. MicroPro MCA treatment does not increase corrosion risk to fixings and fittings. Stainless Steel is recommended for all exterior fixings.

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Quality Assurance	Mt. Pokaka ensures machining, glue lamination and production of the XLP plank adheres to our Quality Control Manual in line with ISO 16696. Daily and Weekly production checks are carried out to meet Henkel requirements for glue line integrity.
Product Support	Mt Pokaka has experienced sales, manufacturing, design, technical and construction teams available to assist in the design, specification and construction of XLP plank construction projects from initial project concept to development of detailed designs, manufacture and construction.
Validity	This document is reviewed annually to ensure that it is up to date with the most recent testing and versions of the NZBC.
Related Documents	<u>SCION - Mechanical Testing of 30, 40 & 50mm MiniCLT TE18-031</u> <u>PK ENGINEERING - Report on testing of Laminata Timber</u>
Reference Websites	<u>https://www.kopperspc.co.nz/micropro/</u> <u>https://anz.fsc.org/fsc-forest-stewardship-standard-for-new-zealand-nz-fss</u>

Further Information

If you require further information on the properties of Mt Pokaka Laminata XLP planks please contact sales@mtpokaka.co.nz and we would be happy to assist. We can provide information and introductions to external consultants who can assist in your project and further information as appropriate.

Disclaimer

This Product Technical Statement provides information on Mt. Pokaka Laminata XLP floor, ceiling, wall planks. The information provided in this document is supplied in good faith and to the best of our knowledge was correct at the time of preparation. No responsibility can be accepted by Mt. Pokaka, its staff or its agents for any errors or omissions. Users are advised to make their own determination as to the suitability of this information in relation to their particular purposes and specific circumstances. No warranty or assurance can be given that other restrictions and or limitations to the use of XLP planks separate to the information provided may apply. Mt Pokaka disclaims all liability and responsibility for any loss or damage, direct or indirect, which may be suffered by any person acting in reliance on anything contained in or omitted from this Product Technical Statement.



Mt. Pokaka Timber Products Ltd.

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Kerikeri,

New Zealand

sales@mtpokaka.co.nz

To whom it may concern

14 October 2010

Information on New Structural Wood Adhesive Qualification Standard for Australia and New Zealand

Dear Sir or Madam

With this letter we inform you that the development process of the new performance based on Australian/New Zealand structural adhesive qualification standard AS/NZS 4364 was finalised on 5th October 2010 by the relevant standards committee TM 004.

Standards Australia will publish the new standard within the next 2 months. From the date of publication, both standards will be concurrently valid for the duration of 12 months. After this co-existence period is elapsed, only the new performance based standard will be valid for the qualification of structural wood adhesives.

Related standards with reference to the existing 1996 version of AS/NZS 4364 will be amended simultaneously to reference the new performance based standard.

Key characteristics of the new adhesive standard

- The standard is performance based; any technology can be qualified if requirements are met;
- 2 parallel pathways of test methods are accepted: (A) Canadian methods and (B) European methods;
- The intent of the standard is to classify adhesives for use in 3 different Service Classes: (1) Interior, (2) Exterior under cover and (3) Exterior full exposure;
- The standard is in general in line with the newly published ISO 20152-1 adhesive qualification standard;
- Necessary editorial amendments agreed by the committee will be automatically incorporated into the relevant cross-referenced production standards: AS/NZS 1328.1 (glulam), AS 5068 (structural finger-joints).

Implication for Purbond adhesive approval in Australia and New Zealand

- PURBOND HB S-Line fully complies with the new standard and is qualified for all above mentioned Service Classes.

If you have any further questions, please contact your local Purbond representative.

Yours sincerely



Walter Stampfli
General Manager



Stefan Gerber
Technology Manager

Durability statement for LOCTITE-PURBOND Adhesives

LOCTITE-PURBOND adhesives for Engineered Wood Elements

LOCTITE-PURBOND adhesives have ever since been evaluated for the use in all three service classes, mainly considering glulam as target application. Since the introduction of the first commercially available 1C PUR adhesive in 1994 – PURBOND HB 110 – thousands of cubic meters of load-bearing wood elements have been produced using this technology. Therefore, in addition to the many accelerated durability tests specified by the standards, a huge pool of practical experience could be gathered meanwhile.

Compliance to standard durability requirements

LOCTITE-PURBOND adhesive are classified as Typ I adhesive for the use service classes 1, 2 and 3. They are certified according to the relevant standards for use in structural applications. These standards include a range of durability tests or so called *accelerated aging tests*. Such tests are designed to predict the durability and the long-term performance of adhesives.

- EN 301 and EN 302-2, delamination test
- EN 301 and EN 302-1, tension shear test after various climatic treatments
- EN 391, Method A and Method B, delamination test
- EN 14080, Annex C, longterm creep tests under varying climate conditions
- AS/NZS 4364:2010 and AS/NZS 4364:1996, delamination and shear tests after various climatic treatments
- JAS OE-4, delamination test of finger joints (boil-dry and vacuum-pressure)
- JAS Cond B&C, delamination and shear tests

Durability of the LOCTITE-PURBOND glueline

LOCTITE-PURBOND adhesives are formulated for the most part with high-performance raw materials from Bayer MaterialScience AG. These so called prepolymers are based on polyether polyols and diisocyanatodiphenylmethane and are terminated with moisture reactive isocyanate groups. The adhesives also contain catalysts and other additives. When an adhesive so formulated is applied to wood, it reacts with moisture from the substrate or the ambient air to form a durable and inert polyether-based polyurethane-polyurea system. Once cured, LOCTITE-PURBOND products are resistant to hydrolysis, oxidation and thermal or microbial degradation.

Long-term experience with durability

Over the years, Purbond has not only subjected all their adhesives to the necessary strength- and durability tests called up by the relevant certification bodies and standards, but also installed additional long-term durability and in-service trials. These trials have produced evidence that LOCTITE-PURBOND adhesives used in glulam beams (1) perform on the same level as the established formaldehyde-based adhesives under constant load in terms of deflection and creep, and (2) resist long-term full exposure to the weather. (1) is proven by an ongoing comparative full-scale 4-point bending test on glulam beams loaded at a bending stress level of 14 MPa (1,2 MPa shear stress), which were installed at MPA University, Stuttgart, Germany in 1992. This test is still ongoing. (2) is supported by a study on a fully exposed 20-year-old beam showing that the adhesive layer blocked the advancement of microbiological decay of the exposed wood. Additionally, EMPA (Swiss Federal Laboratories for Materials Testing and Research) conducted a status assessment of LOCTITE-PURBOND-adhesive joints in fully exposed timber bridges⁽¹⁾. The bridges were at the time of assessment between 6 and 12 years in service. The results of the inspections showed no signs of delamination and degradation.

With thousands of engineered wood structures bonded with LOCTITE-PURBOND adhesives, being in service across Europe since the early nineties, and with the backing of the above mentioned evidence of performance under the current standard requirements as well as in ongoing long-term trials, we herewith confirm that LOCTITE-PURBOND adhesives are reliable and safe to be used for bonding engineered wood products for use in all service conditions including service class 3.

Henkel-Purbond, June 2015

¹ A. Fischer, K. Richer (2004), Inspection of 1KPUR / PRF bond lines at selected timber bridges in Grindelwald / Be (CH), Walde / Ag (CH) and Gross Bieberau (D), EMPA Dübendorf.

LOCTITE HB S029 PURBOND

August 2022

This technical data sheet was coordinated with MPA University Stuttgart, an independent material testing laboratory.

It is only applicable in accordance with application instructions for finger jointing LOCTITE HB S PURBOND line.

PRODUCT DESCRIPTION

LOCTITE HB S029 PURBOND provides the following product characteristics:

Technology	Polyurethane
Product Type	Assembly Glue
Application	Structural Engineered Wood Products
Components	One-component
Basis	Isocyanate prepolymer
Condition	Solvent-free, formaldehyde-free
Appearance	Beige, liquid, (after curing: wood tone, solid)
Cure	Air humidity and moisture in the wood

Application Areas

- Manufacturing of engineered wood products in service classes 1, 2 and 3 according to EN 1995-1-1
- Finger joint, e.g. flange-web, web-web connections in I-joists



Wood species (approved according to EN 15425)

Finger jointing without a primer:

- European larch (*Larix decidua*)
- European spruce (*Picea abies*)
- European silver fir (*Abies alba*)
- Scotch pine (*Pinus sylvestris*)

Product Properties

- Strong, non-brittle adhesive film
- Resistant to weak alkalis, acids and solvents
- Good flow properties
- Fluorescent
- Classified as **EN 15425 I 70 FJ 0,1 w** adhesive
- Approved and registered to various certificates and registrations, see section Certifications & Registrations

Technical Data

LOCTITE HB S029 PURBOND:

Solid Content, %:	
free from fiber and abrasive fillers	100
Viscosity, Brookfield - 20 °C, mPa.s :	
Spindle 6, speed 20 rpm - after 16 to 36 hours after production	20,000 to 32,000

Typical Properties

Density, g/cm ³	1.16
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Maximal assembly time, minutes 20°C / 65% relative air humidity (RH) and a wood moisture content of 12%	2
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Minimal curing time (finger joints) at 20°C and 12% wood surface moisture content, bond line thickness:

- of up to 0.1 mm, minutes	5
- of up to 0.1 mm with approval of Henkel Engineered Wood and the certification body:	4
minutes	4

Time to reach final bonding strength at 20°C with 65% RH and a wood moisture content of 12 %, bond line thickness:	
- of max. 0.1 mm, hours	1

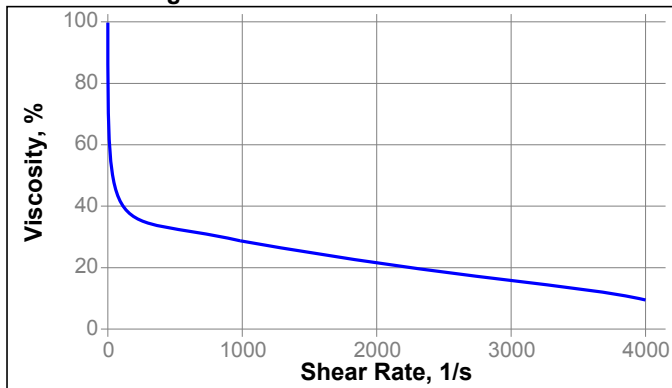
In case of too dry wood surfaces, the surface moisture content maybe raised by moderate spraying of water.

Please follow the detailed application instructions for finger jointing of LOCTITE HB S PURBOND line.

The above times depend on production parameters (moisture/temperature of wood and air; glue line thickness), application type and system. An optimization in accordance with Henkel Engineered Wood is possible.

Slight foaming of the adhesive during hardening is caused by the curing reaction and is normal.

The adhesive shows shear thinning behaviour. Please see an exemplary viscosity – shear rate – relationship in the graph below.

Shear Thinning:**DIRECTIONS OF USE****Preliminary Statement**

Prior to application it is necessary to read the **Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed. Please also refer to the local safety instructions and contact Henkel for analytical support.

Application

For safe use of LOCTITE HB S029 PURBOND, please refer to this document as well as the specific Application Instructions for finger jointing of LOCTITE HB S PURBOND line. A suitable quality control system is recommended.

Protection and cleaning**SAFETY PRECAUTIONS**

The use of protective gloves is highly recommended. Best practice makes gloves and safety glasses mandatory when handling the adhesive or any chemicals associated with the manufacturing process.

CLEANING

Prior to bringing a plant into initial operation, Henkel recommends the use of release agents to prevent adhesive adhering to equipment and tools, e.g. LOCTITE RELEASE AGENT PURBOND. Henkel can make recommendations upon request, but all release agents should be appropriate for the adhesive and materials to which they are applied.

CERTIFICATIONS & REGISTRATIONS

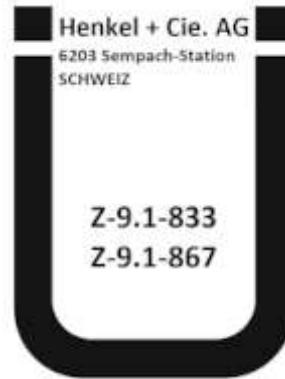
Classified as **EN 15425 I 70 FJ 0,1 w** according to standard EN 15425:2017. The adhesive can be used to manufacture finger joints of glued laminated timber according to EN 14080:2013, of structural finger jointed solid timber according to EN 15497:2014 and of cross laminated timber (CLT) according to EN 16351:2021 or EAD 130005-00-0304.

National Technical Approval by the DIBt (Deutsches Institut für Bautechnik) for the LOCTITE HB S029 PURBOND adhesive for the fabrication of load-bearing engineered wood components.

Certification number:

Z-9.1-833

Z-9.1-867



Classification Type I pursuant to EN 15425 (2008) of LOCTITE HB S029 PURBOND adhesive for finger-jointed and glue-laminated load-bearing wood structures, by the FCBA based on following documents:

FCBA n° LBO/GL/MP403/09/274

FCBA n° LBO/GL/MP403/09/275

FCBA n° LBO/GL/MP403/09/276



Fulfills the requirements as a Type I adhesive in accordance with AS/NZS **4364:2010** and is suitable for Service Class 3 applications.

Formaldehyde Classification:

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

Register Number: **JAIA-008888**

JAIA F ★★★★★

Classification for VOC, formaldehyde, ammonia and odor:

Fulfills the M1-criteria for low-emission building materials

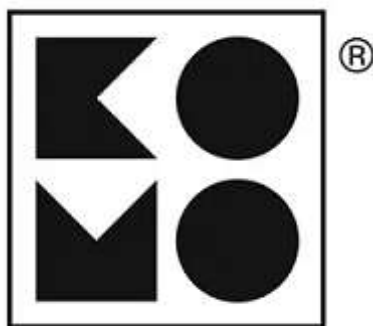
Issued by The Building Information Foundation RTS sr



KOMO® (Iijmen DHBC) product certificate **nr. 21008**.



Complies with the BRL 2338 standard, "Adhesives for load-bearing wooden building constructions".



Cradle to Cradle Classification:
Material Health Certificate "Gold"



STORAGE

Store in the original tightly closed packaging in a cool, dry place.

Shelf life

Shelf-life (in unopened original packaging), 10 months

Classification

Please refer to the corresponding **safety data sheets** for details on:

Hazardous Information

Transport Regulations

Safety Regulations

ADDITIONAL INFORMATION

Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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Reference 0.2