UNIQUELY GLULAM

Glued Laminated Timber (Glulam) is a high strength engineered wood material. Finger-jointed pieces of strength-graded solid timber (lamellae) are glued together to form large structural members such as beams and columns.

The unique characteristics of Glulam allow for larger sizes and complex curved shapes that are not possible with other building materials.

In commercial construction, Glulam beams may span distances up to 30 metres. Glulam trusses and arches can span even larger distances. In residential construction, Glulam can be used as columns, bearers or floor beams, floor joists, roof beams, rafters and ridge beams located at the apex of a pitched roof structure.

Glulam's high strength-to-weight ratio makes it easier to handle as compared to equivalent steel and concrete elements.

As main structural members, it is critical that Glulam members are appropriately designed and manufactured to ensure reliable performance.

MANUFACTURE

Glulam is a highly engineered product and must be manufactured in a strict controlled environment that meets certain quality control requirements:-

- Strength graded lumber
- Adhesives with stringent requirements for strength and durability
- Daily quality control tests as specified by appropriate standards for Glulam
- Keeping records of every production

Glulam manufacturers can produce virtually any size, section and profile, subject to transportation limitations.

QUALITY ASSURANCE AND MARKING

The excellent quality of Glulam members should be guaranteed by a continuous and rigorous internal quality control. Quality control is audited by a third party agency to ensure that the manufacture of Glulam members conforms to certain standard requirements.

Glulam should have appropriate markings that include:-

- Name of manufacturer
- Certificate number
- Standard number (*e.g.*, MS 758, BS EN 14080, *etc.*)
- Adhesive type
- Timber species
- Date of manufacture or batch number

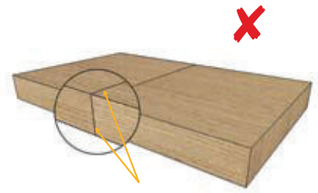
cover photo
Cancer Care Centre, Credit Valley Hospital, Canada
Credit: Farrow Partnership Architects / Tom Arban

Yellow Treehouse, New Zealand
Credit: Pete Eising, Pacific Environments Architects / LucyG Photography

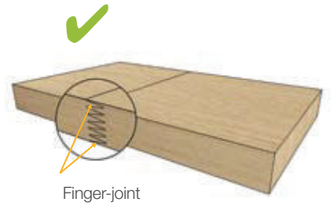
The Winter Garden, UK
Credit: Communication Service, Sheffield City Council

INDICATORS OF NON-CONFORMING GLULAM

It is not always possible to distinguish Glulam that are properly manufactured and those that are not. Many of the stringent required inputs that make up a proper Glulam member are not visible in the finished product. In other words, it is very easy to pass off a poorly made Glulam member to the unsuspecting buyer. The illustrations on this page provide some guidelines and obvious indicators to distinguish proper Glulam members from non-conforming Glulam.

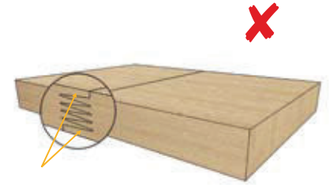


Butt joint



Finger-joint without shoulder

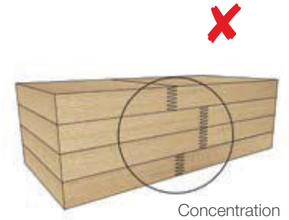
Structural finger-joints are without shoulders. Butt joints are not allowed.



Finger-joint with shoulders

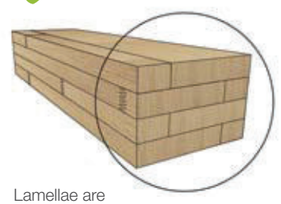
Finger-joints properly spaced

Spacing of finger-joints must be greater than the width of the beam.



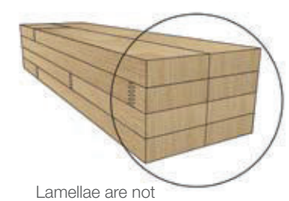
Concentration of finger-joints

x = width of Glulam



Lamellae are properly staggered

Lamellae must be properly staggered.



Lamellae are not properly staggered

Equal thickness of lamellae

Lamellae must be of uniform thickness.

Un-equal thickness of lamellae