

**Q** *Why should I use Glulam instead of steel?*

**A** Here are just a few reasons –

- Easier and lighter to handle and fix
- Friendlier on the environment – stores carbon rather than emitting it
- Uses NZ's only renewable construction material – plantation timber
- Uses 14 times less energy to produce than equivalent steel beam
- Superior Fire Resistance compared to steel
- Lower maintenance – Glulam does not rust or corrode
- Cost effective – no boxing in or covering steel beams
- Appearance – natural warmth and beauty of timber cannot be reproduced in steel
- Will not buckle or distort in response to temperature changes
- Direct fixing of plates, joists and other connections is much easier

**Q** *Why should I use Glulam instead of solid timber?*

**A** Because Glulam is manufactured from selected grade, kiln dried material it is stronger and more stable than a solid timber beam of the same section. The tendency of large section solid timber to twist, split and shrink is greatly minimised in Glulam. A Glulam beam can reduce the overall section of members up to 40% compared to unseasoned timber.

**Q** *What Type of Quality assurance comes with Glulam Beams?*

**A** All Glulam must be manufactured to comply with the joint Australia and New Zealand Standard. Licensed manufacturers are regularly inspected by the NZ Timber Certification Board and issued with an individual License number. This certifies that the manufacturer's production system complies with the detailed requirements of AS/NZS 1328 – Glue Laminated Structural Timber. Audits are also carried out by Bureau Veritas to ensure compliance and quality control procedures and records are in place. To ensure you have a quality product check that your supplier has a current license number.

**Q** *Can Glulam beams be used in exterior situations?*

**A** Yes. Treatment to hazard class 3 (H3) is recommended for all Glulam beams exposed to the weather. Along with this treatment an exterior adhesive such as resorcinol adhesive should be used. The finished beams must be suitably coated with either a penetrating sealer or film forming coating. When painting or staining external Glulam beams it is preferable to use lighter colours. Dark colours attract heat and may cause surface shrinkage. Because Glulam is chemically inert it is ideal for corrosive atmospheres such as marine structures, fertilisers and scouring plants where steel is subject to rust and corrosion.

**Q** *What finish should I ask for on my beams?*

**A** If your beam is going to be used in a situation where appearance is important such as house interiors, halls etc – appearance Grade A should be specified. This calls for a flush, filled and sanded surface. Appearance Grade B is intended for applications where surface appearance is not so critical and a machine planed finish that may have occasional skips and other minor voids is acceptable.

**Q** *What strength grades should Glulam be designed to?*

**A** The new Glulam Code AS/NZS 1328 allocated Glulam beams manufacturers in NZ Radiata Pine to three grades – GL8, GL10, & GL12. These figures refer to the stiffness (E) of the beam. The most common is GL8; some manufacturers are certified to produce GL10 or GL12. Check with your supplier.

**Q** *Are there any recommendations for storage of Glulam?*

**A** In order to maintain the best condition of manufactured Glulam proper storage and handling is important. They should be stacked well clear of the ground and protected from the elements. Stacks of beams should be covered with a weatherproof material ensuring adequate ventilation to prevent condensation building up. Avoid black polythene, as this will make the beams sweat. If possible fillet stack beams to allow air circulation.



Avoid the use of chains or hard ropes that might damage the edges of beams. When lifting ensure the beams evenly supported and use fabric slings properly secured to prevent any slipping. Avoid any sudden movements when lifting.

Be careful not to handle and lift long beams on their weak axis – flat – as they are designed to act as a beam not a plank.

Remember these are pre-finished members and a lack of care during storage and installation will affect the finished appearance.

**Q** *How long should I keep wrapping on?*

**A** Wrapping of Glulam beams is primarily to protect them from marking during handling and transport. This is not designed to be a waterproof protection. Once on-site water can often get in under the wrapping and cannot get out. Wrapping should be slit to provide drainage.

Wrapping can be left on Glulam beams for as long as possible (even during construction) to protect against accidental marking.

Also be aware that partial removal of wrapping to access connections may cause patches of discolouration by exposure to weather.

**Q** *Do I need special connections for my beams?*

**A** Glulam can be treated as natural solid timber when it comes to fixings. The use of standard nailing systems and bolts is normal. In exposed situations dark stains can appear from the use of unprotected steel brackets and bolts. Use galvanised metalwork where there is any possibility of moisture.

**Q** *Can finished Glulam beams be re-cut and drilled?*

**A** Any cutting, drilling or slotting that exposes unsealed timber must be protected with an application of appropriate weather or treatment sealer. Avoid cut-outs, rebating or drilling in the top and bottom edges of Glulam beams. These could cause serious weakness in tension and compression areas. Consult the manufacturer or designer first.

**Q** *Will CCA treated Glulam cause corrosion on galvanised fixings?*

**A** While this may be a problem with solid unseasoned timber, Glulam does not act in the same way. Because all Glulam is manufactured from material that is kiln dried after treatment, the treatments salts are thoroughly fixed into the timber. They will therefore not subsequently leach out or affect galvanised fixings. For additional protection bolts may be greased before inserting into CCA treated Glulam beams that are exposed to weathering.

**Q** *Do splits along glue lines mean delamination has occurred?*

**A** Actual delamination is a failure in the laminating process. While an opening along a glue line may be indicative of delamination there are other more common causes. Typical checking that occurs in large section timber in response to moisture variation will most naturally occur in Glulam along a glue line where the natural continuation of the timber fibres is interrupted. This is often mistaken for delamination.

**Q** *How serious are checks and why do they appear?*

**A** Surface checking and splits occur as timber is allowed to absorb moisture then dries out in response to environmental changes. Surface fibres are more severely exposed to these changes than the inner core and as a result of the movement in these fibres as they dry and shrink, surface splits may occur. Changes in atmospheric conditions will affect the appearance and disappearance of these checks. The effect of surface checks are superficial only and do not usually have any effect on the structural performance of the Glulam.

**Q** *How can these checks be minimised?*

**A** Glulam beams should be provided with a coating capable of controlling the ingress of moisture into the timber, which is done before the beams leave the factory. If the beams are exposed to the weather for a greater period than 8-10 weeks a further coating should be applied. For coatings to protect beams that are permanently exposed to the elements consult a coatings specialist.

