

Glulam manufacture

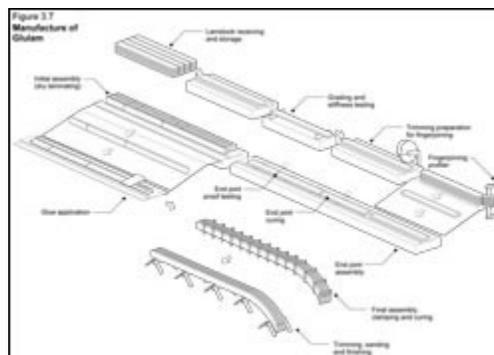
The dimension lumber pieces that make up glulam are end jointed and arranged in horizontal layers or laminations. The lumber used for the manufacture of glulam is a special grade (lamstock) that is purchased directly from lumber mills. The lamstock is dried to a maximum moisture content of 15 percent and planed to a closer tolerance than that required for visually graded lumber. Laminating multiple pieces together is an effective way of using high strength dimension lumber of limited length to manufacture glulam members in many cross sectional shapes and lengths.

The special grade of lumber used for glulam, lamstock, is received and stored at the laminating plant under controlled conditions. The lamstock must be dried to a moisture content of between 7 and 15% before laminating to maximize adhesion and minimize shrinkage in service. The lumber laminations (lamstock) are visually and mechanically sorted for strength and stiffness into lamstock grades. The assessments of strength and stiffness are used to determine where a given piece will be situated in a beam or column. For example, high strength pieces are placed in the outermost laminations of a beam where the bending stresses are the greatest and for columns and tension members, the stronger laminations are more equally distributed. This blending of strength characteristics is known as grade combination and ensures consistent performance of the finished product. The laminations are glued under pressure using a waterproof adhesive. See Figure 3.7, below, for a schematic representation of glulam manufacture.

Glulam beams may also be cambered, which means that they may be produced with a slight upward bow so that the amount of deflection under service loads is reduced. A typical camber is 2 to 4 mm per metre of length.

Glulam is manufactured to meet the requirements outlined in CSA O122 *Structural Glued-Laminated Timber*.

Figure 3.7: Manufacture of Glulam



[Download this Figure as a PDF.](#)