# LAMELLÉ-COLLÉGLUED LAMINATED TIMBER

**DEFINITION AND ROLE**

Glued laminated timber is a structural element made up of several wooden strips joined together and glued along their sides. This technique makes it possible to obtain heavy duty elements without any length limitations, for use in structures with extended sides. It makes it possible to produce straight poles and beams upon demand, either curved or with variable inertia. When the strips have equivalent properties, the glued laminated timber is said to be homogeneous. The overall performance of a beam can be improved during the production process by placing more resistant strips along the outer layers; this is referred to as variegated glued laminated timber. The glued laminated timber class is designated by two letters, GL (for glulam), followed by the bending strength value, followed by a letter indicating the type of glued laminated timber: h (homogeneous) or c (combined).
Example: GL 24 h.

**STRESSES**

Glued laminated timber mainly performs a mechanical function. As they are generally sheltered, posts and beams made with glued laminated timber can be subject to slight or occasional moisture (condensations, sprays, etc.).

**REQUIRED PROPERTIES**

The ratings and performances of glued laminated timber are described in standard EN 14080. The CE marking allows its performances to be displayed. Depending on the exposure and risk of biological degradation, an insecticidal fungicide treatment may be required if the natural durability is insufficient.

**PRINCIPLES OF IMPLEMENTATION**

Possible applications of glued laminated timber include a wide range of structures (poles, joists, beams, frameworks, etc.), as well as layout and decorative products (box girders, mezzanine structures, joinery, staircases, steps, trays, flat surfaces, furniture facades, etc.).
For species whose durability is insufficient, construction site cuts and trims must be retreated. Glued laminated beams use timber-timber assemblies (tenons-mortise, joins, dowels, etc.) or metallic parts (nails, screws, bolts, pins, plates, saddles, etc.). Walls made with wooden frames are assembled with metal parts.

**USAGE CLASS**

Usage class 2 is required in most cases. More severe exposure may require better risk coverage for usage classes 3 and 4.

Photo: Glued laminated timber posts, Aix-en-Provence train station© M. Vernay