



# LVL

## Laminated veneer lumber for structural applications

LVL consists of several thin, glued layers of wood. Compared to traditional construction wood these structural beams are straighter, offer better fire-safety, are length-independent, have a more homogeneous structure and can boast more consistent physical and mechanical specs. The beams are not subject to deformation from temperature or moist and are highly resistant to torque, bending, cracking and shrinking. High rigidity per unit of weight and a low susceptibility to bending and vibration make LVL beams particularly suitable for large spans.

### Applications

- Floors
- Roofs
- Walls
- Concrete formwork

### Characteristics



Structural



# LVL

## Applications

LVL beams are used in a range of wooden buildings, including both residential and light commercial construction projects. The beams can be used as a bearing structure or finish for the ends of I beams in floors, roofs and walls. LVL is also a good choice for an edge finish or providing extra rigidity. The strength of LVL means the beams can be used singly or in groups like solid wood beams, both in typical wooden constructions or more traditional house-building.

## Technical specifications

Design characteristics of LVL  
EN 1995-1-1 (Eurocode 5)

Characteristic design qualities				LVL
Characteristic	Orientation			Performance
Calculation value density	5% fractile	$\rho_{0,05}$	kg/m <sup>3</sup>	480
Bending strength	On surface	$f_{m,o,k}$	N/mm <sup>2</sup>	50,0
	Along edges	$f_{m,o,k}$	N/mm <sup>2</sup>	48,0
	Tolerance parameter			0,15
Tensile strength	Parallel with fiber	$f_{t,o,k}$	N/mm <sup>2</sup>	36,0
	Perpendicular to fiber, along edges	$f_{t,90,k}$	N/mm <sup>2</sup>	0,9
	Perpendicular to fiber, on surface	$f_{t,90,k}$	N/mm <sup>2</sup>	NPD
Compressive strength	Parallel with fiber	$f_{c,o,k}$	N/mm <sup>2</sup>	40,0
	Perpendicular to fiber, along edges	$f_{c,90,k}$	N/mm <sup>2</sup>	7,5
	Perpendicular to fiber, on surface	$f_{c,90,k}$	N/mm <sup>2</sup>	3,8
Shear force	Parallel to fiber (average)	$f_{v,k}$	N/mm <sup>2</sup>	3,2
	Along edges	$f_{v,k}$	N/mm <sup>2</sup>	4,6
Elasticity modulus	Parallel to fiber (average)	$E_{o,mean}$	N/mm <sup>2</sup>	14000
	Parallel to fiber (5% fractile)	$E_{o,0.05}$	N/mm <sup>2</sup>	12000
	Perpendicular to fiber, along edges (average)	$E_{90,mean}$		NPD
	Perpendicular to fiber, on surface (average)	$E_{90,mean}$		NPD
Shear modulus	Along edges (average)	$G_{mean}$	N/mm <sup>2</sup>	500
	On surface (average)	$G_{mean}$	N/mm <sup>2</sup>	500
Fire reaction class				D-s1, d0
Formaldehyde emission class				E1
Durability class				4

- 1) The use of the LVL is restricted to use classes 1 & 2 in accordance with EN 1995-1-1.
- 2) The characteristic bending strength applies to a reference depth of 300mm. For other depths above 300 the characteristic bending strength must be multiplied by the modification factor  $k_{m,corr}$ :

$$k_{m,corr} = \min \left\{ \left( \frac{300}{h} \right)^{0.150}; 1.2 \right\}$$

- 3) Values apply to all thicknesses
- 4) The characteristic tensile strength is for a reference length of 3000mm. For other lengths longer than 3000mm the characteristic tensile strength must be multiplied by the modification factor  $k_{t,corr}$ :

$$k_{t,corr} = \min \left\{ \left( \frac{3000}{l} \right)^{0.150}; 1.10 \right\}$$

- 5) The elasticity modulus values take account of the effect of shear distortion, which can be disregarded in the calculation of the deflection.
- 6) The  $k_{mod}$  modification factors for LVL are defined in EN 1995-1-1.
- 7) The  $k_{def}$  modification factors for LVL are defined in EN 1995-1-1.
- 8) The safety factor  $\gamma_M$ , defined in EN 1995-1-1, can be taken as 1.20.
- 9) For other design characteristics the factors or values defined for LVL in EN 1995-1-1 are applicable.

## Available dimensions and thicknesses

LVL is available from stock. Consult the complete UNILIN, division panels stock range at [www.unilinpanels.com](http://www.unilinpanels.com).

For our technical possibilities in terms of different thicknesses and dimensions, as well as minimum order requirements, please contact our sales team or email: [info.panels@unilin.com](mailto:info.panels@unilin.com).

Certificates 