

Kerto® LVL

Qp-beam



Kerto® LVL Qp-beam is a dimensionally stiff and precise roof beam to be used in roof structures in new constructions and renovation projects.

Qp-beam enables spacious rooms, and in roof construction, it allows more space, for insulation, for example, and reduces the need for support grids. The structure of Qp-beam is unique: very slender and with a larger height than normal, but rigid. The beam can be produced with a greater height higher than the traditional S-beam, but it is more slender than the S-beam, which mean less wasted material and cost efficiency.

The cross-bonded veneers minimize product swelling and cupping caused by moisture during construction.

Qp-beam is made from 3 mm thick, parallel-grained spruce veneers with two cross-bonded core veneer layers joined with a weather- and boil-resistant phenol formaldehyde adhesive.

MAIN APPLICATIONS

Structural applications:

- Beams with greater height for roof constructions
- Other special roof applications

MAJOR ADVANTAGES

- Dimensionally precise and stiff high beam structure
- Allow beams with greater height
- Designed especially for highly insulated roof constructions
- Dimensionally stable: does not warp or twist
- Minimize waste and save material costs and time on the construction site
- Easy to design using our free Finnwood design software
- Excellent strength-to-weight ratio
- Great workability: easy to fasten, nail and drill
- Natural material: sustainable Nordic wood
- PEFC-certified
- Environmentally friendly
- 1 m³ of Kerto LVL (1 m³) sequesters the equivalent of 789 kg CO₂ stored in wood

APPROVALS

Qp-beam is CE-marked and has a statement by VTT Technical Research Centre of Finland (VTT-S-05156.11).

Kerto LVL production is managed according to the principles of the ISO 9001:2008 standard. The quality and the constancy of performance of the product is controlled by a notified body, VTT Expert Services Ltd, through regular inspections and audits.

PACKING

Packed in moisture-resistant plastic wrapping or packing hoods. Packages can be stored outside only temporarily. For longer-term storage, it is recommended to store Qp-beam under cover in dry conditions.

STANDARD QP-BEAM SIZES

42 × 500 × max 20,000 mm

51 × 620 × max 20,000 mm

63 × 830 × max 20,000 mm

Other thicknesses and special dimensions are available by request – there may be requirements for minimum quantity for special dimensions.

OVERALL DIMENSIONS

	MINIMUM (mm)	MAXIMUM (mm)
Length	2,000*	20,000
Width	500*	830
Thickness	39	75

*Short lengths (<2,000 mm) are available upon request.

TOLERANCES OF KERTO QP-BEAM PRODUCTS*

	SIZE (mm)	MINIMUM (mm)	MAXIMUM (mm)
Thickness	39 < t ≤ 51 mm	-2.0 mm	+2.0 mm
	t > 54 < 75 mm	-3.0 mm	+3.0 mm
Height	> 500	-0.5%	+0.5%
Length	All	-5.0 mm	+5.0 mm

*With a moisture content of 10% ±2%. Special tolerances are available upon request.

PANEL CONSTRUCTIONS

THICKNESS	NUMBER OF PLYS	LAY-UP CONSTRUCTION
39	13	II-III-III-II
42	14	II-III-III-II
45	15	II-III-III-II
51	17	II-III-III-II
57	19	II-III-III-II
63	21	II-III-III-II
69	23	II-III-III-II
75	25	II-III-III-II

Special constructions are also available by request.

METSÄ WOOD

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FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Kerto LVL falls far below the Class E1 requirement of ≤0.1 ppm and also fulfils the most stringent requirements in the world (≤0.03 ppm). The formaldehyde emissions of Kerto LVL are approximately 0.018 ppm.

FURTHER PROCESSING

Qp-beam can be further processed in many different ways according to its end use and the customer's particular requirements.

Sanding	Optical sanding, 1-side and 2-side. Calibrated sanding.
Machining	Beams can be machined to special sizes and shapes, and with notches and holes
Temporary weather protection	WeatherGuard
Fire protection	FireResist (B-s2,d0)
Mould protection	MouldGuard

DESIGN VALUES AND PHYSICAL PROPERTIES

Bending strength	Symbol	Qp-beam 39–51 mm	Unit
Edgewise (depth 300 mm)	$f_{m,0,edge,k}$	36.0	N/mm ²
Flatwise, parallel to grain	$f_{m,0,flat,k}$	28.0	N/mm ²
Bending strength	Symbol	Qp-beam 54–75 mm	Unit
Edgewise (depth 300 mm)	$f_{m,0,edge,k}$	38.0	N/mm ²
Flatwise, parallel to grain	$f_{m,0,flat,k}$	30.0	N/mm ²
Modulus of elasticity 39–51 mm			
Parallel to grain, along	$E_{0,mean}$	11,700	N/mm ²
Modulus of elasticity 54–75 mm			
Parallel to grain, along	$E_{0,mean}$	12,300	N/mm ²
Other properties			
Characteristic density (5%)	ρ_k	480	kg/m ³
Mean density	ρ_{mean}	510	kg/m ³
Moisture content (on mill delivery)		10 (±2)	%
Performance in fire, charring rate	β_n	0.7	mm/min
Euroclass with regard to reaction to fire		D-s1,d0	

FURTHER INFORMATION

- Kerto manual (www.metsawood.com/kertomanual)
- Qp-beam Declaration of Performance (www.metsawood.com/dop)
- Kerto LVL products are CE-marked according to the EN 14374 standard
- VTT certificate 184/03, 2016

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