

# Kerto® LVL

## Q-panel



Kerto® LVL Q-panel is a load-bearing and dimensionally stable product that can be used in both horizontal and vertical structures. Q-panel can be used in the most demanding applications. Use of large Q-panel ensures material efficiency and minimizes installation time.

Kerto LVL Q-panel is made of 3 mm thick strength graded softwood veneers of which approximately 20 % are oriented in crosswise direction. The veneers are bonded with weather- and boil-resistant phenol formaldehyde adhesive. Q-panel has outstanding strength-to-weight ratio. Crosswise veneers ensure excellent dimensional stability and enhance the transverse strength and stiffness of the panel.

Q-panel is an ideal material for load-bearing applications including floor, wall and roof elements due to its stiffness, strength properties and light weight. It can be used in both horizontal and vertical applications.

### Main applications

#### Structural applications:

- Panel product for roof, floor and wall constructions
- High and slender beams
- Headers and lintels
- Portal frames

#### Industrial applications:

- Free shaped beams and panels (CNC machining)
- Components for prefabricated roof, floor and wall elements and modules
- Doors and windows
- Concrete formwork

### Major advantages

- **Strong and rigid**
- **Excellent strength-to-weight ratio**
- **Dimensional stability improved against warp and twist**
- **Great workability and quick to install**
- **Easy to fasten, nail and drill**
- **Ensures material efficiency with customised product dimensions**
- **High and slender beams for energy efficient constructions**
- **Large panels up to 2,500 mm wide, 20 m long**
- **Easy to design with free Finnwood software**
- **Made of sustainable northern wood and PEFC certified**
- **Environmentally friendly**
- **Kerto LVL (1 m<sup>3</sup>) contains the stored carbon equivalent to 778 kg CO<sub>2</sub>**

### Approvals and design properties

Kerto LVL Q-panel is CE marked and the design properties are determined according to standard EN 14374. The design properties given in the Declaration of Performance (DoP) are to be used for structural calculations with EN 1995 (Eurocode 5). The DoP documents can be downloaded from [www.metsawood.com/dop](http://www.metsawood.com/dop).

Q-panel has also Eurofins product Certificate and national approvals in Germany, Norway, Australia and Japan. Design properties outside Europe are given in the approval documents.

Kerto LVL production is managed according to the principles of ISO 9001. The quality and the constancy of the performance of the product is controlled by regular third party inspections and audits.

### Standard sizes

All Q-panel thicknesses are available in standard widths 600, 900, 1,200, 1,800 and 2,500 mm.

Special dimensions are available on request.

### Overall dimensions

	MINIMUM (mm)	MAXIMUM (mm)
Thickness	21	75
Width/height	200	2,500
Length	2,000*	25,000**

\* Short lengths (< 2,000 mm) and widths under 200 mm are available on request.

\*\* For products wider than 1,830 mm, maximum length is 20,000 mm.

### Standard tolerances

	SIZE	MINIMUM	MAXIMUM
Thickness	≤ 27 mm	-1.0 mm	+1.0 mm
	27 < t ≤ 57 mm	-2.0 mm	+2.0 mm
	t > 57 mm	-3.0 mm	+3.0 mm
Width/height	< 400 mm	-2.0 mm	+2.0 mm
	≥ 400 mm	-0.5 %	+0.5 %
Length	All	-5.0 mm	+5.0 mm

In moisture content of 10 ± 2 %. Special tolerances are available on request.

### SANDING OF KERTO LVL AFFECTS PRODUCT THICKNESSES

- Optical sanding reduces the original nominal thickness by approximately 2 mm. The standard thickness tolerances apply to the sanded nominal thickness. Structural design shall be made according to the sanded nominal thickness.
- Calibrated sanding reduces the original nominal thickness by approximately 3 mm. The thickness tolerance of calibrated sanded products is +/- 0.5 mm from the target thickness. The dark glue line may become visible as it is allowed to sand through the face veneers. Structural design shall be made according to the sanded nominal thickness.

### Panel constructions

THICKNESS (mm)	NUMBER OF PLYS	LAY-UP
21	7	I-III-I
21	7	II-I-II
24	8	II-II-II
27	9	II-III-II
30	10	II-III-II
33	11	II-III-II
39	13	II-III-III-II
45	15	II-III-III-II
51	17	II-III-III-II
57	19	II-III-III-III-II
63	21	II-III-III-III-II
69	23	II-III-III-III-II
75	25	II-III-III-III-II

Special constructions are available on request.

### Bonding

Kerto LVL is bonded with a weather- and boil-resistant phenol formaldehyde adhesive. The gluing meets the requirements of the standard EN 14374. The face veneer scarf joints on the front side of the product are glued with colourless adhesive.

During hot pressing the adhesive cures as thermoset plastic, and therefore is inert and non-hazardous to humans and animals.

### Formaldehyde emissions

Determined according to EN 717-1, the formaldehyde emitted by Kerto LVL falls far below the Class E1 requirement of ≤ 0.100 ppm, and also fulfils the most stringent requirements in the world (≤ 0.030 ppm). The formaldehyde emission of Kerto LVL is approximately 0.018 ppm.

### Further processing

Kerto LVL Q-panel can be further processed in various ways according to end-use requirements.

Sanding	Optical sanding, 2 sided only Calibrated sanding, 2 sided only
Edge profiling	Tongue and groove, half-lap
Machining	Machined to special size and shape, notches and holes
Multiple-gluing (GLVL) - not CE marked	Heavy duty beams from 78 mm up to 144 mm, higher beams available on request
Temporary weather protection - up to width 610 mm	WeatherGuard
Treatment against mould	MouldGuard
Treatment against termites (Australia only)	H2S treatment

### Packing

Products are packed in moisture-resistant plastic wrapping or packing hoods. Packages can be stored outside only temporarily. Longer-term storage is recommended under cover in dry conditions.

On request the products can be delivered without plastic wrapping. In this case products shall not be exposed to weather.

### Further information

- Kerto LVL Q-panel Declaration of Performance ([www.metsawood.com/dop](http://www.metsawood.com/dop))
- Eurofins product certificate EUFI29-20000676-C
- Kerto Manual ([www.metsawood.com/kertomanual](http://www.metsawood.com/kertomanual))
- Kerto for Load Bearing Applications brochure

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