

# Kerto® LVL

## S-beam



Kerto® LVL S-beam combines excellent technical performance with ease of use. Its essential qualities include strength, dimensional stability and light weight. It is an ideal choice for all types of construction projects, renovation, new buildings, pre-fabricated houses and elements.

Kerto LVL S-beam is made of 3 mm thick parallel grained spruce veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Kerto LVL S-beams can be used both as horizontal and vertical bearer in various applications in construction systems. S-beam has excellent strength-to-weight ratio which allows extremely long spans with minimal deflection. Erection and installation can be carried out without any heavy machinery, even in confined spaces.

### MAIN APPLICATIONS

#### Structural applications:

- Headers, main beams, ridge beams
- Lintels
- Floor joists
- Roof rafters
- Trusses
- Studs and columns
- Frames
- Components for roof, floor and wall elements

#### Industrial applications:

- Industrial and heavy duty door frames
- Concrete formwork
- Scaffolding

### MAJOR ADVANTAGES

- Strong and rigid
- Long spans with minimal deflection
- Dimensionally stable, does not warp or twist
- Customized product dimensions, with minimum waste, material costs and time on 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
- Kerto LVL S-beam (1 m<sup>3</sup>) contains the stored carbon equivalent to 789 kg CO<sub>2</sub>

### APPROVALS

Kerto LVL S-beam is CE marked and the characteristic properties are determined according to standard EN 14374 for structural design according to Euro-codes. S-beam has VTT certificate number VTT-C-184/03 and national approvals in USA, Norway, Australia, Germany and Japan.

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

### PACKING

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.

### STANDARD SIZES

	WIDTH (mm)									
Thickness (mm)	200	225	260	300	360	400	450	500	600	
27	Kerto®	Kerto®								
33	Kerto®	Kerto®	Kerto®							
39	Kerto®	Kerto®	Kerto®	Kerto®						
45	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®					
51	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®				
57	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®			
63	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®		
75	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	Kerto®	

Special dimensions available by request – there may be requirements for minimum quantity per special dimension

### OVERALL DIMENSIONS

	MINIMUM (mm)	MAXIMUM (mm)
Length	2000*	25 000**
Width	40	2500
Thickness	27	75

\*Short lengths from request (< 2000 mm)

\*\* When product width wider than 1830 mm maximum length 20 000 mm

### TOLERANCES OF KERTO LVL S-BEAM PRODUCTS\*

	SIZE (mm)	MINIMUM (mm)	MAXIMUM (mm)
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
Height/	< 400	-2,0 mm	+2,0 mm
Width	> 400	-0,5 %	+0,5 %
Length	All	-5,0 mm	+5,0 mm

\*In moisture content of 10 ±2 %. Special tolerances from request.

### FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Kerto LVL S-beam falls far below the Class E1 requirement of ≤ 0,100 ppm and fulfils also the most stringent requirements in the world (≤ 0,030 ppm). The formaldehyde emission of Kerto LVL S-beam is approximately 0,018 ppm.



### FURTHER PROCESSING

Kerto LVL S-beam can be further processed in many different ways according to its end-use and customers particular requirements.

<b>Sanding</b>	Optical sanding, 1-side and 2-side. Calibrated sanding.
<b>Edge profiling</b>	Tongue and groove, Half lap
<b>Machining</b>	Beams machining to special size and shape, notches and holes
<b>Re-gluing</b>	Heavy duty beams from 78 mm up to 144 mm
<b>Temporary weather protection</b>	WeatherGuard
<b>Fire protection</b>	FireResist (B-s2,d0)
<b>Mould protection</b>	MouldGuard

### DESIGN VALUES AND PHYSICAL PROPERTIES FOR KERTO LVL S-BEAM PRODUCTS

Bending strength	Symbol	S-beam 27-75 mm	Unit
Edgewise (depth 300 mm)	$f_{m,0,edge,k}$	44,0	N/mm <sup>2</sup>
Flatwise, parallel to grain	$f_{m,0,flat,k}$	50,0	N/mm <sup>2</sup>
<b>Modulus of elasticity</b>			
Parallel to grain, along	$E_{0,mean}$	13 800	N/mm <sup>2</sup>
Perpendicular to grain, edgewise	$E_{90,edge,mean}$	430	N/mm <sup>2</sup>
Perpendicular to grain, flatwise	$E_{90,flat,mean}$	130	N/mm <sup>2</sup>
<b>Other properties</b>			
Characteristic density (5%)	$\rho_k$	480	kg/m <sup>3</sup>
Mean density	$\rho_{mean}$	510	kg/m <sup>3</sup>
Moisture content (on mill delivery)		10 (±2)	%
Performance in fire, charring rate	$\beta_n$	0.7	mm/min
Euroclass with regard to reaction to fire		D-s1,d0	

### FURTHER INFORMATION

- Kerto manual ([www.metsawood.com/kertomanual](http://www.metsawood.com/kertomanual))
- Kerto LVL S-beam Declaration of Performance ([www.metsawood.com/dop](http://www.metsawood.com/dop))
- VTT certificate 184/03, 2016

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