



storaenso

Solid construction timber (KVH[®])

Duobalken[®]/Triobalken[®] laminated beams



Content

Solid construction timber (KVH®)	3
General information/Highlights	3
Overview of product features	4
Standard dimensions.	5
KVH® according to list/ranges	6
Quality criteria	7
 Duobalken® and Triobalken® laminated beams	8
General information/Highlights	8
Overview of product features	9
Standard dimensions (order-based manufacture).	10
Standard dimensions (warehouse plant stocking)/ranges / characteristics	11
Individual beams	12
Quality criteria/use classes	13
Beams for log homes.	14
Standard cross sections of log home beams	15
 Contact	16



KVH® from Stora Enso Building and Living

Solid construction timber – the solution for sophisticated modern structures

The safest and easiest way
to be certain you use
the right timber for modern
timber structures is to use
solid construction timber (KVH®).

The Supervisory Board for Solid Construction Timber (Überwachungsgemeinschaft Konstruktionsvollholz e.V.) in co-operation with the Association of German Carpenters (Bund Deutscher Zimmermeister – BDZ) in the Central Association of the German Building Trade (Zentralverband des Deutschen Baugewerbes e.V.) have drafted common requirements and stipulated these in an agreement forming the basis for production and supply.

Solid construction timber (KVH®) is sawn construction timber made from softwood, typically spruce, for use in modern timber construction.

Alternative types of wood are available for special uses, such as for thresholds or for outdoor areas not directly exposed to the elements.

Defined load-bearing capacities and the desire for filigree supporting frameworks and attractive surfaces coupled with fast delivery times to the point of use are further good reasons for the usage of KVH®.



Highlights

- Precise fit
- Attractive appearance
- Finger-jointing permits production in lengths up to 16 m
- Superior dimensional stability due to technical drying process
- Free from contents that pose a risk to health



KVH® to meet the highest requirements.

As a manufacturer of natural building materials like KVH® and Duobalken®/Triobalken® laminated beams, the use of environmentally gentle production processes is of very special importance.



Overview of product features

KVH® from Stora Enso Building and Living is a quality-controlled product with clearly defined characteristics to satisfy the high requirements of house owners, designers and craftsmen in every respect.

Depending on the intended use, we manufacture two lines which essentially differ only in terms of their visual appearance:

- KVH®-Si for exposed structures and
- KVH®-NSi for hidden structures.

In sorting the timber – essential to ensure the appropriate use of KVH® in construction – quality criteria are met which surpass those stipulated for customary sawn construction timber:

The timber is sorted according to EN 14081/DIN 4074-1, and is externally monitored by various national and international institutions.

In addition to the requirements of these standards, the following sorting criteria are met:

- defined residual moisture
- type of crosscut
- dimensional stability of the cross sections
- surface properties

All sorting characteristics and conditions are provided in the “KVH® from Stora Enso Building and Living Quality Criteria” table.

Dimensional stability due to technical drying process

To minimise deformation of timber and the associated adverse effects on structures due to shrinking and swelling, an average residual moisture of $15\% \pm 3\%$ has been set for solid construction timber (KVH®). At Stora Enso Building and Living, this value is precisely set by a technical drying process in computer-controlled drying kilns. Every individual piece of timber is then checked before use.

Variable lengths due to finger-jointing

Finger-jointing (EN 385) permits the production of sawn timber up to a maximum length of 16 m. The individual sections are bonded together without affecting the structural strength of the building element.

Stora Enso Building and Living has more than 30 years of experience of using the sophisticated finger-jointing technique. This wealth of experience is now benefiting customers and manufacturers alike.

Adhesives used

KVH® from Stora Enso Building and Living is also outstandingly ecological! It is glued with toxicologically safe and solvent-free PUR adhesives.

This new environment friendly adhesive develops its high-strength properties solely through the interaction of moisture from air and wood.

No chemical wood preservation

Given the low residual moisture of 15% – whilst taking account of prevailing construction conditions – KVH® from Stora Enso Building and Living cannot be attacked by wood-destroying fungi. Construction damage due to insects are not to be expected based on many years of experience to now due to the technical drying processes.

Therefore whilst taking account of the conditions of DIN 68800-2, the essential condition for refraining from the use of chemical wood preservation is met.

Should the structure require the use of chemical preservation, approved impregnation agents are available.



KVH® can be used individually and flexibly thanks to its winning aesthetics.

Trimming – quickly and precisely.

Standard dimensions

Solid construction timber is produced in standard cross sections to cover virtually all requirements of modern timber frame construction.

The advantages of standardisation for trade and the processing industry are obvious:

- **produced as stock**
- **short delivery times**
- **economic planning and construction**

The Pfarrkirchen Mill is also optimised for maximum flexibility. List orders from customers can be produced

- **quickly**
- **exactly**
- **and trimmed.**

For this purpose the end of every piece of timber can be labelled, showing building element number(s), cross section, length and other details.

The trimming is carried out on machines standard to the industry. Therefore you can transmit your data electronically.

Whether you have a standard, trimmed or special order, you decide which of the production versions is best suited to your purposes.

















































Our current warehouse status is available on request by fax or e-mail. Other dimensions are available on request or as Stora Enso Building and Living Duobalken® and Triobalken® laminated beams.

Maximum weight per packet is approx. 3 tons.

Standard dimensions for Stora Enso Building and Living solid construction timber KVH® NSi and Si										
Standard length:					5 m and 13 m (up to 16 m possible)					
Type of wood:					SPRUCE					

 **order-based** manufacture

 **warehouse** plant stocking

Width (mm)	Height (mm)											
	60	80	100	120	140	160	180	200	220	240	260	280
40 piece/packet	 ¹⁾											
	180											
60 piece/packet	 ¹⁾											
	126	91	77	63	56	49	42	35	35	28	28	
80 piece/packet												
		65	55	45	40	35	30	25	25	20	20	20
100 piece/packet												
			44	36	32	28	24	20	20	16	16	16
120 piece/packet												
				27	24	21	18	15	15	12	12	12
140 piece/packet												
					24	21	18	15	15	12		

¹⁾ Dimensions 40 x 60 mm and 60 x 60 mm are available in standard length of **5 m** only, not S10TS/C24 sorted.

Additional dimensions are technically possible but only upon request; Visible quality (Si) in preferential dimensions possible.



KVH® according to list

The large number of standard dimensions with widths starting from 60 mm and heights up to 280 mm satisfy the majority of general requirements for KVH®. Standardised lengths of 13.00 m ensure widespread, short notice availability while nevertheless facilitating the individual use of goods in stock which can be shortened as necessary.

In addition there are applications where it is beneficial and more efficient to use selected KVH® according to list. Here the precise number of lengths can be produced and bundled and packaged with right alignment in accordance with customer wishes. This obviates the need for such selection or repackaging in carpentry firms or for interim storage as the timber required for a specific project is directly available without length or time loss.

Individual pieces of timber are optimised according to length and joined together in multiple lengths if required, whereby the possible scale of lengths of individual pieces of timber ranges from 3.00 m to 16.00 m. Detailed information on package content and, where applicable, the multiple lengths of joined individual beams is printed on the labels on the front as well as on the additional packaging label.

The combination of the complete abovementioned KVH® diverse range together with diverse special dimensions and intermediate dimensions available, proven production processes and individual delivery rhythms, e.g. those determined jointly with customers, leaves almost nothing to be desired.

Ranges KVH® and Duobalken®/Triobalken® from Stora Enso Building and Living

- **Standard**
(KVH® and Duobalken®/Triobalken® laminated beams):
Bundles consisting of a single cross section and grade in a defined packaging unit.
- **System lengths**
(KVH® and Duobalken®/Triobalken® laminated beams):
Bundled in one special length of for example 7 m, 7.5 m, 8 m, 8.5 m or 9 m, with uniform size and quality (NSi, Si).
- **Individual beams**
(KVH® and Duobalken®/Triobalken® laminated beams):
Superior range of cross sections, which guarantee precise availability.
- **KVH® list:**
Optimised list of different cross sections in multiple lengths.



List package with labels on front.

Packaging label with detailed information.



KVH® from Stora Enso Building and Living – Quality criteria

Requirements to be met by KVH® structural timber in accordance with the inspection regulations and the agreement between the Bund Deutscher Zimmermeister (BDZ) and Überwachungsgemeinschaft Konstruktionsvollholz e.V.

Grading criterion	Requirements to be met by KVH® Exposed areas (KVH®-Si)	Requirements to be met by KVH® Non-exposed areas (KVH®-NSi)	Remarks
Grading class compliant with DIN 4074-1	Min. S10TS; C24 in accordance with DIN 1052	Min. S10TS; C24 in accordance with DIN 1052	The decisive strength and stiffness properties are given in DIN 1052.
Moisture content	15% ± 3%	15% ± 3%	The specified moisture content is a precondition for dispensing for the most part with preservative treatment and can also be the precondition for finger joint assembly.
Type of cutting	Split-heart, free-of-heart on request	Split-heart	Split-heart: Given that the pith does not always automatically run through the middle of the log, split-heart is defined as follows: For a log with an ideal growth form, the pith would be cut through in two-strand cutting. Free-of-heart: Heart plank with $d \geq 40$ mm is removed.
Wane	Not permitted	Measured at an angle $\leq 10\%$ of the smaller cross-section side	
Dimensional stability of the cross-section	DIN EN 336 Dimensional stability class 2: $w \leq 100$ mm: $\pm 1,0$ mm $w > 100$ mm: $\pm 1,5$ mm	DIN EN 336 Dimensional stability class 2: $w \leq 100$ mm: $\pm 1,0$ mm $w > 100$ mm: $\pm 1,5$ mm	The dimensional stability for the longitudinal dimensions must be agreed between the customer and supplier.
Knot condition	Loose knots and dead knots not permitted. Occasional faulty knots or parts of knots up to max. 20 mm in diameter are permitted.	DIN 4074-1 Grading class S10	Replacement with natural wood dowels is permitted. Maximum of 2 adjacent to each other permitted for Si.
Knot diameter ratio	S10: $A \leq 2/5$ S13: $A \leq 1/5$ not exceeding 70 mm	S10: $A \leq 2/5$ S13: $A \leq 1/5$ not exceeding 70 mm	Knot diameter ratio A is determined in accordance with DIN 4074-1. The following applies for mechanical grading: • Knot sizes are not taken into consideration for KVH®-NSi • $A \leq 2/5$ applies for KVH®-Si
Ingrown bark	Not permitted	DIN 4074-1	
Cracks, radial cracks caused by shrinking (shrinkage shakes)	Width of the crack w must be $\leq 3\%$ of the respective cross-section width	DIN 4074-1	For Si the requirements are higher than those applicable to grading class S10 in accordance with DIN 4074-1.
Pitch pockets	Width $w \leq 5$ mm	—	Additional criterion
Discoloration	Not permitted	DIN 4074-1	For Si the requirements are higher than those applicable to grading class S10 in accordance with DIN 4074-1.
Insect attack	Not permitted	DIN 4074-1	For Si the requirements are higher than those applicable to grading class S10 in accordance with DIN 4074-1.
Twisting	—	—	The permissible extent of twisting is not specified in further detail because no unacceptable twisting is to be expected if all the other criteria are complied with.
Longitudinal warping	≤ 8 mm/2 m for split-heart cutting ≤ 4 mm/2 m for heart-free cutting	≤ 8 mm/2 m for split-heart cutting	In comparison: In accordance with DIN 4074-1 S10 and S13: ≤ 8 mm/2 m
Finishing of the ends	Trimmed perpendicular	Trimmed perpendicular	
Surface quality	Planed and chamfered	Leveled and chamfered	
Finger-jointing	DIN EN 385	DIN EN 385	
Special specifications			
Packaging	Packets wrapped over four sides in green foil. Upon request single bar wrapped in foil (black).	Packets wrapped over four sides in green foil.	Additional attribute for KVH® from Stora Enso Building and Living
Signing	Small face marking	Continuous small face marking	Additional attribute for KVH® from Stora Enso Building and Living
Certificates	All certificates held by Stora Enso Building and Living can be sent to you on request.		

Duobalken®/Triobalken® laminated beams from Stora Enso Building and Living

for stability and attractive appearance



It comprises two or three timbers with exposed pith which are glued together. Due to the rigid bonding of the elements the product remains permanent dimensionally stable.

Finger-jointing allows production of Duobalken® and Triobalken® laminated beams up to a length of 16 m. The classic beam character and the solid wood appearance are undiminished and make the product an excellent building material particularly for exposed ceiling beams and rafters or for purlin roofs.

According to certification, increased structural load bearing values can be calculated for Duobalken®/Triobalken®.

Duobalken®/Triobalken® are therefore equivalent to glued laminated timber with strength class GL24h (formerly BS11).

Highlights

- For dimensionally stable timber construction
- Excellent value for money
- Maximum load-bearing capacity
- Attractive appearance
- Usage in exposed and concealed areas

Overview of product features

Duobalken® consist of two, and Triobalken® of three planks or timber glued together usually along their flat side. They are made of solid timber (softwood) with a cross section area of the individual timbers (lamellae) of 80 x 280 mm and 100 x 120 mm.

The position of the finished glue line – both vertically and horizontally – causes no differences in strength.

The characteristic strength properties are specified in EN 338.

The lowest sorting/strength class of the individual timbers contained in the cross section is decisive here.

The cross section dimensions of the individual timbers (lamellae) may not exceed the values specified in the table below.

Sorting

The softwood is sorted according to load-bearing capacity in line with DIN EN 14081/DIN 4074-1; the fulfilment of the sorting criteria for sawn timber in accordance with S10TS/C24. Finger-jointing is performed to EN 385.

All sorting characteristics and conditions are provided in the “Duobalken® and Triobalken® from Stora Enso Building and Living Quality criteria” table.

Dimensional stability due to technical drying process

To minimise deformation of timber and the associated adverse effects on structures due to shrinking and swelling, an average residual moisture of $12\% \pm 2\%$ has been set for Duobalken® and Triobalken® laminated beams. At Stora Enso Building and Living, this value is precisely set by a technical drying process in computer-controlled drying kilns. Every individual piece of timber is then checked before use.

Adhesives used

Due to the fact that they are glued with melamine adhesives, the Duobalken® and Triobalken® laminated beams from Stora Enso Building and Living are extremely ecological and safe.

Surface qualities

Duobalken® and Triobalken® are standard planed and chamfered on four sides. Beams for use in exposed areas are specially selected during the evaluation of the raw materials – and due to encoding in the glue joint groove the surface character is undiminished.

No chemical wood preservation

Given the low residual moisture of approx. 12% – whilst taking account of prevailing construction conditions – Duobalken® and Triobalken® laminated beams from Stora Enso Building and Living cannot be attacked by wood-destroying fungi. Construction damage due to insects has also not occurred based on our many years of experience to now due to the technical drying processes. Therefore whilst taking account of the conditions of DIN 68800-2, the essential condition for refraining from the use of chemical wood preservation is met.

If preventive chemical wood preservation is required Duobalken® and Triobalken® laminated beams are to be treated as glulam in accordance with DIN 68800-3.

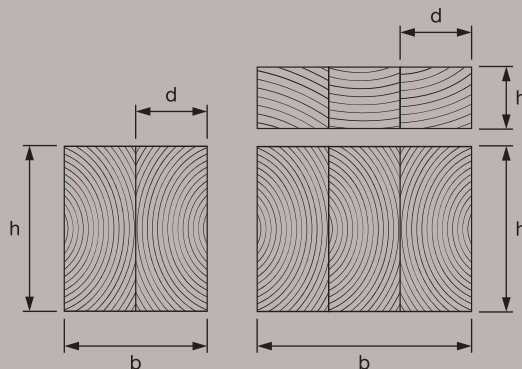


Should the structure require the use of chemical preservation, approved impregnation agents are available.

Cross section dimensions of the individual beams

	Duobalken®	Triobalken®	
Thickness d	≤ 8 cm	≤ 8 cm	≤ 12 cm
Height h	≤ 28 cm	≤ 28 cm	≤ 10 cm

b = beam width



Standard dimensions

Duobalken® and Triobalken® laminated beams are produced in standard cross sections which cover virtually all areas of use in modern timber construction.

The advantages of standardisation for trade and the processing industry are obvious:

- **Manufacture as warehouse goods**
 - for packaged deliveries
 - and superior range for precise order picked delivery (individual beams)
- **Short delivery times**
- **Economic planning and construction**

In the Žďirec KVH® Mill it is possible to produce as stock. In addition individual beams are also possible in fixed lengths from a superior range of cross sections.
















































Our current warehouse status is available on request by fax or e-mail.

Other dimensions are available upon request.

Standard dimensions for Stora Enso Building and Living Duobalken® and Triobalken®		NSi and Si
Standard length:	13 m (up to 16 m possible)	
Type of wood:	SPRUCE	

 order-based manufacture **NSi**

 order-based manufacture **NSi and Si**

Width (mm)	Height (mm)								
	80	100	120	140	160	180	200	220	240
60									
piece / packet	91	77	63	56	49	42	35	35	28
80									
piece / packet	65	55	45	40	35	30	25	25	20
100			 ¹						
piece / packet		44	36	32	28	24	20	20	16
120									
piece / packet			27		21	18	15	15	12
140						 ²			
piece / packet				24	21	18	15		12
160									
piece / packet					14		10		8
180									
piece / packet						12	10	10	8
200									
piece / packet							10		
240									
piece / packet							8		4
























¹⁾ Only possible with nominal size 100 x 140 mm

²⁾ Only possible with nominal size 140 x 200 mm

Visible quality for exposed areas (Si): High quality product for optically demanding areas such as visible ceiling beams, ceiling rafters and timber frame boards.

Standard dimensions for Stora Enso Building and Living Duobalken® and Triobalken®		NSi and Si
Standard length:	13 m (up to 16 m possible)	
Type of wood:	SPRUCE	

 **warehouse** plant stocking **NSi** or **Si**

Width (mm)	Height (mm)						
	100	120	140	160	180	200	240
100							
piece/packet	44	36	32	28		20	16
120							
piece/packet		27		21	18	15	12
140							
piece/packet			24		18	15	12
160							
piece/packet				14		10	8
180							
piece/packet					12	10	8
200							
piece/packet						10	8

Ranges Duobalken®/Triobalken® from Stora Enso Building and Living

- Standard:**
 Bundles consisting of a single cross section and grade in a defined packaging unit.
- System lengths:**
 Bundled in one special length of for example 7 m, 7.5 m, 8 m, 8.5 m or 9 m, with uniform size and quality (NSi, Si).
- Individual beams:**
 Superior range of cross sections, which guarantee precise availability.

Elastomechanical and building physics characteristics		
Technical characteristics	KVH®	Duobalken®/Triobalken®
Wood species ¹	Spruce (larch, pine)	
Grading class compliant with DIN 4074	S10 (S13 on request)	
Strength classes and characteristics	C 24/C30 in accordance with DIN 1052:2008-12	
*Deviation from DIN 1052:2008-12	E _{0,mean} = 11.000 N/mm ²	E _{0,mean} = 11.600 N/mm ²
Moisture content u _m	15% ± 3%	≤ 15%
Swelling and shrinkage ratio	0,24% per 1% change of wood moisture content	
Reaction to fire class in accordance with DIN EN 13501-1 and/or DIN 4102	D-s2, d0 or B2 (normal flammability)	
Weight in accordance with DIN 1055-1	5 kN/m ³	
Thermal conductivity λ	0,13 W/(mK)	
Water vapor diffusion resistance factor μ	40	
¹ Types of wood not printed in bold type are available on request but have longer delivery times; other softwood types are admissible, but not generally used.		
DIN 18334 “VOB, Part C (ATV), Carpentry and Wood Construction” stipulates maximum timber moisture of 18% for timber frame houses. Duobalken® and Triobalken® laminated beams satisfy this requirement without any problems.		

Duobalken® and Triobalken® from Stora Enso Building and Living as individual beams

According to certification, increased structural load bearing values can be calculated for Duobalken® and Triobalken®. 11,600 N/mm² can be calculated instead of the mean value of the elasticity module parallel of 11,000 N/mm² for KVH®. Duobalken® and Triobalken® are therefore equivalent to glued laminated timber (glulam) with strength class GL24h (formerly BS11).

This product is also available in individual lengths to enable this advantage to be exploited.

The stockpiling of rough sawn beams that are freshly planed just before delivery guarantees a perfect surface.



Flexibility and rapid availability is provided by producing Duobalken®/Triobalken® as individual lengths and dimensions and keeping them in stock.

Individual beams of Stora Enso Building and Living Duobalken® and Triobalken® Si

Stockpiling

In packets, see Pages 10-11

● Manufactured dimensions that are kept in stock, sold by individual beam

○ Planed down cross section of the next largest dimension, dimension should be calculated as next largest standard size

Width (mm)	Length (m)	Height (mm)							
		100	120	140	160	180	200	220	240
100	13 m	●	●	●	●	●	●	●	●
	10 m	—	—	—	●	●	●	●	●
120	13 m	—	●	●	●	●	●	●	●
	10 m	—	—	—	●	●	●	●	●
140	13 m	—	—	●	●	●	●	○	●
	10 m	—	—	—	—	—	●	○	●
160	13 m	—	—	—	●	—	●	—	●
	10 m	—	—	—	—	—	●	—	●
180	13 m	—	—	—	—	●	—	—	—
	10 m	—	—	—	—	—	●	—	—
200	13 m	—	—	—	—	—	—	—	—
	10 m	—	—	—	—	—	—	—	—

► Individually wrapped in film on request

► Minimum purchase = 1 unit (combined with other products to full lorry)

Duobalken® and Triobalken® from Stora Enso Building and Living – Quality criteria

Requirements to be met by Duobalken® and Triobalken® beams in accordance with the general technical approval of the German building authorities as assessed by the Deutsches Institut für Bautechnik (Z-9.1-440 dated 30/01/2009)

Grading criterion	Requirements to be met by Duobalken® and Triobalken® beams		Remarks
	Exposed areas	Non-exposed areas	
Technical standard	General technical approval of the German building authorities No. Z 9.1-440		
Modulus of elasticity II to fiber	E _{0,mean} = 11.600 N/mm ²		Higher value compared to solid timber C24 in accordance with DIN 1052.
Grading class compliant with DIN 4074-1	Min. S10TS; C24 in accordance with DIN 1052		The decisive strength and stiffness properties are given in DIN 1052.
Moisture content u _m	Max. 15%		Precondition for gluing
Dimensional stability of the cross-section	DIN EN 336 Dimensional stability class 2: w ≤ 100 mm: ± 1,0 mm w > 100 mm: ± 1,5 mm		The dimensional stability for the longitudinal dimensions must be agreed between the customer and supplier.
Twisting	≤ 4 mm/2 m		In comparison: DIN 4074-1 S10: ≤ 8 mm/2 m
Longitudinal warping	≤ 4 mm/2 m		In comparison: DIN 4074-1 S10: ≤ 8 mm/2 m
Finishing of the ends	Trimmed perpendicular		
Surface quality	Planed and chamfered	Leveled and chamfered	The right hand sides (sides adjacent to the heart) must face outwards.
Finger-jointing	DIN EN 385		
Special specifications			
Packaging	Packets wrapped over four sides in green foil. Upon request single bar wrapped in foil (black). Additionally can also be three sides covered with foil on request.	Packets wrapped over four sides in green foil.	Additional attribute for Duobalken® and Triobalken® from Stora Enso Building and Living
Signing	Signed by front side tag	Signed in the glue joint groove	Additional attribute for Duobalken® and Triobalken® from Stora Enso Building and Living
Certificates	All certificates held by Stora Enso Building and Living can be sent to you on request.		

Use classes			
Service classes in accordance with DIN 1052	Use class in accordance with DIN 68800	Example of normal application	Use of KVH®, Duobalken® and Triobalken® beams
SC 1 – Dry areas $u_m \leq 12\%$ (5 to 15%)	GK 0, GK 1 where accessible to insects	Building components enclosed on all sides and heated	KVH®, Duobalken®, Triobalken® beams
SC 2 – Areas susceptible to high humidity $u_m \leq 20\%$ (10 to 20%)	GK 2 where temporary humidity is possible	Protected building components in a carport structure	KVH®, Duobalken®, Triobalken® beams made of larch/Douglas fir heartwood
SC 3 – Outside areas $u_m > 20\%$ (12 to 24%)	GK 3 for outside areas exposed to weather	Unprotected building components, balcony structures*	KVH® made of larch/Douglas fir heartwood without finger-jointing*
* An additional requirement for preservative treatment for GK 3 must be decided in each individual case.			
On request we treat KVH®, Duobalken® and Triobalken® with Diffusit Holzbau, Dr. Wolman GmbH.			

Beams for log homes from Stora Enso Building and Living

Log homes are for some people the most exclusive kind of wooden houses, representing the most comfortable way to live. They offer a wide range of architectural possibilities, permanent relationship to and direct contact with wood as a natural material and much more besides, and we offer just the ideal material for them: log home beams from Stora Enso Building and Living.

Log home beams made from solid wood with glued construction are manufactured in a wide range of dimensions, design permutations and from the most diverse types of wood depending on application, dimension and construction demands. In particular glued log home beams offer advantages in respect of twisting and warping as well as an optimised deformation pattern due to the low moisture of the wood required for surface gluing. Solid wood cross sections are preferred for relatively thin, small cross sections and for less important, non-exposed application areas.

Log home beams are sorted according to strength class S10TS/C24 in accordance with EN 14081/DIN 4074-1 and are glued such that they are weatherproof in the glued joint and finger-jointed to DIN 68 140 and DIN EN 385/386. PU adhesive is used for finger-jointing while melamine resin is used for as surface adhesive.

A comprehensive programme of own and external monitoring simultaneously guarantees consistent high quality, and this is applicable from off the shelf blank timber through to bundled construction sets.

Standard dimensions of from 60 x 100 mm to 160 x 240 mm facilitate a broad range of use from garden summer house to high quality residence. Standard lengths of 13.00 m as well as a project-related production of up to 16.00 m lengths enable continuous wall structures for all common building dimensions. Here narrow, thin cross sections are predominantly used for less important building purposes, such as garden summer houses or shelters.

Medium cross sections are in particular suitable for buildings, such as holiday homes, garages etc.

Cross sections with larger dimensions are intended for multi-layered wall constructions of permanently inhabited buildings. Special cross sections, such as those for single layered, solid wall constructions of houses, are manufactured specially for the property and adjusted to suit the specific application.

Duobalken® with tongue and groove formation are also ideal for use as surface-forming ceiling beams.

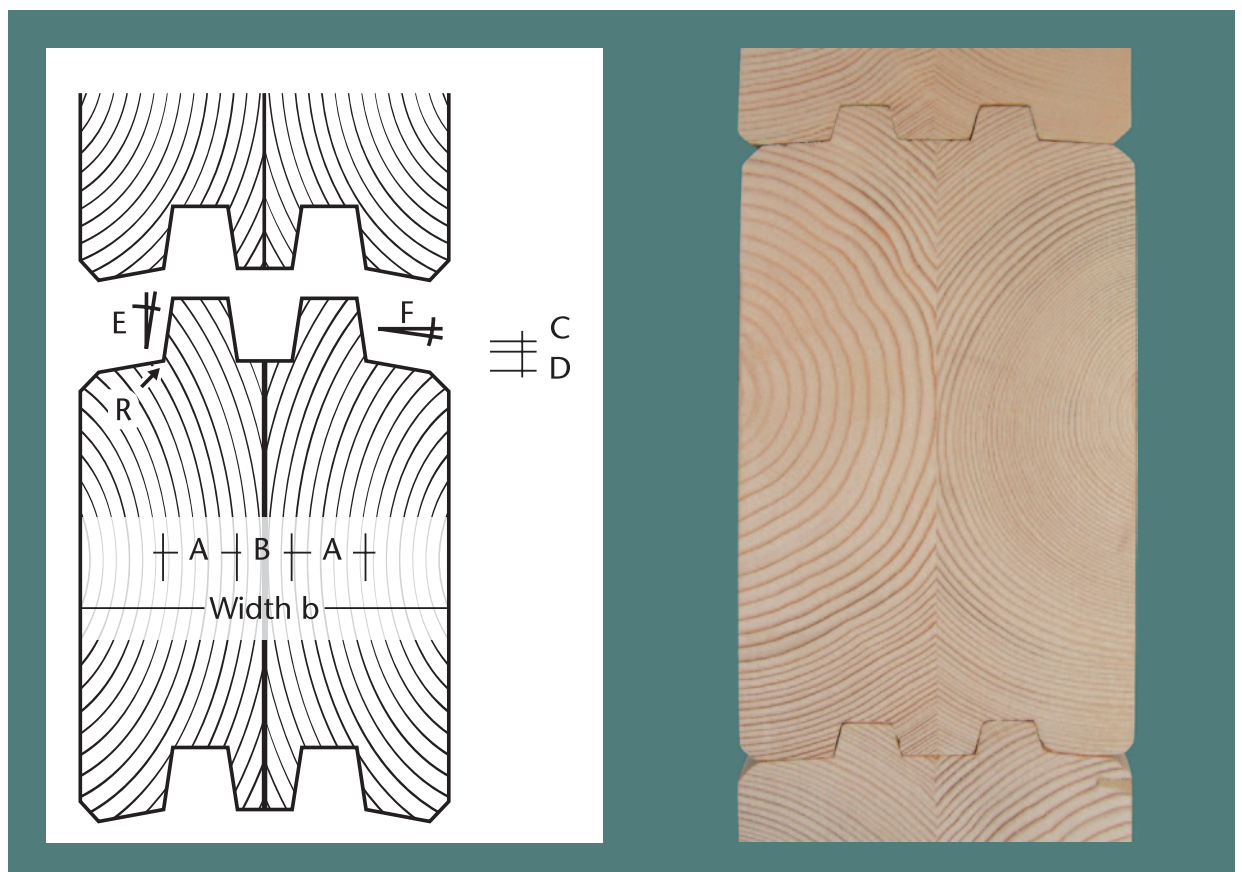
Log homes – unrivalled in terms of comfortableness.



Standard cross sections of log home beams

The following standard products and cross sections are available:

Height h tongue measurement (incl. tongue) [mm]	KVH®	Duo- balken®	Trio- balken®	Width b* [mm]	n Numbers of tongue & groove**	A [mm]	B [mm]	C [mm]	D [mm]	E [°]	F [°]	R [mm]
120-240	X	X		60	2	15	10	0,9	3	15°	5°	R1
120-240	X	X		80	2	15	10	1,6	3	15°	5°	R1
140-240	X	X		100	2	15	15	1,6	3	15°	5°	R1
160-240		X	X	120	2	15	20	1,5	3	15°	5°	R1
200-240		X	X	140	3	20	20	1,5	5	15°	5°	R1
200-240		X	X	160	3	20	20	2,4	5	15°	5°	R1
* Intermediate sizes on request												
** Groove 11 mm, Tongue 10 mm												



Alternatively CLT – Cross Laminated Timber from Stora Enso Building and Living can be used for this application.

More information: www.clt.info



Stora Enso Building and Living
Pfarrkirchen Mill
Gewerbepark West
DE-84347 Pfarrkirchen
Germany
Phone +49 8561 3005-0
Fax +49 8561 3005-55
office.pfarrkirchen@storaenso.com
www.storaenso.com/KVH

The variety of products of the Stora Enso Building and Living group ranges from rough sawn timber, planed timber, KVH® solid construction timber, Duobalken® and Triobalken® laminated beams, Thermowood to CLT Cross Laminated Timber. To meet your requirements we offer more than 40 products. Please do not hesitate to contact us. We are happy to listen to your wishes. Further information can also be found on our homepage www.storaenso.com

For our customers we are involved in the following associations:



Überwachungsgemeinschaft
Konstruktionsvollholz e.V.



The Association of German Premanu-
factured Building Manufacturers



Deutscher
Holzfertigbau-Verband e.V.



Österreichischer
Fertighausverband



Gesamtverband
Deutscher Holzhandel e.V.