best wood SCHNEIDER

CEILING, ROOF AND WALL ELEMENTS

Assembly and installation guidelines best wood SCHNEIDER®

www.schneider-holz.com

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Uncomplicated, fast & reliable – the team of best wood SCHNEIDER® deals with your requests.

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Legal notice

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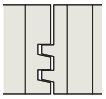
best wood **GLULAM – CEILING**

Local spruce, industrial quality and visual quality and Scandinavian spruce, visual quality, mountain larch

Delivery options

Length	2.30–18.00 m
Thickness	100, 120, 140, 160, 180, 200, 220, 240, 260, 280 mm
Width	500–1000 mm
Other cross sections	Available by request
Installation variants Further information see price list	0  1  2  3  4  5 
Minimum production length	per element width 5.00 m

Characteristics

Standard	EN 14080:2013
Strength class	GL 24h, GL 28h
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	40 mm, sorted for quality and finger-jointed
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally), upper side without chamfer, trimmed precisely ± 2 mm; visual quality only on the bottom side
Tolerance	Thickness: ± 1 mm; width: ± 2 mm; length: ± 2 mm; curvature at ceiling level: max. 20 mm per 18.00 m
Thermal conductivity	λ = 0.13 (W/m*K) according to EN ISO 10456
Shape change	Shrinkage and swelling dimensions per 1 % change in timber moisture: Length: 0.02 %, width/thickness: 0.24 % (DIN 1052:2008)
Fireproofing	Verification possible via the free best wood STATICS software

Description

The outstanding advantage of the best wood GLULAM CEILING is, that it can be installed simply and rapidly. The elements are immediately passable on foot after their installation. It provides stability and a pleasant appearance in one. With this organic solution, a very enjoyable room climate can be obtained. Installation, also subsequently, is possible without any problems.

Certificates (Download at www.schneider-holz.com)

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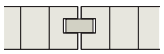
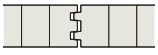
best wood SCHNEIDER

best wood **GLULAM – CEILING SEPARATED**

Local spruce, industrial quality and visual quality and Scandinavian spruce, visual quality, mountain larch

Delivery options

Length	2.30–18.00 m
Thickness	45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95 mm
Width	360–760 mm, (< 500 mm production dimensions based on 40 mm)
Installation variants Further information see price list	0  2  3  6, 7, 8 
Other cross sections	Available by request, production dimensions made on a base of 40 mm
Minimum production length	per element width 5.00 m
Minimum order quantity	Ordering in pairs, because of separation.

Characteristics

Standard	EN 14080:2013
Strength class	GL 24hs
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	40 mm, sorted for quality and finger-jointed
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally), upper side without chamfer, trimmed precisely ± 2 mm; visual quality only on the bottom side
Tolerance	Thickness: ± 1 mm; width: ± 2 mm; length: ± 2 mm; curvature at ceiling level: max. 20 mm per 18.00 m
Thermal conductivity	λ = 0.13 (W/m*K) according to EN ISO 10456
Shape change	Shrinkage and swelling dimensions per 1 % change in timber moisture: Length: 0.02 %, width/thickness: 0.24 % (DIN 1052:2008)
Fireproofing	Verification possible via the free best wood STATICS software

Description

Ripped ceiling boards are a cost-saving solution when statics allow weaker ceiling thicknesses. They are perfectly applicable for adjoining rooms with an interior room climate.

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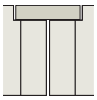
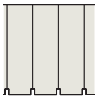
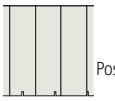
best wood SCHNEIDER

best wood **GLULAM – CEILING WITH ACOUSTIC DESIGN**

Local spruce, industrial quality and visual quality and Scandinavian spruce, visual quality, mountain larch

Delivery options

Length	2.30–14.00 m
Thickness	100, 120, 140, 160, 180, 200, 220, 240, 260, 280 mm
Width	200–400 mm depending on the type of saw cut (production dimensions made on a base of 40 mm)
Installation variants Further information see price list	0  2  3  5 
Milling	 5/11 mm, in the centre of the glue joints Possible widths: 200/240/280/320/360/400  2/6 mm, distance between saw cuts 50 mm Possible widths: 200/250/300/350/400

Characteristics

Standard	EN 14080:2013
Strength class	GL 24h, GL 28h
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	40 mm, sorted for quality and finger-jointed
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally), upper side without chamfer, trimmed precisely ± 2 mm; visual quality only on the bottom side
Tolerance	Thickness: ± 1 mm; width: ± 2 mm; length: ± 2 mm; curvature at ceiling level: max. 20 mm per 18.00 m
Thermal conductivity	λ = 0.13 (W/m*K) according to EN ISO 10456
Shape change	Shrinkage and swelling dimensions per 1 % change in timber moisture: Length: 0.02 %, width/thickness: 0.24 % (DIN 1052:2008)
Fireproofing	Verification possible via the free best wood STATICS software

Description

The best wood GLULAM – CEILING with the acoustic design extends the design options.

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best wood **CLT – CEILING, ROOF**

Local spruce, industrial quality, Scandinavian spruce, visual quality

Delivery options

Length	2.30–16.00 m
Thickness	60, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280 mm
Width	900–1200 mm, shiplap edge ≤1150 mm cover size
Installation variants Further information see price list	**0**  **11**  **13**  **14**  **16** 
Minimum production length	per element width 8.00 m
Other cross sections	Available by request

Characteristics

Approval	ETA-21/0568
Strength class	C24
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	20, 30 and 40 mm, sorted for quality and finger-jointed
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally), trimmed precisely ± 1 mm
Thermal conductivity	λ = 0.12 (W/m*K) according to ETA-21/0568
Specific heat capacity	1600 (J/kg*K) according to EN ISO 10456
CLT panel diffusion resistance	μ 20 (damp) / 50 (dry) in accordance with EN ISO 10456
Emission class	E1 according to DIN EN 717-1
Shape change	At board level ≈ 0.02 % per 1 % change in wood moisture perpendicular to board level ≈ 0.24 % per 1 % change in wood moisture
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtight after testing in accordance with EN 12114 from 60 mm

Description

best wood CLT is a load-bearing solid wood element, consisting of at least three layers of crossways glued solid wood boards, which is suitable for all building requirements thanks to its excellent construction characteristics. The crosswise structure of high-quality raw material in combination with high-quality of gluing of edges and sides guarantees a high degree of dimensional stability, and leads to only small deformations from swelling and shrinking in the event of moisture changes in the panel level.

A high degree of prefabrication of the best wood CLT with downstream cut-off and the simplicity of joining the best wood CLT elements ensures swift and cheap installation and guarantees dry construction. It is simple to produce building element constructions with increased fire resistance with evidence from the best wood STATICS software.

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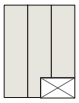
best wood SCHNEIDER

best wood **CLT – WALL XL**

Cross laminated timber for solid wall structures
Local spruce, industrial quality, local spruce, visual industrial quality

Delivery options

Length	2.30–16.00 m
Thickness	60, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300, 320, 340, 360
Width	up to 3500 mm
Installation variants Further information see price list	**0**  **13**  **16**  **17** 
Minimum production length	per element width 8.00 m
Minimum production width	1800 mm
Other cross sections	Available by request

Characteristics

Strength class	C24
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	20, 30 and 40 mm, sorted for quality and finger-jointed
General information	Planed along the long side/profiled and with planar calibration, bottom side chamfered 4 mm (measured diagonally), trimmed precisely ± 1 mm
Thermal conductivity	λ = 0.12 (W/m*K) according to ETA-21/0568
Specific heat capacity	1600 (J/kg*K) according to EN ISO 10456
CLT panel diffusion resistance	μ 20 (damp) / 50 (dry) in accordance with EN ISO 10456
Emission class	E1 according to DIN EN 717-1
Shape change	At board level ≈ 0.02 % per 1 % change in wood moisture perpendicular to board level ≈ 0.24 % per 1 % change in wood moisture
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtightness after testing in accordance with EN 12114 from 60 mm

Description

best wood CLT is a load-bearing solid wood element, consisting of at least three layers of crossways glued solid wood boards, which is suitable for all building requirements thanks to its excellent construction characteristics.
The crosswise structure of high-quality raw material guarantees a high degree of dimensional stability, and leads to only small deformations from swelling and shrinking in the event of moisture changes in the panel level.
A high degree of prefabrication of the best wood CLT with downstream cut-off and the simplicity of joining the best wood CLT elements ensures swift and cheap installation and guarantees dry construction.
It is simple to produce building element constructions with increased fire resistance with evidence from the best wood STATICS software.

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QUALITÄT, DIE BLEIBT · ★★★★★ best wood PREMIUM · PREMIUMPRODUKTE VON best wood SCHNEIDER

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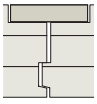
best wood SCHNEIDER

best wood **CLT – CEILING XL**

Cross laminated timber for solid ceiling structures
Local spruce, industrial quality, local spruce, visual industrial quality

Delivery options

Length	2.30–16.00 m
Thickness	60, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300, 320, 340, 360
Width	up to 3000 mm
Installation variants Further information see price list	**0**  **11**  **13**  **14**  **16** 
Minimum production length	per element width 8.00 m
Minimum production width	1800 mm
Other cross sections	Available by request

Characteristics

Strength class	C24
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	20, 30 and 40 mm, sorted for quality and finger-jointed
General information	Planed along the long side/profiled and with planar calibration, bottom side chamfered 4 mm (measured diagonally), trimmed precisely ± 1 mm
Thermal conductivity	λ = 0.12 (W/m*K) according to ETA-21/0568
Specific heat capacity	1600 (J/kg*K) according to EN ISO 10456
CLT panel diffusion resistance	μ 20 (damp) / 50 (dry) in accordance with EN ISO 10456
Emission class	E1 according to DIN EN 717-1
Shape change	At board level ≈ 0.02 % per 1 % change in wood moisture perpendicular to board level ≈ 0.24 % per 1 % change in wood moisture
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtightness after testing in accordance with EN 12114 from 60 mm

Description

best wood CLT is a load-bearing solid wood element, consisting of at least three layers of crossways glued solid wood boards, which is suitable for all building requirements thanks to its excellent construction characteristics.
The crosswise structure of high-quality raw material guarantees a high degree of dimensional stability, and leads to only small deformations from swelling and shrinking in the event of moisture changes in the panel level.
A high degree of prefabrication of the best wood CLT with downstream cut-off and the simplicity of joining the best wood CLT elements ensures swift and cheap installation and guarantees dry construction.
It is simple to produce building element constructions with increased fire resistance with evidence from the best wood STATICS software.

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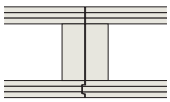
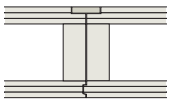
best wood **CLT BOX – CEILING FS**

Wooden box element for multi-storey wood construction with improved soundproofing, best wood CLT with three glued-on GLULAM lamellae ribbed beams and a CLT cover board, with wood fiber acoustic board, drillings and chippings,
Local spruce, industrial quality, Scandinavian spruce, visual quality

Delivery options

Length	2.30–16.00 m, from 440 mm 8.00–16.00 m	
Width	900–1200 mm	
Height	220–490 mm (intervals see price list)	
Number of ribs	3	
Upper CLT panel	in 60 mm	
Lower CLT panel	in 60 mm and in 90 mm for increased fireproofing requirements	
Specification	Acoustic board	placed in the rafter and glued to the lower CLT panel ex works (wood fiber acoustic board)
	Drillings	ex works (for putting in the customer-provided chippings)
	Chippings	supplied in the required quantity and in 25 kg PE bags and put in by the customer on site
	Chippings plan	included in scope of delivery
Installation variants Further information see price list	31 	34 
Minimum production length	per element width 8.00 m	

Characteristics, description and advantages see page 12.

Soundproofing

Description

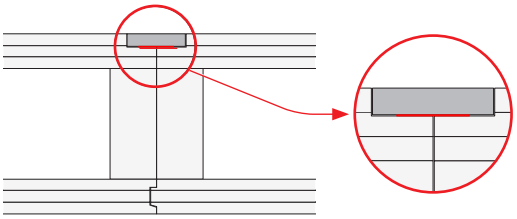
best wood CLT BOX – CEILING FS rafter soundproofing was developed in our own, standard-compliant construction acoustics ceiling test bench, and improves the impact sound insulation in the low-frequency range. Notes concerning possible floor construction on the CLT BOX – CEILING FS and the determined standard impact sound levels can be found at www.schneider-holz.com.

Fireproofing

Description

The fire safety technical certificate for F60 and F90 can be produced using our best wood STATICS software. General building regulations test certificates for F60 and F90 and classification reports REI60 and REI90 are available at www.schneider-holz.com.

Fire protection detail in ceiling joint of the CLT BOX – CEILING FS elements



Masked off with TESCON VANA 60 mm

For other versions see ETA-21/0336

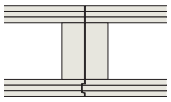
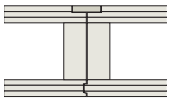
Certificates (Download at www.schneider-holz.com)

best wood SCHNEIDER

best wood **CLT BOX**

Wooden box element for large spans with fire protection requirements,
best wood CLT with three glued-on GLULAM lamellae ribbed beams and a CLT cover board,
Local spruce, industrial quality, Scandinavian spruce, visual quality

Delivery options

Length	2.30–16.00 m, from 440 mm 8.00–16.00 m
Height	220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480 mm
Width	900–1200 mm
Number of ribs	3
Upper CLT panel	in 60 mm
Lower CLT panel	in 60 mm and in 90 mm for increased fireproofing requirements
Installation variants Further information see price list	31  34 
Minimum production length	per element width 8.00 m, chamfered on one side

Characteristics

Approval	ETA-21/0336
Strength class	Board C24; rib GL 24h
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	Board: 20, 30 mm; rib 40 mm
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally)
Thermal conductivity	Rib: $\lambda = 0.13$ (W/m*K); board: $\lambda = 0.12$ (W/m*K) according to ETA-21/0336
Specific heat capacity	1600 (J/kg*K) according to EN ISO 10456
CLT panel diffusion resistance	μ 20 (damp) / 50 (dry) in accordance with EN ISO 10456
Emission class	E1 according to DIN EN 717-1
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtight after testing in accordance with EN 12114 from 60 mm
Characteristics	see pg. 13

Description

best wood CLT BOX is a statically effective and at the same time space-creating wood element, which is suitable for all ceiling requirements thanks to its versatile dimensions and excellent construction characteristics. A high-performance and versatile building product is created by utilising the advantages of solid timber and wood frame construction. When CLT BOX is being used as a flat roof, the mathematical proof of condensation must be carried out in a project-specific way using hygrothermic simulation in accordance with DIN EN 15026. Just talk to us about it, we would be pleased to assist you.

The combination of CLT and ribbing planks produces a high static load-bearing capacity with a comparatively low weight. The crosswise assembly from high-quality raw material in combination with high-quality gluing of edges and surfaces guarantees a high degree of dimensional stability. A high degree of prefabrication of the best wood CLT BOX with downstream cut-off and the simplicity of joining the best wood CLT BOX elements ensures swift and cheap installation and guarantees dry construction. It is simple to produce building element constructions with increased fire resistance with evidence from the best wood STATICS software.

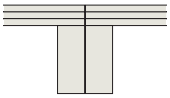
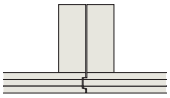
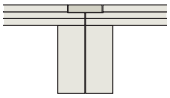
Advantages

- High static load-bearing capacity and light weight
- Large spans and therefore prop-free rooms possible
- High degree of prefabrication and simple joining of the ceiling elements for swift and cheap installation
- Utilises advantages of solid timber and wood frame construction

best wood **CLT BOX – CEILING** open

Wooden box element for easy installation routing,
best wood CLT with three glued-on GLULAM ribbed beams
Local spruce, industrial quality, Scandinavian spruce, visual quality

Delivery options

Length	2.30–16.00 m, from 440 mm total height 8.00–16.00 m
Height	160, 180, 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460 mm
Width	900–1200 mm
Number of ribs	3
Upper CLT panel	in 60 mm
Lower CLT panel	in 60 mm and in 90 mm for increased fireproofing requirements
Installation variants Further information see price list	0  41  43 
Minimum production length	per element width 8.00 m, chamfered on one side (only when open at the top)

Characteristics

Approval	ETA-21/0336
Strength class	Board C24; rib GL 24h
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	Board: 20, 30 mm; rib 40 mm
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally) – only when open at the top
Emission class	E1 according to DIN EN 717-1
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtight after testing in accordance with EN 12114 from 60 mm

Description

best wood CLT BOX is a statically effective and at the same time space-creating wood element, which is suitable for all ceiling requirements thanks to its versatile dimensions and excellent construction characteristics. A high-performance and versatile building product is created by utilising the advantages of solid timber and wood frame construction.

The combination of CLT and ribbing planks produces a high static load-bearing capacity with a comparatively low weight. The crosswise assembly from high-quality raw material in combination with high-quality gluing of edges and surfaces guarantees a high degree of dimensional stability. A high degree of prefabrication of the best wood CLT BOX with downstream cut-off and the simplicity of joining the best wood CLT BOX elements ensures swift and cheap installation and guarantees dry construction. It is simple to produce building element constructions with increased fire resistance with evidence from the best wood STATICS software.

Advantages

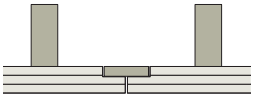
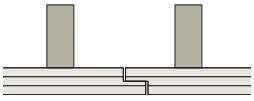
- High static load-bearing capacity and comparatively light weight
- High degree of prefabrication and simple joining of the ceiling elements for swift and cheap installation
- Utilises advantages of solid timber and wood frame construction
- Self-completion possible
- For inserting installations in the longitudinal direction

Certificates (Download at www.schneider-holz.com)

best wood **CLT BOX – ROOF**

Open box element for passive house construction,
best wood CLT with two glued-on GLULAM lamellae ribbed beams,
Local spruce, industrial quality, Scandinavian spruce, visual quality

Delivery options

Length	2.30–16.00 m, from 440 mm 8.00–16.00 m
Thickness	160, 180, 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460 mm
Width	1120–1200 mm, shiplap edge ≤1150 mm cover size
Number of ribs	2
Lower CLT panel	in 60 mm and 90 mm for increased fireproofing requirements
Installation variants Further information see price list	23  26 
Minimum production length	per element width 8.00 m

Characteristics

Approval	ETA-21/0336
Strength class	Board C24; rib GL 24h
Application classes	Use in application classes 1 and 2 according to EN 1995-1-1
Drying	Kiln dried, wood moisture max. 15 % at delivery
Bonding	Clear, water-proof gluing with polyurethane adhesives (free of formaldehyde)
Lamellae	Board: 20, 30 mm; rib 40 mm
General information	Planed on four sides, bottom side chamfered 4 mm (measured diagonally)
Thermal conductivity	Rib: λ = 0.13 (W/m*K); board: λ = 0.12 (W/m*K) according to ETA-21/0336
Specific heat capacity	1600 (J/kg*K) according to EN ISO 10456
CLT panel diffusion resistance	μ 20 (damp) / 50 (dry) in accordance with EN ISO 10456
Emission class	E1 according to DIN EN 717-1
Reaction to fire	D-s2, d0 according to DIN EN 13501-1
Fireproofing	Verification possible via the free best wood STATICS software
Airtightness	Airtight after testing in accordance with EN 12114 from 60 mm

Description

The combination of CLT and ribbing planks produces a high static load-bearing capacity with a comparatively low weight. The crosswise assembly from high-quality raw material in combination with high-quality gluing of edges and surfaces guarantees a high degree of dimensional stability.

Advantages

- High static load-bearing capacity and comparatively light weight
- Large spans and therefore prop-free rooms possible
- High degree of prefabrication and simple joining of the ceiling elements for swift and cheap installation
- Utilises advantages of solid timber and wood frame construction
- High resistance to fire
- Outstanding insulation characteristics due to insulation of spaces for passive house construction

Certificates

General information

These assembly and installation guidelines contain recommendations and notes on the correct handling of ceiling, roof and wall elements from best wood SCHNEIDER®, and are intended exclusively for specialists who are authorised for the planning and processing that is involved in wood construction and building and have the relevant specialist knowledge.

In addition to these assembly and installation guidelines, the respective applicable standards and statutory regulations and the current state of technology must always be adhered to and taken into consideration.

All of the information in this guideline must be regarded as general, and does not relate to a particular construction project. best wood SCHNEIDER® GmbH does not accept any liability or give any guarantees on the basis of this brochure.

The preliminary measurement tables or the best wood STATICS free statics programme can be used for the pre-dimensioning of best wood SCHNEIDER® ceiling systems. The best wood STATICS software compares the different ceiling systems with each other and returns the required element height for each ceiling type. Checkable static verification of the best wood ceiling, roof and wall elements can also be produced using best wood STATICS.

The regulations, standards and directives which have been issued for the respective material that is processed in the product apply for the required proof of protection from heat and moisture. Notes on soundproofing and fireproofing can be found on page 20.

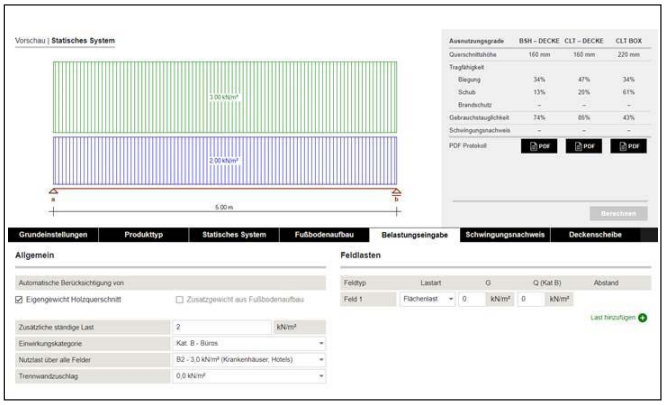


Fig. 1: best wood STATICS

You will find dimensioning aids for the best wood ceilings, an overview of all installation variants and the surface qualities on our web site in our download area at **www.schneider-holz.com/de/service/downloads/**

Receipt of goods

Once the goods have been received at the specified delivery address, they must always be checked for quantity, contractual quality and assured characteristics, such as:

- Is the scope of delivery correct?
- Are the dimensions of the individual products correct?
- Is the wood moisture within the limit range for the product?
- Has the joinery been carried out as per the installation plan?
- Have the goods been damaged in transit?
- Are there any soiled surfaces?

Obvious defects must be reported immediately in writing after receipt of goods.

Production-related complaints (e.g. resin pockets, open joints, surface damage etc.) must generally be reported no more than 14 days after installing the elements.

Dirt on finished surfaces must be immediately declared after receipt of goods and cleaned in consultation with best wood SCHNEIDER®. Painting over or touching up varnished elements yourself will not have a positive outcome.

Edge protectors must always be used when unloading and lifting. Lifting may only be carried out using approved lifting gear (e.g. SIHGA Pick, Würth or the like).

Storage of the delivered elements

If the elements from best wood SCHNEIDER® are put into intermediate storage after delivery until they are installed, they must be kept in a clean and level storage location on floor battens.

The elements must be protected from the influence of the weather (moisture penetration, direct sunlight and soiling) during the entire storage period. The stretch film that is used for transport does not provide protection from the weather, which is why the elements must be stored under a roof or additional weather-resistant protective tarpaulins.

Installation of the delivered elements

Fig. 2: SIHGA PICK

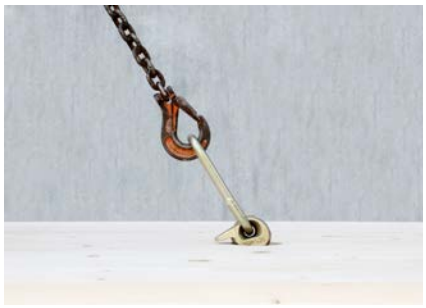


Fig. 3: WÜRTH transportation anchor

When the elements are installed, always pay attention to the installation order in the installation plan. If the elements are of visual quality, they must always be installed with clean hands or gloves, and it is essential not to walk on the visible surfaces. The edges of the elements must be protected in such a way that they cannot be damaged by lifting straps or the like.

The attachment systems of SIHGA Pick, Würth or other approved lifting gear can be used to attach to the elements. (see fig. 2, 3)

Installation gap with GLULAM ceilings
With GLULAM ceilings, the planning must include an installation gap depending on the situation on site and the intended use of the building.

The best wood GLULAM – CEILING is delivered with wood moisture content of 12 % +/-2.5 %, and adapts itself to the anticipated room climate during the usage phase:

- 9 % +/- 3 % for buildings that are closed on all sides and heated, with air humidity of approx. 50 % and 20 °C;
- 12 % +/- 3 % for buildings that are closed on all sides and not heated, with air humidity of approx. 65 to 70 % and 20 °C;
- 15 % +/- 3 % for covered, open buildings, with air humidity of approx. 75 to 80 % and 20 °C;

In order to achieve this equilibrium moisture, the wood absorbs moisture from the air or gives it off, whereby the width, height and length of the elements shrink or swell, and the cross-sectional dimensions change. The working of the wood must generally be taken into consideration with GLULAM – ceilings, since irreparable damage may otherwise be caused to the building caused by displacement or constraint. This can be prevented by taking installation gaps into consideration.

The installation gap which is required can be determined using **Table 1** and the specific shrinkage and swelling dimensions. With European coniferous wood, according to DIN 1052:2008-12 a uniform **specific shrinkage dimension of 0.24 %/%** (percentage of percentage wood moisture change in width and thickness) is reckoned with as an average of tangential and radial shrinkage or swelling, since the actual annual ring progress in later wood cross-sections is not usually predictable. The specific shrinkage dimension in the longitudinal direction is 0.01 %.

Table 1:

Relative air humidity (%)	Values for equilibrium moisture content (% by weight)						
90 %	21.1	21.0	21.0	20.8	20.0	19.8	19.3
85 %	18.1	18.0	18.0	17.9	17.5	17.1	16.9
80 %	16.2	16.0	16.0	15.8	15.5	15.1	14.9
75 %	14.7	14.5	14.3	14.0	13.9	13.5	13.2
70 %	13.2	13.1	13.0	12.8	12.4	12.1	11.8
65 %	12.0	12.0	11.8	11.5	11.2	11.0	10.7
60 %	11.0	10.9	10.8	10.5	10.3	10.0	9.7
55 %	10.1	10.0	9.9	9.7	9.4	9.1	8.8
50 %	9.4	9.2	9.0	8.9	8.6	8.4	8.0
45 %	8.6	8.4	8.3	8.1	7.9	7.5	7.1
40 %	7.8	7.7	7.5	7.3	7.0	6.6	6.3
35 %	7.0	6.9	6.7	6.4	6.2	5.8	5.5
30 %	6.2	6.1	5.9	5.6	5.3	5.0	4.7
25 %	5.4	5.3	5.0	4.8	4.5	4.2	3.8
Temperature in °C	**10°**	**15°**	**20°**	**25°**	**30°**	**35°**	**40°**

Source: R. Keylwert and information from the U.S. Forest Products Laboratory, Madison 1951

Example shrinkage and swelling calculation:

Parameters:

Climate during usage phase: 20° C ; 80 % rel. air humidity
GLULAM element wood moisture upon delivery: 12 %
Anticipated compensating moisture: 16 %
Width GLULAM element: 1000 mm

Calculation:

Element width x (wood moisture difference/100) x spec. shrinkage dimension = **Change to width**
1000 mm x 0.04 x 0.24 = **+ 9.6 mm**

Installation gap for best wood CLT and best wood CLT BOX

An installation gap does not have to be taken into consideration for best wood CLT and best wood CLT BOX. If fire protection requirements exist for the elements, a suitable element joint variant from approval ETA-21/0568 or ETA-21/0336 must be selected. An installation gap must be taken into consideration with certain element joint variants.

A structural installation gap must be planned at the end of the support for all ceiling systems, both in span direction and perpendicular to span direction. (see fig. 4)

The formation of the ceiling, roof and wall sections takes place via the element connection. The section stiffness by connecting several elements is provided using inlay boards or shiplap edges, secured with mechanical fasteners. The inlay boards should have a minimum cross-section dimension of w x h = 100 x 22 mm^2 and be made from solid wood in accord-

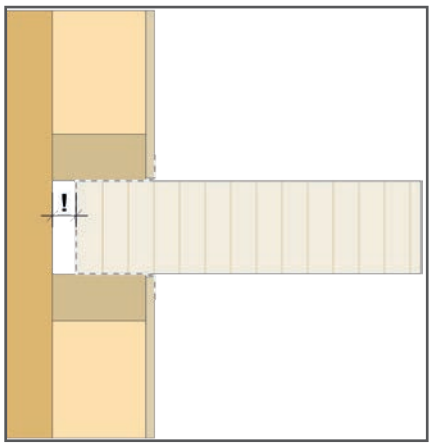


Fig. 4: Structural installation gap

ance with DIN EN 338, OSB boards in accordance with DIN EN 300 or from comparable wooden materials in accordance with the general building inspection approval or European technical evaluation.

Nails, clips or wood screws may be used as fasteners. Alternatively, cross screw connections may be used with square-edged versions of the element. The number of mechanical fasteners and the arrangement thereof must be chosen in accordance with the static requirements, and can be determined using the best wood STATICS statics software.

If best wood CHIPPINGS are used on the element or CLT BOX – CEILING is used in the rafters, the butt joints of square elements must be masked before putting in the chippings.

Protection of the elements during the construction phase

During storage and installation:
The elements must be protected from direct weathering from above during and after installation.

Information:
In the case of elements with a transport protection film, it must be removed immediately after installing the elements. Any damage or defects to the elements must be reported in writing 14 days after the delivery of the elements.

In the installed condition:
All subsequent trades and their employees on the construction project must be made aware of and sensitized to the fact that a visible ceiling is a finished component that must not be soiled during the remainder of the work, and must be protected from the effects of excessive moisture.

Masking work on the elements may only be carried out using best wood CEILING TAPE or Kip FINELINE-TAPE 3808 adhesive tape, since other adhesive tapes could leave adhesive residue behind on the elements.

Wood works by swelling (absorbing moisture) or shrinking (drying) in the hygroscopic area. This diffusion-open characteristic of the wood provides a cozy room climate. The natural moisture fluctuations which occur because of this should be taken into consideration in the planning.

However, if the moisture increases in an unnatural way (e.g. due to increased moisture when drying wet screed), unplanned expansion of the wood can occur, which causes damage to the building. In the event of unnaturally rapid drying (e.g. caused by heating and drying devices), the tension in the wood becomes too great and cracks occur on the surface.

For these reasons, the elements must be protected from the above-mentioned influences in the installed condition.

For an ideal room climate, the relative humidity should be between 40 – 65 % within a temperature range of 10 – 25 °C. On winter construction sites without installed windows, careful acclimatisation should begin after installing the windows so that the elements can slowly adjust to each other. Observation is required during construction when doing this.

Soundproofing

Place the EASY FILL filling aid over the opening of the CLT BOX – CEILING FS

Pour in 1/2 bag of chippings

If the chippings are delivered in BigPacks, pour in the chippings up to the mark = 12.5 kg

Put the chippings into the CLT BOX – CEILING FS using a cordless screwdriver

If a best wood ceiling system requires soundproofing, advance acoustic planning is essential. The soundproofing database at www.schneider-holz.com provides the sound insulation dimensions for the individual ceiling systems. If the best wood CHIPPINGS are poured into the rafters when using CLT BOX – CEILING FS, the provided CHIPPINGS PLAN must always be followed.

Putting the best wood CHIPPINGS into the best wood CLT BOX – ceiling CEILING FS:
When the best wood CHIPPINGS are put in, they must be distributed in the element openings as specified in the CHIPPINGS PLAN. Introduction is advisable using the EASY FILL filling aid.

If the chippings are delivered as bagged goods: Pour 1/2 bag into the EASY FILL = 12.5kg
If the chippings are delivered in BigPacks: Pour in chippings up to the mark = 12.5kg

Fireproofing

For buildings with fireproofing requirements, the type of component must be planned in advance and structural proof of the fire resistance must be produced.

The following approvals, general building regulations test certificates, classification reports and expert opinions for various components can be found in the download area at www.schneider-holz.com:

- ETA-21/0568
- ETA-21/0336
- abP/classification report for exposed roof beams F30/REI45
- abP/classification report for CLT BOX – CEILING FS F60/REI60
- abP/classification report for CLT BOX – CEILING FS F90/REI90
- abP for walls with wood frame construction F90/F60
- abP for walls with wood frame construction F60/F30
- expert opinion for walls with wood frame construction F30/REI30 - F90/REI90

Airtightness

All best wood CLT panels with a thickness of more than 60 mm have been tested and deemed suitable as an airtight component in the surface area. The element joints must be masked in such a way that they are airtight. Other details such as butt joints on the support/ridge must be planned in advance and carefully implemented.

Our system partner proclima would be pleased to reply to any technical questions regarding the airtightness of buildings.

pro clima technical hotline:

Phone	+ 49 (0) 6202 27 82 - 45
Fax	+ 49 (0) 6202 27 82 - 51
E-mail	technik@proclima.de

Breakthroughs, replacements and recesses

Required breakthroughs, replacements and recesses in best wood SCHNEIDER®ceiling systems must be planned and statically verified in advance by a structural engineer.

It is advisable to discuss the feasibility of the joinery with the ceiling element joinery department beforehand. Contacts can be found on the inside of the cover.

Color finishing for ceiling and roof systems

The **UV protect** transparent paint for the interior is the ideal protection against UV rays for spruce ceilings, and ensures that they retain their light color for a long time. The **colored varnishes** in soft white, alpine white and light grey are suitable for puristically appealing rooms. Further colors are available by request.

The automated application of color ensures that the surface is homogeneous. All of the varnishes are characterised by having first-class biological construction properties. Our ceiling elements therefore provide a diffusion-open and pleasant room climate, and have been awarded the natureplus® seal of quality.

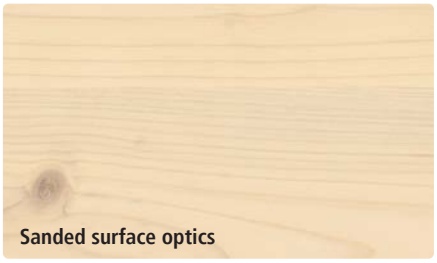
Dirt on finished surfaces must be immediately declared after receipt of goods and cleaned in consultation with best wood SCHNEIDER®. Painting over or touching up varnished elements yourself will not have a positive outcome.

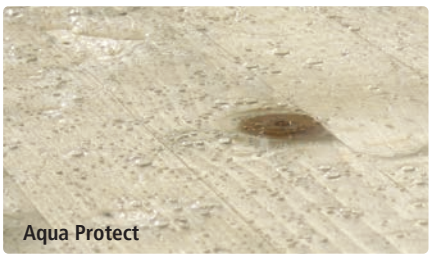

UV-protect


soft white


alpine white


light grey


Sanded surface optics


Aqua Protect

Protects the ceiling elements from moisture during the open construction phase

Characteristics

- With mineral UV protection
- Diffusion-open
- Sustainable
- natureplus certified
- For a good indoor and living climate

Supplied with

- UV protection
- Surface cosmetics
- Sanded or rough-sawn look
- Priming/intermediate sanding/final coat
- Self-adhesive protective foil

Application of TIMBERCOLOR or UV protect for unvarnished components in the interior by the customer

We recommend the following procedure for applying TIMBERCOLOR or UV protect for unvarnished components in the interior by the customer:

Before starting painting or spraying work on the material, a color sample must be produced and compared with the supplied, varnished ceiling element.

Processing sequence:

- Sand posts, beams, purlins, ceiling elements etc. with 180 grain
- Remove or vacuum residual dust from surfaces
- **Prime** with **TIMBERBASE**
- Carry out intermediate sanding with 180 grain sandpaper
- **Paint** with **TIMBERCOLOR** (soft white, alpine white, light grey) or **UV protect**
- Pay attention to drying times

Processing conditions:
Do not use in direct sunlight, rain, fog and not below 5 °C. The moisture content of the wood must not exceed 18 %.

Drying:
With standard climate (23 °C, 50 % rel. humidity), dry to handle after approx. 60 min., dry after approx. 2–4 hours.

Primer/paint application quantity

Application procedure	TIMBERBASE primer	TIMBERCOLOR / UV protect paint application
Spraying (Airless / Airmix)	1 coat of paint of 100 g/m^2	1 coat of paint of 100 g/m^2
Brush	1 coat of paint of 100 g/m^2	2 coats of paint of 50 g/m^2
Roll	1 coat of paint of 100 g/m^2	Not possible with a roller

If large areas are being painted we recommend applying the relevant color with a cup gun (Airmix, minimum nozzle size 2.0 mm) or an Airless device (nozzle size 4/12). A significantly greater quantity can be applied with a homogeneous surface appearance using the spraying procedure.

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