ULTRA PLY

Structural plywood

INSTALLATION GUIDE

kronospan

Structural plywood

Kronobuild®

This guide informs briefly about plywood for use in construction, the manufactoring of the products and the use of the covered products.

Plywood is made by compressing thin layers of veneer and glue under high pressure and heat.
Common uses for structural plywood are in floor decking, wall sheathing, flat roofing and external cladding.

Use classes
Structural plywood must comply with the requirements of EN 13986 and be manufactured in accordance with the Use Classes EN 636-1, -2 or -3. Plywood boards must be marked at the factory according to these use classes.
The plywood described in this installation guide refers to Class-2.

The environmental conditions for which plywood are considered suitable are defined according to the parameters laid down for Use Classes in EN 335 Durability of wood and wood-based products.

FSC
www.fsc.org
FSC® C022333
Znak odpowiedzialnej gospodarki leśnej

CE
07 63-CPR-6024

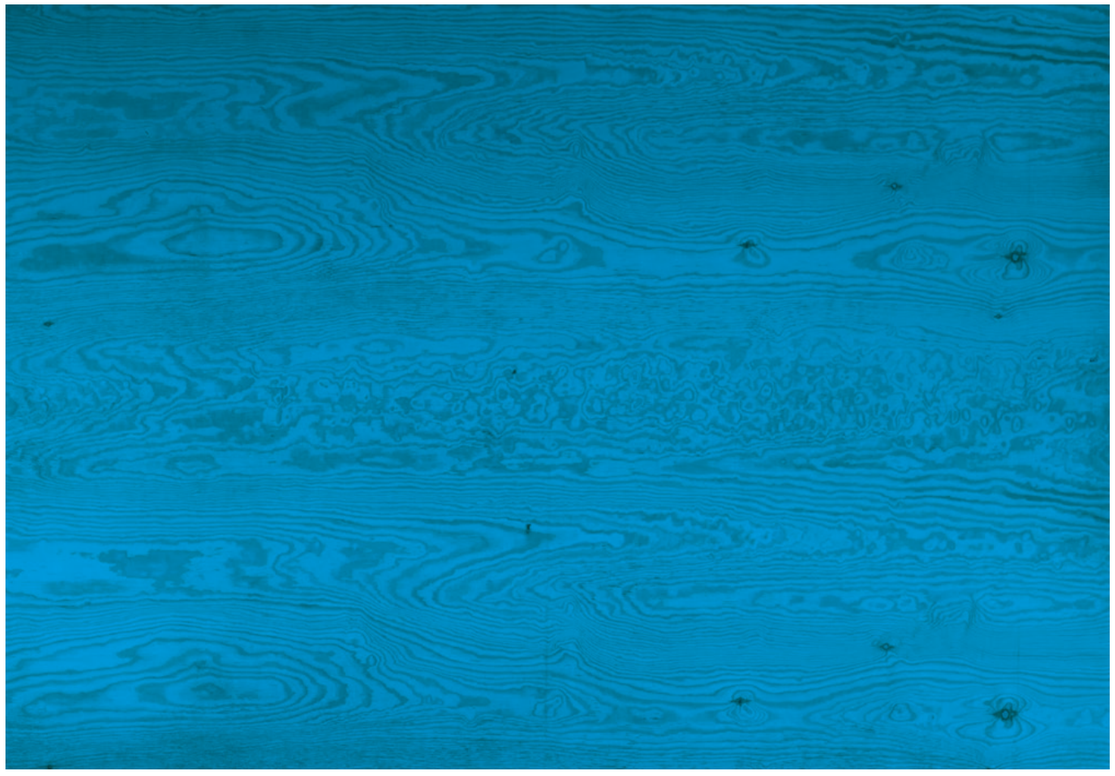
ULEF
CARB
ULEF

Plywood Kronobuild is produced with philosophy of balanced development and in a perfect harmony with nature.

Plywood Kronobuild is made of the timber, the legal origin of which confirmed by relevant documents (FSC, PEFC).

Table 1: Use Classes and applications

Use classles - EN 636	Field of application	Moisture content in wood
Use class 2: Humid conditions For use in protected exterior appli- cations as defined in Use Class 2, with a moisture content corresponding to environmental conditions of 20°C and 85% relative humidity. (Note: Moisture content in most panels will not exceed 15%.)	Constructions in ventilated and non-permanently heated buildings, e.g. cottages, garages, warehouses and ventilated structures protected from the weather, e.g. ventilated roof structures	Moisture content, which only for short periods of the year, exceeds 16% but never 20%.



Cutting and fixing

Construction plywood can be machined with hand saws, hand-held power tools, stationary circular saws or band saws. Plywood can be fixed by nails or screws and/or by gluing, depending upon the application and requirements.

The following must be observed as a minimum when using plywood in roof decking:

Plywood used for roof decking is covered by EN 13986 Wood-based panels for use in construction and is CE-marked. The panels must be appropriate for the ambient environmental conditions of the projected end use (see Use Classes, page 1). All panels must be tongued and grooved on long edges.

Conditioning and storage: It is important that panels are installed at a moisture content as close as possible to that which they will achieve in service, corresponding to 15% wood moisture according to use class 2 (EN 636-2).

This means that panels must be protected from rain and direct wetting at all times, eg. in an enclosed building or where a short period of external storage is unavoidable, then stacks should be covered with opaque, waterproof sheeting.

Table 2: Plywood for roof decking must be supported and fastened as follows

Thickness	Framing centres	Nails (annular grooved or ring-shank)	Screws (corrosion resistant) mm	Fixing frequency	
				Intermediate framing	Perimater framning
12 mm	600	2,8 x 50	3,5 x 50	300	150
15 mm	800				
18 mm	1200	2,8 x 65	3,5 x 50		
21 mm					

Thickness: For use in a cold deck with visible roofing felt, the thickness of panels should be increased to the next dimension to counteract moisture-induced movements caused by building moisture.

Laying panels: Panels must be laid with the marked side down, so that the roofing is applied to the unmarked side. Tongued and grooved panels on long edges should be laid across the joists with both short edges supported on a joist (see figure 1). For maximum strength and stiffness, each panel should be laid continuously over at least two spans between joists. All panels should be laid to break joint, ie with staggered short edge joints to avoid lining them up (see figure 1).

Expansion gaps: A expansion gap should be provided around the perimeter of each panel to allow for possible expansion of the decking. This should be a minimum of 1 mm at each edge (wood moisture: 10-15%) or minimum 2 mm (wood moisture: 8-10%). Larger roofs may need intermediate expansion gaps. It's important that panels are kept dry with intermediate cover until roofing are in place.

Fixing: Panels should be fixed using corrosion resistant screws or nails (annular grooved or ringshank). The frequency and pattern of nailing to joists and noggings should be in accordance with table 2 and figure 1.

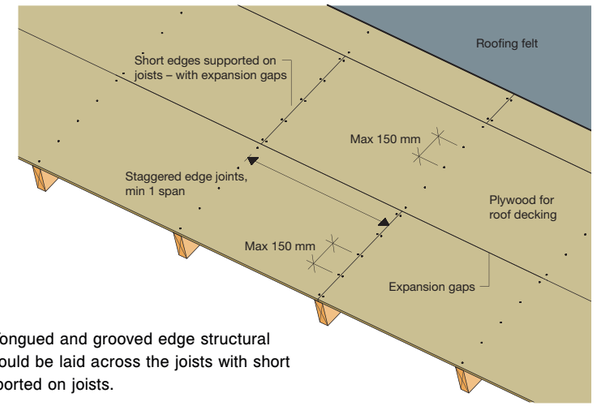


Figure 1: Tongued and grooved edge structural decking should be laid across the joists with short edges supported on joists.

The following must be observed as a minimum when using plywood in flooring:

Plywood used in flooring is covered by EN 13986 Wood-based panels for use in construction and is CE-marked. The panels must be appropriate for the ambient environmental conditions of the projected end use (see Use Classes, page 1). All panels must be tongued and grooved on long edges.

Table 3: In flooring plywood panels must be supported and fastened as follows:

Thickness	Framing centres	Nails (annular grooved or ring-shank)	Screws (corrosion resi-stant) mm	Fixing frequency	
				Inter-mediate framing	Perimater framning
15 mm	400	2,8 x 50	3,5 x 50	300	150
18 mm	600	2,8 x 65	3,5 x 50		

Type of floor - plywood is use in the following different types of floors:
- Sub-floor where the floor decking is attached to a series of battens which has insulation between them, see figure 2
- Suspended floors in which the floor decking is attached to a series of joists (panels are load-bearing)
- Floating floors in which the floor decking rests on insulation or an acoustic membrane above a structural sub-floor.

Laying of panels: For flooring purposes it is recommended that tongued and grooved panels with glued joints are used to provide a smooth and stable substrate. Panels must be laid with the marked side down, so that the roofing is applied to the unmarked side.
Tongued and grooved boards should be laid across the joists or battens with both short edges supported on a joist or a batten. Maximum strength and stiffness will be obtained if each panel is continuous over at least two spans between joists/battens. Panels should be laid to break joint, ie with staggered short edge joints to avoid lining them up. (see figure 2).
To reduce the risk of creaking in use and enable the joint to have maximum strength, all joints in tongued and grooved panelled floors should be glued with at least a durability class D4 adhesive. Glue should be applied liberally to both the tongue and the groove to ensure the entire joint is bonded.
All battens should be made with timber of 45 × 45 mm or LVL of 39 x 40 mm (unless otherwise specified by joist manufacturer). All timber joists should be 45 mm.
Battens and joists must be straight with no distortion. After installation the top surface of the battens or joists may deviate maximum 2 mm from flat level under a 2 m straight edge, both across and along the individual battens. Battens should be fixed to the floor elevation (see figure 3).

Expansion gaps: A gap should be provided around the perimeter of a floor, to allow for possible expansion of the decking. This should be a minimum of 10 mm at each stage. Larger floors may also require intermediate expansion gaps of a minimum of 20 mm at 10-metre intervals.

Fixing: Panels should be fixed using corrosion resistant screws or nails (annular grooved or ringshank). Screws should be conventional countersunk woodscrews. All nail heads should be punched home by
1–2 mm. Screws should be countersunk.
The frequency and pattern of nailing to joists and battens should be as set out in table 3.
After fixing, panel surfaces should be protected with building polythene (0,2 mm). Heavily trafficked areas should be protected with a temporary hardboard covering (3-4 mm).

Finishing
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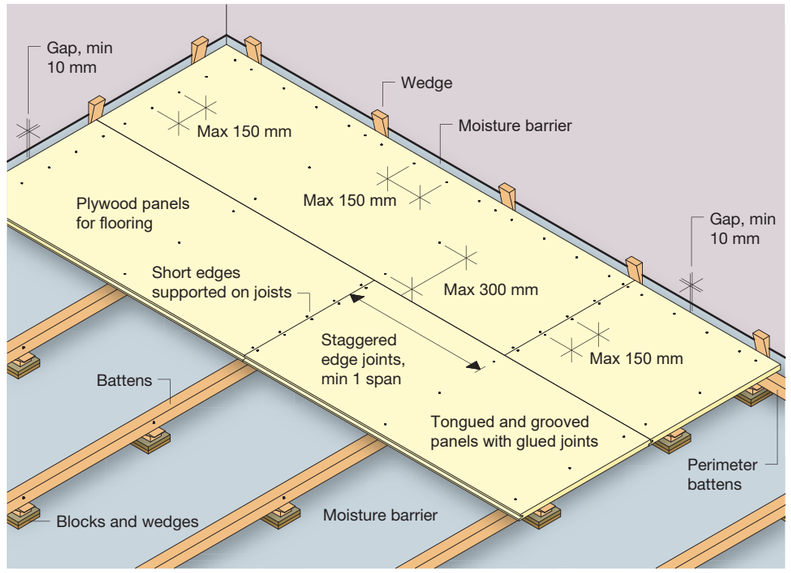

Figure 2: Tongued and grooved edge sub-floor should be laied across a series of battens with short edges supported on batterns, and with insulation between.

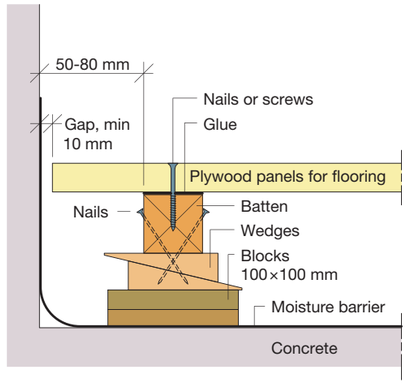

Figure 3: Floor elevation using wood or plastic wedges.

Kronobuild®

ULTRA PLY

Engineered to perform™

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