

# Guidance for Installation ROOFING

ARAUCOPLY

OCTOBER 01<sup>st</sup>, 2017

## STRUCTURAL ROOF DECKING ON JOISTS IN LOAD CATEGORY H\*



### ARAUCOPLY RADIATA PINE SOFTWOOD PLYWOOD

1073 - CPR - 801/809 EN 13986, Roofing, EN 636 - IS, EN 636 - 2 S, EN 314 - 2 class 3, EI, D-s2, d0.  
EN 635-3 grade I or II or III in combination.  
(T&G panels sanded or unsanded).

\* (Load Category H: Roofs that are not accessible except for maintenance, repair and cleaning. Normal maintenance repair and cleaning include painting and minor repairs).

## The following clauses shall be met when USING THE PANELS AS STRUCTURAL ROOF DECKING ON JOISTS:

### Handling

- The panels can be used for structural roof decking:
  - In service class I for 'warm roofing'.
  - In service class 2 for ventilated 'cold roofing', when the roof is designed and executed in such a way that the moisture content of the panels does not exceed 18 percent for any significant period of time and never exceeds 20 percent.
- Each panel shall be marked on the back and shall have tongue and groove (T&G) at the long and short edges of the panels.
- The panels shall be stacked flat at transport and storage to avoid sagging or other distortion.
- The panels shall before and after installation be protected against rain and soiling.
- Before installation, the panels shall be conditioned in the service class for the intended end-use:
  - End-use as 'warm roofing', the recommended moisture content of the panels is 9-12%.
  - End-use as ventilated 'cold roofing', the recommended moisture content of the panels is 12-14%.

### Installation

- At a pitched roof (slope > 15°) use scaffoldings for installation.
- Panels shall be supported and fixed as follows:
- The panels shall be installed with the marking downwards.

Thickness (mm)	Maximum Centre to Centre Span for Flat Roofing (**)	Ringshank (*) Maximum Fastener Spacing and Minimum Fastener Dimensions		
		Minimum Ringshank Dimension	Centres of the Intermediate Supporting Joists and Noggings	Centres at the Perimeter of the Panels
18 mm	800	29/50	300	150

Notes: (\*) Or other improved nails and screws. / (\*\*) The span can be increased with increased slope; see EN 12871.

- The T&G panels shall be laid across the joists with a minimum panel length equal to 2 supports. All perimeter and cut edges shall be supported on joists or noggings.

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- The short edge joints of panels shall be staggered. To take any increase of the panel moisture content in service into account, an expansion gap between the joints shall be incorporated:
  - End use as 'warm roofing' a gap of 1-2 mm is recommended.
  - End use as ventilated 'cold roofing' a gap of 2-3 mm is recommended.
- When using panels in building (end – use condition) and in order to maintain reaction to fire classification, panels should be mounted without air gap behind the wood based panels. That is directly on the building material behind.

### Deflection (Stiffness)

- Stiffness for the deflection under concentrated point load for panels without roof covering for the maximum spans given under 7, are given below:
  - EN 12871 Characteristic Strength and Stiffness values for the structural performance as floor and roof decking on joists.

EN 12871 CHARACTERISTIC VALUES FOR STRUCTURAL PERFORMANCE AS FLOOR/ROOF DECKING JOISTS								
Thickness Nominal $t_{nom}$ (mm)	Veneers / Layers	Maximum Span (mm)	Concentrated Point Load - Bending			Impact Resistance	Assessment	
			Characteristic Strength		Mean Stiffness $R_m$		Service Class	Load Category Note 1
			Serviceability $F_{ser,k}$	Ultimate $F_{ult,k}$				
			N	N	N/mm			
ROOF								
18	7/7	800	1,646	2,588	159	Fullfilled	2	H

Note 1: Load category A. Areas for domestic and residential activities.

Load Category H: Roofs that are not accessible except for maintenance, repair and cleaning. Normal maintenance repair and cleaning include painting and minor repairs).

The stiffness fulfils the requirement given in EN 12871 clause 6.2.2.3.4 for roofing covered with bitumen felt or single ply membrane with a maximum expansion gap of 0.5mm.

### Roof Covering

- Roof covering shall be installed according to the guidelines of the manufacturer of the covering, this includes furthermore surface requirements (EN 635-3 grade - sanded or unsanded).

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# Guidance for Installation FLOORING

**ARAUCOPLY**

OCTOBER 01<sup>st</sup>, 2017

## STRUCTURAL FLOOR DECKING ON JOISTS IN LOAD CATEGORY A\*



### ARAUCOPLY RADIATA PINE SOFTWOOD PLYWOOD

1073 - CPR - 801/809 EN 13986, Flooring, EN 636 - IS, EN 636 - 2 S, EN 314 - 2 class 3, EI, D-s2, d0.  
D<sub>n</sub> - sl. EN 635-3 grade I or II or III in combination.  
(T&G panels sanded or unsanded).

\* (Load Category A: Areas for domestic and residential activities).

## The following clauses shall be met when USING THE PANELS AS STRUCTURAL FLOOR DECKING ON JOISTS:

### Handling

1. The panels can be used in service class I, when the floor is designed and executed in such a way that the moisture content of the panels does not exceed 12 percent for any significant period of time.
2. Each panel shall be marked on the back and shall have tongue and groove (T&G) at the long and short edges of the panels.
3. The panels shall be stacked flat at transport and storage to avoid sagging or other distortion.
4. The panels shall before and after installation be protected against rain and soiling.
5. Before installation, the panels shall be conditioned in the service class for the intended end-use:
  - End use as flooring in service class I, the recommended moisture content of the panels is 8-10%.

### Installation

6. Panels shall be supported and fixed as follows:

Thickness (mm)	Maximum Centre to Centre Span (mm)	Ringshank (*) Maximum Fastener Spacing and Minimum Fastener Dimensions		
		Minimum Ringshank Dimension	Centres of the Intermediate Supporting Joists and Noggings	Centres at the Perimeter of the Panels
18 mm	600	29/50	300	150
21 mm	600	29/50	300	150

Notes: (\*) Or other improved nails and screws.

7. The panels shall be installed in a closed house.
8. The panels shall be installed with the marking downward, so that the flooring is installed on the unmarked side.
9. The T&G panels shall be laid across the joists a minimum panel length equal to 2 supports, and during installation be glued together (tongue and groove) and be fastened (optional glued) to the supports. All perimeter and cut edges shall be supported on joists or noggings. Glue should be applied which is gap filling, elastic and applicable for the purpose on basis of the guidelines of the manufacturer of the glue.

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10. At the perimeter of the floor and pipe lead-in etc. there should be an expansion gap of at least 10 mm to absorb movements due to moisture changes. At floor lengths longer than 10 m one or more intermediate expansion gaps shall be made to absorb movements. The width of the expansion gap should at least be 1.5 mm per metre run of the length of the floor.
11. When using panels in building (end – use condition) and in order to maintain reaction to fire classification, panels should be mount without air gap behind the wood based panels. That is directly on the building material behind.

### Deflection (Stiffness)

12. Stiffness for the deflection under concentrated point load for panels without floor covering for the maximum spans given under 6, are given below:
  - EN 12871 Characteristic Strength and Stiffness values for the structural performance as floor and roof decking on joists.

EN 12871 CHARACTERISTIC VALUES FOR STRUCTURAL PERFORMANCE AS FLOOR/ROOF DECKING JOISTS								
Thickness Nominal t <sub>nom</sub> (mm)	Veneers / Layers	Maximum Span (mm)	Concentrated Point Load - Bending			Impact Resistance	Assessment	
			Characteristic Strength		Mean Stiffness R <sub>m</sub> N/mm		Service Class	Load Category Note 1
			Serviceability F <sub>ser,k</sub> N	Ultimate F <sub>ult,k</sub> N				
FLOOR								
18	7/7	600	4,250	4,838	436	Fullfilled	1	A
21	7/7	600	4,960	5,157	487	Fullfilled	1	A

Note 1: Load category A. Areas for domestic and residential activities.

Load category H: Roofs that are not accessible except for maintenance, repair and cleaning. Normal maintenance repair and cleaning include painting and minor repairs.

The stiffness fulfils the requirement given in EN 12871 clause 6.2.2.3.3 with a maximum deflection of 2.5 mm per 1 kN point load.

### Floor Covering

13. Floor covering shall be installed according to the guidelines of the manufacturer of the coverings, this includes furthermore surface requirements (EN 635-3 grade - sanded or unsanded).

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