Sudati

CE
1034-CPD-12982/1/07

Installation Guide
October 1st, 2007.

SUDPLY PINE PLYWOOD
Structural Floor Decking on joists
Load Category A

Application
1. Appropriately CE marked panels may be used as Structural Floor Decking on joists in Hazard Classes 1 or 2 in Load Category A (areas for domestic and residential activities).
2. Panels shall be transported, delivered, handled, stacked and stored as protected from the elements as soon as possible and in accordance to the recommendations of clauses 6, 7, 8 and 9 of ENV 12872.
3. Before installation panels shall be allowed to reach an equilibrium moisture contend in accordance to the intended intended Service Class in accordance to clause 10 of ENV 12872.

Installation
1. During and after installation, the panels need to be permanently protected from rain as quickly as possible.
2. Panels shall be laid with their long grain across the joists.
3. For square edged panels, the edges between the joists need to be supported on a minimum bearing of 18mm and the short edges supported for their full length on the joists.
4. A 3mm expansion gap shall be left between the edges of square edge panels to prevent buckling.
5. T&G panels shall be laid across the joists with both short edges supported on a joist.
6. All panels joints need to be staggered.
7. A 10mm expansion gap shall be left at the perimeter of the floor and each panel shall be firmly fixed down to prevent buckling.
8. Panels shall be cut, drilled, laid down and fixed in accordance to clauses 11, 12 and 13 of ENV 12872 and in accordance to the following table:

Panel type	Maximum span centre to centre	Minimum fastener dimension (Ringshank)	Minimum fastener distance from panel edge	Maximum fastener spacings	
				Centres at the perimeter of the panels	Centres of the intermediate supporting joists and noggings or stud of panels
18mm square edge or T&G	400mm, 480mm, 600mm	Diameter - 2.9mm Length - 50mm	8mm	150mm	300mm

Performance
1. Panels meet the requirements of EN 12871 and Eurocode I for impact load resitance and also for strength under point load for serviceability and ultimate loads.
2. Stiffness under point load is given in the table below:

Panel type	Maximum span centre to centre	Rmean average (N/mm)	
		Mid span	Joint
18mm square edge	400mm	1.025	x
	480mm	858	
	600mm	605	
18mm T&G	400mm	952	774
	480mm	804	649
	600mm	586	466

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SUDPLY PINE PLYWOOD
Structural Roof Decking on joists
Load Category H

Application

1. Appropriately CE marked panels may be used as Structural Roof Decking on joists in Hazard Class 1 as "warm roof" in Load Category H (roofs that are not accessible except for maintenance, repair and cleaning).
2. Appropriately CE marked panels may also be used in Hazard Class 2 as a "cold roof" in Load Category H provided adequate ventilation and vapour control layers are provided such that the equilibrium moisture content is normally limited to 17% and will only exceed 20% for short periods.
3. Appropriately CE marked panels may also be used as structural panels on pitched roofs.
4. Panels shall be transported, delivered, handled, stacked and stored as protected from the elements as possible and in accordance to the recommendations of clauses 6, 7, 8 and 9 of ENV 12872.
5. Before installation panels shall be allowed to reach an equilibrium moisture contend in accordance to the intended Service Class in accordance to clause 10 of ENV 12872.

Installation

1. During and after installation, the panels need to be permanently protected from rain as quickly as possible.
2. Panels shall be laid with their long grain across the joists.
3. For square edged panels, the edges between the joists need to be supported on a minimum bearing of 18mm and the short edges supported for their full length on the joists.
4. A 3mm expansion gap shall be left between the edges of square edge panels to prevent buckling.
5. T&G panels shall be laid across the joists with both short edges supported on a joist.
6. All panels joints need to be staggered.

7. An expansion gap of 2mm per metre run of panel shall be provided around the perimeter of the roof to upstands or abutting construction and panels shall be firmly fixed down to prevent buckling and uplift from air currents.

8. Panels shall be cut, drilled, laid down and fixed in accordance to clauses 11, 12 and 15 of ENV 12872 and in accordance to the spacings given in the following table:

Panel type	Maximum span centre to centre	Minimum fastener dimension (Ringshank)	Minimum fastener distance from panel edge	Maximum fastener spacings	
				Centres at the perimeter of the panels	Centres of the intermediate supporting joists and noggings or stud of panels
12mm square edge	400mm, 450mm, 600mm	Diameter - 2,4mm Length - 50mm	8mm	150mm	300mm
15mm T&G	815mm				
18mm T&G	1220mm	Diameter - 2,9mm Length - 50mm			

Performance

1. Panels meet the requirements of EN 12871 and Eurocode I for impact load resitance and also for strength under point load for serviceability and ultimate loads.
2. Stiffness under point load is given in the table below:

Panel type	Maximum span centre to centre	Rmean average (N/mm)	
		Mid span	Joint
12mm square edge	400mm	455	x
	450mm	402	
	600mm	233	
15mm T&G	815mm	225	151
18mm T&G	1220mm	153	95

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SUDPLY PINE PLYWOODS

Physical characteristics:

Type	Thickness tolerances (EN 315, EN 12871)				Layup	Veneers thickness (mm)		
	Sanded (mm)		Unsanded (mm)			Faces and backs	Centers	Cores
	ACX, BCX, CPC, P&TS		CDX					
	Min.	Max.	Min.	Max.				
12mm 4ply	11,6	12,4	11,2	12,8	–||–	2,7	x	3,3
15mm 5ply	14,6	15,4	14,2	15,8	–|–|–	2,7	2,7	3,8
18mm 7ply	17,6	18,4	17,2	18,8	–|–|–|–	2,7	2,7	2,7
20mm 7ply	19,6	20,4	19,2	20,8	–|–|–|–	2,7	2,7	3,3

Tolerances (EN 315, EN 12871)	Size	Squareness	Straigthness
	+ 0 / - 3.0mm	+/- 1.0 mm/m	+/- 1.0 mm/m

Mean density (EN 323)	580 Kg/m³ at 9% moisture contend

Performance characteristics:

Bending (EN 310)	Strength (N/mm2)				Stiffness (N/mm2)			
	//		-/-		//		-/-	
Panel type	Mean	L5%	Mean	L5%	Mean	L5%	Mean	L5%
12mm 4ply	44,6	**17,7**	26,7	**12,0**	**6.180**	3.580	**2.060**	1.250
15mm 5ply	50,2	**29,6**	28,4	**16,2**	**7.380**	5.570	**2.400**	1.090
18mm 7ply	48,1	**35,1**	36,7	**20,8**	**6.230**	3.770	**3.590**	2.690
20mm 7ply	38,3	**23,7**	30,2	**15,6**	**5.690**	4.220	**3.330**	2.150

Bonding quality (EN 314-1/2)	**Bonding class 3** (typical mean performance listed below)

Release of formaldehyde	**E1**	
	Taken from EN 13986 Annex B, NOTE 2 for phenolic glue.	
Reaction to fire	**Flooring - D_{FL}-s1**	**Other uses - D-s2, d0**
	Taken from EN 13986 Table 8 for min. 400 kg/m³:	
Water vapour permeability	**Wet cup - 70 μ**	**Dry cup - 200 μ**
	Taken from EN 13986 Table 9 for 500 kg/m³:	
Airborne sound insulation	**R = 13 x lg (m_A) + 14**	
	Calculated in acc. to EN 13986 part 5.10 using the formula.	
Sound absorption coefficient	**250-500 Hz - 0,10**	**1.000-2.000 Hz - 0,30**
	Taken from EN 13986 Table 10:	
Thermal conductivity	**0,13 W/(m.K)**	
	Taken from EN 13986 Table 11 for 500 kg/m³:	
Biological durability (EN 335-1/3)	**Hazard class 2**	
	Taken from ENV 1099 and EN 350-2 item 2.10b	
Content of pentachlorophenol (PCP)	**< 5 ppm**	
	Taken from EN 13986 part 5.18.	

Note: This document replaces the Technical File SDP-CE-01/07 of July 1st, 2007.

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SUDPLY PINE PLYWOODS

Performance characteristics for structural use as components:

Bending	Strength (N/mm2)				Stiffness (N/mm2)			
	//		-/-		//		-/-	
Panel type	Mean	L5%	Mean	L5%	Mean	L5%	Mean	L5%
12mm 4ply	31,4	**17,3**	20,2	**9,3**	9.490	5.240	2.770	1.840
15mm 5ply	x	**15,0**	x	**10,0**	x	5.000	x	1.000
18mm 7ply	39,3	**16,9**	20,7	**11,4**	8.940	4.500	3.250	1.850
20mm 7ply	x	**15,0**	x	**10,0**	x	4.000	x	2.000

Performance characteristics for structural use as Roof Decking:

Thickness	Support spacing (span)	Strength under point load				Stiffness under point load		Impact resistance
		Related to service		Ultimate Load				
		$F_{ser, k, 05}$ 5% fractile		$F_{max, k, 05}$ 5% fractile		R_{mean} Average		
		Mid span	Joint	Mid span	Joint	Mid span	Joint	
	mm	N	N	N	N	N/mm	N/mm	
12mm	400	1.235	x	3.236	x	455	x	Fulfilled
	450	1.824		3.528		402		Fulfilled
	600	2.225		2.941		233		Fulfilled
15mm T&G	815	2.014	2.163	3.335	2.643	225	151	Fulfilled
18mm T&G	1.220	2.961	2.458	4.229	2.802	153	95	Fulfilled

Performance characteristics for structural use as Floor Decking:

Thickness	Support spacing (span)	Strength under point load				Stiffness under point load		Impact resistance
		Related to service		Ultimate Load				
		$F_{ser, k, 05}$ 5% fractile		$F_{max, k, 05}$ 5% fractile		R_{mean} Average		
		Mid span	Joint	Mid span	Joint	Mid span	Joint	
	mm	N	N	N	N	N/mm	N/mm	
18mm	400	3.634	x	6.003	x	1.025	x	Fulfilled
	480	4.112		5.779		858		Fulfilled
	600	3.485		4.915		605		Fulfilled
18mm T&G	400	3.077	2.795	4.993	3.551	952	774	Fulfilled
	480	3.802	2.696	5.297	3.721	804	649	Fulfilled
	600	3.405	2.464	5.270	4.059	586	466	Fulfilled

Note: This document replaces the Technical File SDP-CE-01/07 of July 1st, 2007.

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Declaration of Conformity

Indústria de Compensados Sudati Ltda.
Av. Pres. Getúlio Vargas, 1638
85555-000 Palmas, PR
Brazil

declarares that the Pine Plywoods manufactured at its Palmas plywood mill bearing the marking

CE 1034-CPD-12982/1/07 SUDPLY PALMAS 07 EN 13986 EN 636-2 E1

intended to be used in buildings and constructions

conform with EN 13986 and its Annex ZA

for internal use as structural components in humid conditions and
for internal use as structural floor and roof on joists

as per technical file SDP-CE-01/07, attached.

The Factory Production Control was certified by

HFB Engineering GMBH
Zschortauer Strasse 42
04129 Leipzig
Germany

with certificate No. 1034-CPD-12982/1/07 of June 13, 2007, attached.

Palmas, October 1st, 2007.

Bartolomeu da Silva Neto
Technical Manager

HFB ENGINEERING GMBH
TEST LABORATORY FOR CONSTRUCTION MATERIALS AND ELEMENTS
NOTIFIED BODY (REFERENCE- No. 1034)
Zschortauer Straße 42 • 04129 Leipzig • Germany

CERTIFICATE

OF FACTORY PRODUCTION CONTROL

CE Nr. 1034 – CPD – 12982/1/07

In compliance with the Directive 89/106/EEC of the Council of European Communities of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to the construction products (Construction Products Directive - CPD), amended by the Directive 93/68/EEC of the Council of European Communities of 22 July 1993, it has been stated that the construction products

"SUDPLY" Pine Plywood

according to the performance characteristics for wood-based panels for use in construction, as presented on page 2 of this certificate

produced by the manufacturer

Industria de Compensados Sudati Ltda.
Av. Pres. Getulio Vargas, 1638
85555-000 Palmas, PR
Brazil

in the factory

Industria de Compensados Sudati Ltda.
Av. Pres. Getulio Vargas, 1638
85555-000 Palmas, PR
Brazil

are submitted by the manufacturer to the initial type-testing of the product and a factory production control and that the approved body HFB has performed the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control (system 2+). This certificate attests that all provisions concerning the attestation of factory production control described in Annex ZA of the standard

EN 13986 : 2004

were applied.

This certificate was first issued on 13th of June 2007 and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

The validity of this certificate will be confirmed by the certification report issued every six month by the certification laboratory.

Leipzig, 13th of June, 2007

Prüf-, Überwachungs- und Zertifizierungsstelle HFB

i. V.

Dipl.- Ing. L. Röwer
Head of Certification Laboratory

CERTIFICATE
OF FACTORY PRODUCTION CONTROL
CE Nr. 1034 - CPD - 12982/1/07

Plywood Products:

Panel type/ Plant designation			EN 13986; Performance characteristics required for wood-based panels for use in construction				
"SUDPLY"			Wood-based panels for internal use as structural components in		Wood-based panels for internal use as structural floor and roof decking on joists and as structural wall sheathing on studs		
No.	Thickness	Plies	dry conditions	humid conditions	Floor decking on joists	Roof decking on joists	Wall sheathing on studs
			tab. 4.1	tab. 4.2	tab. 4.7		
1	12.0 mm	4ply	✓	✓	–	✓	✓
2	15.0 mm	5ply	✓	✓	–	–	–
3	18.0 mm	7ply	✓	✓	✓	–	–
4	18.0 mm T&G	7ply	✓	✓	✓	–	–
5	20.0 mm	7ply	✓	✓	–	–	–
6	15.0 mm T&G	5ply	✓	✓	–	✓	–
–	–	–	–	–	–	–	–

Panel types			Wood species		Veneer thickness		
No.	Thickness	Plies	Outer layers	Inner plies	Face, Back	Crossbands	Centers
1	12.0 mm	4ply	pinus elliottii > 650 kg/m³	pinus elliottii, pinus taeda > 420 kg/m³	2.7 mm	3.8 mm	x
2	15.0 mm	5ply			2.7 mm	3.8 mm	2.7 mm
3	18.0 mm	7ply			2.7 mm	2.7 mm	2.7 mm
4	18.0 mm T&G	7ply			2.7 mm	2.7 mm	2.7 mm
5	20.0 mm	7ply			2.7 mm	3.3 mm	2.7 mm
6	15.0 mm T&G	5ply			2.7 mm	3.8 mm	2.7 mm