

### Declaration of Performance DoP N° GRP/PP/13/CE2+




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Product identification	PINE PLYWOOD EN 636-2 S									
Product Types	9mm	12mm4	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm
Intended uses	(See page 2)									

Name and contact address of the manufacturer	INDUSTRIA DE COMPENSADOS GUARARAPES Rua Alcina Santos Araújo, 411, São Francisco Palmas, PR, 85555-000, BRAZIL									
Mill identification	GUARARAPES - PALMAS									
Harmonized standard	EN 13986:2004									
AVCP System	2+									
Notified Body	1034 - HFB Engineering GMBH, Leipzig, Germany									
Certificate	1034-CPD-12981/2/10 dated 21 <sup>st</sup> June 2010									

Essential characteristics	Declared performance	Technical Specification
Release of formaldehyde	E1 (phenolic resin bonded)	EN 13986 Annex B Note 2
Bond quality	Class 3	EN 314-1/2 Type testing
Density	560 Kg/m <sup>3</sup>	EN 323 Type testing
Reaction to fire	D-s2, d0 / Flooring - DFL-s1	EN 13986 Table 8
Water vapour permeability	Wet - 70 μ / Dry - 200 μ      Dry - 200 μ	EN 13986 Table 9
Airborne sound insulation	R = 13 x lg (m <sub>A</sub> ) + 14	EN 13986 part 5.10
Sound absorption coefficient	0,10 / 0,30	EN 13986 Table 10
Thermal conductivity	0,13 W/(m.K)	EN 13986 Table 11
Content of pentachlorophenol	< 5 ppm	EN 13986 part 5.18
Biological durability	Class 2	EN 335 / EN 1099

Dimensional tolerances	Declared performance	Technical Specification									
Length and width	+0 / -3.0mm	EN 324-2									
Squareness	+/- 1.0 mm/m										
Straightness	+/- 1.0 mm/m										
Thickness	See below per Type										EN 324-1 / EN 315 / EN 12871
	Product Type	9mm	12mm4	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm
	Maximum (mm)	9,8	12,8	12,8	13,1	15,8	18,8	21,8	24,8	27,8	30,8
	Minimum (mm)	8,2	11,2	11,2	11,6	14,2	17,2	19,2	22,8	26,8	28,2

Essential characteristics	Declared performance	Technical Specification									
Bending properties	See below per Type										EN 310 Type testing
	Type	9mm	12mm4	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm
Bending strength (N/mm <sup>2</sup> )	Fk, 0	51,7	38,4	40,0	41,3	42,4	39,3	40,1	39,3	39,6	39,2
	Fk, 90	8,0	15,7	18,5	17,4	19,0	23,2	25,0	24,8	22,6	22,7
Bending stiffness (N/mm <sup>2</sup> ) MOE	Ek, 0	7.308	4.055	5.094	5.815	5.737	5.743	6.147	5.118	5.795	5.529
	Ek, 90	607	1.131	1.829	1.318	2.284	2.032	2.688	3.665	2.753	3.586

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Intended use (1)		Internal use as structural components in humid conditions.										
Essential characteristics		Declared performance							Technical Specification			
Strength and stiffness for structural use (N/mm <sup>2</sup> )		See below per Type							EN 12369-2 / EN 636			
	Product Type	9mm	12mm <sup>4</sup>	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm	
	Para. Fk, 0	30,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	
	Perp. Fk, 90	5,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0	15,0	15,0	
	Para. Em, 0	7.000	4.000	5.000	5.000	5.000	5.000	6.000	5.000	5.000	5.000	
Perp. Em, 90	500	1.000	1.000	1.000	2.000	2.000	2.500	3.000	2.500	3.000		

Intended use (2)		Structural wall sheathing on studs.										
Essential characteristics		Declared performance							Technical Specification			
Soft body impact resistance		Fulfilled for Type 12,5mm							EN 12781 / EN 596 Type testing			

Intended use (3)		Structural roof decking on joists.										
Essential characteristics		Declared performance							Technical Specification			
Strength and Stiffness under point load		See below per Type							EN 12781 / EN 1195 Type testing			
	Product Type	12,5mm / 15mm			12,5mm	15mm	18mm	21mm / 24mm / 27mm				
	Edge type	Square			T&G	T&G	T&G	T&G				
	Spacing (mm)	400	450	600	600	815	1220	1220				
Strength (N)	Fser	Middle	2.087	2.203	1.711	3.022	3.662	3.844	3.838			
		Joint	x	x	x	2.801	2.598	3.763	4.717			
	Fmax	Middle	3.536	3.548	3.800	3.484	4.348	4.132	5.443			
		Joint	x	x	x	3.014	3.145	4.348	4.753			
Stiffness (N/mm)	Rmean	Middle	546	482	274	202	201	170	196			
		Joint	x	x	x	181	148	107	139			
Impact resistance		Fulfilled	Fulfilled	Fulfilled	Fulfilled	Fulfilled	Fulfilled	Fulfilled				

Intended use (4)		Structural floor decking on joists.										
Essential characteristics		Declared performance							Technical Specification			
Strength and Stiffness under point load		See below per Type							EN 12781 / EN 1195 Type testing			
	Product Type	18mm / 21mm / 24mm / 27mm										
	Edge type	Square							T&G			
	Spacing (mm)	400	480	600				400	480	600		
Strength (N)	Fser	Middle	3.634	4.112	3.485			3.077	3.802	3.405		
		Joint	x	x	x			2.795	2.696	2.464		
	Fmax	Middle	6.003	5.779	4.915			4.993	5.297	5.270		
		Joint	x	x	x			3.551	3.721	4.059		
Stiffness (N/mm)	Rmean	Middle	1.025	858	605			952	804	586		
		Joint	x	x	x			774	649	466		
Impact resistance		Fulfilled	Fulfilled	Fulfilled			Fulfilled	Fulfilled	Fulfilled			

Place and date of issue	Issued by	Signature
Palmas, 1st July 2013.	Gerson Aldo de Souza Technical Manager	


CE Marking  
DoP N° GRP/PP/13/CE2+



Product identification	PINE PLYWOOD EN 636-2 S
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Standard panel markings
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Product Types	9mm	12mm4	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm
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1034
GUARAPLY PALMAS 08 GRP/PP/13/CE2+
EN 13986:2004 Bond Class 3 E1
PINE PLYWOOD EN 636-2 S XXmm
<b>Structural Components</b>

CE symbol

Notified Body number

Guararapes Trade Mark

Manufacturing mill

Year of first CE Marking

Declaration of Performance

Harmonized standard

Bond quality

Release of formaldehyde

Product identification

Product type

Intended use as structural components in humid conditions

or

CE 1034 GUARAPLY PALMAS 08 DoP GRP/PP/13/CE2+ EN 13986:2004 BondClass3 E1  
PINE PLYWOOD EN 636-2 S XXmm Structural Components

Special panel markings (attached to the standard markings, when applicable)
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Product Types	12,5mm
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<b>Wall Sheathing</b> <b>Roof Decking</b>
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Intended use as structural wall sheathing on studs


Intended use as structural roof decking on joists

Product Types	15mm	18mm	21mm	24mm	27mm	30mm
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<b>Roof Decking</b> <b>Floor Decking</b>
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Intended use as structural roof decking on joists

Intended use as structural floor decking on joists

Place and date of issue	Issued by	Signature
Palmas, 1 <sup>st</sup> July 2013.	Gerson Aldo de Souza Technical Manager	

**REACH Statement**  
**DoP N° GRP/PP/13/CE2+**




<b>Product identification</b>	<b>PINE PLYWOOD EN 636-2 S</b>									
<b>Product Types</b>	9mm	12mm4	12mm	12,5mm	15mm	18mm	21mm	24mm	27mm	30mm

<b>Name and contact address of the manufacturer</b>	<b>INDUSTRIA DE COMPENSADOS GUARARAPES</b> Rua Alcina Santos Araújo, 411, São Francisco Palmas, PR, 85555-000, BRAZIL
<b>Mill identification</b>	<b>GUARARAPES - PALMAS</b>

<b>In compliance to</b>	<b>REGULATION (EC) No 1907/2006</b> <b>OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL</b> of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals <b>(REACH)</b>
	<b>Article 33</b> Duty to communicate information on substances in articles
<b>And acknowledging the</b>	Candidate List of Substances of Very High Concern for Authorisation (published in accordance with Article 59(10) of the REACH Regulation) Last updated: 20 June 2013 to contain 144 substances.

<b>We hereby state that</b>	<b>We are the ARTICLE producer of the above mentioned product.</b>
	The above mentioned product is softwood plywood made solely of softwood veneers and bonded with phenol-formaldehyde resin, and is not treated with any chemicals.
	The above mentioned product is an ARTICLE which do not contain more than 0.1% of any of the SUBSTANCES of the SVHC list.
	<b>NOTIFICATION is thus not required for this ARTICLE.</b>

<b>Place and date of issue</b>	<b>Issued by</b>	<b>Signature</b>
Palmas, 1st July 2013.	Gerson Aldo de Souza Technical Manager	

### Installation Guide DoP N° GRP/PP/13/CE2+



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Product identification	PINE PLYWOOD EN 636-2 S
Intended use	Structural roof decking on joists - Load category H

Application
<p>1. 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).</p> <p>2. 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.</p> <p>3. Panels may also be used as structural panels on pitched roofs.</p> <p>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.</p> <p>5. Before installation panels shall be allowed to reach an equilibrium moisture content in accordance to the intended Service Class in accordance to clause 10 of ENV 12872.</p>

Essential characteristics	Declared performance				Technical Specification		
					EN 12781 / EN 1195 Type testing		
Product Types	12mm		15mm		18mm / 21mm / 24mm / 27mm		
Stiffness under point load (N/mm)	Edge type		Square / T&G		T&G		
	Spacing (mm)		400	450	600	815	1220
	Rmean	Middle Joint	546	482	274	201	179
		x	x	x	148	107	
Impact load resistance	Fulfilled						
Strength under point load	Fulfilled						

Fastener requirements		
Product Types	12mm / 15mm	18mm / 21mm / 24mm / 27mm
Minimum faster dimension (Ringshank)	Diameter - 2,4mm Length - 50mm	Diameter - 2,9mm Length - 50mm
Maximum fastener spacings on centres	Perimeter of the panels	150mm
	Intermediate supporting joists and noggings or stud of panels	300mm
Maximum fastener distance from panel edge	8mm	

Installation
<p>1. During and after installation, panels must be permanently protected from rain as quickly as possible.</p> <p>2. Panels shall be laid with their long grain across the joists.</p> <p>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.</p> <p>4. A 3mm expansion gap shall be left between the edges of square edge panels to prevent buckling.</p> <p>5. T&amp;G panels shall be laid across the joists with both short edges supported on a joist.</p> <p>6. All panels joints need to be staggered.</p> <p>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.</p> <p>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:</p>

### Installation Guide DoP N° GRP/PP/13/CE2+



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Product identification	PINE PLYWOOD EN 636-2 S
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Intended use	Structural floor decking on joists - Load category A
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<b>Application</b>
<ol style="list-style-type: none"> <li>1. 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).</li> <li>2. 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.</li> <li>3. Before installation panels shall be allowed to reach an equilibrium moisture content in accordance to the intended intended Service Class in accordance to clause 10 of ENV 12872.</li> </ol>

Essential characteristics	Declared performance	Technical Specification
		EN 12781 / EN 1195 Type testing
Product Types	18mm / 21mm / 24mm / 27mm / 30mm	
Stiffness under point load (N/mm)	Edge type	Square
	Spacing (mm)	400    480    600
	Rmean	1.025    858    605
	Middle Joint	x    x    x
		T&G
		400    480    600
		774    649    466
Impact load resistance	Fulfilled	
Strength under point load	Fulfilled	

<b>Fastener requirements</b>		
Product Types	18mm / 21mm / 24mm / 27mm / 30mm	
Minimum faster dimension (Ringshank)	Diameter - 2,9mm Length - 50mm	
Maximum fastener spacings on centres	Perimeter of the panels	150mm
	Intermediate supporting joists and noggings or stud of panels	300mm
Maximum fastener distance from panel edge	8mm	

<b>Installation</b>
<ol style="list-style-type: none"> <li>1. During and after installation, panels need to be permanently protected from rain as quickly as possible.</li> <li>2. Panels shall be laid with their long grain across the joists.</li> <li>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.</li> <li>4. A 3mm expansion gap shall be left between the edges of square edge panels to prevent buckling.</li> <li>5. T&amp;G panels shall be laid across the joists with both short edges supported on a joist.</li> <li>6. All panels joints need to be staggered.</li> <li>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.</li> <li>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:</li> </ol>

Place and date of issue	Issued by	Signature
Palmas, 1st July 2013.	Gerson Aldo de Souza Technical Manager	