

**Declaration of Conformity**

**Indústria de Compensados Guararapes Ltda.  
Rua Alcina Santos Araújo, 411  
Palmas, PR, 85555-000  
Brazil**

**declares that the plywood manufactured at its**

**Palmas Plywood Mill**

**bearing the markings below:**

**CE 1034-CPD-12981/1/10 GUARAPLY PALMAS 10 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 dry and humid conditions**

**as per technical file GRP-CE-01/10, attached.**

**The Factory Production Control was certified by**

**HFB Engineering GMBH  
Zschortauer Strasse 42  
04129 Leipzig  
Germany**

**with certificate No. 1034-CPD-12981/1/10 of 04th March, 2010.**

**Curitiba, 05th March, 2010.**



**Technical Manager**

## Declaration of Performance

DOP N<sup>o</sup> PP/16/CE4

Page 1 of 1

1. Unique identification code of the product-type:

**PINE PLYWOOD EN 636-2 NS G**

thicknesses 7mm thru 30mm

grades C+/C CE4 C+/C+ CE4, C+/C+ O&ES CE4 and C/C CE4

2. Intended uses:

Non-structural components in dry and humid conditions

3. Manufacturer:

Indústria de Compensados GUARARAPES Ltda.

Rua Alcina Santos Araujo, 411, São Francisco

Palmas, PR 85555-000 BRAZIL

Tel. +55-46 3263-8300

e-mail: [Januario@guararapes.com.br](mailto:Januario@guararapes.com.br)

Available from

**Palmas mill**

**Santa Cecília mill**

4. System of assessment and verification of constancy of performance (AVCP):

System 4

5. Harmonised standard:

EN 13986:2004

6. Declared performance

General

Essential characteristics

Bond quality

Release of formaldehyde

Mean density  $\rho$

Declared performance

Class 3 (phenolic)

E1

500 kg/m<sup>3</sup>

Technical Specification

EN 314-1/2

EN 13986 Annex B Note 2

EN 323

For use as NON-STRUCTURAL COMPONENTS in dry and humid conditions

Essential characteristics		Declared performance				Technical Specification				
Characteristic values (L5%)		See below per type				EN 310				
		7mm	9mm	12mm	15mm	18mm	21mm	24mm	27mm	30 mm
Strength (N/mm <sup>2</sup> )	Parallel	35,0	35,9	29,8	32,4	32,6	29,7	25,9	24,1	
	Perpen. ⊥	5,0	8,5	15,9	16,9	16,7	16,6	18,3	18,1	

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

This statement was issued for and on behalf of the manufacturer by:

  
Gerson Aldo de Souza - Technical Manager

In Palmas, PR on 4th January. 2016

**Technical File GRP-CE-01/10**  
**05th March, 2010.**  
**Page 1 of 3**

**GUARAPLY Pine Plywood**

**Physical characteristics:**

<b>Bonding quality</b> (EN 314-1/2)	<b>Bonding class 3</b> (Water and Boil Proof)
-------------------------------------	---

<b>Mean density</b> (EN 323)	<b>580</b> Kg/m <sup>3</sup> at 9% moisture content
------------------------------	---

<b>Size tolerances</b> (EN 315, EN 12871)	<b>Length and width</b>	<b>Squareness</b>	<b>Straightness</b>
	+ 0 / - 3.0mm	+/- 1.0 mm/m	+/- 1.0 mm/m

<b>Thickness tolerances</b> (mm)					<b>Panel constructions</b>			
<b>Panel type</b>	<b>Sanded panels</b>		<b>Touch sanded or unsanded panels</b>		<b>Layup</b>	<b>Faces</b> (mm)	<b>Centers</b> (mm)	<b>Cores</b> (mm)
	Min.	Max.	Min.	Max.				
9mm 3ply	8,6	9,4	8,3	9,8	- -	<b>2,7</b>	x	3,7
12mm 4ply	11,6	12,4	11,2	12,8	-  -			3,7
12,5mm 5ply	12,1	12,9	11,7	13,3	- - -		2,7	2,7
15mm 5ply	14,6	15,4	14,2	15,8	- - -			3,7
18mm 7ply	17,6	18,4	17,2	18,8	- - - -			2,7
21mm 7ply	20,6	21,4	20,2	21,8	- - - -			3,7
24mm 9ply	23,6	24,4	23,2	24,8	- - - - -			3,1
27mm 9ply	26,6	27,4	26,2	27,8	- - - - -			3,7
30mm 11ply	29,6	30,4	29,2	30,8	- - - - - -			3,1

Release of formaldehyde	<b>E1</b> (Requirements < 0,1 ppm)	Actual Levels < 0,015 ppm
	Taken from EN 13986 Annex B, NOTE 2 for phenolic glue.	
Reaction to fire	<b>Flooring - D<sub>FL</sub>-s1</b>	Other uses - D-s2, d0
	Taken from EN 13986 Table 8 for min. 400 kg/m <sup>3</sup> :	
Water vapour permeability	<b>Wet cup - 70 μ</b>	<b>Dry cup - 200 μ</b>
	Taken from EN 13986 Table 9 for 500 kg/m <sup>3</sup> :	
Airborne sound insulation	<b>R = 13 x lg (m<sub>A</sub>) + 14</b>	
	Calculated in acc. to EN 13986 part 5.10 using the formula.	
Sound absorption coefficient	<b>250-500 Hz - 0,10</b>	<b>1.000-2.000 Hz - 0,30</b>
	Taken from EN 13986 Table 10:	
Thermal conductivity	<b>0,13 W/(m.K)</b>	
	Taken from EN 13986 Table 11 for 500 kg/m <sup>3</sup> :	
Biological durability (EN 335-1/3)	<b>Hazard class 2</b>	
	Taken from ENV 1099 and EN 350-2 item 2.10b	
Content of pentachlorophenol (PCP)	<b>&lt; 5 ppm</b>	
	Taken from EN 13986 part 5.18.	

Technical File GRP-CE-01/10  
05th March, 2010.  
Page 2 of 3

**GUARAPLY Pine Plywood**

**Performance characteristics for non structural uses:**

Panel type	Faces (mm)	Flat bending (EN 310)							
		Strength (N/mm <sup>2</sup> )				Stiffness (N/mm <sup>2</sup> )			
		//		-/-		//		-/-	
		Mean	L5%	Mean	L5%	Mean	L5%	Mean	L5%
9mm 3ply	<b>2,7</b>	82,0	<b>51,7</b>	17,5	<b>8,0</b>	<b>9.795</b>	7.308	<b>1.147</b>	607
12mm 4ply		47,7	<b>38,4</b>	21,3	<b>15,7</b>	<b>5.987</b>	4.055	<b>1.712</b>	1.131
12,5mm 5ply		55,8	<b>41,3</b>	27,2	<b>17,4</b>	<b>7.537</b>	5.815	<b>2.284</b>	1.318
15mm 5ply		58,8	<b>42,4</b>	29,8	<b>19,0</b>	<b>7.665</b>	5.737	<b>2.966</b>	2.102
18mm 7ply		51,0	<b>39,3</b>	31,6	<b>23,2</b>	<b>7.202</b>	5.743	<b>3.109</b>	2.032
21mm 7ply		51,9	<b>40,1</b>	37,5	<b>25,0</b>	<b>7.596</b>	6.147	<b>4.028</b>	2.688
24mm 9ply		51,1	<b>39,3</b>	38,4	<b>24,8</b>	<b>6.692</b>	5.118	<b>4.833</b>	3.665
27mm 9ply		46,2	<b>39,6</b>	37,1	<b>22,6</b>	<b>6.617</b>	5.795	<b>4.780</b>	2.753
30mm 11ply		51,7	<b>39,2</b>	35,1	<b>22,7</b>	<b>6.860</b>	5.529	<b>4.932</b>	3.586

**Performance characteristics for structural use as components:**

Panel type	Faces (mm)	Flat bending (EN 12369-2)					
		Classes	Strength (N/mm <sup>2</sup> )		Stiffness (N/mm <sup>2</sup> )		
			L5%		Mean		
			//	-/-	//	-/-	
9mm 3ply	<b>2,7</b>	F 30/5 E 70/5	30,0	5,0	7.000	500	
12mm 4ply		F 25/10 E 40/10	25,0	10,0	4.000	1.000	
12,5mm 5ply		F 25/10 E 50/10	25,0	10,0	5.000	1.000	
15mm 5ply		F 25/10 E 50/20	25,0	10,0	5.000	2.000	
18mm 7ply		F 25/15 E 50/20	25,0	15,0	5.000	2.000	
21mm 7ply		F 25/15 E 60/25	25,0	15,0	6.000	2.500	
24mm 9ply		F 25/15 E 50/30	25,0	15,0	5.000	3.000	
27mm 9ply		F 25/15 E 50/25	25,0	15,0	5.000	2.500	
30mm 11ply		F 25/15 E 50/30	25,0	15,0	5.000	3.000	

**Technical File GRP-CE-01/10**  
**05th March, 2010.**  
**Page 3 of 3**

**GUARAPLY Pine Plywood**

**Performance characteristics for structural use as Roof Decking:**

Minimum Thickness	Support spacing (span)	Impact Resis-tance	Strength Under Point Load				Stiffness Under Point Load	
			Related to Service		Ultimate Load		R <sub>mean</sub> Average	
			F <sub>ser,k,05</sub> 5% fractile		F <sub>max,k,05</sub> 5% fractile		R <sub>mean</sub> Average	
			Mid Span	Joint	Mid Span	Joint	Mid Span	Joint
mm		N	N	N	N	N/mm	N/mm	
12,5mm Square Edge and T&G	400	Fulfilled	2087	X	3536	X	546	X
	450	Fulfilled	2203		3548		482	
	600	Fulfilled	1711		3800		274	
12,5mm T&G	600	Fulfilled	3022	2801	3484	3014	202	181
15mm T&G	800	Fulfilled	3662	2598	4348	3145	201	148
18mm T&G	1200	Fulfilled	3844	3763	4132	4348	170	107
21mm T&G	1200	Fulfilled	3838	4717	5443	4753	196	139

**Performance characteristics for structural use as Floor Decking:**

Minimum Thickness	Support spacing (span)	Impact Resis-tance	Strength Under Point Load				Stiffness Under Point Load	
			Related to Service		Ultimate Load		R <sub>mean</sub> Average	
			F <sub>ser,k,05</sub> 5% fractile		F <sub>max,k,05</sub> 5% fractile		R <sub>mean</sub> Average	
			Mid Span	Joint	Mid Span	Joint	Mid Span	Joint
mm		N	N	N	N	N/mm	N/mm	
18mm Square Edge	400	Fulfilled	3634	X	6003	X	1025	X
	480	Fulfilled	4112		5779		858	
	600	Fulfilled	3485		4915		605	
18mm T&G	400	Fulfilled	3077	2795	4993	3551	952	774
	480	Fulfilled	3802	2696	5297	3721	804	649
	600	Fulfilled	3405	2464	5270	4059	586	466