



PRODUCT

PORTFOLIO

THE COMPANY

PRESENTATION

Lano da Amazonia LTDA is a company dedicated to the **manufacturing and commercializing** of **plywood panels**.

The company's mission is:

- *Respect to the environment*
- *Commitment to clients*
- *Plywood made with the best technology*
- *Commitment to quality*

LEGALIZATION

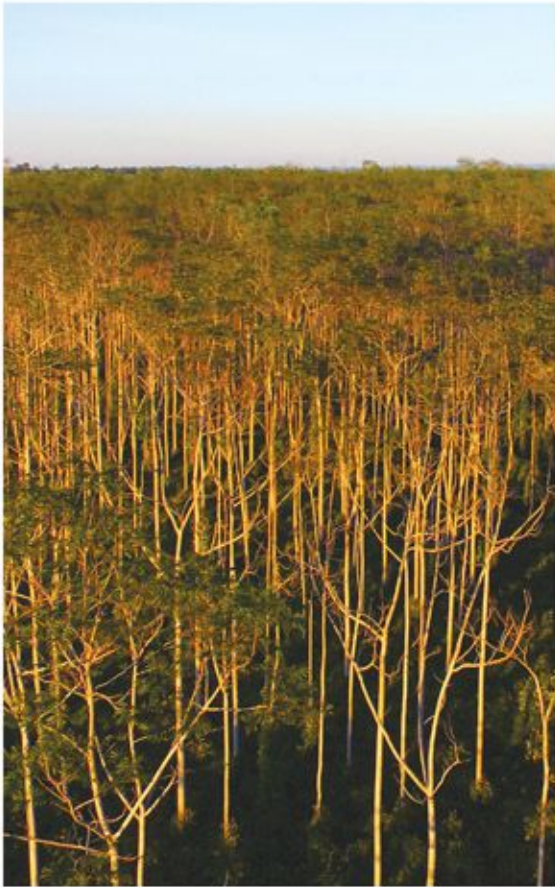
Registration in the legal entities records (Brazil):
01.079.172/0001-65.

Registration in the Brazilian Institute of Environment and Renewable Natural Resources – **IBAMA** –
Ministry of Environment – number: 38299

License of Operation – Environmental Development State's
Office – Government of Rondônia State – number: 140018



REFORESTATION



The company has its own **Pinho Cuiabano reforestation** (*Schilozobium Amazonicum*).



CERTIFICATION

The company is certified with **FORESTWOOD INDUSTRIES, INC.** according to **CARB/EPA (California Air Resources Board and United States Environmental Protection Agency)** standard.

The products are made with WBP resin, as allowed by ATCM CARB/EPA standard. Our product is tracked by the following specification: LANO DA AMAZÔNIA LTDA – MILL # FWI- 158 – CARB/EPA PHASE 2

THICKNESS AND DIMENSIONS

Our **products** are available in **several** thicknesses and dimensions in order to **better serve our clients' needs**.



RAW MATERIAL

The **Pinho Cuiabano wood** (*Schizolobium Amazonicum*) The Pinho Cuiabano wood is from light to moderately dense. Its density ranges 0,30 g/cm³ to 0,62 g/ cm³. (*Source: Paula, 1980; Rodriguez Rojas & Sibille Martina, 1996*) The reference material is the water, which density is 0,997 g/cm³. Therefore, the plywood produced from Pinho Cuiabano will float on water, according to its composition.

APPLICATION

Lano da Amazonia's plywood panels serve customers in the industries of furniture, packaging and construction. **The panels are ready to receive diverse types of finishing**

QUALITY

To check and ensure the **quality** of our products, Lano da Amazônia inspects **50% of its finished products**. This measure is to guarantee our clients a product that meets established standards.

This procedure is registered in the company's production and quality control reports. In addition to this audit of finished product, the entire manufacturing process of products is watched over, from de raw material input to the finished product output.

PRODUCTION

LINE



PRODUCTS



PLATAFORM

Panels of short grain plywood



FLEXIBLE

Panels of short and long grain flexible plywood



PLYWOOD

Panels of long grain plywood



COMPOSITION

For the manufacturing of plywood, Lano da Amazônia follows preset patterns for the number and thickness of the veneers used during the process.

**THESE PATTERNS CAN BE ADJUSTED
ACCORDING TO A CUSTOMER REQUEST.**

SEE BELOW SOME STANDARD PATTERNS:



3 PLYS



5 PLYS



7 PLYS



9 PLYS

PLYWOOD



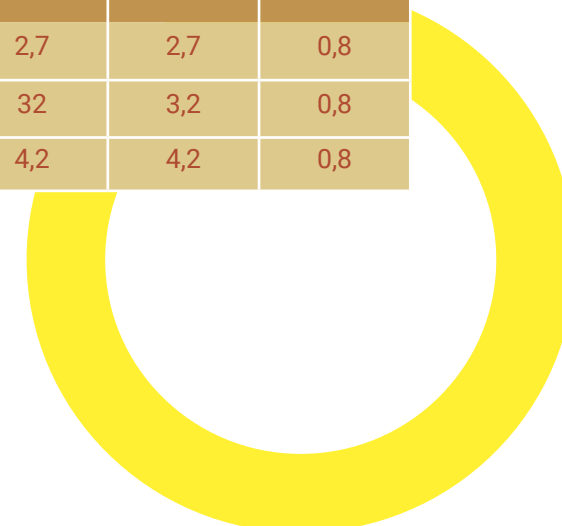
| PRODUCT | QUANTITY OF PLYS | | | |
|-----------------|------------------|------|------|--------------|
| | FACE | BACK | CORE | INTERMEDIATE |
| 5,2 millimeters | 1 | 1 | 1 | 0 |
| 9 millimeters | 1 | 1 | 2 | 1 |
| 12 millimeters | 1 | 1 | 3 | 2 |
| 15 millimeters | 1 | 1 | 3 | 2 |
| 18 millimeters | 1 | 1 | 4 | 3 |
| 20 millimeters | 1 | 1 | 4 | 3 |

| PRODUCT | PLIES THICKNESS (mm) | | | |
|-----------------|----------------------|------|------|--------------|
| | FACE | BACK | CORE | INTERMEDIATE |
| 5,2 millimeters | 1,5 | 1,5 | 2,7 | |
| 9 millimeters | 1,5 | 1,5 | 2,5 | 1,5 |
| 12 millimeters | 1,5 | 1,5 | 2,5 | 1,5 |
| 15 millimeters | 1,5 | 1,5 | 2,5 | 3,0 |
| 18 millimeters | 1,5 | 1,5 | 2,5 | ① 1,5 ② 3 |
| 20 millimeters | 1,5 | 1,5 | 2,5 | 3 |

PLYWOOD FLEXIBLE

| PRODUCT | QUANTITY OF PLYS | | |
|-----------------|------------------|------|------|
| | FACE | BACK | CORE |
| 5,2 millimeters | 1 | 1 | 1 |
| 6 millimeters | 1 | 1 | 1 |
| 8 millimeters | 1 | 1 | 1 |

| PRODUCT | PLIES THICKNESS (mm) | | |
|-----------------|----------------------|------|------|
| | FACE | BACK | CORE |
| 5,2 millimeters | 2,7 | 2,7 | 0,8 |
| 6 millimeters | 3,2 | 3,2 | 0,8 |
| 8 millimeters | 4,2 | 4,2 | 0,8 |



THICKNESS TOLERANCE

Each **product group** has a tolerable **thickness variation**.

| PRODUCT CLASS | THICKNESS TOLERANCE | |
|-----------------------|---------------------|---------|
| | < | > |
| BB/CC calibrated | +/- 0.2 millimeters | +/- 0.3 |
| BB/CC semi calibrated | +/- 0.5 millimeters | +/- 0.5 |
| Plataform | +/- 0.2 millimeters | +/- 0.3 |
| Flexible | +/- 0.2 millimeters | +/- 0.3 |



GLUE / RESIN



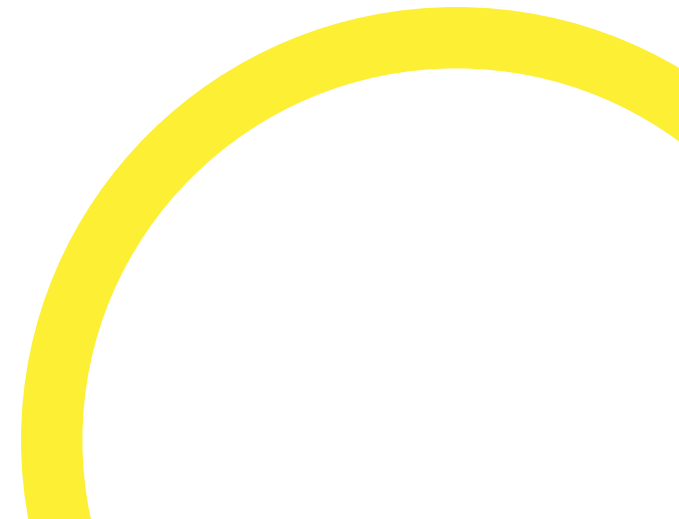
| PANEL THICKNESS (mm) | GRAMMAGE (g/cm ²) | PRESS TIME (minute) |
|----------------------|-------------------------------|---------------------|
| 5,2 | 290 | 8:00 |
| 9 | 310 | 12:00 |
| 12 | 310 | 15:00 |
| 15 | 330 | 18:00 |
| 18 | 330 | 21:00 |
| 20 | 340 | 23:00 |

Lano da Amazônia uses only plywood certified by the CARB/ATCM standard, phenolic glue agrees with NBR 14.725-4 standards.

Resin weight and press time agree with certified standards.

Press Temperature: > 100 °C

| FLEXIBLE THICKNESS (mm) | GRAMMAGE (g/cm ²) | PRESS TIME (minute) |
|-------------------------|-------------------------------|---------------------|
| 5,2 | 0196 | 9:00 |
| 6 | 0196 | 10:00 |
| 8 | 0196 | 12:00 |



OTHER TECHNICAL INFORMATION

PANEL

| THICKNESS (mm) | SPECIFIC APPARENT MASS g/cm ³ NBR - 9485:2011 (MEAN VALUE) | DETERMINATION OF BENDING RESISTANCE (MEAN VALUE) NBR - 9533:2012 | |
|-------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------|
| | | MODULUS OF ELASTICITY MPa | BENDING STRENGTH MPa |
| 5,2 | 0,41 | 6574 | 52 |
| 9 | 0,52 | 5970 | 48 |
| 12 | 0,45 | 5082 | 37 |
| 15 | 0,49 | 5348 | 42 |
| 18 | 0,48 | 4489 | 34 |
| 20 | 0,41 | 3527 | 26 |

SOURCE: TECPAR

FLEXIBLE

| THICKNESS (mm) | SPECIFIC APPARENT MASS g/cm ³ EN- 323:1993 (MEAN VALUE) | DETERMINATION OF BENDING RESISTANCE (MEAN VALUE) SHORT GRAIN EN 310 -2 :1993 | | DETERMINATION OF BENDING RESISTANCE (MEAN VALUE) LONG GRAIN EN 310 -2 :1993 | |
|-------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------|----------------------|
| | | MODULUS OF ELASTICITY MPa | BENDING STRENGTH MPa | MODULUS OF ELASTICITY MPa | BENDING STRENGTH MPa |
| 5 | 0,43 | 176 | 5,71 | 120 | 4,50 |
| 5,2 | 0,45 | 156 | 5,55 | 96 | 3,66 |
| 8 | 0,39 | 82 | 3,5 | 70 | 3,66 |

SOURCE: TECPAR



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