

Introduction

AU-MEX is a leading softwood plywood importer that operates selected plywood mills in the southern highlands of Brazil. With a high annual production capacity, AU-MEX ranks among the top plywood importers globally and exports to markets in Europe, the Middle East, Asia and Australia.

AU-MEX softwood plywood is made from plantation Slash Pine (*Pinus elliottii*) and Loblolly Pine (*Pinus taeda*) logs between 18 and 30 years old, most of which come from FSC-certified plantations. The company uses special production techniques, including veneer density grading and strict control over defects, to meet the most demanding requirements for load-bearing applications.

AU-MEX offers a wide range of plywood grades, thicknesses, and glue bonds that cater to various end-use applications. The company uses phenolic resins to provide a 100% waterproof glue line suitable for permanent steamy and humid exposure.

In the following pages, more detailed information is given on the panel types, grades, thicknesses, glue bonds, etc., which will assist the reader in selecting the correct plywood. So, no matter what the end-use application, whether purely decorative or load-bearing, there is AU-MEX pine plywood to match your requirements.

Product Line Overview

Grade name	Surface appearance		Typical applications	Certified
	Face	Back		
Structural grades				
A-C	Sanded clear face with wood patches	Sanded, knots and knotholes up to 40mm	Panneling, furniture	PS-1 CE 2+ BS 5268-2 BFU 100
B-C	Sanded face with wood patches			
Cp-C	Sanded, knots and repairs up to 40mm		Floor decking	
Flooring	Touch sanded, knots up to 60mm, repairs up to 40mm	Knots and knotholes up to 75mm	Roof decking, floor decking, wall sheathing, shelving, crating, packing	PS-1 CE 2+ BS 5268-2
Sheathing	Unfinished, knots and knotholes up to 75mm			
Frameply	Unfinished, very high density veneers, composed core			Upholstered furniture frames
Non structural grades				
C+/C	Touch sanded, repaired	Unfinished	Shelving, site hoarding, pallets, crates, temporary protections, packing and other applications where structural performance is not a key factor	TECO Tested Gluelines CE 4

A-C

Structural CE 2+ BFU 100 BS 5268-2 PS 1-07

A structural panel with a majority solid wood face. All repairs wider than 3mm are made using all wood patches. This panel is a perfect option for several uses where strength and a solid substrate for painting or veneering is required.

Face Exemple



Back Exemple



Defects	Face	Back
Wood patches	Up to 15 of 40mm	Not usually
Sound knots	Not permitted	Up to 40mm
Unsound knots	Not permitted	Up to 40mm
Splits	Up to 3 of 2mm, repaired	Up to 3 of 15mm

B-C

Structural CE 2+ BFU 100 BS 5268-2 PS 1-07

With knots wood patches and small repaired knots limited to a maximum diameter of 6mm on the face, this panel provides an excellent surface to be painted for all structural, industrial or paneling applications.

Face Exemple



Back Exemple



Defects	Face	Back
Wood patches	Up to 20 of 40mm	Not usually
Sound knots	Up to 6mm	Up to 40mm
Unsound knots	Up to 6mm, repaired	Up to 40mm
Splits	Up to 3 of 5mm, repaired	Up to 3 of 15mm

CP-C

Structural CE 2+ BFU 100 BS 5268-2 PS 1-07

Combined subfloor and underlayment panel, designed specifically for single-layer floor construction, with a solid surface to be used beneath carpet and pad or when other finish floor products are used. Also excellent for industrial applications.

Face Exemple



Back Exemple



Defects	Face	Back
Wood patches	Not usually	Not usually
Sound knots	Up to 40mm	Up to 40mm
Unsound knots	Up to 40mm, repaired	Up to 40mm
Splits	Up to 3 of 10mm, repaired	Up to 3 of 15mm

FLOORING

Structural CE 2+ BS 5268-2 PS 1-07

Developed specially for floor decking and industrial applications where thickness accuracy is critical, these panels may also be used as concrete shuttering panels, roof decking, and wall sheathing. A very versatile product at a very competitive price.

Face Exemple



Back Exemple



Defects	Face	Back
Sound knots	Up to 60mm	Up to 75mm
Unsound knots	Up to 40mm, repaired	Up to 75mm
Splits	Up to 3 of 15mm, repaired	Up to 3 of 15mm

SHEATING

Structural CE 2+ BS 5268-2 PS 1-07

Delivering a very high structural performance, these panels are not repaired and may have composed faces and backs. They offer a perfect solution for applications such as roof sheathing, sidewalls, subflooring, crating, packing, pallet components, etc.

Face Exemple



Back Exemple



Defects	Face	Back
Sound knots	Up to 60mm	Up to 75mm
Unsound knots	Up to 40mm	Up to 75mm
Splits	Up to 3 of 25mm, repaired	Up to 3 of 25mm

FRAMEPLY

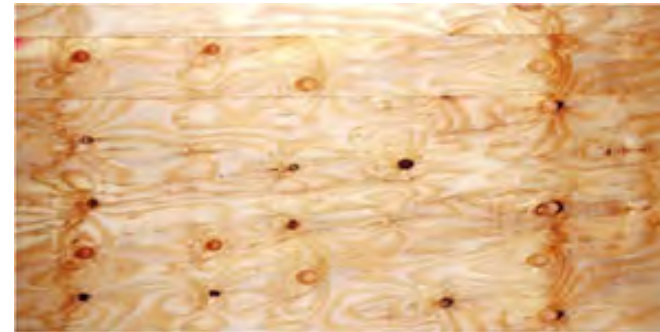
Structural CE 2+ BS 5268-2 PS 1-07

Created to offer the highest structural performance, these panels are not repaired and often have composed faces, backs and high grade inner plies made of the higher density veneers available to provide the best solution for upholstered furniture frame components.

Face Exemple



Back Exemple



Defects	Face	Back
Sound knots	Up to 60mm	Up to 75mm
Unsound knots	Up to 40mm	Up to 75mm
Splits	Up to 3 of 25mm, repaired	Up to 3 of 25mm

C+/C+ O&ES

TECO Tested Glue Lines

Non structural panel made with face and back veneers of lower density and strength values. A water proof glue line and an edge protective sealing together with both sides repaired and touch sanded and coated in both sides with diesel or vegetable oil (mill oiled). Make of these panels an economic option for concrete forming.

Face Exemple



Back Exemple



Defects	Face	Back
Sound knots	Up to 75mm	Up to 75mm
Unsound knots	Up to 75mm, repaired	Up to 75mm, repaired
Splits	Up to 3 of 25mm, repaired	Up to 3 of 25mm, repaired

C+/C

C+ 4 TECO Tested Glue Lines

Non structural panel made with face and back veneers of lower density and strength values. A water proof glue line together with one side repaired and touch sanded make these panels ideal for non structural uses where a solid surface is required .

Face Exemple



Back Exemple



Defects	Face	Back
Sound knots	Up to 75mm	Up to 75mm
Unsound knots	Up to 75mm, repaired	Up to 75mm, repaired
Splits	Up to 3 of 25mm, repaired	Up to 3 of 25mm, repaired

Tongue and grooved (T&G) panels

AU-MEX panels of 15mm, 18mm, and 21mm can be delivered with tongue and groove profiles. T&G panels are great for floor and roof decking to increase load resistance and wall panelling for well-matched joints. They have a net face width of 1.205mm +0/-3mm and a gap on the back of the T&G joints to allow for slight expansion in contact with water, preventing buckling.

Tongue and grooved (T&G) panels

Below are example of T&G profiles



**European
Profile**



Defects and repairs

The quality of the veneers is governed by the natural growth characteristics of the logs from which the veneers are peeled. As a consequence, knots, knot holes, splits and discolouration are just a few of the natural defects that occur.

The grade of the face and back veneers of **AI !A9L** panels are selected so that the

Defects and repairs

Below are some examples of natural defects and repairs.



Core gaps and Workmanship

Good workmanship in laying up the inner plies is essential in ensuring that the structural plywood maximises its full strength potential across the whole panel by minimising the number of undesirable core gaps.

AI !A9L of grades **A-C**, **B-C**, **Cp-C** and **Frameply** are made with full sheets of veneers (natural or composed). This greatly reduces the occurrence of laps and core gaps.

Any gaps that do appear are limited to a maximum of 10mm in width, as can be seen in the example below.



Core gaps and Workmanship

AU-MEX grades **B-B O&ES, Flooring and Sheathing** also offer structurally sound inner plies with limited laps and gaps, with a maximum width of 15mm. This ensures that the core gaps and workmanship are of high quality, contributing to the material's overall stability and durability. As an example, please see the typical illustration provided below.



Core gaps and Workmanship

AI !A9L non structural grades **C+/C+ O&ES**, **C+/C** may have more significant and frequent layup defects. These grades are not intended for structural use, so it's crucial to keep in mind the core gaps and workmanship while using them. Below is a worst-case scenario example that highlights the potential issues that may arise.



Structural performance

AU-MEX ensures consistent delivery of the highest mechanical properties. The veneers undergo strict visual and electronic grading to ensure that only the best veneer sheets are selected for use as face and back plies. The selection criteria are as follows:

The density of the veneer is a crucial factor that affects the strength of plywood. Lower-density veneers are used for core material in AU-MEX's structural grades, while higher-density veneers are reserved for the faces and backs. The examples of this are shown below to give you a better idea.



A high density veneer
good for LVL and also
excellent for structural
plywood faces and backs



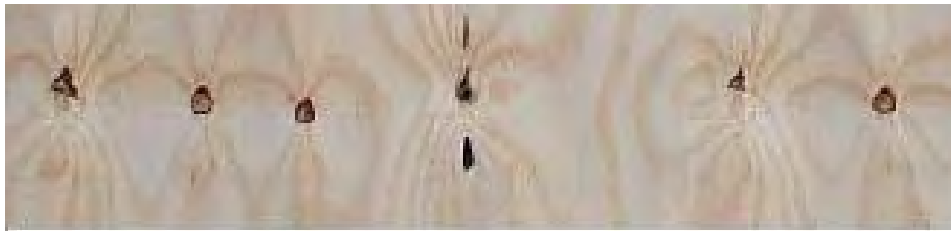
A medium density
Veneer good for
Structural plywood
faces and backs



A low density veneer
good for structural
plywood core only

Structural performance

It is important to consider the width of defects when evaluating the strength of a plywood panel. Plywood panels with critical defects are only suitable for use as inner plies in structural grades of AU-MEX. This helps to ensure the structural performance of the plywood panel.



Desirable situation with very few defects across the veneer section



Nearly critical section with almost 1/4 of the veneer width covered by defects



Critical section with more than 1/3 of the veneer surface covered by defects

Directly obtain details on AU-MEX's structural performance from Technical Files, Data Sheets, Declarations of Conformity and Certificates from Third Parties certifying its products.

Structural performance

When it comes to structural performance, using phenolic resins as a binding agent ensures a completely waterproof glue line that can withstand direct contact with cold, hot water, and steam. Our products undergo constant quality control checks to ensure that the glue bond can withstand even the most extreme conditions.

AU-MEX plywoods are designed to meet or exceed the bonding requirements of various standards, such as EN 314 Bonding Class 3, DIN AW 100, BS 1088 Marine Plywood, NF-Extérieur CTB-X, and KOMO, among others. Additionally, appropriate test procedures are carried out to verify the acceptability of the glue bond for such demanding conditions.

Knife test

As per the EN 314 standards, AU-MEX subjects each press load to standard laboratory tests. In addition to these tests, a "knife test" is also conducted. This test involves making three holes of approximately 40 x 150mm size in the back of the panel, which is the most vulnerable to bonding problems. This panel is usually the one that has been assembled for the longest time in each press load. These intensive tests are conducted to ensure that the panels meet the required level of wood fibre retention. Only if these tests indicate that the panels meet the minimum level of wood fibre retention is that particular press load considered acceptable for release.

Examples of knife tests can be seen below....

A good knife test example...
A desirable situation, normally found.



A marginally acceptable knife test example...
Not seen very often on AWĚ ÒÝ.









An unacceptable knife test example,
with a large area with no fiber retention.



Panels like this are always downgraded.

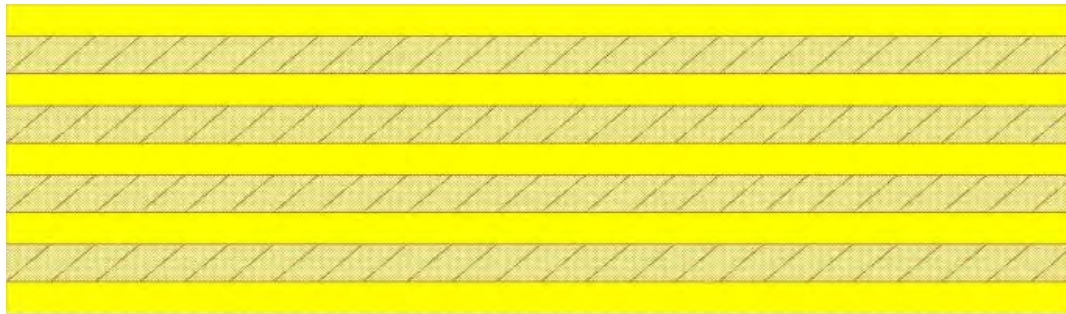
Panel layups

A combination of 2,7mm long layers with 2,7mm, 3,1mm, 3,7mm and 3,9mm crossbands is used to produce several thickness arrangements, as shown below:

	2,7 3,9 2,7	9mm 3 ply 3/8", 11/32"
	2,7 3,7 3,7 2,7	12mm 4 ply 15/32"
	2,7 2,7 2,7 2,7 2,7	12,5mm 5 ply 1/2"
	2,7 3,9 2,7 3,9 2,7	15mm 5 ply 19/32"
	2,7 2,7 2,7 2,7 2,7 2,7 2,7	18mm 7 ply 23/32"
	2,7 3,9 2,7 3,9 2,7 3,9 2,7	21mm 7 ply 7/8"

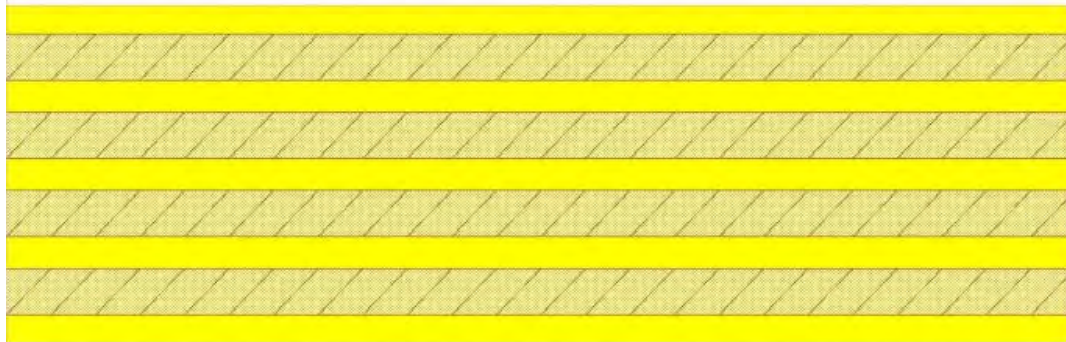
Panel layups

Below mores examples:



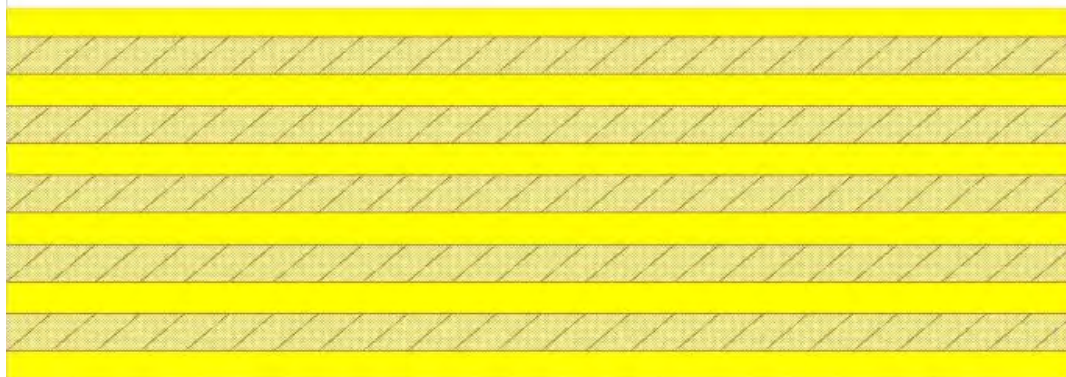
2,7
3,1
2,7
3,1
2,7
3,1
2,7
3,1
2,7

24mm - 9 ply
1", 31/32"



2,7
3,9
2,7
3,9
2,7
3,9
2,7
3,9
2,7

27mm 9 ply
1-1/8", 1-1/16"



2,7
3,1
2,7
3,1
2,7
3,1
2,7
3,1
2,7
3,1
2,7

30mm 11 ply
1-1/4", 1-3/16"

Dimensional tolerances

Structural grades are manufactured to meet the tolerances of all the following standards:

PS 1-07	Structural Plywood
EN 315	Plywood. Tolerances for dimensions
EN 12871	Wood-based panels. Performance specifications and requirements for load bearing boards for use in floors, walls and roofs
DIN 68705-3	Sperrholz; Bau-Furniersperrholz

Non structural grades are manufactured to meet the tolerances of the following standard:

EN 315	Plywood. Tolerances for dimensions
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Size tolerances are given below:

Length and width: **+0 / -3,0mm**

Straightness: **± 1,0mm/m** of panel length.

Squareness: **± 1,0mm/m** of panel length.

Thickness tolerances for the standard panel types are given below:

Dimensional tolerances

Panel finish	Unsanded or touch sanded (calibrated)						Sanded			
Panel grades	C+/C+ O&ES, C+/C O&ES, C+/C+, C+/C, C/C		Flooring, Sheathing, Frameply				B-B O&ES, A-C, B-C, Cp-C			
Nominal thickness (mm)	Min. (mm)	Max. (mm)	Customary thickness	Min. (mm)	Max. (mm)	Within one panel (mm)	Customary thickness	Min. (mm)	Max. (mm)	Within one panel (mm)
9mm	8,3	10,1	3/8"	8,7	9,5	1,0	11/32"	8,6	9,1	0,6
12mm	11,2	13,2	15/32"	11,2	12,8		15/32"	11,6	12,4	
12,5mm	11,7	13,7	1/2"	11,9	13,3		1/2"	12,3	12,9	
15mm	14,2	16,3	19/32"	14,3	15,8	1,5	19/32"	14,7	15,4	
18mm	17,1	19,3	23/32"	17,5	18,8		23/32"	17,9	18,4	
21mm	20,0	22,4	7/8"	21,1	21,8		27/32"	20,8	21,4	
24mm	22,9	25,5	1"	24,1	24,8		31/32"	23,9	24,4	
27mm	25,8	28,6	1-1/8"	27,1	27,8	1-1/16"	26,6	27,4	0,8	
30mm	28,7	31,7	1-1/4"	30,1	30,8	1-3/16"	29,6	30,4		

Note: Thickness shall be verified at $10 \pm 2\%$ of panel moisture content.

Most common panel sizes are **2440x1220mm**, 2400x1200mm and 1250x2500mm.

Other panel thicknesses and sizes may also be available upon request.

Packing

AU-MEX typically follows a standard packing procedure: it packs over three wooden skids in open bundles and secures them with five steel straps. The T&G panels are equipped with side plywood protections to ensure safe transportation. The average weight of a unit is between 1500Kg to 1600Kg. For more information regarding the packing procedure, please refer to the details below...

Quantity of panels per unit				
Nominal thickness	Customary units		2440mm X 1220mm	2500mm X 1250mm
	Unsanded	Sanded		
9mm	3/8"	11/32"	100	100
12mm	15/32"		75	75
12,5mm	1/2"		75	75
15mm	19/32"		60	60
18mm	23/32"		50	50
21mm	7/8"	27/32"	43	43
24mm	1"	31/32"	37	37
27mm	1-1/8"	1-1/16"	33	33
30mm	1-1/4"	1-3/16"	30	30

More details...

Packing

Net volume per unit (m3)				
Thick. (mm)	Customary units		2440x1220mm	2500x1250mm
	Unsanded	Sanded		
9mm	3/8"	11/32"	2,679 m3	2,813 m3
12mm	15/32"		2,679 m3	2,813 m3
12,5mm	1/2"		2,791 m3	2,930 m3
15mm	19/32"		2,679 m3	2,813 m3
18mm	23/32"		2,679 m3	2,813 m3
21mm	7/8"	27/32"	2,688 m3	2,822 m3
24mm	1"	31/32"	2,643 m3	2,775 m3
27mm	1-1/8"	1-1/16"	2,652 m3	2,784 m3
30mm	1-1/4"	1-3/16"	2,679 m3	2,813 m3

Other especial packing arrangements may be available upon request.

Technical certifications

AU-MEX plywood has quality certifications and approvals, making it suitable for various structural and non-structural applications. This versatile plywood is known for its excellent performance in multiple applications. Additionally, the panel surfaces of this plywood bear different marks that indicate its quality standards. To give a brief overview, these marks are essential indicators of the quality and reliability of the AU-MEX plywood.



CE 1034-CPD-12981/1/07: Panels marked with the CE symbol indicate that they have been CE Marked in accordance with the EN 13986 standard and are suitable for use as load-bearing boards in most European countries. These panels guarantee structural performance, bond durability, low formaldehyde gas emissions, tight size tolerances, and durability of the wood itself.



CE

This means that the panels have been CE Marked in accordance with the EN 13986 standard and are accepted for use in construction as non-structural elements in Europe. These panels guarantee bond durability, low formaldehyde gas emissions, and durability against wood decay.

Technical certifications



BFU 100 (DIN 68705-3)

Panels marked with the above identifier are approved for use in load-bearing construction applications in Germany. These panels guarantee excellent structural performance, bond durability, low formaldehyde gas emissions, and tight size tolerances and have been tested by the Certification Agency.



BBA (BS 5268-2)

Panels marked with the BBA identifier meet the requirements of BS 5268-2 for all types of load-bearing construction applications in the UK. These panels guarantee excellent structural performance, bond durability, low formaldehyde gas emissions, and tight size tolerances.



TECO TESTED (PS 1-07)

Panels with the TECO TESTED identifier have been certified according to the United States building code requirements for industrial and structural applications. This stamp assures architects, engineers, and builders that these panels meet the appropriate standard requirements.

FSC certification

AU-MEX is composed solely of Slash and Loblolly Pine trees (*Pinus elliottii* and *taeda*) from plantations in the highlands of Southern Brazil.

The company sources wood from its forests and selected suppliers, who are encouraged to adopt the best logging and forest management practices and obtain FSC and/or PEFC forest management certifications.

The Palmas mill has FSC certification for its production, as per certificate SW-COC-002832, and the Santa Cecilia mill has FSC certification, as per certificate SW-COC-002683.

Most of the wood used in AU-MEX products comes from FSC-certified forests. However, some of the raw material still comes from non-certified forests. As of January 2008, AU-MEX products are available in two possible statuses regarding the origin of the raw material:

1. 100% of the wood comes from FSC-certified forests.
2. Non-FSC certified.

Please let us know if you prefer a product that is FSC-certified.



Responsible Forest Management

SW-COC-002832

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