

Technical Specs

- *Excellent for construction use.*
- *Strength and stiffness.*
- *Exceptional resistance to moisture.*
- *High thermal and acoustic insulation.*
- *Optimal results for exterior and interior uses.*

TECHNICAL PROPOSAL FOR ITS USE

Tulsa **Sanded Pine Panels**. This panel has homogenous sanded faces without open defects and are mainly used for concrete form, industrial applications and furniture. Faces are sanded, and have few natural wood or synthetic repairs.

CHARACTERISTICS

Tulsa **Sanded Pine Panels** are constructed using 100% plantation Radiata Pine veneers that have been sorted according to the American PS 1-95 standard face grades.

Panels are constructed by gluing veneers together perpendicularly, with the face grain always being in the long direction. Tulsa always uses uneven numbers of plies to reach the best stability and strength resistance.

Grade used for faces / backs : **A/C** **B/C**

Grade A



Face with no open defects, free from knots and without discoloration.

Grade B



Face with no open defects some repairs and some occasional tight knots.

Grade C



Grade according to common use for construction with some small open defects.

Sanded Pine Panels

AC / BC

Veneer & Plywood
TULSA
Tulipas & Contrachapados

SIZES

Thickness:

- 9 mm = 11 / 32"
- 12 mm = 15 / 32"
- 15 mm = 19 / 32"
- 18 mm = 23 / 32"

Dimensions:

- Width 1,22 mt = 4'
- Length 2,44 mt = 8'

RECOMMENDED USES

- Concrete forming
- House building
- Furniture
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HUMIDITY

During manufacturing, panel humidity is controlled and stabilized between 8% to 12%.

THERMAL INSULATION

Tulsa plywood are excellent to be used as exterior sheathing or interior panels due to their low thermal conductivity coefficient ($k=10 \text{ Kal-m/m}^2 \text{ h}^\circ \text{ C}$).

QUALITY CERTIFICATION

Tulsa **Sanded Pine Panels** are certified By the American company **TP Timber Products Inspection** and fulfill the standards set in American **PS 1-09** norm.

The controls of the board production process of Tulsa Standard Film are certificated under the standards of the **European Community ENE 13986:2004** .

ADHESIVES

Tulsa **Sanded Pine Panels** are produced using phenolic resins with low polluting emission in accordance to European E-1 norm. This allows outdoor uses with an exceptional resistance to moisture without causing environmental pollution when used in interior applications.

FSC

Tulsa boards are certified for Chain of Custody **FSC Mix**, registration code SA - COC – 002117. This certification must be requested at the time of quotation.



Panel Sizes and Tolerance			
Format		Tolerance	
Length	2.44 mm - 8"	+ 0; - 1,6 mm	
Width	1.22 mm - 4"	+ 0; - 1,6 mm	
Thickness	9 a 25 mm - 11/32" a 1"	Sanded	$\pm 0,4 \text{ mm} \leq 19 \text{ mm}$
			$\pm 3.0 \% > 19 \text{ mm}$
		Not Sanded	$\pm 0,8 \text{ mm} < 20,5 \text{ mm}$
			$\pm 5 \% \geq 20,6 \text{ mm}$

General Information						
Thickness	N° plies	N° panels/bundle	Weight Panel Kg	Density Kg/m ³ (1)	Make up of product	Type of facing material
9 mm - 11/32"	3	108	13,0	544	Radiata Pine Veneers	Radiata Pine Veneers
12 mm - 15/32"	5	80	20,5	550		
15 mm - 19/32"	5	65	24,6	515		
18 mm - 23-32"	7	54	30,95	543		

Source: (1) Data obtained from Tulsa boards in tests done by TECO USA year 2006.

Physical - Mechanical Properties				
Thickness	Bending Stiffness MOR II kN · m ² /m (2)	Bending Strength MOE II kN · m/m (2)	Shear Through Thickness Strength kN/m (2)	Planar Shear Strength kN/m (2)
9 mm - 11/32"	0,35	0,137	22,8	5,1
12 mm - 15/32"	1,22	0,313	33,3	7,7
15 mm - 19/32"	2,17	0,463	43,8	10,1
18 mm - 23-32"	3,34	0,575	44,7	12,2

Source: (2) Data are criteria of tests of American Standard TECO PS 1 -09 for Group I

Sandra Pine Panels
AC / BC



Phisical - Mechanical Proprieties				
Thickness	MOR II N/mm ²	MOR ⊥ N/mm ²	MOE II N/mm ²	MOE ⊥ N/mm ²
9 mm - 11/32"	45	15	5.000	500
12 mm - 15/32"	60	23	5.000	1.500
15 mm - 19/32"	38	23	4.000	2.000
18 mm - 23/32"	38	23	5.000	2.000
21 mm - 53/64"	30	10	4.000	2.000

Source: (2) Data are results with the Standard UNE- ENE 310

Allowable live loads / Spacing of supports center to center

