Technical Specs

- Its main advantage allows up to 20 reuses (when reasonable care in use and handling is taken).
- Overlaid with brown film of 125 grs/ m2.
- Its is recommended for use in concrete that need futher treatment as painted, or coated etc.
- High strength and light weight.
- 65% phenolic resin.

Technical Proposal For Its Use

- Tulsa **Standard Film** panels are edge sealed during manufacturing. If you have to cut boards during the use, it is recommended to re-seal the fresh edges to avoid panel damage caused by capillary penetration of humidity.
- Always use the correct recommended chemical reactive releases for non-porous surfaces to ensure proper form removal.
- Although cleaning a Tulsa overlaid panel is much easier and quicker than traditional form material, it is important to only use fiber spatulas and synthetic materials when cleaning forms to prevent damages to the faces, which might occur with metallic tools. Always store the panels inside a warehouse, protected from weather conditions.
- Although Tulsa **Standard Film** panels are very resistant to the abrasion and impact, care must be taken during cleaning and use to prevent damage. Always use the appropriate vibrators and techniques to protect the panel surface.

FILM STANDARD

Phenolic Film Panel

TULSA S.A.

SIZES

THICKNESS

- 12 mm = 15 / 32''
- 15 mm = 19 / 32''
- 18 mm = 23 / 32''
- 21 mm = 27/ 32 ''

DIMENSIONS

- Width 1,220 m = 4'
- Length 2,440 m = 8'

- Width 1,250 m = 4 3/32 '
- Length 2,500 m = 8 13/64 '

HUMIDITY

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

QUALITY CERTIFICATION

Tulsa **Standard Panels** are certified by the American company **TPI** and fulfill the standards set in American **PS 1-09**.

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 **Standard Panels** are produced using phenolic resins with low polluting emission in accordance to European **E-1** norm.

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.

FILM STANDARD

Phenolic Film Panel

TULSA S.A.

Panel Tolerances

Lenght	0 ; - 1,6 mm (1/16")
Width	0 ; -1,6 mm (1/16")
Squareness	Diagonals on 4' x 8' panel must be whithin 1/8" (3,2 mm)
Straightness	Saw cuts must be straight within 1/16" (1,6 mm)
Thickness	+ / - 0,4 mm

TPI PS 1-09 Norm.

General Information

Thickness	N° plies	N° panels/bundle	Weight Panel Kg	Density Kg/m^3 (1)	Make up of product	Type of facing material
12 mm - 15/32"	5	80	19,6	550	Radiata Pine Veneers	Radiata Pine Veneers
15 mm - 19/32"	5	65	22,9	515		
18 mm - 23/32"	7	54	29,1	543		
21 mm - 27/32"	7	46	34,2	547		

Phisical - Mechanical Propierties

Thickness	Bending Stiffness MOR II kN · m^2/m (2)	Bending Strenght MOE II kN · m/m (2)	Shear Through Thickness Strength kN/m (2)	Planar Shear Strength kN/m (2)
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
21 mm - 27/32"	3,67	0,612	45,5	12,6

Source (2): Data are touchstones of American Standard of group 1.

Phisical - Mechanical Propierties

Thickness	MOR II N/mm^2	MOR ⊥ N/mm^2	MOE II N/mm^2	MOE ⊥ N/mm^2
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 - 27/32"	30	10	4.000	2.000

Source: Resistance values were obtained using the European standard EN 310.

MOR : Modulus of bending strenght.

MOE: Modulus os elasticiy (Bending stiffness)

FILM STANDARD

Phenolic Film Panel

TULSA S.A.

Allowed load / support distance between axes.– Load Span

NOMINAL PANEL THICKNESS	SPAN CONDITION	LOAD GOVERNED BY	SPAN - Center-to-Center of Supports (in)											
			STRENGTH AXIS PERPENDICULAR TO SUPPORTS											
			4	8	12	16	19.2	24	30	32	36	40	48	60
19/32	SINGLE SPAN	L/360	36704	2022	471	177	97	47	23	18	12	9	5	2
		L/240	55057	3033	707	266	145	70	34	28	19	13	7	3
		L/180	73409	4044	943	354	194	94	46	37	25	18	10	5
		Bending	3120	780	346	195	135	86	55	48	38	31	21	13
		Shear	2784	1070	662	480	393	309	244	228	201	180	149	118
		Allowable	**2784**	**780**	**346**	**195**	**135**	**86**	**55**	**48**	**38**	**31**	**21**	**13**
	DOUBLE SPAN	L/360	88416	4871	1135	427	233	113	55	45	31	22	12	
		L/240	132624	7307	1703	640	350	169	83	67	46	33	19	
		L/180	176833	9743	2271	854	467	226	111	90	62	44	25	
		Bending	3120	780	346	195	135	86	55	48	38	31	21	
		Shear	2227	856	530	384	314	247	195	182	161	144	119	
		Allowable	**2227**	**780**	**346**	**195**	**135**	**86**	**55**	**48**	**38**	**31**	**21**	
	TRIPLE SPAN	L/360	69418	3824	891	335	183	88	43	35				
		L/240	104128	5737	1337	503	275	133	65	53				
		L/180	138837	7649	1783	671	367	177	87	71				
		Bending	3900	975	433	243	169	108	69	60				
		Shear	2320	892	552	400	327	257	203	190				
		Allowable	**2320**	**892**	**433**	**243**	**169**	**108**	**69**	**60**				

Allowed load / support distance between axes.– Load Span

NOMINAL PANEL THICKNESS	SPAN CONDITION	LOAD GOVERNED BY	SPAN - Center-to-Center of Supports (in)											
			STRENGTH AXIS PERPENDICULAR TO SUPPORTS											
			4	8	12	16	19.2	24	30	32	36	40	48	60
23/32	SINGLE SPAN	L/360	57295	3156	736	276	151	73	35	29	20	14	8	4
		L/240	85942	4735	1104	415	227	110	53	43	30	21	12	6
		L/180	114590	6313	1472	553	303	146	71	58	40	29	16	8
		Bending	3870	967	430	241	167	107	68	60	47	38	26	17
		Shear	3360	1292	800	579	474	373	294	275	243	218	180	143
		Allowable	**3360**	**967**	**430**	**241**	**167**	**107**	**68**	**60**	**47**	**38**	**26**	**17**
	DOUBLE SPAN	L/360	138016	7604	1773	667	364	176	86	70	48	35	19	
		L/240	207024	11406	2659	1000	547	265	129	105	73	52	29	
		L/180	276032	15209	3546	1334	729	353	173	141	97	70	39	
		Bending	3870	967	430	241	167	107	68	60	47	38	26	
		Shear	2688	1033	640	463	379	298	235	220	194	174	144	
		Allowable	**2688**	**967**	**430**	**241**	**167**	**107**	**68**	**60**	**47**	**38**	**26**	
	TRIPLE SPAN	L/360	108361	5970	1392	523	286	138	68	55				
		L/240	162541	8955	2088	785	429	208	102	83				
		L/180	216722	11941	2784	1047	573	277	136	110				
		Bending	4837	1209	537	302	209	134	86	75				
		Shear	2800	1076	666	482	395	311	245	229				
		Allowable	**2800**	**1076**	**537**	**302**	**209**	**134**	**86**	**75**				