



Jamax Forest Solutions

"We can see the forest through the trees!"

LOG PRODUCT SPECIFICATIONS

MARCH 2011

INTRODUCTION

The Log Product Specifications detailed herein represent the standard specifications.

There may be situations where Log Specifications contained with Supply Agreements vary from these standard specifications. Jamax will advise contractors where this is the case. Otherwise, these standard specifications must be applied.

The standard hardwood log specifications are:

1. Girders
2. Piles
3. Poles
4. Veneer logs
5. High Quality Large Sawlogs
6. High Quality Small Sawlogs
7. Fencing logs – rounds and split posts
8. Low Quality Sawlogs
9. Pulpwood

Note: Non-graded (Salvage) sawlogs are those logs acceptable to the customer that do not meet standard hardwood log specifications 1-7.

1. Girders

Species	Grey Box	Tallowwood
	Grey Gum	White Mahogany
	Ironbark	Blackbutt
	Steel Box	Red Mahogany
	Turpentine	Spotted Gum
Length	Minimum 3.0 m	
Diameter Under Bark (UB)	Minimum toe 300 mm	
Straightness	Select pole	
Pipe	Toe	Solid
	Butt	< (Butt Diameter - Toe diameter)
Length Allowances	<ul style="list-style-type: none"> • Unsound knots and defect are not permitted • Maximum of 2 sound knots (≤ 7 cm diameter) per 2 metres 	
Purchase Lengths	As produced.	

2. Piles

Generally, piles should comply with SAA Int 365 *Australian Interim Specification for Piles (Eastern Australian Hardwoods - 1952)* [copies of which are available from Jamax], unless otherwise specified by the customer. Jamax shall specify requirements for strength and dimensions from time to time by way of a notified pile order.

3. Poles

Generally, poles should meet Australian Standard (AS 2209 - 1994) *Timber Poles for Overhead Lines* [copies of which are available from Jamax], unless otherwise specified by the customer. Jamax shall specify requirements for strength and dimensions from time to time by way of a notified pole order.

Summary of Key Characteristics Poles intended for use after full length Preservative Treatment

<i>Spiral Grain</i>	not exceed 1 in 10 over any 1 metre of its length.
<i>Barrel Checks</i>	individually not exceeding 3 mm in width.
<i>Insect Holes</i>	caused by pinhole borer or other insects attacking the living tree – any number not clustered in a manner liable to impair the strength or integrity of the sapwood.
<i>Grub Holes</i>	only in poles of durability Classes 1 and 2 and then not exceeding 30 mm diameter, provided that holes over 12 mm diameter do not exceed five in number and are spaced not less than 1 m apart and provided also that no grub hole over 12 mm diameter occurs within the critical zone.
<i>Gum Pockets</i>	not within the critical zone; elsewhere scattered and not exceeding 20 mm deep.
<i>Unsound Knots</i>	not within the critical zone. Elsewhere the diameter of individual knots shall not exceed 5 percent of the circumference of the pole if cleared for drainage.
<i>Loose Gum Veins</i>	visible on cut ends – (a) if within 25 mm of the surface of the pole – not exceeding two in number and individually not exceeding 10 percent of the circumference of the pole; (b) elsewhere – unlimited.
<i>Sound Knots</i>	not within the critical zone; elsewhere, the aggregate diameter of the knots in any 600 mm length of the pole shall not exceed 20 percent of the circumference of the pole.
<i>Dry Side</i>	not occurring in the critical zone, and width not exceeding 20 percent of the circumference of the pole.
<i>Pipe</i>	at the butt end only, provided that the diameter does not exceed 20 percent of the diameter of the heartwood of the pole or 100 mm, whichever is the lesser, and not extending into the critical zone.
<i>Punk Hole</i>	not acceptable.
<i>Sapwood Lift</i>	not acceptable.

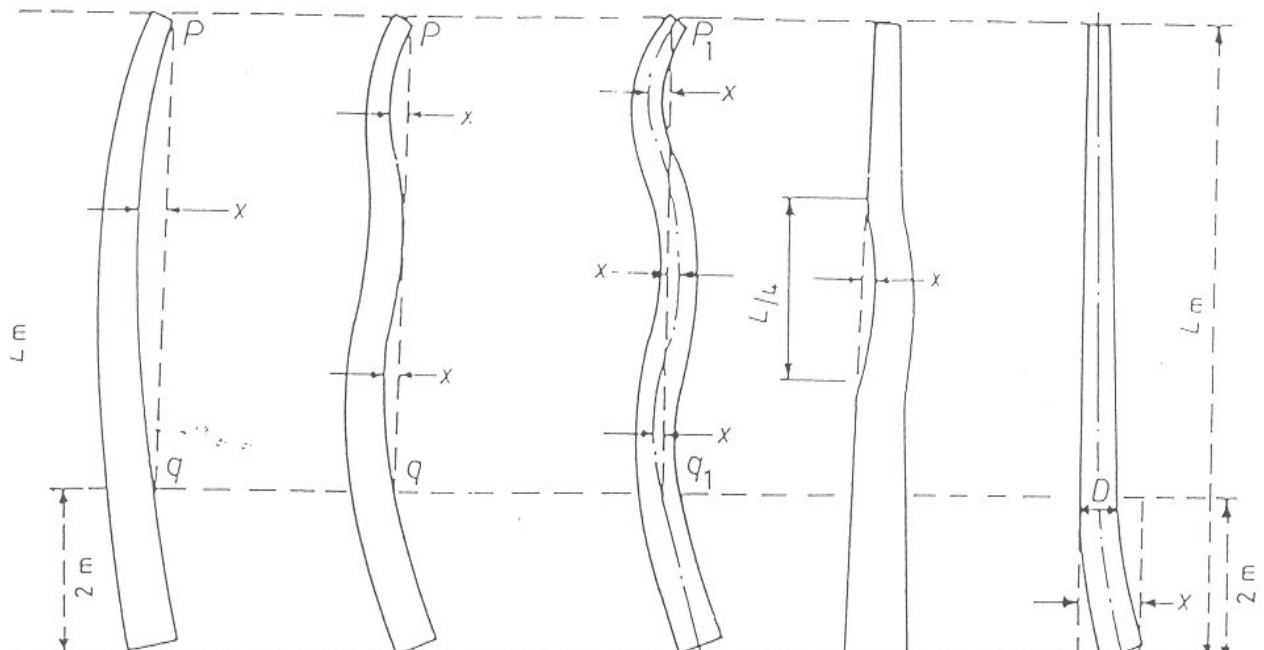
Sprung Limbs not acceptable.

Trimming poles may be trimmed to remove branch stubs, butt flare or other projections adversely affecting their utility or appearance, provided that on completion of this work they still comply with the requirements. However, such trimming shall not be permitted –

- (a) in the critical zone; or
- (b) below ground any closer to the nominal ground line than 1.5 m.

Butt or Head Splits not acceptable.

Figure 1 – Determination of Straightness



(a) Single sweep and multiple sweep
(Pole outline not crossed by P_q)

(b) Multiple Sweep
(Pole outline crossed by P_{1q_1})

(c) Crooks and Kinks

(d) Butt Sweep

Notes: 1. The above diagrams are exaggerated for the purpose of illustrating the system of measurement used and are not to scale.

Straightness When measured in accordance with Figure 1 the maximum deviation of sweeps, crooks or kinks shall not exceed the values for X as given in Table 1.

Select grade and standard grade poles are determined on the basis of select straightness and standard straightness.

Table 1 : Straightness

Type of Deviation	Measured Length m	Max. deviation, X, mm		See Figure
		Select Grade	Standard Grade	
Single sweep and multiple sweep where pole outline is not crossed by P_q	L	7L	10L	1(a)
Multiple sweep where pole outline is crossed by P_q **	L	5L	7L	1(b)
Crooks and kinks	L/4	3L	5L	1(c)
Butt sweep	2	Where D* is up to 400 mm – 1.5D Where D* is up to 400 mm – 1.25D		1(d)

* Where D = actual pole diameter 2 mm from butt.

** Multiple sweep is only acceptable when in one plane.

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Measurement of Knots The size of a knot shall be measured as the distance between two lines parallel to the longitudinal axis of the pole and enclosing the knot or cluster of knots.

The diameter of an encased knot shall be measured to the sound wood of the pole on either side of the knot.

Ovality The least diameter of a pole shall be not less than 80 percent of the greatest diameter at any cross-section over a maximum of 80 percent of the length of the pole.

Critical Zone The 1.6 m length of pole measured from a point 1 m above the nominal ground line to 600 mm below the nominal ground line. If the pole is nominated as a stayed pole, an additional zone measured from the top of the pole equivalent to the length between the nominal ground line and the butt of the pole shall be included.

Permissible deviations using Figure 1 and Table 1.

Pole Length (metres)	Maximum permissible deviation (mm)			
	Fig 1(a)	Fig 1(b)	Fig 1(c)	Fig 1(d)
8.0	56	40	40	24
9.5	66	47	47	28
11.00	77	55	55	33
12.5	87	62	62	37
14.0	98	70	70	42
15.5	108	77	77	46
17.0	119	85	85	51
18.5	129	92	92	55
20.0	140	100	100	60
21.5	150	107	107	64
23.0	161	115	115	69
24.5	171	122	122	73
26.0	182	130	130	78
27.0	189	135	135	81
28.0	196	140	140	84
30.0	210	150	150	90

4. Veneer logs

Species	Blackbutt	Flooded Gum
	Spotted Gum	Blue Gum
	Turpentine	Red Mahogany
	Stringybark	New England Blackbutt
	Messmate	White Gum
Length	Only logs in the length classes shown below are acceptable.	

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Plantation Flooded Gum		Other Species and Natural Flooded Gum	
Log Diameter Under 39 cm CDUB			
40 dm]		40 dm]	
54 dm]		54 dm]	
68 dm]	13 dm billet lengths	67 dm]	13 dm billet lengths
80 dm]	with allowances for	80 dm]	with allowances for
94 dm]	crosscutting	94 dm]	crosscutting
107 dm]		107 dm]	
134 dm]		120 dm]	
147 dm]		134 dm]	
		147 dm]	
Log Diameter 39 cm CDUB and Over			
52 dm]		40 dm]	
80 dm]	26 dm billet lengths	52 dm]	
104 dm]	with allowances for	60 dm]	
133 dm]	crosscutting	80 dm]	20 and 26 dm billet
157 dm]		100 dm]	lengths with allowances
		104 dm]	for crosscutting
		120 dm]	
		130 dm]	
		140 dm]	
		157 dm]	
		160 dm]	

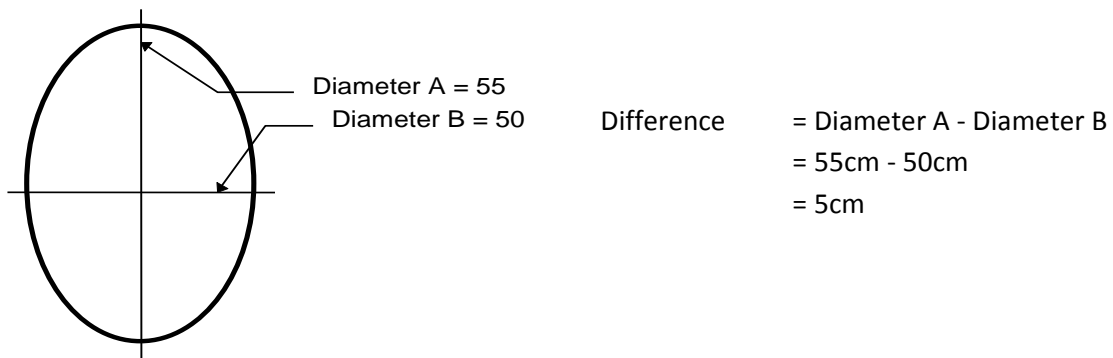
Diameter	Minimum small end diameter	28 cm UB	
	Maximum centre diameter	65 cm UB	
Core	Maximum defective core	10 cm with solid wood surrounding	
Allowable External Defects	Type	<ul style="list-style-type: none"> • Dry or occluded limbs • Green limbs < 10 cm diameter • Fire or mechanical damage where the defect is ≤3 cm below the overgrowth 	
	Number	Log Length	Maximum Number
		< 8 m	2
		8 - 12 m	3
		> 12 m	4

- Individual external defects cannot affect more than 1/4 (25%) of the circumference of the billet.
- If the defect is greater than ½ (50%) of the maximum size allowable - ONE ONLY per billet length.
- If the defect is less than ½ (50%) of the maximum size allowable - TWO ONLY per billet length if the defects are offset.

Internal defects	<ul style="list-style-type: none"> • Active termite activity outside the allowable core is <u>not</u> permitted
	<ul style="list-style-type: none"> • Open rings in Spotted Gum are <u>not</u> permitted
	<ul style="list-style-type: none"> • Tight gum rings and gum pockets are allowable if not excessive
	<ul style="list-style-type: none"> • Hollow pipe is allowable if contained within the core allowance

Ovality	The least diameter of the log shall be not less than 85 percent of the greatest diameter at any cross section of the log.
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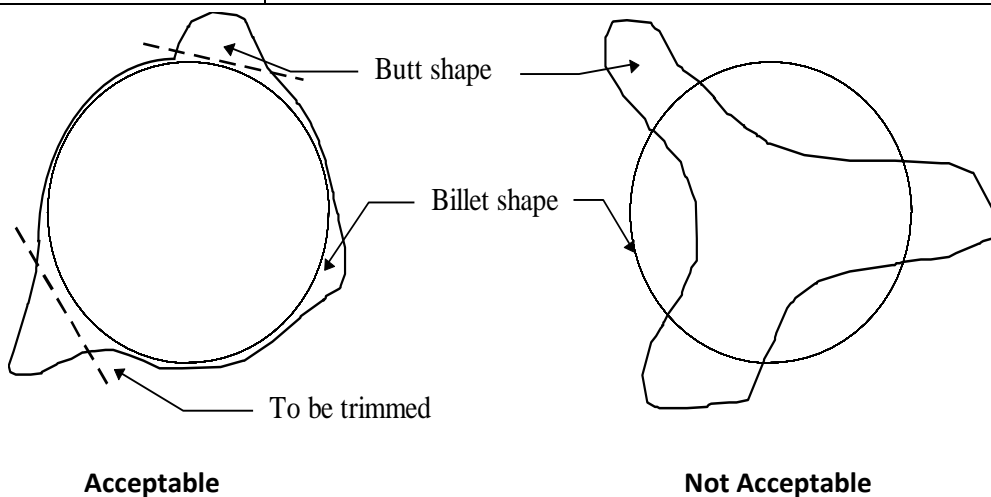
Example



The table below shows that for a log with an average diameter of 52 cm, that the maximum allowable difference in diameters is 8 cm. Therefore, the log is acceptable.

Log Diameter (cm)	Maximum Difference in Diameter (cm)
28	4
30 – 36	5
38 – 42	6
44 – 48	7
50 – 56	8
58 – 62	9
64 – 68	10
70	11

Curly Grain	Not acceptable, especially Spotted Gum
Fluting	Acceptable where it does not affect the billet. Prominent individual flutes should be trimmed to the shape of the billet.



5. High Quality Large Sawlogs

Species	All hardwood species	
Minimum Log Length	2.4 m	
Centre Diameter UB	≥ 40 cm	
Minimum Toe Diameter UB	30 cm	
Maximum Length Allowance with Maximum Pipe	25%	(Utilisation Table 2 - Attachment 1)
Spiral Grain	Maximum slope of 1 in 8	
Sweep	Maximum is 20% (1 in 5) of mid diameter over any 2.4 m section of log	

6. High Quality Small Sawlogs

Species	All hardwood species	
Minimum Log Length	3.0 m	
Centre Diameter UB	< 40 cm	
Minimum Toe Diameter UB	30 cm	
Maximum Length Allowance with Maximum Pipe	25%	(See Small Log Utilisation Schedule table below)
Spiral Grain	Maximum slope of 1 in 8	
Sweep	20% (1 in 5) of mid diameter over any 3.0m section of log	

Small Log Utilisation Schedule

Diameter Under Bark (cm)	Maximum Pipe (cm)	Maximum Total Defect Percent
38	16	42
36	14	39
34	12	37
32	8	31
30	6	29
28	2	26
26	0	25
24	0	25

7. SALVAGE (Fencing Rounds)

7.1 Species

White Mahogany, Iron Bark, Grey Gum, Bloodwood, Grey Box, Turpentine.

7.2 Log Presentation

Square ends, (slovens removed), and with limbs trimmed flush with the log.

7.3 Length

Multiples of 24dm.

7.4 Diameter

Minimum small end diameter 10cms under bark.
Maximum large end diameter 35cms under bark.

7.5 Wood thickness

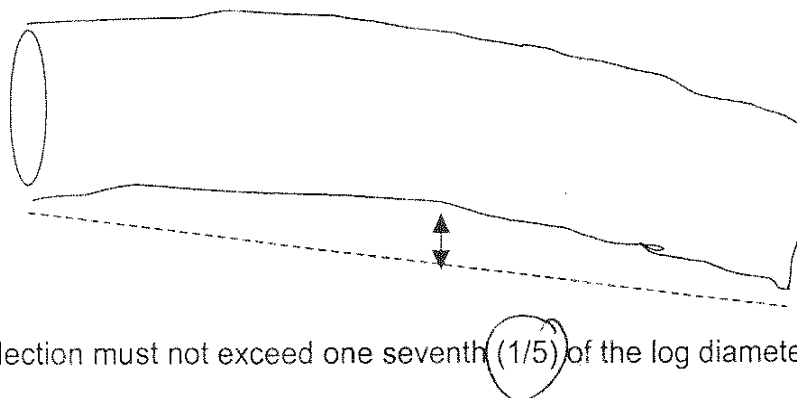
Solid. Solid wood in this context is the equivalent solid wood in a graded log or as set out in the measurement manual.

7.6 Length Defects

Maximum of 2 solid limbs per 2m of log length.
No limbs greater than 25% of circumference of the log.

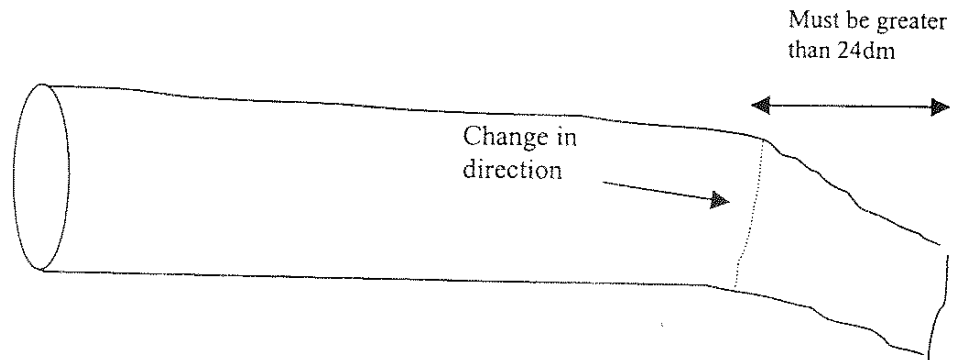
7.7 Sweep

The maximum sweep over any 24dm is 1 in 7.



7.8 Changes in direction

Changes in direction are not considered as sweep and are only acceptable if they occur more than 24dm from the end of the log



7. SALVAGE (Fencing Split Posts)

7.1 Species

White Mahogany, Iron Bark, Grey Gum, Bloodwood, Grey Box, Turpentine.

7.2 Log Presentation

Square ends, (slovens removed), and with limbs trimmed flush with the log.

7.3 Length

Multiples of 20dm.

7.4 Diameter

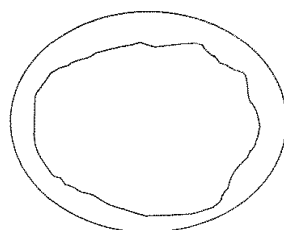
Minimum small end diameter 30cms under bark.
Maximum large end diameter 60cms under bark.

7.5 Wood thickness

The minimum wood thickness is 10cm for 90% of log circumference for solid wood outside of open rings.

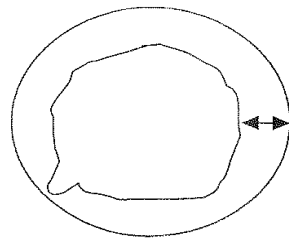
Measurement of wood thickness with logs with open pipe must be a minimum of 15cm for 90% of log circumference to provide for incipient decay and hold the heart together for ripping and wedging of the posts.

The logs below show the wood thickness requirements on the end section of a log.



Wood depth around the log is less than minimum

Not in specification



Wood depth is greater than minimum for 90% of the log

In specification

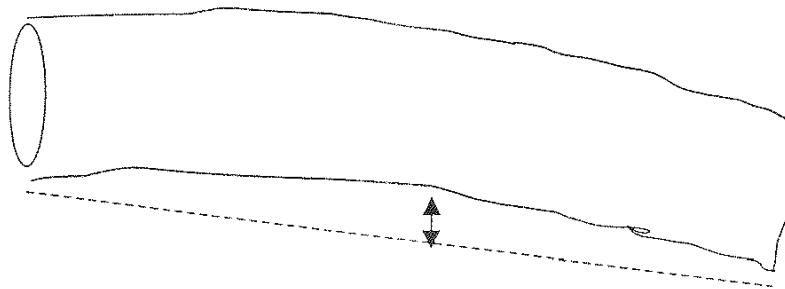
7.6 Length Defects

One limb per 2m of log length, limb must be solid and less than 15cm diameter.

The maximum length allowance for length defects should not exceed 25% of each 2m of log length.

7.7 Sweep

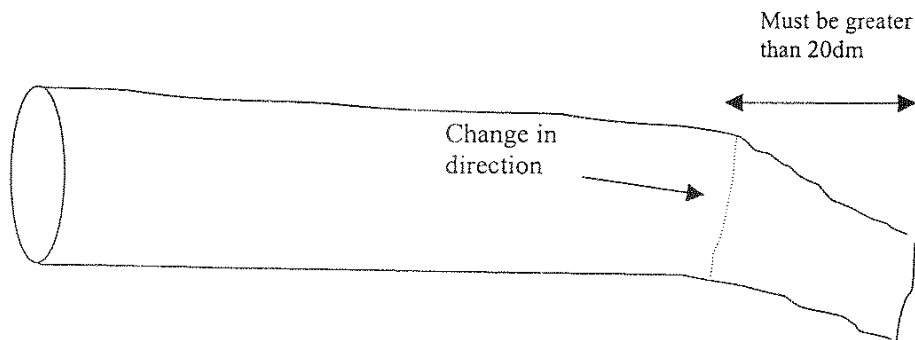
The maximum sweep over any 24dm is 1 in 5 (20%, ie. maximum deflection shall not exceed one fifth 1 in 7 of the centre diameter of any 20dm section of the log.



Deflection must not exceed 1 in 7 of the log diameter

7.8 Changes in direction

Changes in direction are not considered as sweep and are only acceptable if they occur more than 20dm from the end of the log



7.9 Spiral Grain

Spiral grain in fencing timber is not acceptable.

8. Low Quality Sawlogs

Species

All species normally accepted as high quality sawlogs are acceptable as salvage, subject to customer requirements.

Log Dimensions

- Log Presentation - Logs are to be presented with square ends, (slovens removed), and with limbs trimmed flush with the log.
- Length - Logs are to be presented in random lengths with a minimum length of 25dms.

9. Pulpwood

Export Pulpwood:

Species	All hardwood species except Durability Class 1 species such as Red Bloodwood, White Mahogany, Red Mahogany, Turpentine, Tallowwood, Ironbark & Grey Gum, or as otherwise advised by Jamax.		
Minimum Length / Diameter	B&S Timbers	Minimum Length Diameter	2.4 25 – 65 cm
	Tea Gardens	Minimum Length Diameter	2.4 m 10 – 45 cm
	Newells Creek	Minimum Length Diameter	2.4m 10 – 40 cm
Straightness	B&S Timbers	<ul style="list-style-type: none"> • Logs must be capable of passing through an opening of 65 cm without jamming • Split billets only allowed when notified by Jamax. Split billets need to meet the same diameter constraints as round billets. 	
	Tea Gardens	<ul style="list-style-type: none"> • Logs must be capable of passing through an opening of 45 cm without jamming. • Split billets only allowed when notified by Jamax. Split billets need to meet the same diameter constraints as round billets. 	
	Newells Creek	<ul style="list-style-type: none"> • Logs must be capable of passing through an opening of 40 cm without jamming • Split billets only allowed when notified by Jamax. Split billets need to meet the same diameter constraints as round billets. 	
Moisture Content	All logs must be delivered within one month of log preparation on the dump.		
Bark	All logs must be fully debarked.		
Foreign Material	All charcoal, metal, stone, bitumen and plastic must be fully removed.		
Defect	All logs must be solid with no pipe, carrot heart, doze, tiger cat or wet fungal rot.		

Domestic pulpwood:

Species	<p>GROUP A: Blue Gum, Blackbutt, Peppermint, Flooded Gum, Grey Gum, Bloodwood, Grey Ironbark, Red Ironbark, Swamp Mahogany, Grey Box, Round-leaved Gum, Slatey Gum, Brown Barrel, Yellow Box, Mountain Grey Gum (in order of preference)</p> <p>GROUP B: Red Mahogany, Messmate, White Gum (viminalis), New England Blackbutt, Mountain Gum (dalrympleana), White Stringybark, Blue-leaved Stringybark, Brushbox.</p> <p>NO Silvertop Stringybark, Rough-barked Apple, Smooth-barked Apple, Scribbly Gum, Turpentine, Spotted Gum or unlisted species</p> <ul style="list-style-type: none"> • White Mahogany is acceptable in whole loads providing logs are marked WMH and do not exceed 10% of input. • Where possible, logs are to be supplied as either entirely Group A or Group B • Approximate tonnage of each species contained on each load must be recorded on the delivery docket
Minimum length	2.4m
Diameter Range (dub)	<p>25 – 65 cm large end diameter</p> <p>10cm minimum small end diameter</p>
Straightness	<ul style="list-style-type: none"> • Maximum bend 45cm over a 2 m length for logs less than 40cm centre diameter
Bark	All logs must be fully debarked
Defect	<p>Minimum 10cm wood thickness</p> <p>Heart defect 60%maximum</p> <p>Spiral Grain 1:10 maximum</p> <p>Limbs: maximum 1/3 of diameter & less than one limb every 2 m</p>

ATTACHMENT 1:

UTILISATION TABLE

Maximum length allowance with maximum pipe is 25 %

LOG DIAMETER (CM)	MAXIMUM PIPE	MAXIMUM DEFECT %	LOG DIAMETER (CM)	MAXIMUM PIPE	MAXIMUM DEFECT %
30	6	29	96	62	65
32	8	31	98	64	65
34	10	33	100	64	65
36	12	36	102	66	65
38	14	38	104	68	65
40	16	40	106	68	65
42	18	43	108	70	65
44	20	45	110	72	66
46	22	47	112	74	66
48	24	49	114	74	66
50	26	51	116	76	66
52	28	53	118	78	67
54	30	54	120	80	67
56	32	56	122	80	67
58	34	58	124	82	67
60	36	59	126	84	67
62	38	60	128	84	67
64	38	60	130	86	67
66	40	60	132	88	67
68	42	60	134	90	67
70	42	60	136	90	67
72	44	61	138	92	67
74	46	62	140	94	68
76	48	62	142	94	68
78	48	62	144	96	68
80	50	62	146	98	68
82	52	63	148	100	68
84	54	63	150	100	68
86	54	63	152	102	68
88	56	64	154	104	68
90	58	64	156	104	68
92	58	64	158	106	68
94	60	64	160	108	68