



Ergon Energy Corporation Limited

Technical Specification for Vacuum Pressure Impregnated Harwood Poles

ETS-07-01-01

Technical Specification for Vacuum Pressure Impregnated Hardwood Poles

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1. Purpose and Scope

This specification sets out the requirements for preservative treated hardwood poles for use in Ergon Energy electricity distribution systems in Queensland.

2. References

2.1 Applicable Standards

The poles shall comply with the relevant parts of the following Standards and all amendments issued from time to time except where varied by this specification.

STANDARD	TITLE
AS 1080	Timber - Methods of test
AS 1148	Timber – Nomenclature - Australian, New Zealand and imported species
AS 1605	Methods for sampling and analysing timber preservatives and preservative-treated timber
AS 3818.11	Timber - Heavy structural products-visually graded- utility poles
AS 2878	Timber - Classification into strength groups
AS 4491	Timber - Glossary of terms in timber related Standards
ISO 9001	Quality Management Systems - Requirements

3. Drawings

3.1 Drawings by the Purchaser

The following drawing forms part of this specification.

DRAWING No.	REVISION	TITLE
07-01-01	B	Identification Disc PI Hardwood Poles

4. Service Conditions

Hardwood poles will be exposed to the following environmental conditions:

Temperatures	45°C summer day time -5°C winter night time
Solar Radiation Level	1 000 Wm ⁻² with high ultraviolet content
Precipitation	Tropical summer storms with gust wind speeds above 160 km/h, and an annual rainfall in excess of 1 500 mm
Humidity	Extreme range of relative humidities from 10% to 100% which causes substantial shrinkage and swelling stresses in the timber

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Pollution	Areas of coastal salt spray and/or industrial pollution with equivalent salt deposit densities in the range 2.0 to 3.0 gm ⁻²
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5. Design and Construction

5.1 Species

Timber shall be supplied in accordance with the species shown in **Appendix A.1** of this specification.

5.2 Grading of Timber

5.2.1 General

Each pole shall be cut from a straight, matured, growing tree and shall comply with the grade requirements specified in Clause 3.2 of AS 3818.11 except as otherwise provided herein.

5.2.2 Insect Holes

Any number of radial insect holes which are not clustered in a manner liable to impair the strength of the pole or the integrity of the sapwood will be tolerated provided the diameter of any single such hole does not exceed 12 mm.

5.2.3 Grub Holes

Grub holes shall not exceed 25 mm in diameter provided that such holes over 12 mm in diameter:

- (i) do not exceed five in number;
- (ii) do not exceed 150 mm in length;
- (iii) are spaced not less than 1 m apart;
- (iv) do not occur within 600 mm of the centre of a cleared knot;
- (v) do not occur within 600 mm of either the nominal ground line or an unsound knot; and
- (vi) are not capable of collecting water when the pole is erected.

5.2.4 Sound Knots

The diameter of individual sound knots shall not exceed 20% of the circumference of the pole. Such knots shall not appear in the critical zone (as defined in Clause 2.2 of AS 3818.11) and elsewhere, the aggregate diameter of the knots in any 600 mm length of pole shall not exceed 40% of the circumference of the pole. At any cross-section of the pole the aggregate diameter of the knots shall not exceed 20% of the circumference of the pole.

5.2.5 Unsound Knots

Where an unsound knot (i.e. a knot that is more or less decayed and therefore softer than the surrounding wood) is cleared (i.e. dressed) the width of the clearing shall not exceed 10% of the circumference of the pole at that point and also shall not exceed 5% of the circumference of the pole in depth. No cleared knot shall be permitted in the critical zone (as defined in Clause 2.2 of AS 3818.11) and not more than six shall be permitted elsewhere in the pole provided they are spaced more than one (1) metre apart.

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5.2.6 Pipes

A pipe which is not associated with any decay will be tolerated at the butt end of the pole provided that the diameter of the pipe does not exceed 20% of the diameter of the pole at the butt and the length after all obstructions have been cleared does not exceed 10% of the overall length of the pole.

5.2.7 Ring Shakes and Loose/Open Gum Veins

Ring shakes and loose/open gum veins visible at the head of the pole and within 40 mm of the surface shall not exceed two in number and individually shall not exceed 10% of the circumference of the pole.

5.2.8 Trimming

Sound knots and limbs having diameters in excess of 75 mm shall be trimmed such that the finished surface contains no sharp edges and is convex in shape and protrudes above the adjacent surface of the pole by 5 to 10 mm.

5.2.9 Barrel Checks

Barrel checks shall not exceed 5 mm in width.

5.2.10 End Splits and End Checks

The length of end splits and end checks shall not exceed:

- (a) 200 mm at the head of the pole
- (b) 1000 mm at the butt of the pole

The width of end splits and end checks shall not exceed:

- (a) 12 mm at the head of the pole
- (b) 30 mm at the butt of the pole

5.2.11 Dry Side

Dry side (i.e. a strip of exposed deadwood, bordered by callus and formed by injury to the living tree) will not be permitted.

5.3 Size and Form of Pole

5.3.1 Diameter

After dressing, poles shall have diameters not less than those specified in **Appendix A.2**. Maximum pole diameters at the nominal groundline shall not be greater than those shown in **Appendix A.3**.

Maximum pole diameter (including butt sweep) shall not be greater than that allowed by Table 1.5 and Figure 1.5 of AS 3818.11. Notwithstanding the above, poles up to 18.5 metres in length shall have a butt diameter not exceeding 650 mm. Longer length poles shall have a butt diameter not exceeding 700 mm.

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5.3.2 Length

Poles shall be not less than the specified lengths or more than 100 mm longer than these lengths.

5.3.3 Straightness

The maximum deviation of sweeps, crooks or kinks shall not exceed the limits for standard grade poles prescribed in Table 1.5 of AS 3818.11 except that at the head of the pole, any sweep, crook or kink shall not exceed 5 L millimetres for a distance of 0.25 L metres where L is the overall length of the pole in metres.

5.4 Species Branding

The Supplier shall brand the species of timber on each pole. This brand shall be replaced on the pole immediately after any docking or other operation which removes the previous markings. Continuity of the species brand of each individual pole is to be maintained until the identification disc described in Clause 10.1 of this specification, is fitted.

5.5 Traceability of Poles

Suppliers are required to provide the details of tracking of poles in order to identify the origin of source and supplier and track the poles received from Ergon's own properties. The minimum required details are:

- Source location and age
- Species name
- Details of treatment and manufacture
- Pole size and identification no
- Strength group
- Supplier

5.6 Pre-Treatment Conditioning

The poles shall be dried to an appropriate moisture content level which will enable subsequent copper chromium arsenic and ammoniacal chrome quaternary treatment to H5 level in accordance with the Timber Utilisation and Marketing Act 1987 (Queensland).

Poles shall be kept clear of the ground for the duration of the drying period. The area beneath and immediately surrounding the stacks shall be kept free of vegetation and refuse at all times and shall be well drained. Precautions shall be taken to ensure poles are not damaged or distorted and also to prevent infestation by borers, decay or other destructive agents during the seasoning period.

5.7 Preparation

All incising, cutting to size, boring and fitting required by the Purchaser shall be done after seasoning and before preservative treatment. The finished surface shall be reasonably smooth, free of splinters, axe cuts or chainsaw notches, dirt and other extraneous matter. Each pole shall be docked to the correct length in such a manner that all wood contaminated with sealing compound is removed to allow ingress of the preservative solution.

Unless the Purchaser specifies otherwise, ends shall be sawn at right angles to the axis of the pole. If the branded end is docked from the pole, the species brand shall be replaced immediately on the butt end.

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A cavity 50 mm diameter and 6 mm deep shall be drilled in each pole 5.5 m from the butt end for the identification disc.

5.8 Preservative

The preservatives acceptable under this Specification shall be copper chrome arsenic and ammoniacal chrome quaternary (ACQ) formulations approved under Timber Utilisation and Marketing Act 1987 (Queensland).

Prior to supply of the goods the Supplier must provide to the Purchaser, evidence that the preservative to be used is approved under Timber Utilisation and Marketing Act 1987 (Queensland).

Each parcel of poles delivered to the Purchaser shall be accompanied by a certificate of treatment stating the preservative used and the minimum retention achieved.

5.9 Impregnation of Poles

The Purchaser's Inspector may at any time inspect, sample and test any preservatives and/or shall, on request, be provided by the Supplier with an analysis of any preservative solutions to be used or which have been used for the poles being supplied under this Specification. Unless the Purchaser specifies otherwise, the use of a hydrometer for such analysis will be acceptable.

Treatment plants supplying poles under this Specification shall hold an 'Authorisation to use an Approved Preservative Treatment and Registration of Brand' according to Timber Utilisation and Marketing Act 1987 (Queensland).

Poles of different species, different treatment characteristics or different moisture contents shall not be permitted in the same charge unless that charge is treated to ensure that the minimum retention and penetration requirements are met in all types of poles in the charge. Tests shall be carried out on each type of pole in the charge in accordance with Clause 6 of this specification to confirm that the minimum retention and penetration requirements have been met.

Each charge shall be identified by the date and a number or reference letter which shall be issued sequentially by the Supplier. Poles shall be marked in accordance with Clause 10 of this specification.

5.10 Retention Requirements

The poles shall be treated to H5 level as defined in the Timber Utilisation and Marketing Act 1987 (Queensland). The minimum depth of sapwood shall be in accordance with Table 5.2 of AS 3818.11.

5.11 Surface Condition of Impregnated Poles

The Supplier shall ensure that the poles comply with the requirements of Clause 5.4 of AS 3818.11 with respect to ensuring the absence of chemical residues on the surface of treated poles when delivered to the Purchaser. Prior to delivery of goods, the Supplier must provide to the Purchaser written details of the method(s) it will use to satisfy the requirements of Clause 5.4 of AS 3818.11.

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5.12 Storage of Treated Poles

The Supplier shall provide an area for the storage of poles after treatment and until they are delivered to the Purchaser.

Poles shall be stored clear of the ground by the Supplier for a period of at least six (6) weeks after treatment.

Poles shall be segregated into stacks so that each length and strength rating is readily accessible for examination by the Purchaser's Inspector and for fitting of the identification disc.

Precautions shall be taken to ensure poles are not damaged or distorted and to prevent exposure to destructive agents during the storage period.

5.13 Inspection Openings

All inspection openings, test holes, etc, shall be plugged, to the satisfaction of the Purchaser's Inspector, to the maximum possible depth, with a dry, tight fitting plug, which shall be cut off flush with the surface of the pole. The plug shall either be preservative treated to H5 retention requirements, or prepared from durability 1 or durability 2 timber and suitably greased to aid insertion of the plug.

5.14 End Protection

After treatment, the ends of the poles shall be protected against checking and splitting by sealing the whole end face with a sealing compound approved by the purchaser. In addition, anti-splitting devices shall be used, however such devices must not cover any internal pipe.

Prior to delivery of the goods the Supplier shall nominate in writing to the Purchaser both the type of end sealing compound and the method to be used to prevent end splitting.

6. Performance and Testing

6.1 Tests for Satisfactory Impregnation

The retention of preservative in a charge shall be confirmed by chemical analysis of pole plugs. Two plugs having a diameter in the range of 15-20 mm shall be taken from each pole to be sampled at points opposite one another from between 1.0 m to 1.5 m above the nominal groundline of the pole.

The minimum sampling requirement shall be as shown in the following table:

No. OF POLES IN A SINGLE CHARGE	MINIMUM No. OF POLES TO BE SAMPLED FOR CHEMICAL ANALYSIS
40 or more	9
28 to 39	6
15 to 27	4
2 to 14	2

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The test for satisfactory preservative retention shall be carried out on those plugs removed for chemical analysis by a laboratory approved by the Purchaser. For the purpose of testing retention, half of each plug shall be combined for chemical analysis.

The test for satisfactory preservative penetration shall be carried out on those plugs removed for chemical analysis and shall be as specified in AS 1605 or other suitable method approved by the purchaser.

If either one of the two plug samples from any pole does not meet the penetration requirement or if the analytical sample does not meet the retention requirement, then:

- (i) all poles in that particular charge shall be tested with poles which fail to achieve the acceptable retention level or meet the penetration requirement set aside for re-treatment; or
- (ii) all poles in that particular charge shall be set aside for re-treatment.

Pole plugs shall extend radially from the surface of the pole and include at least 10 mm of heartwood. Only complete plugs shall be submitted for tests in accordance with the provisions of this clause. Test results arising from the submission of only part of a pole plug (eg. a section of a plug purporting to be the Analytical Zone) will **NOT** be accepted by the Purchaser.

The results of tests carried out on poles being supplied under this Specification shall be forwarded to the Purchaser and provided to the Purchaser's Inspector on request.

6.2 Record of Treatment of Poles – Log Book

Records of the treatment shall be kept in accordance with Clause 5.8 of AS 3818.11 and made available to the Purchaser on request.

Records of individual poles showing the following details shall be kept and made available to the Purchaser on request:

- Date of delivery of each untreated pole into the Supplier's yard.
- Details of any pre-impregnation treatment.
- Date of treatment.
- Charge number or reference letter.
- Species.
- Length and strength rating of each pole.
- Estimated treatable volume.

The Supplier shall advise the Purchaser prior to the commencement of this Contract, the period of time that test records shall be kept.

6.3 Inspection

All poles being supplied under this Specification shall be available at all reasonable times for inspection by the Purchaser.

The Supplier shall afford all reasonable facilities, including access to all materials, equipment and labour for turning poles etc for carrying out inspection and associated duties required by the Purchaser's Inspector. The provision of assistance for the Purchaser's inspector shall be without charge.

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A final acceptance inspection will be made by the Purchaser's Inspector at the agreed delivery place(s).

Each parcel of poles delivered shall be accompanied by a certificate of treatment stating the preservative used and the minimum retention achieved.

A pole passed at an earlier inspection, will not be rejected at a later inspection because of non-compliance with those parts of the Specification for which the pole was earlier inspected and passed. In the event that defects detrimental to the life or usefulness of the pole develop within the defects liability period, the Supplier will be required to replace the pole where the defect can be attributed to the quality of the pole or treatment process.

7. Risk Assessment

There is no requirement for manufacturer provided safety risk assessments for the items covered in this specification.

8. Quality Assurance

8.1 Purchasers Policy

The Supplier must comply with the Quality Assurance requirements stated in this specification.

8.2 Documentary Evidence

Documentary evidence shall be provided concerning the level of quality system certification associated with the supplier and/or manufacturer. This documentation shall include the Capability Statement associated with the Quality System Certification.

The Supplier must have in place Quality Certification to satisfy the requirements of ISO 9001 prior to commencing the supply of goods under the Contract.

9. Alternate Options

Supplier is encouraged to provide offers to supply recycled poles by processing the old regraded poles to smaller sized poles.

It has been observed that supply of hardwood poles of higher lengths and strengths is becoming increasingly difficult. In order to overcome this situation, tenderers have an option to offer alternate engineering solutions to replace the tall hardwood poles with:

- Rebutted poles (with steel bases)
- Jointed poles (with steel sleeve joint)

To replace hardwood poles with Softwood poles that can display exactly same length and strength capabilities.

All the above alternate options shall be accompanied by service history in Australian conditions, design and test reports to support their reliability, design and strength capabilities.

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10. Packaging and Marking

10.1 Identification Disc and Marking of Poles

Metal identification discs shall be provided by the Supplier for recording the treatment given to all poles being supplied under this Specification.

The particulars of the pole shall be marked on the disc by the Supplier in accordance with **QESI Drawing No 07-01-01**. Relevant information shall be taken from the Supplier's log book.

The Supplier shall securely fit the marked discs to those poles which have received satisfactory treatment. Poles delivered with missing discs may be rejected.

The Supplier shall, after anti-split plates have been applied, legibly brand the butt of each pole that has received satisfactory treatment with the following information:

- (a) Pole length and kN rating
- (b) Date of treatment
- (c) Charge number or reference letter
- (d) Supplier's pole reference number
- (e) Purchaser's Stock Code No.

11. Handling and Transport

Poles shall not be dropped or otherwise mishandled. Pole tongs, cant hooks or any other pointed tools, capable of producing indentations more than 15 mm deep, shall **NOT** be used.

12. Reliability

12.1 Service Life

The expected minimum average service life of hardwood poles is 35 years. The grading and species listed in this specification have been selected to meet this requirement.

12.2 Evidence in Support of Reliability

Suppliers are invited to submit any proposals which may increase the anticipated service life of poles.

13. Training

Prior to the supply of goods, the Supplier shall if requested by the Purchaser provide training materials to the Purchaser's reasonable satisfaction. The training materials shall include, but are not limited the following materials:

- Drawings

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- Written instructions in the form of manuals
- Audio/visual tapes

Training topics include but are not limited to the following topics:

- Handling
- Storage
- Maintenance
- Disposal

14. Environmental Considerations

At the time of the Supplier submitting its offer, the Supplier must provide to the Purchaser all information requested regarding the practices, procedures and chemicals used by the Supplier which may affect the environment.

The Supplier must comply with all of the Purchaser's requirements regarding environmentally sound practices and procedures.

15. Information to be Provided

15.1 Specific Technical Requirements

At the time of the Supplier submitting its offer, the Supplier shall advise the Purchaser of the Supplier's particulars and its sub-suppliers' particulars as required in **Attachment 1** of this specification.

15.2 Checklist of Supporting Documentation

Attachment 2 details a checklist of supporting technical documentation which is required to be submitted with the offer.

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16. Appendix A.1 – Acceptable Species

Species	Standard Trade	Botanical Name	Strength
Code	Common Name		Group
BI	Broad-leaved Red Ironbark	<i>E. fibrosa ssp. fibrosa</i>	S1
J	Cooktown Ironbark	<i>Erythrophleum clorostachys</i>	S1
DS	Darwin Stringybark	<i>E.tetrodonta</i>	S1
GG	Grey Gum	<i>E. punctata</i>	S1
		<i>E. propinqua</i>	
GI	Grey Ironbark	<i>E. drepanophylla</i>	S1
		<i>E. paniculata</i>	
HA	Hickory Ash	<i>Flindersia iffaiiana</i>	S1
BB	Blackbutt	<i>E. pilularis</i>	S2
CG	Cadaga	<i>E. torelliana</i>	S2
CR	Crows Ash	<i>Flindersia australis</i>	S2
GM	Gympie Messmate	<i>E. cloeziana</i>	S2
GB	Grey Box	<i>E. moluccana</i>	S2
		<i>E. woollsiana</i>	
NI	Narrow-leaved Red Ironbark	<i>E. crebra</i>	S2
RI	Red Ironbark	<i>E. sideroxylon</i>	S2
WM	White Mahogany	<i>E. acmenioides</i>	S2
		<i>E. umbra ssp. umbra</i>	
		<i>E. umbra ssp. carnea</i>	
SG	Spotted Gum	<i>Corymbia maculata</i>	S2
		<i>Corymbia citriodora</i>	
TW	Tallowwood	<i>E. microcorys</i>	S2
BD	Brown Bloodwood	<i>Corymbia trachyphloia</i>	S3
RW	Red Bloodwood	<i>Corymbia gummifera</i>	S3
		<i>Corymbia polycarpa</i>	
		<i>Corymbia intermedia</i>	
FR	Forest Red Gum	<i>E. tereticornis</i>	S3

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17. Appendix A.2 – Minimum Pole Diameters

POLE DESCRIPTION			MINIMUM POLE DIAMETERS (mm)					
Length (m)	Nominal Ground Line Distance from Butt (mm)	Strength Rating (kN) (Note 1)	Strength Group S1 (Note 2)		Strength Group S2 (Note 2)		Strength Group S3 (Note 2)	
			2m from butt	At head	2m from butt	At head	2m from butt	At head
8.0	1400	3	165	105	175	115	185	125
		5	195	135	210	145	220	155
		8	230	165	245	175	260	190
		12	265	195	280	210	295	220
		20	N/A	N/A	350	250	N/A	N/A
9.5	1550	3	180	110	190	120	200	125
		5	210	135	225	150	240	160
		8	250	170	265	185	280	195
		12	285	200	300	215	320	230
11.0	1700	3	190	110	200	120	215	130
		5	225	135	240	150	255	160
		8	265	170	280	185	295	195
		12	300	200	320	220	335	230
12.5	1850	3	200	115	215	125	225	130
		5	235	140	250	150	265	160
		8	275	170	295	185	310	195
		12	315	200	335	215	355	235
14.0	2000	3	210	120	220	130	235	140
		5	250	145	265	165	280	165
		8	290	170	305	185	325	200
		12	330	205	350	215	370	235
		20	395	260	420	285	445	310

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18. Appendix A.2 – Minimum Pole Diameters...(Cont'd)

POLE DESCRIPTION			MINIMUM POLE DIAMETERS (mm)					
Length (m)	Nominal Ground Line Distance from Butt (mm)	Strength Rating (kN) (Note 1)	Strength Group S1 (Note 2)		Strength Group S2 (Note 2)		Strength Group S3 (Note 2)	
			2m from butt	At head	2m from butt	At head	2m from butt	At head
15.5	2150	5	260	155	275	165	290	175
		8	300	180	320	195	335	205
		12	345	210	365	230	385	245
		20	410	255	435	285	455	300
17.0	2300	5	265	160	285	170	300	180
		8	310	190	330	200	350	215
		12	355	220	380	235	400	250
		20	420	265	450	285	475	305
18.5	2450	5	275	165	290	175	310	185
		8	320	195	340	210	360	220
		12	370	225	390	240	410	255
		20	435	270	465	290	490	310
20.0	2600	5	285	170	300	180	320	190
		8	330	200	350	215	370	225
		12	380	230	400	250	425	265
		20	450	280	475	295	505	315
21.5	2750	5	290	175	310	185	325	195
		8	340	205	360	220	380	235
		12	390	240	415	255	435	270
		20	460	285	490	305	515	325
23.0	2900	5	300	180	315	190	335	200
		8	350	210	370	225	390	240
		12	400	245	425	260	445	275
		20	470	295	500	310	530	330

Notes: Allowable pole top load under MAXIMUM wind conditions. As defined in AS 2878.

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19. Appendix A.3 – Minimum Pole Diameters

POLE DESCRIPTION			MAXIMUM POLE DIAMETERS (mm) AT NOMINAL GROUNDLINE		
Length (m)	Nominal Ground Line Distance from Butt (mm)	Strength Rating (kN)	Strength Group S1	Strength Group S2	Strength Group S3
9.5	1550	12	360	360	380
11.0	1700	12	380	380	395
12.5	1850	12	405	405	425
14.0	2000	20	500	500	520
15.5	2150	20	515	515	535
17.0	2300	20	540	540	565
18.5	2450	20	555	555	580
20.0	2600	20	575	575	605
21.5	2750	20	590	590	615
23.0	2900	20	600	600	630

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20. Attachment 1 – Supplier Details

Supplier's Name and Address	
Name and Address of Mill	
Source(s) of timber: Forest name(s) and State(s)	
Name and Address of Chemical Treatment plant	
Preservative Treatment Offered	

SIGNATURE OF TENDERER: _____

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21. Attachment 2 – Technical Document Checklist

CLAUSE Ref.	PARTICULARS	
The Supplier must provide to the Purchaser full and comprehensive details of the following items?		
5.8	Evidence that the preservative to be used is approved under the Timber Utilisation and Marketing Act 1987 (Queensland)	
5.7	Action taken by the Supplier to ensure that no surface residue of treatment chemicals remain on the poles	
5.145.14	Wood sealing compound used by the Supplier for end grain sealing and treatment	
5.14	Methods to be used by the Supplier to prevent end splitting at both the head and butt of the poles	
6.2	The period that the log books relating to treatment of poles are to be archived	
8.0	The Supplier's Quality system manual to be used in performing this Contract	
8.0	Evidence that the Supplier satisfies the Quality Certification requirements of ISO 9001	
12	Reliability	
13	Availability of training materials	
14Error! Reference source not found.	Environmental considerations	

NAME OF TENDERER:

ADDRESS OF TENDERER: _____

SIGNATURE: _____ FOR AND ON BEHALF OF TENDERER

DATE: _____

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22. Attachment 3 - 07-01-01 - Identification Disc VPI Hardwood Poles

<p>AMENDMENT DESCRIPTION: Limit State Tip Load Capacity added Reg'd Brand removed, extra notes added. APPD C. Noel DATE 18.08.2011</p>																	
<p>This drawing must not be reproduced in part or whole without written permission from the QESI</p>	<p>MATERIAL : Aluminium or Aluminium Alloy</p> <p>FABRICATION : Disc to be formed Convex before fitting to pole (To be flattened during fitting into recess in pole)</p> <p>DIMENSIONS : Diameter 50 ± 0 mm Thickness 2 ± 0.5 mm</p> <p>LETTERING : Letters and Numbers to be 6mm minimum, legibly and indelibly formed with metal punch or engraved on disc.</p>																
<p>© COPYRIGHT 1997 QESI</p>	<p>NOTES :</p> <ol style="list-style-type: none"> 1. CHARGE NUMBER To be issued sequentially by supplier. 2. STRENGTH RATING Maximum Working Tip Load Capacity (kN) – Limit State Tip Load Capacity (kN) 3. SERIAL NUMBER The unique number assigned to each pole by the supplier for traceability purposes. 4. PRESERVATIVE TYPE As defined in AS1604.1 Table C1. 5. POLE LENGTH Decimal point may be omitted on lengths to suit disc space. Eg 125 = 12.5 metres 																
<p>QESI</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">ORIGINAL ISSUE</td> <td style="width: 50%;">Queensland Electricity Supply Industry</td> <td style="width: 10%;">SCALE: N.T.S.</td> <td style="width: 20%;">SHEET SIZE A4</td> </tr> <tr> <td>APP'D</td> <td>D Laurie</td> <td colspan="2" rowspan="3" style="text-align: center; font-size: 2em; font-weight: bold;">07-01-01</td> </tr> <tr> <td>DATE</td> <td>25-7-96</td> </tr> <tr> <td>ORIGIN</td> <td>ENERGEX S&SD</td> </tr> <tr> <td>FILE: DWG\HARD\QESI\07-01-01.DWG</td> <td>TIMBER PRODUCTS IDENTIFICATION DISC V P I HARDWOOD POLES</td> <td>SHEET 1 OF 1</td> <td>D</td> </tr> </table>	ORIGINAL ISSUE	Queensland Electricity Supply Industry	SCALE: N.T.S.	SHEET SIZE A4	APP'D	D Laurie	07-01-01		DATE	25-7-96	ORIGIN	ENERGEX S&SD	FILE: DWG\HARD\QESI\07-01-01.DWG	TIMBER PRODUCTS IDENTIFICATION DISC V P I HARDWOOD POLES	SHEET 1 OF 1	D
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