



Ergon Energy Corporation Limited

Technical Specification for Steel Butted (Rebutted) Hardwood Poles

ETS07-01-03

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



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1. Purpose and Scope

1.1 General

This specification sets out the technical requirements for the design, manufacture, testing of works, supply and delivery of steel butted (rebutted) hardwood poles (new poles only) for use in Ergon Energy electricity distribution systems in Queensland.

1.2 Goods to be supplied

Steel butted hardwood poles to be supplied shall have lengths and nominal working strengths as specified in **Attachment 1**.

Appendix 1 is an items list for steel butted hardwood poles.

2. References

2.1 Applicable Standards

The steel butted hardwood poles shall be designed manufactured and tested in accordance 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 3818.11:2009	Timber – Pole for overhead lines
AS/NZS 4680:2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.
AS/NZS 4792:2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous hollow sections.
AS/NZS 1554:2011	Structural steel welding
AS 4100:1998	Steel structures
AS/NZS 4676:2000	Structural design requirements for utility service poles
AS/NZS 1170.0:2002	Structural design actions – General principals
AS/NZS 1170.1:2002	Structural design actions – Permanent imposed and other actions
AS/NZS 1170.2:2002	Structural design actions – Wind actions
AS/NZS ISO 31000:2009	Risk Management – Principles and guidelines
AS/NZS 2878:2000	Timber – Classification into strength groups
AS/NZS ISO 9001:2008	Quality management systems - Requirements
AS/NZS 7000:2010	Overhead Line Design – Detailed Procedures

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3. Drawings

3.1 Drawings by the Purchaser

Drawing 07-01-03 (Attachment 3) Pole Rebutting Detail.

3.2 Drawings by the Tenderer

The Tenderer shall supply all drawings required to adequately evaluate the tender including general arrangement drawings and structural assembly drawings.

4. Service Conditions

The steel butted hardwood poles supplied under this specification will be exposed to the following service conditions.

Description	Condition
Ambient Temperatures	50°C Summer day time -5°C Winter night time
Solar Radiation Level	1100 W/m ² with high ultraviolet content
Precipitation	An annual rainfall in excess of 2000 mm (Bureau of Meteorology)
Wind Velocity	Tropical summer storms with gust wind speeds above 210km/h
Humidity	Extended periods of relative humidity in excess of 90% R.H.
Atmospheric classifications	Areas of coastal salt spray and industrial pollution equivalent salt deposits in the range of 2.0-3.0 g/m ² . Level III – Heavy (AS 4436-1996) and corresponding creepage distance should be applied.

5. Design and Construction

5.1 General

Hardwood pole component of the products supplied under this specification shall fully meet the Queensland Electricity Supply Industry Technical Specification for Vacuum-Pressure Impregnated Hardwood Poles ETS07-01-01.

It is the Tenderers responsibility that hardwood poles fully meet ETS07-01-01 which forms part of this specification.

5.2 Steel / Concrete or Steel Stub

The steel butted hardwood poles supplied under this specification shall consist of steel / concrete or steel stub. The stub shall be of circular section with no taper, finished with a smooth surface, free of burrs and sharp edges.

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Two 12mm x 38mm drainage slots as shown in Drawing 07-01-03 (attachment 3) shall be provided for the steel butted poles that are filled with concrete. Each drainage slot shall have an offset of 180°.

Four inspection holes for maintenance purposes shall be located on the steel sleeve for the steel butted pole and shall be 12mm in diameter. The first two inspection holes shall be located 450mm below the tip of the steel sleeve with 180° offset from each other. The other two inspection holes shall be located a further 300mm below the first two inspection holes also with 180° offset from each other. Refer to Drawing 07-01-03 (attachment 3) for details.

Details of the hardwood poles that may be suitable for use are provided in **Schedule A.1** attached.

The Tenderer shall also nominate additional timber preservatives if required after shaving. Details of the timber preservatives shall be provided in **Attachment 2**.

The Tenderer shall supply detail on the method of attachment of the wood pole to the steel sleeve and certification by an RPEQ Structural Engineer of strength and bending capacity of the joint.

5.3 Design Loads

Limit State Design principles in accordance with AS/NZS 7000:2010 Overhead Line Design – Detailed Procedures shall apply and the Tenderer shall provide technical details / design calculations in determining the strength ratings of the steel butted poles in **Attachment 1**.

The internal diameter of the steel sleeve shall be sized such that the bending moment capability of the pole at the top of the sleeve referred to the pole tip shall be not less than the limit state design strength tip load based on timber stress values shown below. Tip load limit state design bending moments are based on the Nominal Pole strength loads factored up by 1.8.

Timber Strength Group	Ultimate Timber Strength in Bending MPa Unseasoned	Strength Factor	Shaving Factor as per AS 4676	Design timber stress for limit state load MPa
S1	100	0.9	0.85	76.5
S2	80	0.9	0.85	61.2
S3	65	0.9	0.85	49.7

The wall thickness of the steel sleeve shall be sized such that the limit state design bending moment at the ground line position referred to the pole tip shall be not less than the specified limit state design pole tip load, based on the appropriate steel yield stress after application of a 0.9 strength factor. The minimum wall thickness of the steel sleeve shall not be less than the recommended minimum thickness in AS/NZS 4676:2000.

5.4 Special Environmental Condition

The area in which the steel butted pole system will be installed is home to subterranean termite, *Mastotermes Darwinensis* and the coastal brown ant, *Pheidole Megacephala*. As such the timber / concrete interface shall be 1000mm above groundline. Refer to Drawing 07-01-03 (attachment 3) for details.

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5.5 Corrosion Protection

All steel items (except for stainless steel) shall be hot-dip galvanised in accordance with AS/NZS 4680:2006 and AS/NZS 4792:2006.

Hot dip galvanising of ferrous parts including bolts, nuts, and washers shall be carried out after all machining, bending, cutting, drilling, punching, marking and welding operations have been carried out. All welding shall be in accordance with AS/NZS 1554:2011.

Details of additional corrosion measures at ground-line to ensure the service life specified under Clause 12 shall be included with the tender submission.

5.6 Electrical Insulation Coating

The option of an electrical insulating coating from 600mm below ground to a minimum height of 2400mm above ground for all exposed metal work would be highly desirable.

Details of electrical insulation coating method and service life shall be included with the tender submission.

5.7 Standards

The applicable Australian Standards used in the fabrication of components and fittings in the steel butting system must be nominated. Where other standards apply in the fabrication of components such as the International Electrotechnical Commission (IEC) and British Standards, these standards or its equivalent Australian Standards shall be nominated for comparison.

5.8 Certification

The design and manufacture must be certified by a Structural Registered Professional Engineer Queensland. The name and registration details of the Engineer shall be supplied with the Tender.

5.9 Alternate Option

Suppliers may provide alternative options to the steel/concrete or steel stub poles used in this specification, but these options shall be accompanied by service history in Australian conditions along with design and test reports to support their reliability, design and strength capabilities.

6. Performance and Testing

6.1 Inspection and Testing

The Purchaser's representative shall be given access to the Tenderer's works at all reasonable times during manufacture of the steel butted poles and shall be given every assistance for the purpose of inspection and witnessing of tests, together with any information which may be reasonably required regarding the materials, the methods of manufacture and the progress of the work.

All inspection and testing shall be carried out by the Tenderer. The Purchaser shall be given Seven (7) days' notice of such materials or components inspection and testing. Such inspections and tests will be carried out at the Tenderer's works or, if this is not practicable, at a place to be fixed by the Purchaser after consultation with the Tenderer.

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The Tenderer shall as soon as possible after testing, supply to the Purchaser two complete sets of certified reports of tests carried out on steel butted poles to be supplied under the certificate.

All costs incurred by the Tenderer in carrying out the tests and demonstrations specified, including the cost of all components damaged or destroyed, shall be borne by the Tenderer and shall be included in the prices quoted.

6.2 Type Testing

Where the steel butted pole design offered is one not previously manufactured and tested, type tests intended to establish design characteristics shall be carried out on one steel butted pole of each strength category. The steel butted poles shall each be of the greatest length offered in the particular category.

The following type tests shall be carried out in accordance with Appendix K of AS/NZS 4676:2000.

- Structural test for strength limit state.

6.3 Structural Proof Tests

The Purchaser reserves the right to request that the Tenderer carry out structural proof tests. Seven (7) days' notice of such tests shall be given to the Purchaser. Such test will be structural test for strength limit state.

The Tenderer when requested shall supply to the Purchaser full detailed calculations of bending moments, which shall serve as a comparison with the test results. The supplier shall also provide such calculations for each steel butted pole offered, in sufficient detail to prove to the purchaser that the test if carried out would be representative of the maximum design load.

Should failure occur during proving tests, further testing of replacement steel butted poles shall take place only after full details of design modifications have been approved in principle.

The design and manufacture must be tested and certified by a Registered Professional Engineer Queensland. The name and registration details of the engineer are to be supplied.

7. Risk Assessment

7.1 Compliance

The Tenderer warrants (without limiting any other warranties or conditions implied by law) that all Goods have been produced, sold and delivered to the Principal in compliance with all applicable laws (including all workplace health and safety and electrical safety legislation, codes of conduct and the Principal's Workplace Health & Safety and Electrical Safety Conditions).

7.2 Formal Risk Assessment

Tendered items shall be subjected to a formal risk assessment prior to acceptance. It is preferred that the Tenderers perform the risk assessment themselves and provided resultant documentation with their tender. Where risk assessment documentation is not

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provided with the tenders, or does not meet the required standard, such tenders shall have their price loaded with the estimated costs associated with the Purchaser conducting the assessment. Any documented risk assessment which accompanies the tender must meet the requirements of AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines. It is preferred that the risk assessment methodology uses an energy model to identify hazards.

7.3 Hazards

The risk assessment/s must identify hazards to the corporation personnel, public and property associated with the installation of the steel butted poles, maintenance of the poles during life expectancy and dismantling / disposal of poles at end of life.

7.4 Risk Assessment Schedule

The risk assessment schedule included with this specification is to be completed by the Tenderer. Note the schedule contains a generic set of questions designed to cover all the purchaser's plant and material and the Tenderer is only required to complete those items applicable to the product offered.

8. Quality Assurance

8.1 Purchasers Policy

It is the Purchaser's policy to procure goods, equipment and services from sources that demonstrate the ability to supply quality products.

8.2 Documentary Evidence

Tenderers are required to submit evidence that the design and manufacture of the steel butted poles is in accordance with AS/NZS ISO 9001:2008 and shall include the Capability Statement associated with the Quality System Certification.

If the Tenderer is a non-manufacturing supplier, the documentary evidence shall include the quality system certifications of both the supplier and the Tenderer.

Tenderer's attention is drawn to **MP000801F100**: Management Systems Information Schedule (Form) which forms an integral part of this specification.

9. Samples

9.1 Production Samples

If required, samples shall be provided delivered freight free to the depot nominated within 14 days of official request.

10. Packaging and Marking

10.1 General

Packaging and marking shall be in accordance with the Queensland Electricity Supply Industry Technical Specification for Vacuum-Pressure Impregnated Hardwood Poles ETS07-01-01 Clause 10 "Packaging and Marking".

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If after rebutting or joining the pole the length and strength rating have changed, a new Identification Disc shall replace the existing with updated details. No other changes shall be made on the Identification Disc.

11. Service Performance

Tenderers shall state:

- a) The period of service achieved by the items offered within Australian service conditions.
- b) Australian electricity utilities with a service history of the items offered.
- c) Contact names and phone numbers of relevant employees of those electricity utilities who can verify the service performance claimed.

12. Reliability

12.1 Service Life

Comments on the reliability and performance of the items offered for a minimum service life of 45 years under the specified environmental conditions shall be submitted with the offer.

12.2 Evidence in Support of Reliability

Such comments shall include evidence in support of the reliability and performance claimed including information on Failure Mode and Effect Analysis.

13. Training

Training material in the form of drawings, instructions and / or audio visuals shall be provided for the items accepted under the offer.

This material shall include but is not limited to the following topics:

- Handling
- Storage
- Installation
- Maintenance
- Environmental performance
- Electrical performance mechanical performance
- Disposal

14. Environmental Considerations

Tenderers are required to comment on the environmental soundness of the design and the materials used in the manufacture of the items offered. In particular comments should address such issues as recyclability at the end of service life.

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15. Information to be provided

15.1 Specific Technical Requirements

The specific technical requirements for the items offered shall be as stated in **Attachments 1 and 2** of this specification. The Tenderer shall fill in all data requested by these Attachments and shall guarantee such data.

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16. Schedule A.1 – V.P.I – Diameters and Maximum Masses

Item	Timber Pole Description					Minimum Pole Diameters and Maximum Masses								
	Pole Length (m)	Ergon Standard Setting Depth (m)	Nominal Pole Strength Rating (kN)	Limit State Strength Rating (kN)	Ultimate Strength Rating (kN)	Strength Group S1			Strength Group S2			Strength Group S3		
						Diameter 2m from Butt (mm)	Diameter at Head (mm)	Maximum Mass (kg)	Diameter 2m from Butt (mm)	Diameter at Head (mm)	Maximum Mass (kg)	Diameter 2m from Butt (mm)	Diameter at Head (mm)	Maximum Mass (kg)
1	11	1.85	5	9	12.5	225	135	680	240	150	735	255	160	790
2			8	14.4	20	265	170	875	280	175	965	295	195	1025
3			12	21.6	30	300	200	1100	320	220	1230	335	230	1290
4	12.5	2	5	9	12.5	235	140	815	250	150	890	265	160	950
5			8	14.4	20	275	170	1055	295	185	1155	310	195	1250
6			12	21.6	30	315	200	1350	335	215	1460	355	235	1610
7	14	2.15	5	9	12.5	250	145	1025	265	165	1075	280	165	1170
8			8	14.4	20	290	170	1305	305	185	1360	325	200	1470
9			12	21.6	30	330	205	1615	350	215	1750	370	235	1870
10	15.5	2.3	5	9	12.5	260	155	1275	275	165	1385	290	175	1440
11			8	14.4	20	300	180	1600	320	195	1720	335	205	1830
12			12	21.6	30	345	210	2160	365	230	2285	385	245	2410
13	17	2.45	5	9	12.5	265	160	1445	285	170	1500	300	180	1625
14			8	14.4	20	310	190	1810	330	200	1935	350	215	2060
15			12	21.6	30	355	220	2430	380	235	2650	400	250	2865
16	18.5	2.6	5	9	12.5	275	165	1735	290	175	1870	310	185	1935
17			8	14.4	20	320	195	2150	340	210	2290	360	220	2425
18			12	21.6	30	370	225	2855	390	240	3085	410	255	3230

Strength groups are as defined in AS/NZS 2878:2000 “Timbers – Classification into Strength Groups”.

SIGNATURE OF TENDERER: _____

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17. Attachment 1 - Technical Details of Steel butted Pole – Dimensions, Strength Ratings and Masses

Item	Steel butted Pole Description					STRENGTH GROUP OFFERED (____)									
	Overall Pole Length (m)	Recommended Depth of Embedment	Nominal Pole Strength Rating (kN)	Ultimate Strength of Steel butted Pole (kN)	Ultimate Strength of Steel / Concrete Stub at the Interface (kN)	Length of Timber Section (m)	Stub Length (m)	Length of Timber Overlap (m)	Timber / Concrete / Steel Interface above Groundline (mm)	Minimum Timber Diameter at Interface (mm)	Stub Diameter OD (mm)	Stub Wall Thickness (mm)	Stub Weight (kg)	Maximum Timber Weight (kg)	Maximum Total Weight (kg)
1	11		5												
2			8												
3			12												
4	12.5		5												
5			8												
6			12												
7	14		5												
8			8												
9			12												
10	15.5		5												
11			8												
12			12												
13	17		5												
14			8												
15			12												
16	18.5		5												
17			8												
18			12												

SIGNATURE OF TENDERER: _____

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18. Attachment 2 – Technical Details – Steel butted Pole Specification Compliance

Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 1 11m, 5kN	Item 2 11m, 8kN	Item 3 11m, 12kN
Drawings provided as in Clause 3.2	YES/NO)			
Steel butting and Jointing Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel /concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5				
Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

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ATTACHMENT 2 – TECHNICAL DETAILS –STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

6.Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name: ?				
Engineer's Certification Number: ?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

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ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 4 12.5m, 5kN	Item 5 12.5m, 8kN	Item 6 12.5m, 12kN
Drawings provided as in Clause 3.2	(YES/NO)			
Steel butting Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel/concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5				
Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

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ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

6. Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name?				
Engineer's Certification Number?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

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ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE

Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 7 14m, 5kN	Item 8 14m, 8kN	Item 9 14m, 12kN
Drawings provided as in Clause 3.2	(YES/NO)			
Steel butting Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel/concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5				
Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

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ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

6. Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name?				
Engineer's Certification Number?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE

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Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 10 15.5m, 5kN	Item 11 15.5m, 8kN	Item 12 15.5m, 12kN
Drawings provided as in Clause 3.2	(YES/NO)			
Steel butting Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel/ concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5				
Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

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ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

6. Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name?				
Engineer's Certification Number?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE

Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 13 17m, 5kN	Item 14 17m, 8kN	Item 15 17m, 12kN
Drawings provided as in Clause 3.2	(YES/NO)			
Steel butting Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel/concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5 Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

6. Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name?				
Engineer's Certification Number?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE

Name of Manufacturer:				
Address of Manufacturer:				
Place of Manufacturer:				
Country of Origin:				
		Item 16 18.5m, 5kN	Item 17 18.5m, 8kN	Item 18 18.5m, 12kN
Drawings provided as in Clause 3.2	(YES/NO)			
Steel butting Components – Design & Manufacture as in Clause 5.2				
1. Grade of steel section (MPA) and Australian Standard				
2. Compression strength of the steel/concrete section				
3. Number of Bolts required				
4. Number of Nuts required				
5. Number of Washers required				
6. Other (specify)				
Additional timber preservatives if required as in Clause 5.2 - if YES please supply details	(YES/NO)			
Timber / concrete interface 1000mm above groundline as in Clause 5.4	(YES/NO)			
Corrosion Protection as in Clause 5.5 Galvanised to AS/NZS 4680:2006 and AS/NZS 4792:2006 / Other (specify):				
1. Steel section	(YES/NO)			
2. Bolts	(YES/NO)			
3. Nuts	(YES/NO)			
4. Washers	(YES/NO)			
5. Additional corrosion protection at ground-line	(YES/NO)			

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



ATTACHMENT 2 – TECHNICAL DETAILS – STEEL BUTTED POLE SPECIFICATION COMPLIANCE Continued

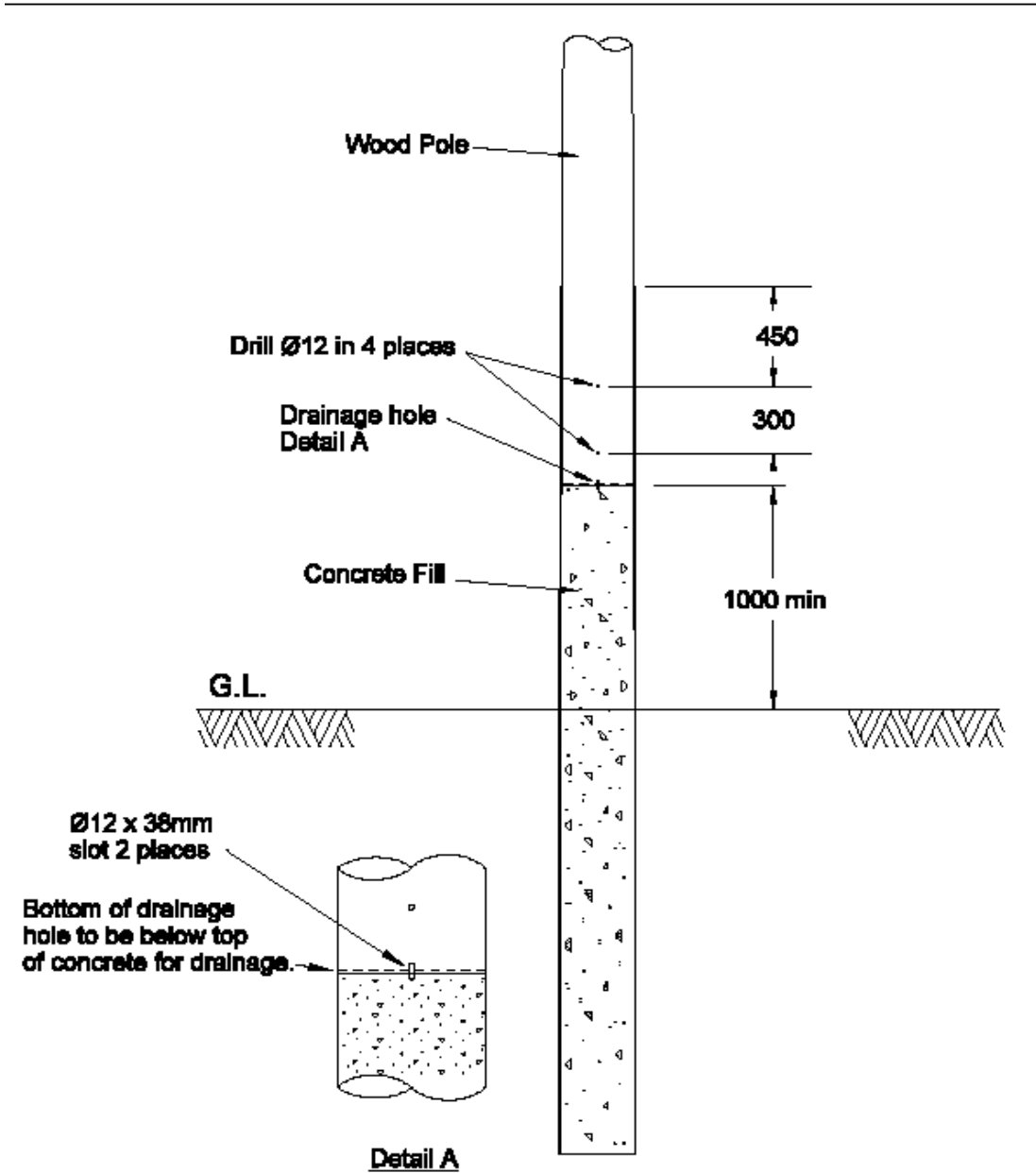
6. Electrical Insulation Coating				
7. Other (specify)				
Welding if applicable as in Clause 5.5				
Compliance with AS/NZS 1554:2011	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Structural Design & Field Test as in Clause 5.3 and Clause 5.8 Certified by Registered Professional Engineer Queensland :	(YES/NO)			
Engineer's Name?				
Engineer's Certification Number?				
Technical Details				
Full calculation supplied:	(YES/NO)			
Risk Assessment as in Clause 7	(YES/NO)			
Quality Assurance as in Clause 8	(YES/NO)			
Packaging as in Clause 10	(YES/NO)			
Any special lifting or handling requirements (if YES, please specify)	(YES/NO)			
Service History as in Clause 11				
Service history information provided:	(YES/NO)			
Reliability as in Clause 12				
Reliability evidence provided:	(YES/NO)			
Training as in Clause 13				
Training material available:	(YES/NO)			
Environmental Conditions as in Clause 14				
Comments provided:	(YES/NO)			

SIGNATURE OF TENDERER: _____

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



19. Attachment 3 – Pole Rebutting Detail



DRAWING 07-01-03 – POLE REBUTTING DETAIL

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



20. APPENDIX “1” - ITEMS LIST

ITEM No.	Stock Code	DESCRIPTION
A1	2411353	Steel Butted Wood Pole 11.0m x 5kn
A2	2411361	Steel Butted Wood Pole 11.0m x 8kn
A3	2411379	Steel Butted Wood Pole 11.0m x 12kn
A4	2411395	Steel Butted Wood Pole 12.5m x 5kn
A5	2411403	Steel Butted Wood Pole 12.5m x 8kn
A6	2411411	Steel Butted Wood Pole 12.5m x 12kn
A7	2411437	Steel Butted Wood Pole 14.0m x 5kn
A8	2411445	Steel Butted Wood Pole 14.0m x 8kn
A9	2411452	Steel Butted Wood Pole 14.0m x 12kn
A10	2411460	Steel Butted Wood Pole 15.5m x 5kn
A11	2411478	Steel Butted Wood Pole 15.5m x 8kn
A12	2411486	Steel Butted Wood Pole 15.5m x 12kn
A13	2411494	Steel Butted Wood Pole 17.0m x 5kn
A14	2411502	Steel Butted Wood Pole 17.0m x 8kn
A15	2411338	Steel Butted Wood Pole 17.0m x 12kn
A16	TBA	Steel Butted Wood Pole 18.5m x 5kn
A17	TBA	Steel Butted Wood Pole 18.5m x 8kn
A18	TBA	Steel Butted Wood Pole 18.5m x 12kn

Technical Specification for Steel Butted (Rebutted) Hardwood Poles



The Supply of Steel
Butted Pole Nails Sch



The Supply of Steel
Butted Pole Nails Sch