Joint Workings

Galvanised Fabricated Metalwork

JTS01-03-01

Contents

1. PURPOSE & SCOPE

1.1 GENERAL

This technical specification sets out the requirements for the manufacture, testing at works, supply and delivery of **galvanised fabricated metalwork** for use on overhead electricity distribution systems in a totally exposed environment.

This technical specification specifically covers the items specified in Attachment 1.

2. APPLICABLE STANDARDS

The equipment must comply with the latest revision of all relevant Queensland Acts / Regulations and Australian and IEC Standards, and all amendments issued from time to time except where varied by this specification.

Should inconsistencies be identified between standards and/or this specification, the Tenderer shall immediately refer such inconsistencies to the Energex/ERGON for resolution.

Standards that are applicable to this specification include the following:

Standard	Title
AS 1000	The International System of units (SI) and its applications
AS 1100	Technical drawings
AS 1111	ISO metric hexagon bolts and screws – Product grade C
AS 1112	ISO metric hexagon nuts – Product grade C
AS 1154	Insulator and conductor fittings for overhead power lines
AS 1199.1	Sampling procedures for inspection by attributes
AS 1214	Hot-dip galvanized coatings on threaded fasteners
AS 1237	Plain washers for metric bolts
AS 1275	Metric screw threads for fasteners
AS 1442	Carbon steels and carbon-manganese steels - Hot-rolled bars and semifinished products
AS/NZS 1554	Structural steel welding
AS/NZS 1594	Hot-rolled steel flat products
AS1968	Helical spring lock washers
AS 2650	Common specifications for high-voltage switchgear and controlgear
AS 2700	Colours standards for general purposes
AS/NZS 3678	Structural steel - Hot-rolled plates, floorplates and slabs
AS 3679	Structural steel - Hot rolled bars and sections
AS 3766	Mechanical fittings for low voltage aerial bundled cables
AS 4068	Flat pallets for materials handling
AS/NZS 4680	Hot-dipped galvanized (zinc) coatings on fabricated ferrous articles
AS/NZS ISO 9001	Quality management systems – Requirements
AS/NZS ISO 9002	Quality systems - Models for quality assurance in production, installation and servicing

Standard	Title
AS/NZS ISO 14001	Environmental management systems

3. DRAWINGS

The drawings included in Attachment 1 form part of this Technical Specification:

4. SERVICE CONDITIONS

4.1 ENVIRONMENTAL CONDITIONS

All items supplied under this specification will be exposed to and must be able to withstand the following normal environmental conditions.

Humidity	Extended periods of relative humidity in excess of 90%
Solar radiation Level	1000 W/m^2
Ambient temperature range	45°C summer daytime -5°C winter night time
Precipitation	Annual rainfall in excess of 1500 mm
Wind speed	Tropical summer storms with gust wind speeds above 160 km/h
Isokeraunic Level	35-40
Pollution	Level IV – very heavy Equivalent salt deposits in the range of 2.0-3.0 g/m^2 Areas generally of moderate extent, subjected to conductive dusts and to industrial smoke producing particularly thick conductive deposits Areas generally of moderate extent, very close to the coast and exposed to seaspray or to very strong and polluting winds from the sea

Extreme Conditions

The Queensland electricity supply area also experiences extreme conditions. Please provide information on how offered items will operate in the following conditions (Attachment 2):

- 50°C summer daytime (maximum)
- -10°C winter night time (minimum)
- High relative humidity (90%) combined with rapid temperature drop (20˚C in 20 minutes)
- Areas where the use of fertilizers by spraying, or the burning of crop residues, can lead to a higher pollution level than specified above.

Marine Coast

All items supplied under this specification may be installed in marine coastal areas with direct and constant salt spray. Please provide information on how items will perform in this extreme environment.

5. DESIGN & CONSTRUCTION

5.1 IDENTIFICATION REFERENCE

5.1.1 All items shall be permanently marked with the Energex/ERGON identification reference/marking as stated on the fabrication drawings.

5.1.2 Additionally, the manufacturer's name or registered trademark and the Tenderer's name or registered trademark shall be permanently marked on each item. The markings shall be applied in such a way as to remain legible after galvanizing where galvanizing is required.

5.1.3 Where it is impractical to permanently mark the manufacturer's name or trademark and the Tenderer's name or trademark on an item, the Tenderer shall submit an alternative method of traceability of the item. This shall only apply to small items where there may be insufficient space to permanently mark the Tenderer's name or trademark and the manufacturer's name or trademark. Energex/ERGON reserves the right to accept or reject the method.

5.1.4 The Tenderer shall submit with the offer, a full size drawing or image of the manufacturer's name or registered trademark that will be permanently marked on each item along with the Tenderer's name or registered trademark that will be permanently marked on each item.

5.1.5 Refer to clause 6.6 for additional requirements if items are not manufactured in Australia.

5.2 CORROSION PROTECTION

Unless otherwise specified on the drawing, all ferrous items shall be hot dipped galvanized in accordance with AS 4680 and/or AS 1214 as applicable after fabrication.

5.3 RATINGS

All steelwork shall be manufactured to meet the design requirements stated on the applicable Energex/ERGON or QESI drawings.

5.4 BOLTS (SCREWS, THREADED ROD) NUTS AND WASHERS

5.4.1 All bolts and nuts shall be threaded in accordance with AS 1111 and AS 1112 respectively. The resulting thread form shall have tolerance class of 6H/8g. Internal threads shall be cut and oiled after galvanizing where galvanizing is required.

5.4.2 Flat and spring washers shall be manufactured in accordance with AS 1237 and AS 1968 respectively.

5.5 HOLES

All holes shall be accurately formed as specified on the drawings and to the required tolerances as specified on the applicable drawings.

5.6 MATERIAL

Steel members and sections shall conform to the minimum steel grade as shown in Table 1 or as shown on the Energex/ERGON or QESI drawings.

Table 1

Type of Steel	Grade
Universal beams and columns, parallel flange channels, large angles to AS/NZS 3679.1	300
Flat, small angles, taper flange beams and columns to AS/NZS 3679.1	300
Welded sections to AS/NZS 3679.2	300
Hot rolled plates, floor plates and slabs to AS/NZS 3678	250
Hollow sections to AS 1163: -Circular sections less than 165mm nominal outside diameter -Sections other than the above	 C250 or C350 C350 or C450
Cold formed purlins and girts to AS 1397	G550, Z350 or Z450 G450, Z350 or Z450

If a drawing refers to the use of AS/NZS 3679.1 Grade 250, then AS/NZS 3679.1 Grade 300 is a suitable alternative.

All material used shall be new material only. Material that has lost its effective thickness will not be accepted.

5.7 WELDING

Welding shall be in accordance with AS 1554, Parts 1 and 2 or as otherwise indicated on the relevant Energex/ERGON or QESI drawing. Weld categories not shown on drawings shall be Category GP.

5.8 ASSEMBLY

Where specified, parts shall be assembled before delivery.

5.9 DIMENSIONS AND TOLERANCES

All dimensions and tolerances shall be in accordance with the applicable Energex/ERGON or QESI drawing or relevant Australian Standard if not stated thereon.

6 PERFORMANCE TESTING AND TRACEABILITY

6.1 GENERAL

The product/s covered in this specification shall withstand the mechanical stress associated with continuous operation under the environmental conditions described in Clause 4.

6.2 DEFINITIONS

6.2.1 For the purpose of this specification, an **item** shall be defined as the galvanised fabricated metalwork piece complete with any separate parts to be supplied as per the fabrication drawing.

6.2.2 A **component** shall be defined as a part or parts to be supplied separately with the fabricated metalwork item. For example, nuts, bolts, washers and other pieces required to be supplied separately or preassembled.

6.3 COMPLIANCE

The Tenderer shall state in writing that their offer complies with the relevant Standards and this specification. If the Tenderer is offering equipment manufactured to an equivalent standard, full details of that standard must be given including a copy written in English. Energex/ERGON reserves the right to request further testing and/or analysis on items not manufactured to Australian Standards at the cost of the Tenderer.

6.4 BATCH AND ROUTINE TESTS

The following batch test certificates are required for all items as per the approved sampling test plan:

- Verification of Dimensions
- Visual inspection of all welds prior to galvanising
- Protective coating

6.4.1 For the purposes of this technical specification, a batch shall be defined as a single production run of a single set of input materials used for the output of the item. Where the materials used in the items offered and/ or the manufacturing process have changed, a new batch number shall be allocated.

6.4.2 Prior to contract commencement, the successful Tenderer shall:

a) Submit a sampling test plan in accordance with AS1199.1 “Sampling Procedures for Inspection by Attributes.”

b) Nominate a test facility

c) Both (a) and (b) shall be agreed to by Energex/ERGON

d) A typical test plan would provide detail on the types of tests to be carried out on each item and the frequency of the tests

6.4.3 Batch Test certificates for dimensions, welds, and galvanising shall be held by the Tenderer and provided to Energex/ERGON within 24 business hours upon request. Batch and Routine tests are to be in accordance with the relevant Australian Standards.

6.4.4 Prior to each delivery of the items or as agreed with Energex/ERGON, a "Certificate of Compliance" is to be supplied by the Tenderer.

6.4.5 The Certificate of Compliance shall state:

- The Batch number, the Tenderer's name, the name of the Manufacturing Company, the Country of manufacture, and Location name of the manufacture.
- The items meet the dimensional tolerances, welding standards, and protective coating requirements specified on the relevant drawings.

6.5 AUSTRALIAN MANUFACTURED ITEMS AND COMPONENTS

6.5.1 Australian manufactured means that the item shall be manufactured within Australia from 100% Australian made components using 100% Australian labour.

6.5.2 With each delivery of the items to Energex/ERGON, the Tenderer shall provide documented proof that the grade of steel used in the manufacture of the items and components of the items meets all of the requirements specified on the relevant drawings, or where the material grade is not specified by Energex/ERGON, by the relevant Australian Standards.

6.5.3 With each delivery of items to Energex/ERGON, the Tenderer shall state the batch number and name of the manufacturing company where the items and components of the items have been manufactured.

6.6 NON AUSTRALIAN MANUFACTURED ITEMS AND COMPONENTS

6.6.1 The successful Tenderer shall have a system in place whereby all deliveries of items into Australia have recorded traceability on the date of each batch of manufactured items leaving the overseas manufacturing facility, and the date of each batch arriving at the receiving company in Australia.

6.6.2 With each delivery of the items to Energex/ERGON, the Tenderer shall state the batch number and name of the **receiving** company responsible for acceptance of the items or components of the items upon arrival to Australia.

6.6.3 With each delivery of items to Energex/ERGON, the Tenderer shall state the batch number and name of the **manufacturing** company and country where the items and components of the items have been manufactured.

6.6.4 With the delivery of the items to Energex/ERGON, the Tenderer shall state the batch number and provide documentation (certified mill test reports or test certificates issued by the mill) of the grade of steel used in the manufacture and the location where the steel has been formed or milled.

6.6.5 With the delivery of the items to Energex/ERGON, the Tenderer shall provide documented proof that the grade of steel used in the manufacture of the items and components of the items meets all of the requirements specified on the relevant drawings, or where the material grade is not specified by Energex/ERGON, by the relevant Australian Standards.

6.6.6 Energex/ERGON will not accept any items or components of those items not manufactured in Australia that do not meet all of the above requirements.

6.7 ACCEPTABLE TESTS

Energex/ERGON may carry out acceptance test on equipment to prove it conforms to the requirements of this Technical Specification. Any equipment showing evidence of failure to comply with the requirements of this specification will be liable to rejection.

6.8 WITNESSING OF TESTS

6.8.1 Energex/ERGON reserves the right to witness all testing.

6.8.2 The Tenderer shall give Energex/ERGON reasonable notice of when testing will be carried out.

7 RISK ASSESSMENT

7.1 LEGISLATION

The Tenderer must comply with the requirements of the Work Health and Safety Act 2011, Queensland Electrical Safety Act 2002 and associated regulations, codes of practice and compliance/ advisory to Attachment 3).

7.2 DOCUMENTATION

Tendered items not shall be subjected to a formal risk assessment.

8 QUALITY ASSURANCE

8.1 QUALITY ASSURANCE DETAILS

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

8.1.2 The Tenderer's attention is drawn to "Quality Assurance Requirements for Suppliers of Products" which forms an integral part of this specification. Refer to Attachment 5.

8.1.3 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.

8.1.4 Tenderers and manufacturers shall provide details of their Quality Certification to meet the requirements of ISO 9002.

8.1.5 If the Tenderer is a non-manufacturing Tenderer, the documentary evidence shall include the quality system certificates of both the Tenderer and the manufacturer.

9 SAMPLES

When requested, samples of items offered shall be submitted to assist in the evaluation of the offer by the date stated on the request.

Each item sample shall be delivered freight free, suitably packaged and labelled with the following information:

Name of Tenderer and this Contract No. -

Contract Item Number and Energex/ERGON Stock Code Numbers

Any supporting data on features or characteristics

10 PACKAGING AND MARKING

The successful Tenderer's attention is specifically drawn to the requirements of Annexure F of the RFT with regards to the packaging and delivery of palletised goods.

Any item where the estimated weight is over 20kg shall have the weight marked in indelible ink or other permanent method.

All items are to be supplied in packaged lots in accordance with the quantities detailed in Schedule "B".

The successful Tenderer(s) shall take all necessary precautions to ensure safe handling of all products supplied. In particular:-

- Individual pack sizes shall not weigh more than 20kg.
- Palletised goods shall be supplied on standard hard wooden pallets although specially designed pallets will be acceptable where additional stability is required.
- Palletised goods are to be secured and stabilised with no overhang to facilitate unloading.
- Goods requiring indoor storage shall not exceed 1100mm in height.

Each packaged lot shall be marked with the following information:

Manufacturers Name

Order Release Authority/Order Number

Contract No.

Energex/ERGON Stock Code

Item Description

Batch Number

Pack Size

Pack Weight

11 SERVICE PERFORMANCE

Tenders shall state:

- The period of service achieved by the items offered within Australian service conditions.
- Australian electricity supply authorities who have a service history of the items proposed for use by the Purchaser.
- Contact names and phone numbers of relevant employees of those supply authorities who can verify the service performance claimed.

12 RELIABILITY

12.1 GUARANTEE

The Tenderer is required to guarantee the reliability and the performance of the equipment for the design service life of 35 years under the specified system and environmental conditions by specifying the guaranteed performance and design service life in Attachment 2 Technical Details.

12.2 DESIGN SERVICE LIFE

For the specified guaranteed design service life, the Tenderer is required to provide comment and submit evidence in support of the reliability and performance claimed including detailed information on Failure Mode and Effect Analysis.

13 TRAINING

Training material in the form of drawings, instructions and/or audio visuals is not required for the items accepted under this offer.

14 ENVIRONMENTAL CONSIDERATIONS

The Tenderer is required to comment on the environmental soundness of the Energex/ERGON design and the materials used in the manufacture of the items offered. In particular, comments should address such issues as recyclability and disposability at the end of service life and also disposal of packaging materials. Tenderers are required to document Environmental Management particulars in Attachment “5”.

15 INFORMATION TO BE PROVIDED

15.1 GENERAL

The specific technical requirements for the items offered shall be as stated in Attachment 2, of this specification. The Tenderer shall provide all details requested in Attachment 2 and shall guarantee such data. A separate Schedule/ Column of a Schedule shall be completed for each item offered.

15.2 TRACEABLE ITEM PERFORMANCE GUARANTEE

The Tenderer shall complete Attachment 6 including details of performance reliability of traceable items per Section 11.

15.3 TECHNICAL DOCUMENTATION

Attachment 4 details a checklist of supporting technical documentation which is required to be submitted with the tender.

ATTACHMENT 1 – ITEM AND STOCK CODE LISTING

Item No.	Energex Stock Code	Ergon II No	QESI Dwg	Brief Description
PART A: QESI				
1	2565	2435899	10-1-8-1-A	PLATE,METAL Connection Crossarm, 110kV Wishbone, PL 6 x 75 x 506mm Lg, Galv Stl
2	2566		01-12-02 C	Bracket, Insulator U Strap
3	2563	2403193	10-1-7-1-A	BRACKET,MOUNTING Crossarm Stabilizing, Stl, Galv, for Wishbone Constructions
4		2423457	10-1-10-1-A	BRACKET,MOUNTING 4 X LVABC Bundle Switches
5		405842	10-1-12-1-A	BRACKET,MOUNTING Galvanised Concrete Pole To Wooden X-arm
6	12466	104210	10-1-3-1-A	BRACKET,MOUNTING Angle Galv Service Cable
7	16576	406226	10-1-6-1-A	BRACKET Fuse Mtg Galv, LV ABC Thr Service Fuse Pole Mounted Max 8mm Thick c/w 2 x Hooks For Services
8	15257	1728509	01-05-01-B	Eye Nut, 98kN M20
9		2403836	10-1-9-1-A	STRAP TIE Universal Type, Galv, 50 x 10mm
10		405890	10-1-20-1-A	BRACKET,INSULATOR Bridging Post Insulator
11		405846	10-1-4-1-A	BRACKET Surge Arrestor Mounting
12	14094	2406992	10-1-2-1-A	GUARD Post U/G Cable Warning Sign
13	18584	104483	10-1-11-1-A	SAFETY,BOLLARD,TRAFFIC 101.6 x 4.0 CHS Galv Finish, 1325mm Lg, Fitted One End with Galv Drive-on Cap
14	16630	2403205	10-1-5-1-A	BRACKET,INSULATOR Gain Base, to suit Line Post Insulator
15	8989		01-05-01-B	Eye Nut, 62kN M16
16	12779		10-1-13-1-A	Hook, Support Gainbase A.B.C
17	2559		01-11-01-C	BRACE,CROSSARM Type 650C
18	2560	479405	01-11-02-D	BRACE,CROSSARM Type 1000C, 01-11-02 Issue C (P200)
19	2567	479227	01-12-01-C	STRAP Shackle, LV, 01-12-01
20	6165	2400664	01-19-01-C	GUARD Stay, Urban Galv
21	6406		10-1-15-1-A	BRACKET Footpath Stay, Galv, To 01-13-03 Issue A
22	10574	405991	01-13-01-D	BRACKET,INSULATOR Pole Top Pin, Stl Galv, 22/33kV, To 01-13-01 Issue B
23	16046	705449	10-1-19-1-A	BRACKET Mtg, Galv, "T" Type for Surge Arresters
24	16461	405840	10-1-1-1-A	BRACKET Transformer Mtg Galv, to Suit 100/300kVA Transformers, To 881375-01
25		406254	01-13-03-C	BRACKET Footpath Stay, Galv, To 01-13-03 Issue A
26		479456	01-11-02-D	BRACE,CROSSARM Type 1000T, 01-11-02 Issue C (Max Pallet size 600)
27		479375	01-11-01-C	BRACE,CROSSARM Type 650T, 01-11-01 (Max Pallet Size 700)

Item No.	ENERGEX Stock Code	ENERGEX Dwg No.	Brief Description
PART B: ENERGEX			
28	523	LOSTD-FX005-02, LOSTD-FX007-01	Bolt, Double U 150mm
29	525	LOSTD-FX005-04, LOSTD-FX007-01	Bolt, Double U 170mm
30	6076	1970-A4 O	Bracket, Insulator, Suspension Angle Type
31	2423	4290-A2 F	Pillar D Head Bolt, Long Handle
32	6601	3385-A4 F	Channel Mounting Cable Support STEEL,GALV;880 MM LG,76 MM W,38 MM
33	6602	3386-A4 G	Channel Mounting Cable Support Type 2 STEEL,GALV;310 MM LG,76 MM W,38 MM
34	6673	4824-A2 F	Cable Protection Cover Type 3 2400 MM LG,150 MM W,100 MM
35	6674	4825-A2 F	Cable Protection Cover Type 4 2400 MM LG,230 MM W,145 MM
36	6855	3039-A4 C	Retaining Pin for Cable Support Bracket
37	6908	3896-A3 G	Individual Step Rung
38	8343	1642-A4-01 J	Yoke plate, 160kN
39	10599	5838-A3 F	Bracket, Yoke ANGLE SUSPENSION;RECT;STEEL,MILD;GALV;ABC CABLE
40	11693	3132-A3 J	Bracket, Pole 100mm Crossarm
41	12155	10781-A3 SHEET 1 B	Anchor Plate 150mm sq
42	12431	5710-A4 F	Equipment Support Over 900mm trench
43	12917	2989-A4 D	Plate, Adaptor, Pole CLAMPED;STEEL;GALV;50 MM W,130 MM LG,16 MM THK
44	13048	3387-A4 E	Channel Mounting Cable Support Type 3 STEEL,GALV;1180 MM LG,76 MM W,38 MM
45	13761	3344-A4 F	Spacer Bracket, suits transformer hanger bracket
46	13776	12893-A1	Twin Mounting Bracket for Pole Mounted Voltage Regulators
47	13777	4822-A2 J	Cable Protection Cover Type 1 2400 MM LG,60 MM W,60 MM
48	13809	4804-A3 L	Pole Transformer Hanger Bracket
49	10852	054-A4 SHEET 1 A	Anchor, Concrete Floor 50kN
50	10549	2252-A4 H	Hook, Support J-HOOK;STEEL,STRUCTURAL GDE 250;GALV;125 MM LG
51	14355	2378-A4 C	Bracket, Surge Arrester
52	14386	5642-A3 I	Anchor Cable Pulling Eye
53	14558	5381-A3 G	Bracket, Insulator Support
54	15864	4850-A4 F	Bracket, Pole Control Box
55	15103	3342-A2 F	Individual Step Rung

Item No.	ENERGEX Stock Code	ENERGEX Dwg No.	Brief Description
56	15278	6563-A3 H	Bracket, 11kV & LV Padmount Terminations
57	16631	9104-A3 D	Earthwire Riser 1.5kN MWT
58	17545	76211-A1 G	Bracket, Transformer RC Poles
59	17748	6321-A4 A	Rod, Suspension Switchwire Support
60	17886	13045-A3 A	Pole Top Bracket, 11kV
61	18196	1642-A4-02 C	Yoke plate, 200kN
62	18434	LOSTD-ST001-02 C	Support, Angle Stl
63	18435	LOSTD-ST001-03 A	Support, Angle Stl
64	18440	LOSTD-ST006-01 B	Anchor, 15/33kN Pulling Eye
65	18442	LOSTD-ST009-01 C	Pole, Lightning Mast
66	18449	LOSTD-ST015-01 C	Adaptor 110kv stn post insulator to M20 Bolt
67	18471	15169-A1	33kV Air Break Switch Insulated Link
68	18489	LOSTD-ST015-03 A	Adaptor 33 & 11kv stn post insulator to M20 Bolt 50 MM
69	18657	12589-A3 A	Frame, Mounting POLE TERMINATION FRAME;33 KV;HEATSHRINKTYPE TERMINATION
70	18660	12588-A3 H	Bracket 33kV Cablecleat Termination
71	18757	LOSTD-ST048-01 A	Frame, Mounting
72	19021	13562-A3 A	Tension Crossarm 3m 8kN MWT
73	19022	13561-A3 A	Double Circuit Intermediate Cross Arm 1.8m
74	19038	13653-A3 C	Bracket, Service Connection Raiser
75	19278	87513-A3 D	Bracket, Mounting 9 KN;MTG BASE EXTENSION;FOR BRACED POSTINSULATOR
76	19279	87512-A3 D	Bracket, Extension 9kN
77	19281	11518-A3 SHEET 1 C	O/H Earth Wire Crossarm Light
78	19282	11518-A3 SHEET 3 E	O/H Earth Wire Crossarm 8' Uplift
79	19284	11492-A3 SHEET 1 G	Earthwire Riser for Suspension Construction
80	19289	13887-A3 SHEET 1 D	132kV 5kN & 9kN Line Post Drop Bracket
81	19472	14102-A3 SHEET 1 B	132kV Bridging Insulator Base to Suit 5kN Line Post Insulator
82	19473	12407-A3 SHEET 1 C	220kN Ultimate Capacity Stayrod Assembly
83	19837	14325-A3 SHEET 2 C	Crossarm, Stl 2470mm Long Reinforcing piece
84	19846	14325-A3 F	Crossarm, Stl 2470mm Long
85	19851	8628-A4 B	Angular Washer for Pole Ground Stay
86	19948	LOSTD-ST043-02 A	Bracket, ALFC Tuning Coil
87	19949	LOSTD-ST043-01 A	Bracket, AFLC Coupling Capacitor Support Frame
88	19950	6668-A2 C	Cross Arm Stl Suspension Construction

Item No.	ENERGEX Stock Code	ENERGEX Dwg No.	Brief Description
89	19951	7216-A2 A	Cross Arm Stl, Strain
90	19954	7219-A2 A	Cross Arm Stl, Strain
91	19956	9324-A3 C	Earthwire Riser 1.0kN MWT 33kV Offset
92	19957	9325-A3 B	Earthwire Riser 2.8kN MWT 33kV Shackle
93	20086	8788-A4 B	Bracket, Surge Arrester VD & VO
94	20087	8786-A4 B	Bracket, Surge Arrester Trident B
95	20088	8787-A4 B	Bracket, Surge Arrester Trident Outer Phases
96	20115	8791-A4 B	Bracket, Surge Arrester VD & VO
97	20181	8863-A4 D	Riser Bracket 1.9m Extension
98	20199	8866-A4 B	Riser Bracket 0.8m Extension
99	20283	9019-A4 C	Bracket, Surge Arrestor for Crossarm
100	20666	CCSTD-AR064-10	CT/VT Marshalling Box
101	20795	9095-A4	DADIC Bracket, Double Service Hook
102	21238	17591-A3 B	Crossarm, Stl 2490mm LG
103	22266	12588-A3 H	800 sq mm Cable Cleat Saddle 33kV Pole Term
104	6058	1591-A4 M	Bracket, insulator shark fin small
105	16605	12570-A1 G	Hanger Extension Bracket for Pole Bolt Transformer
106	22531	22981-A3	Top Pole Load Break Switch
107	22661	12588-A3 H	1000 sq mm Cable Cleat Saddle 33kV Pole Term
108	22454	22547-A3 A	Transformer mounting bracket, 25kVA single and thr phase
109	18596	LOSTD-CV01 E3-04	Strain Beam
110	18599	LOSTD-CV03 A3-01	Anchor, Guy
111	18526	LOSTD-ST01 A7-02	Frame, Mounting equipment support
112	18529	LOSTD-ST015-03	Adaptor 33 & 11kv stn post insulator to M20 Bolt 140 MM
113	20082	15627-A3 E	Crossarm, Stl Expanded Trident 11kV & 33kV
114	2644	6686-A3 D	Hook, Cant
115	6320	2304-A4 I	Hook, Support
116	10560	2151-A4 G	Protector, Electrical Cable
117	11072	2459-A4 F	Bracket, Stabilizing Bolt on Transformer
118	11610	10849-A3 A	Floodlight Adaptor Bracket GEC or Phillips
119	11687	2675-A4 B	Plate, Adaptor, Pole CLAMPED;STEEL;GALV;50 MM W,130 MM LG,16 MM THK;20 MM DIA,130 MM LG,ROD;M16 BOLT
120	12468	2896-A4 E	Adaptor, Bow Pole to Insulator

Item No.	ENERGEX Stock Code	ENERGEX Dwg No.	Brief Description
121	12783	3789-A4 C	Bolt Hook A.B.C 300 long
122	13147	3789-A4 C	Bolt Hook A.B.C 400 long
123	13166	4732-A2 I	Strt Light Slve, 0.3m Outreach
124	14887	5408-A2 F	Watchmen Service Floodlight Louvre
125	15850	12034-A1 I	Bracket, 11kV Non-Porcelain Pole Type
126	16590	7577-A3 A	Caliper Lock
127	18515	LOSTD-ST031-02 A	Frame, Mounting
128	18655	15179-A1 C	Bracket, Hanger Type
129	20085	8782-A4 B	Mid Pole Load Break Switch
130	2720	3321-A4	Bracket, Insulator "U" Strap
131	2564	314-A4-Issue H	Bracket, insulator, Shark Fin Large
132	6927	1969-A4-H	Clevis Tongue Assembly STEEL;GALV;186 MM LG,40 MM W;C/WHEX BOLT WITH 2 HEX NUTS;FOR U/W 11/33 KV SUSPENSION CONCRETE;
133	19280	16011-A3 01 B	132kV 5kN Extension Gains Base Extension
134	19283	11493-A3 01 F	Earthwire Riser for Termination and Shackle
135	16575	5422-A4-F	FUSE MTG BRACKET; C/W SUPPORT HOOK, 1 FUSE SUPPORT

Item No.	Ergon II No	Ergon Dwg	Brief Description
PART C: ERGON			
136	104386	SD10-0028-01-B	BRACKET,INSULATOR Gain Base suitable for use with Line Post Insulator
137	2400070	SD10-0026-01-C	BRACKET,MOUNTING 66kV Suspension Extension, 16mm Galv Stl Rod c/w 2 Hex Head Nuts
138	2404435	G-140-A4	CROSSARM,METAL Stl Galv, 3000 x 127 x 76 x 10mm
139	2418895	930914-01-0C	BRACKET,MOUNTING Galv Stl, for mounting Service Fuse on Transformer Pole
140	2417152	917260-05-0D	BRACKET,MOUNTING Crossarm Rural Intermediate Suitable for use with 2700 Crossarm and Concrete Pole
141	105120	911590-01-0D	BRACKET,MOUNTING Regulator Control Box Mounting Hinged, One Left & One Right Bracket per Set
142	604006	903731-01-0B	BRACKET Mtg, HV EDOs & Isolating Links Direct to Pole
143	2406985	875258-01-0B	GUARD Cable, Stl Galv, 2700 x 100 x 100mm
144	2401220	875238-01-0G	BRACKET 11/22kV Cable Pole Termination
145	1184053	875236-01-0C	BRACKET Fuse Mtg Galv Road Lighting Fuse
146	405920	875234-01-0C	BRACKET Switch Fuse Mtg Galv LV ABC Twin
147	405883	875169-01-0C	BRACKET Trident Intermediate Galv
148	405888	875168-01-0B	CROSSARM,METAL Stl Galv, Trident Termination
149	479421	22-A4-220-0B	BRACE,CROSSARM Brace: Cross-arm Type 920
150	479294	QESI 01-12-03-B	STRAP Light Angle, LV
151	2400745	SD 10-0032-01-B	STRAP,SHACKLE INSULATOR,TYPE 3 CRANKED GALV STL,350MM X 40MM X 6MM 11963
152	2433142	991860-01-0B	BRACKET,MOUNTING Suitable for use on Pole Termination Bracket to Separate Cables
153	104496	875401-01-0B	GUARD Cable, Stl, Galv, 2700 x 130 x 130mm
154	104588	889392-01-0C	BRACKET Regulator Mtg Galv, Suit 100A Regulators
155	2400727	865737-02-0B	BRACKET Fuse Mtg Galv LV ABC Thr Service Fuses Pole Mounted Max 6mm Thick c/w 2 x Hooks For Services
156	104453	872319-01-0D	BRACKET Pole Mounting, Twin Voltage Regulators
157	405847	872551-01-0E	BRACKET,MOUNTING Regulator Control Box Mounting
158	406203	22-A4-206-C	BRACKET Service Fuse Mounting
159	104534	884359-01-0B	BRACKET,MOUNTING Support Clamp Galv Fibre Optic Cable
160	2402325	SD10-0117-01-C	RAISER Stl Galv, 1800 x 100 x 100 x 6mm, RHS 11kV Termination Light Duty
161	104405	22-A4-1123-0B	BOLT ASSEMBLY,FOUNDATION Hold Down Bolt Assembly, Suit LV Distribution Cabinet
162	406271	22-A4-522-B	BRACKET,MOUNTING Clamp, used for attachment of Crossarms, Transformers etc to Conc Pole
163	2418952	919996-01-0B	BRACKET,MOUNTING Neutral Terminal for use with Bundle Switch, Galv Stl 250 x 32 x 6, 3 Holes

ATTACHMENT 2 – TECHNICAL DETAILS

Technical Details – Product

PARTICULARS	UNITS	Item No…… Stock Code No. .....
Manufacturer's Name and Address		
Country of Manufacture (if not Australia)		
City/Town of Manufacture (if not Australia)		
City/Town of Steel Mill (if not in Australia)		
Manufacturer's Product Catalogue No.		
Does the Manufactured Item meet all requirements specified on the drawing?		
Grade of Material		
Galvanising Details:		
Method		
Applicable Australian Standard		
Minimum Coating Thickness	µm	
Details of Oil used on Threads		
Have details on Identification (5.1) and other special requirements if manufactured overseas (6.6) been submitted? Pack Size		
Pack Weight	kg	

Extreme Service Conditions – Product

Ref	Particulars	Comments
	<PRODUCT>	
1.	50°C summer daytime (maximum)	
2.	-10°C winter night time (minimum)	
3.	High relative humidity (90%) combined with rapid temperature drop (20^0C in 20 minutes)	
4.	Areas where the use of fertilizers by spraying, or the burning of crop residues, can lead to a higher pollution level than specified above	

Ref	Particulars	Comments
5.	Marine coastal areas with direct and constant salt spray	
6.		
7.		
8.		

NAME OF TENDERER _____

ATTACHMENT 3 – RISK ASSESMENT

Ref.	Particulars	Response
1.	Does the Equipment offered comply wit ht safe work Australia Code of Practice for Managing Risks of Plan in the Workplace? (http://www.safeworkaustralia.gov.au) If so, have the following obligations been fulfilled for Manufactures and/or Tenderers of Plant to ensure (according to part 2 of the Queensland Work Health and Safety Act 2011): -That the Equipment offered has been examined and tested to ensure it is safe and without risk to health when used properly? -The Equipment offered is accompanied by information about the way the equipment must be used to ensure health and safety? -In particular, information relating to the duties of designers, manufacturers, suppliers, importers and installers of plant. If so, please provide provision of appropriate information?	
2.	Does the Equipment offered comply with the Queensland Electrical Safety Act 2002? (http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/ElectricalSA02.pdf)	
3.	Has a Risk Assessment been performed on the Equipment offered, which meets the requirements of the safe work Australia Code of Practice for How to manage Work Health and Safety Risks? (http://www.safeworkaustralia.gov.au) If so, please include a copy of the risk assessment with the tender.	
4.	Do any of the items offered involve assembly of components from a variety of sources? If so, are the components compatible to ensure the item is safe and without risk to health and safety when used properly?	
5.	Has the Equipment been examined and tested to ensure it is safe when used properly? In particular, have all Test Certificates specified in this Technical Specification been supplied? Is information available for safe operation and maintenance of the Equipment?	

Name & Signature of Tenderer / Date: _____

Address: _____

Name & Signature of Witness / Date: _____

ATTACHMENT 4 – TECHNICAL DOCUMENTATION CHECKLIST

The following information shall be supplied by the Tenderer whose attention is drawn to the relevant Clauses of the Specification.

Tenderer to answer each question “Yes” or “No”

Clause Ref.	Particulars	Response
Have full and comprehensive details been submitted WITH the tender documents associated with each of the following?		
1	Has Attachment 2 been completed for each item offered.	Yes/No
2	Do products comply with the relevant standards.	Yes/No
9	Samples	Yes/No
12	Reliability	Yes/No
14	Environmental Considerations	Yes/No
15	Information to be provided	Yes/No

ATTACHMENT 5 - MANAGEMENT SYSTEMS INFORMATION SCHEDULE

1. Tenderer Details

Tenderer:-	Representative's Name:-
Address:-	Telephone:- Facsimile:- Mobile / Other:-
Product / Service:-	ABN:-

2. Quality Assurance

Do you have a fully implemented Quality Management System in place which has been certified by an external certification body? (3rd Party Industry Specific Certification)	YES / NO
If YES, advise name of certification body and Certificate number. Attach copy of the certificate and Standard number	Certified by: Certificate Number:
Copy of Certificate and Schedule(s) attached	YES / NO
Do you hold a current Ergon Energy or other Electricity Authority and/or the Queensland Government Contractor Rating? (2nd Party)	YES / NO
If YES, advise Electricity Authority, Certificate Number and rating	Elec. Authority: Number: Rating:

If you answered **"YES"** to having 3rd Party Industry Specific Quality Certification and

- this is **not** "by association" with another entity please complete **Sections 5 and 6**.
- this **is** "by association" with another entity please complete **Section 3**.

If you answered **"NO"** to having 3rd Party Industry Specific Quality Accreditation, please complete **Section 4**.

3. Quality Assurance Certification by Association

If you have answered **"YES"** to having Quality Assurance Certification, and have used another entity in providing this answer please provide details of this entity below.

Registered Company Name:

Address:

ABN:

Please complete **Sections 5 and 6.**

4. Internal Quality System Questions

Have you developed and implemented your own internal non-certified Quality Management System?	YES/NO

If you answered **"NO"** to the above question please complete **Section 5**.

If you answered **"YES"** to the above question please complete the remaining questions in **Section 4**.

Do you have a Quality Manual?		YES/NO
Do you have procedures in place to ensure Quality of product and / or service?		YES/NO
Do you have a sample Quality Inspection and Test Plan or similar that you could provide on request?		YES/NO
Do you have an Internal Audit System?		YES/NO
Do you produce Internal Audit Reports that have suitable corrective action mechanisms?		YES/NO
Do you require your Tenderers / contractors to have a documented Quality Management System in place?		YES/NO
How do you evaluate your Tenderer's / contractors quality performance?	Audit Inspections Performance History	Yes/No Yes/No Yes/No
If requested, would your company be able to provide a copy of its Internal Quality Management System to Ergon Energy?		YES/NO

5. Environmental

Do you have a fully implemented Environmental Management System in place which has been certified by an external certification body? If YES attach a copy of the certificate.	YES/NO

If YES go to **Section 6**.

Do you have an Environmental Management Policy that is available to the Purchaser within 7 days of request?	YES/NO
Do you have a formal Environmental Management Plan that is available to the Purchaser within 7 days of request that outlines how you will address environmental risks relevant to your activities and conditions?	YES/NO
Are the requirements of your Environmental Management Plan incorporated into your Work Procedures?	YES/NO
Do you have a fully implemented Environmental Management System in place in accordance with ISO14001 which has been certified by an external certification body?	YES / NO
If YES, advise name of certification body and Certificate number. Attach copy of the certificate and Standard number	Certified by: Certificate Number:
Copy of Certificate and Schedule(s) attached	YES / NO

6. Workplace Health and Safety

Do you have a formal Workplace Health and Safety Management Plan that is available to the Purchaser within 7 days of request that outlines how you will address safety risks relevant to your activities and conditions?	YES/NO
Are the requirements of your Workplace Health and Safety Management Plan incorporated into your Work Procedures?	YES/NO
Do you have a Workplace Health and Safety Policy that is available to the Purchaser within 7 days of request?	YES/NO

NAME OF TENDERER

SIGNATURE
(FOR AND ON BEHALF OF TENDERER)

DATE

ATTACHMENT 6- TRACEABLE ITEMS AND RELIABILITY PERFORMANCE GUARANTEE

The following information shall be supplied by the Tenderer whose attention is drawn to the relevant Clauses of the Specification.

Traceability			
1.	Sub-components incorporating traceability – for all Tendered main, optional and alternative items - please list:		

NAME OF TENDERER _____