

Equipment Technical Specification

Road lighting columns outreach arms, brackets and adaptors

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Equipment Technical Specification

Asset Standards and Design

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ETS 0102 Road lighting columns, outreach arms, brackets and adaptors

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1.0 PURPOSE

To set out the technical requirements for road lighting columns, outreach arms, brackets and adaptors used to support a range of luminaires and pedestrian crossing floodlights for use in road lighting systems.

2.0 SCOPE

This specification covers the design, manufacture and testing of the column and outreach arms, shown on the drawings specified in section 6.

The road lighting columns, outreach arms, brackets and adaptors will be manufactured and tested to the standards with the year of publication referred here. Road lighting columns, outreach arms, brackets and adaptors manufactured and tested to previous or later versions of the standards will not be accepted.

In case any inconsistencies are identified between Standards and/or this specification, the supplier will immediately refer such inconsistencies to **Network Mains Manager**, Endeavour Energy for resolution.

3.0 REFERENCES

Internal

- **Company Policy 9.2.5 – Network Asset Design**
- **Company Policy 9.6.8 – Public Lighting**

External

- AS/NZS 1158.6 (2010) - Lighting for roads and public spaces – Luminaires
- AS 1158.1.2 (2010) Vehicular traffic
- AS 1163 (2009) - Structural Steel hollow sections
- AS 1170.2:2011 - Structural design actions – Wind actions
- AS/NZS 1554.1 (2009) - Structural steel welding - Welding of steel structures
- AS 1594 (2002) Hot-rolled steel flat products
- AS 1798 (2014) - Lighting poles and bracket arms - Preferred dimensions
- AS/NZS 3678 (2011) - Structural steel-hot-rolled plates, floor plates and slabs
- AS 4100 (1998) - Steel structures
- AS/NZS 4676 (2000) - Structural design requirements for utility services poles
- AS/NZS 4677 (2010) - Steel utility services poles
- AS/NZS 4680 (2006) - Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
- AS/NZS ISO 9001 (2000) - Quality Management Systems – requirements
- AS/NZS ISO 9002 (1994) - Quality Systems – Model for quality assurance in production, installation and servicing
- BS EN 40-3-3 (2013) - Lighting columns. Design and verification. Verification by calculation

4.0 DEFINITIONS AND ABBREVIATIONS

Company **Endeavour Energy**

NATA **National Association of Testing Authorities, Australia (NATA). It provides certification of a range of products and services.**

V_z: **Wind velocity New South Wales – region A (normal) (refer to AS/NZS 4676:2000)**

5.0 ACTIONS

5.1 Environmental conditions

The equipment will be installed outdoors and will be exposed to and must be able to withstand the environmental conditions listed in Table 1.

Table 1 Environmental conditions

Humidity	Relative humidity up to 90% average (clause 1.5 (d) of AS/NZS 1158.6:2010).
Solar radiation level	1000 Wm ⁻² with high ultra violet content (clause 1.5 (b) of AS/NZS 1158.6:2004).
Ambient temperature range	From -10°C to 40°C. (clause 1.5 (a) of AS/NZS 1158.6:2010).
Precipitation	Annual rainfall 900mm (Bureau of Meteorology).
Wind speed	Refer to clause 5.3.2
Isokeraunic level	20-25 (Bureau of Meteorology).

5.2 Design and construction

5.2.1 General

Columns and outreach arm combinations are used for road lighting systems connected to underground mains supply.

Brackets mounted on wood poles are used to install luminaires for road lighting systems connected to overhead mains supply.

Adaptors are used to achieve appropriate orientation and height of luminaires in road lighting systems.

5.2.1.1 Steel components

Steel used in the construction of columns, outreach arms, brackets and adaptors will be commercially available, in accordance with AS 1594:2002, AS 1163:2009 and/or AS 3678:2011, and will comply with the minimum requirement listed in Table 2.

Table 2: Steel grade and thickness

Item description	Minimum grade of steel	Minimum steel thickness (mm)
Base Plate Mounted column	250	3
Outreach arms	250	3
Outreach arm extension	350 (only)	2

Items made of alternative materials may be considered where it can be shown that these alternative materials (eg aluminium) meet the long term mechanical and reliability requirements for the particular component.

5.2.2 Tolerances

Tolerances will be in accordance with AS 1798:2014 Section 5.

5.2.3 Welding

Welding of steel columns, outreach arms, brackets and adaptors will be in accordance with AS 1554.1:2009.

5.2.4 Protective coating

All steel items will be hot dip galvanised in accordance with AS 4680:2006.

5.3 Design parameters for columns

5.3.1 General

All columns will be designed to withstand without permanent deformation the following loadings:

- Dead loading due to column, outreach arm(s) and luminaire(s), as stated in table J1 of AS/NZS 4676:2000.
- All columns will be designed so that they can support all outreach arm combinations shown on the company drawing numbers 262834, 262835, 262836, 262837 and 262838.
- Wind loading on column, outreach arm(s) and luminaire(s) including luminaires shown on the company drawing numbers 262834, 262835, 262836, 262837 and 262838.
- Design strength of columns will be analysed over a minimum of 100 increments in accordance to AS 4100:1998 and AS 4600:2005.
- Column access door reinforcing will be analysed to BS EN 40-3-3:2013.

5.3.2 Wind loading

Column wind loads will be determined from methods set out in AS 1170.2:2011, given in Table 3. Wind velocity V_z will be defined as: New South Wales – region A (normal) (refer to AS/NZS 4676:2000, Tables E1 and E2).

Table 3: Wind loading data

Height (m)	V_z (m/s)	
	V_s (Serviceability Requirement)	V_u (Ultimate Requirement)
10 to 15	38	50
<10	31	41

The wind loading design drag coefficients will be 0.7 for luminaires and 1.2 for outreach arms, as shown in Table E4 of AS/NZS 4676:2000.

5.3.3 Load combination

Load combination of dead loads, live loads and wind loads for design purposes will be determined in accordance with AS 1170.2:2011 clause 4.2.2 and AS 4100:1998.

5.3.4 Deflection

The deflection of the column from the vertical position under serviceability limit state will be calculated according to the serviceability wind speeds in clause 5.3.2, and will not exceed 4% of the nominal height of the column measured at the base of the outreach arm spigot.

5.3.5 *Tip loading*

The supplier will state the maximum allowable tip load for all columns offered. These tip loadings, together with the overturning moment, will be specified in Annexure 1. The maximum allowable tip load is defined as the maximum continuous load that can be applied horizontally (in any direction) to the base of the spigot with the column installed in its normal vertical working position.

5.3.6 *Proof loading*

The supplier will state the maximum bending moment that may be applied at the ground line of each column type offered under ultimate limit state conditions.

5.4 **Frangible columns**

Frangible columns offered will be impact absorbent type only.

5.4.1 *Impact absorbent columns*

These columns will conform to the requirements of this Specification, and in particular following clauses 5.4.2 and 5.4.3.

5.4.2 *Impact absorbent column - crash behaviour*

The impact absorbent columns will deform progressively when a vehicle crashes into them. The columns must deform progressively to decelerate an impacting vehicle in a controlled and uniform manner. The base of the column is to remain attached to the footing after impact and the column is to collapse upon vehicle impact in a predictable and acceptable manner.

5.4.3 *Impact absorbent column - crash performance tests*

The supplier will supply evidence of full scale impact testing, carried out by an organisation acceptable to the company, from which an assessment will be made of the adequacy and suitability of the column as being impact absorbent. The Impact absorbent column must have the same characteristics as explained in AS1158.1.2 appendix B clause B4.2.3.

The falling column will fall away from, and in the same direction as the travel of the impacting vehicle, coming to rest within an angle of $\pm 15^\circ$ to the impacting vehicle's longitudinal axis. If the column does not fall away from the vehicle (for example, it falls towards and on top of the vehicle); the falling column will not crush the vehicle turret in a manner dangerous to the occupants.

Typical of the performance required is that for frontal impact of a vehicle of 1200kg mass impacting at 60km/h, the column will produce decelerations, measured at the vehicle floor pan, no greater than 10g averaged over any 50 millisecond period, and no greater than 10g for any period longer than five (5) milliseconds.

The point of impact is to be not more than 1/4 width of the vehicle from the longitudinal centre line of the vehicle. In impacting the column, the vehicle must be brought to rest by the column in a controlled manner. Any pitch, yaw or roll will be such that the vehicle will not overturn or spin away from the column. Following impact, a column access door must remain in place to establish that there are no exposed wires.

5.5 Design parameters for outreach arms, brackets and adaptors

All outreach arms and extensions are to be designed to withstand without permanent deformation the worst application of the following loadings:

- Dead loading due to outreach arm(s), brackets, adaptors and luminaire(s).
- Wind loading on outreach arm(s), brackets, adaptors and luminaire(s) (as set out in clause 5.3.2).

Design strength of outreach arm(s), brackets, and adaptors will be calculated in accordance to AS 4100:1998.

The design parameters can be derived from the column and outreach combination drawings, given in section 6.

5.5.1 Load combination

Load combinations of dead load and wind load will be determined by the method as set out in clause 5.3.3 of this Specification.

5.5.2 Deflection

The outreach arms and brackets will be designed so that under loading with luminaire(s) and/or extension arm, where fitted, (for example, when fitted to a vertical column spigot), the luminaire spigot uplift angle will not be less than 5° or greater than 7°, except for Eden style outreach arms where it is required to be 0°.

The deflection of the outreach arms and brackets when fitted to a fixed non-deflecting spigot will, under the serviceability limit state, be calculated in accordance with the serviceability wind speeds in the table in clause 5.3.2 and will not exceed 4% of the nominal horizontal outreach length.

5.6 Design changes during contract

In the course of an order for the supply of equipment under this specification, any changes proposed to the design or components including manufacturing process and equipment will be requested in writing. This request will be forwarded to Network Mains Manager for approval prior to production. Equipment which has been modified without the prior approval of the Network Mains Manager will be rejected.

5.7 Construction of columns, outreach arms, brackets and adaptors

All outreach arms, bracket and adaptors will be constructed in accordance with the drawings list shown in section 6 and Annexure 1 of this Specification.

5.8 Performance and testing

5.8.1 General

The equipment covered in this specification will withstand the mechanical stress associated with continuous operation under the environmental conditions described in clause 5.1. Any equipment showing evidence of failure to comply with the requirements of this Specification will be liable to rejection.

5.8.2 Design Capacity

The design capacity of all components will be determined either by calculation in accordance with Sections 2 to 5 of AS 4676 or by load testing in accordance with Section 7 of AS 4676.

All design capacity tests will be carried out by a testing authority holding appropriate accreditation:

- by NATA Australia; or,
- by an accreditation authority recognised by NATA Australia.

Tests from other testing authorities, such as KEMA, may be accepted at the discretion of the company's Manager Asset Standards and Design. Design Capacity calculations are to be provided in the form of a written engineers certification. The certification must provide all relevant details so that the company can establish the validity of the calculations. The above certification for poles will be from an engineer with the following qualifications:

- Chartered Professional Engineer (CPEng) of Engineers Australia; and
- member of the Structural College of the Engineers Australia; and
- must be registered in the National Professional Engineers Register of Engineers Australia for Structural Engineering.

Overseas qualification covering above three (3) criteria, assessed and agreed by Engineers Australia, or acceptable to Manager Asset Standards and Design, Endeavour Energy, may be considered.

5.8.3 Routine tests

All equipment must be routine tested in accordance with AS/NZS 1554 and AS/NZS 4680. One copy of the routine test results must accompany each unit delivered. All test certificates must include the manufacturer's serial number(s). On allocation, the company order number, contract/item number and specification number must be added to the certificate, or as an attachment to the test report.

5.9 Packaging

Packaging of the items must comply that they are delivered undamaged, giving due consideration to the methods and distance of transportation and handling. Each package lot will be marked with the following information:

- Manufacturer's name.
- The company's name (purchaser).
- Order number.
- Item description.
- Pack quantity.
- Pack mass (kg) - columns and outreach arms

Equipment will be packed in such a way as to monitor that there is no metal to metal contact in the finished package.

5.10 Marking

All columns subject of this tender will be marked in accordance to clause 1.6.2 of AS/NZS 4677:2010 and Drawing no. 341259 from drawings table of clause 6.0 of this Specification. The manufacturer's name, column serial number and batch numbers, will be stamped on the inside of the column door.

All outreach arms and timber pole brackets subject of this Specification will be marked with the following:

- The company stock code
- Year of manufacture
- Outreach arm/street light bracket length/mass
- Lettering will be at least 20mm high and visible from ground level, once installed in position.

All adaptors, subject of this specification will be marked with the following:

- The company stock code.
- Year of manufacture.

5.11 General requirements

5.11.1 *Special tools, gauges and accessories*

Details of any special tools that are required for installation and ongoing maintenance are to be provided with any items offered under this specification.

5.11.2 *Door locking and earth stud*

All street light columns will be equipped with door locking and earth stud as shown in drawing number 263460A.

5.11.3 *Steel mounting brackets for pole substation type IE-H1, IE-H2 and IE-H3*

Drawing numbered 333137C to be seen in conjunction with drawings 293316C, 10124E and 40637E.

5.11.4 *Quality assurance*

Suppliers / Manufacturers are to have a quality system certified to ISO 9001:2000 in operation. Documentary evidence will be provided concerning the level of Quality System Certification associated with the tenderer and/or manufacturer.

This documentation will include the Capability Statement associated with the Quality System Certification.

5.11.5 *Environmental considerations*

Suppliers / Manufacturers are required to comment on the environmental soundness of the design and material used in the manufacture of the items offered. In particular, comments must address such issues as recyclability and disposal at end of service life.

5.11.6 *Reliability*

Suppliers / Manufacturers are required to state the reliability of the equipment and the performance of the materials offered for a service life of 35 years under the specified system and environmental conditions.

Such statements will include evidence in support of the reliability and performance claimed, including information on failure mode and effect analysis.

5.11.7 *Traceability*

Suppliers / Manufacturers will determine the sub-components in their equipment that require traceability. The criteria for traceability will be based on previously identified failure modes that may necessitate the recall of equipment from service for rework or replacement, must the failure occur either in the field or be discovered during manufacture or testing at works.

5.12 Samples

With due regard to the items offered by the tenderer, samples may be required as part of the tender package and at no cost to the company.

If the tenderer is required to provide samples, they must be delivered within six (6) weeks of the date requested.

Samples will be delivered freight free, suitably crated and packaged and labelled with the following information:

- Name of tenderer and the contract number.
- Contract item numbers.
- Any supporting data on features or characteristics.

5.13 Inspection of columns at delivery

An inspection will be carried out for manufacturing defects. In particular, elements such as the welding, surface and edges will be checked. The inspection will monitor that no deformities or potential hazards are present, for example sharp edges, burrs and dents. During this inspection, the manufacturer's stamping will also be checked; to establish that the required information is correctly displayed.

5.14 Information to be provided

5.14.1 Drawings and information to be submitted

The specific technical requirements for each item offered will be as stated in Annexure 1. The tenderer will provide all details requested by Annexure 1 and will guarantee such data. A separate schedule/column of a schedule will be completed for each item offered.

In addition to the completed schedules, tenderers will submit with their tender a complete description of the equipment offered including:

- Full design calculations or testing and drawings on each item offered. The calculations must be of sufficient detail so as to enable checking and verification of compliance with the specification and appropriate codes.
- Typical erection, test, operation and maintenance manuals.
- Description of the principle of operation and operating mechanism(s).
- A list of all departures of the tender from this Specification
- Documentation to enable an assessment to be made of the tenderer's ability to conform with the Quality Assurance requirements of this specification in regard to design, manufacture, inspection, testing, transportability, storage, erection and commissioning.
- Details of any quality program audits carried out on the tenderer's works in accordance with the AS/NZS ISO 9001-2000 standard or equivalent internationally recognised quality program standards.

5.15 Drawings

The drawings in Tables 4 to 7 are included in, and form part of, this Specification.

Table 4: Columns

Drawing Title	Drawing Number	Height (m)	Endeavour Stock Code
Enlarged Base Column General Detail	262714 C	4.5	1545110
		5.5	1545128
		7.0	1540137
		8.5	1540145
		10.0	1540152
		11.5	1540160
Macarthur Column General Detail	262715 C	4.5	1545169
		5.5	1545177
		7.0	1545185
Bentley Column General Detail	262716 D	4.5	1545136
		5.5	1545144
		7.0	1545151
Slimline Column General Detail	288195 E	4.5	-
		5.5	
		7.0	
		8.8	
		10.0	
Round Impact Absorbing Column General Detail	288197 C	7.0	1540178
		8.5	1540186
		10.0	1540194
Aluminium Macarthur Column and Outreach General Detail	344777 B	6.0	-
		7.0	-
		8.5	-
Steel Lighting Column - Door Locking and Earthing Stud	263461 A	-	N/A

Table 5: Outreaches

Drawing Title	Drawing Number	Description	Endeavour Stock Code
Curved pipe outreaches for Minor Roads (general detail).	262717 E	1.5m Single	1545193
		3.0m Single	1545201
		4.5m Single	1545219
		1.5m Double	1545227
		3.0m Double	1545235
		4.5m Double	1545243
		2.0m Extension	1542265
Major Road Outreaches (general arrangement).	262718 D	3.0m Single	1540210
		4.5m Single	1540228
		3.0m Double	1542257
		1.5m Extension	1540236
		2.0m Extension	1542265
Single Macarthur Outreaches General Detail	262719 C	1.5m Single	1545250
		3.0m Single	1545268
		4.5m Single	1545276
Double Macarthur Outreaches General Detail	262720 D	1.5m Double	1545789
		3.0m Double	-
		4.5m Double	-
Eden Outreaches General Detail	288196 C	1.2m Single	-
		2.0m Single	-
		3.0m Single	-
		4.5m Single	-
		1.2m Double	-
		2.0m Double	-
		3.0m Double	-
Aluminium Macarthur Column and Outreach General Detail	344777 B	4.5m Double	-
		1.5m Single	-
		3.0m Single	-
Marking of Columns, Outreach Arms and Extensions	341259 A	4.5m Single	-
		N/A	N/A

Table 6: Brackets

Drawing Title	Drawing Number	Height (m)	Endeavour Stock Code
Wood Pole Types IEB4, IEB5, IEB6, IEB7 - General arrangement	287017 B	2.7m (IE B4)	1542216
		3.6m (IE B5)	1542224
		4.5m (IE B6)	1542232
		6.0m (IE B7)	1542240
Luminaire Mounting Bracket IEH1 for Substation Pole General Detail	293316 C	-	-
Street light Bracket Type H2 General Arrangement and Fabrication Details	010124 E	-	-
Luminaire Mounting Bracket IE H3 general detail	040637 E	-	SL21637
Steel Luminaire brackets for pole substation mounting dimensions.	333137 C	-	-
Luminaire Mounting Bracket IEB1 General Detail	263463 F	-	1019739
Luminaire Mounting Bracket IEB3 General Detail	263460 J	-	1019752
Floodlight Cross Arm Mounting Bracket General Detail	E03130 C	-	1501949
Floodlight Pole Mounting Bracket General Detail	E03131 D	-	1112820
Aluminium Luminaire Mounting Brackets for Wood and Concrete Poles Dimensions	353702 A	2.7m (IE A4)	1557990
		3.6m (IE A5)	1558006
		4.5m (IE A6)	1558014
		6.0m (IE A7)	1558022
Steel Luminaire Mounting Brackets (General)	333136 C	-	-

Table 7: Brackets

Drawing Title	Drawing Number	Description	Endeavour Stock Code
Post Top Adaptor to 25NB Spigot General Detail	333232 B	-	1557933
Luminaire 45° Spigot Adaptor General Detail	287047 C	-	1081100
Luminaire Parallel “Y” Spigot Adaptor General Detail	287049 C	-	-
Luminaire 90° “Y” Spigot Adapter General Detail	287051 C	-	-
Aerial Service Adaptor Arrangement and Details.	302784 B	-	-
Insulated Street Lighting Mounting Bracket	397450 A	-	-

6.0 AUTHORITIES AND RESPONSIBILITIES

General Manager Asset Management has the authority and the responsibility for:

- approving this technical Specification including any variations;
- making all decisions concerning compliance in respect to this Specification;
- approving nominations of the company representatives and
- delegating any of these authorities and responsibilities to the Manager Asset Standards and Design.

Manager Asset Standards and Design has the authority and responsibility for:

- reviewing technical specifications and making recommendations to the General Manager Asset Management;
- making recommendations concerning compliance in respect to this Specification and
- making nominations of the company representatives.

Manager Network Connections has the authority and the responsibility for monitoring that all new contestable works streetlight installations are inspected for compliance with the requirements of this Specification.

Network Mains Manager has the authority and responsibility for reviewing all test reports submitted and making recommendations to the Manager Asset Standards and Design.

7.0 DOCUMENT CONTROL

Documentation content coordinator: Network Mains Manager
Documentation process coordinator: Branch Administrator

Annexure 1 - Technical details - Columns

Particulars (drawing number)		Details
The company Stock Code		
Description		
Manufacturer's name		
Manufacturer's part number		
Supplier's part number		
Column construction material		
Diameter at top of column	mm	
Diameter at bottom of column	mm	
Column mass	kg	
Steel components (clause 5.2.1.1)		
Grade of steel		
Australian Standard:		
Minimum steel thickness	mm	
Welding (clause 5.2.3) Compliance with AS 1554.1: 2009	Yes/no	
At time of manufacture, a welder's certificate can be provided?	Yes/no	
Protective coating (clause 5.2.4) Galvanised to AS 4680:2006	Yes/no	
Deflection Compliance with AS 1170.2:2011 (clause 5.3.2)	Yes/no	
Maximum tip loading (clause 5.3.5)	kN	
Overturning moment (clause 5.3.5)	kN/m	
Proof loading (clause 5.3.6)	N/m)	
Frangible columns (impact absorbent) Compliance with clause 5.4	Yes/no	
Crash tests carried out	Yes/no	
Results of tests supplied	Yes/no	
Structural design (clause 5.8.4) Certificate by Chartered Professional Engineer	Yes/no	
Engineer's name		
Engineer's certificate number		
Technical details (clause 5.8.4) Full calculations supplied	Yes/no	
Fabrication drawings supplied	Yes/no	

Particulars (drawing number)		Details
Quality assurance: (clause 5.12.2) Supplier rated to AS/NZS ISO 9000.2: 1998	Yes/no	
Designer rated to AS/NZS ISO 9001:2008	Yes/no	
Reliability: (clause 5.12.4) Reliability evidence provided:	Yes/no	
Packaging (clause 5.10) Details of packaging provided Pack quantity Pack mass Special lifting or handling requirements?	Yes/no	
Training (clause 5.14) Training material available:	Yes/no	
Manufacturer details: Name Address Country		

Name of supplier

Address of supplier

Signature of supplier

Annexure 2 - Technical details – Outreach Arms

Particulars (drawing number)		Details
The company Stock Code		
Description		
Manufacturer's name		
Manufacturer's part number		
Supplier's part number		
Welding (clause 5.2.3) Compliance with AS 1554.1:2009	Yes/ no	
At time of manufacture, can a Welders Certificate be provided?	Yes/no	
Protective coating (clause 5.2.4) Galvanised to AS 4680:2006	Yes/no	
Deflection (clause 5.3.4) Compliance with AS 1170.2:2011	Yes/no	
Structural design (clause 5.8.4) Certificate by Chartered Professional Engineer	Yes/no	
Engineer's name		
Engineer's certificate number		
Technical details (clause 5.8.4) Full calculations supplied	Yes/no	
Fabrication drawings supplied	Yes/no	
Quality assurance (clause 5.12.2) Supplier rated to AS/NZS ISO 9000.2:1998	Yes/no	
Designer rated to AS/NZS ISO 9001:2008	Yes/No	
Reliability (clause 5.12.4) Reliability evidence provided	Yes/no	
Packaging (clause 5.10) Details of packaging provided Pack quantity Pack mass Special lifting or handling requirements?	Yes/no	
Manufacturer details: Name Address Country		

Name of supplier _____

Address of supplier _____

Signature of supplier _____

Annexure 3 - Technical details - Wood pole brackets

Particulars (drawing number)		Details
The company Stock Code		
Description		
Manufacturer's name		
Manufacturer's part number		
Supplier's part number		
Welding (clause 5.2.3) Compliance with AS 1554.1:2009	Yes/no	
At time of manufacture, can a Welders Certificate be provided?	Yes/no	
Protective coating (clause 5.2.4) Galvanised to AS 4680:2006	Yes/no	
Deflection Compliance with AS 1170.2:2011 (clause 5.3.4)	Yes/no	
Structural design (clause 5.8.4) Certificate by Chartered Professional Engineer	Yes/no	
Engineer's name		
Engineer's certificate number		
Technical details (clause 5.8.4) Full calculations supplied	Yes/no	
Fabrication drawings supplied	Yes/no	
Quality assurance (clause 5.12.2) Supplier rated to AS/NZS ISO 9000.2:1998	Yes/no	
Designer rated to AS/NZS ISO 9001:2008	Yes/No	
Reliability (clause 5.12.4) Reliability evidence provided	Yes/no	
Packaging (clause 5.10) Details of packaging provided Pack quantity Pack mass Lifting or handling Requirements	Yes/no	
Manufacturer details: Name Address Country		

Name of supplier

Address of supplier

Signature of supplier

Annexure 4 - Technical details - Adaptors

Particulars (drawing number)		Details
Welding (clause 5.2.3) Compliance with AS 1554.1:2009	Yes/No	
At time of manufacture, can a Welders Certificate be provided?	Yes/No	
Protective coating (clause 5.2.4) Galvanised to AS 4680:2006	Yes/No	
Deflection Compliance with AS 1170.2:2011(clause 5.3.4)	Yes/No	
Structural design (clause 5.8.4) Certificate by Chartered Professional Engineer	Yes/No	
Engineer's name		
Engineer's certificate number		
Technical details (clause 5.8.4) Full calculations supplied	Yes/No	
Fabrication drawings supplied	Yes/No	
Quality assurance (clause 5.12.2) Supplier rated to AS/NZS ISO 9000.2:1998	Yes/No	
Designer rated to AS/NZS ISO 9001:2008	Yes/No	
Reliability (clause 5.12.4) Reliability evidence provided	Yes/No	
Packaging (clause 5.10) Details of packaging provided Pack quantity Pack mass Special lifting or handling requirements?	Yes/No	
Manufacturer details: Name Address Country		

Name of supplier

Address of supplier

Signature of supplier
