

# TCS 014: 2022

Specification

## Frangible Street Lighting Poles

Supply of

Version: 2022  
Revision: B



Department  
of Transport

## TCS 014: 2022

### Foreword

This specification has been developed by DoT (Roads). It is one of a number of technical specifications, and associated standard drawings, which set out the requirements for roadside ITS devices, traffic signal equipment and other electrical equipment and associated devices and control systems.

This specification is intended for use in all relevant works undertaken by or on behalf of DoT (Roads).

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**Specification updates.** VicRoads specifications and associated standard drawings are subject to periodic review. To keep the specifications up to date, amendments or new editions are issued as necessary. It is therefore important for users of VicRoads specifications to ensure that they have the latest version and associated amendments.

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## SECTION 1 – SCOPE AND GENERAL

### 1.1 SCOPE

This specification covers the requirements for the design, manufacture, testing, and supply of frangible street lighting poles for use on DoT (Roads) Projects.

### 1.2 GENERAL

- 1.2.1 Frangible street lighting poles supplied to DoT (Roads) shall hold current DoT (Roads) Type Approval (See Appendix A).
- 1.2.2 All street lighting poles supplied shall conform to a sample previously supplied to, and formally approved by DoT (Roads).
- 1.2.3 Reference to “approved” within this specification shall mean individual components or methods that have been previously accepted by DoT (Roads) and documented in DoT (Roads) ITS Approved Consultant List and ITS Type Approval List.
- 1.2.4 All poles covered by this specification shall have a design life, including an in-service fatigue life, of not less than 50 years.
- 1.2.5 Each finished pole shall be handled and individually packed in such a manner so as to prevent any damage to the pole or the finish during storage, handling and transport.
- 1.2.6 For information regarding rigid street lighting poles refer to TCS 001.
- 1.2.7 For information regarding street lighting brackets refer to TCS 050.
- 1.2.8 For information regarding the installation of street lighting poles, refer to Standard Section 731.

### 1.3 FRANGIBLE POLES

#### 1.3.1 General

- 1.3.1.1 Frangible poles are pole designed to intentionally break away or collapse if struck by an errant vehicle.
- 1.3.1.2 Frangible poles are primarily intended to reduce the risk of injury to drivers upon impact with the pole and, for impact absorbing poles, reduce the risk of a secondary incident.

### 1.3.2 Slip Base Poles

- 1.3.2.1 Slip base street lighting poles are designed to ‘slip’ from the mounting plate upon impact and fall in a controlled manner.
- 1.3.2.2 Slip base poles shall typically be ground set mounted and shall comply with the requirements of DoT (Roads) Standard Drawing TC-1065.

### 1.3.3 Impact Absorbing Poles

- 1.3.3.1 Impact absorbing street lighting poles can be either ground set mounted, plate set mounted, or direct buried and shall comply with the requirements of DoT (Roads) Standard Drawing TC-1064.
- 1.3.3.2 Impact absorbing poles are poles which:
- (a) deform progressively upon impact with an errant vehicle, decelerating the vehicle at a controlled rate and finally bring it to rest whilst still in contact with the pole;
  - (b) remain attached to the baseplate and ground set mount after impact;
  - (c) collapse on impact in a predictable and acceptable manner; and
  - (d) be fully compliant with structural strength in its undamaged condition.

## 1.4 ACRONYMS

The acronyms used in this document shall be interpreted as follows:

AASHTO	American Association of State Highway and Transportation Officials
AS	Australian Standard
ASTM	American Society for Testing and Materials
AS/NZS	Australian Standard / New Zealand Standard
DoT (Roads)	Department of Transport (Roads) ( <i>formerly VicRoads</i> )
MASH2	AASHTO Manual for Assessing Safety Hardware Second Edition (2016)
VESI	Victorian Electricity Supply Industry

## SECTION 2 – RELATED SPECIFICATIONS AND DRAWINGS

### 2.1 AUSTRALIAN STANDARDS

2.1.1 Subject to the following clauses, the fabrication and supply of all components for all traffic signal mast arms, joint use mast arms and joint use poles shall comply fully with the most recent issue of the Australian Standards listed below, together with any amendments to these standards.

2.1.2 The following related Australian Standards are referenced:

AS 1275	Metric Screw Threads for Fasteners
AS 4100	Steel Structures
AS 4506	Metal Finishing – Thermoset Powder Coating
AS/NZS 1170.0	Structural Design Actions – General Principles
AS/NZS 1170.2	Structural Design Actions - Wind Actions
AS/NZS 4680	Hot-Dip Galvanized (Zinc) Coatings on Fabricated Ferrous Articles
AS/NZS 5100.6	Bridge Design – Part 6: Steel and Composite Construction

### 2.2 DOT (ROADS) SPECIFICATIONS AND DRAWINGS

The fabrication and supply of all components shall conform to the relevant DoT (Roads) specifications, and related specifications and standards, as indicated throughout this document.

#### 2.2.1 DoT (Roads) Specifications

The following DoT (Roads) Specifications are referenced:

Standard Section 731	Road Lighting Installation
TCS 001	Traffic Signal Posts, Mast Arms, Joint-Use Poles, Joint-Use Mast Arms, Rigid Street Lighting Poles, & Flashing Pedestrian Crossing Poles
TCS 050	Fabrication and Supply of Street Lighting Brackets
TCS 065	LED Road Lighting Luminaires



### 2.2.2 DoT (Roads) Standard Drawings

The following DoT (Roads) Standard Drawings are referenced:

TC-1064	Impact Absorbing Pole Assembly Ground Set Mounted
TC-1065	Slip Base Pole Assembly Ground Set Mounted
TC-1111	JUMA, JUP, RSLP Street Lighting Extensions Spigot Cap

### 2.3 OTHER REFERENCES

References to other documents are made throughout this specification. They are listed below:

AASHTO MASH 2	Manual for Assessing Safety Hardware, Second Edition
ASTM D1000 – 17	Standard Testing Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications

## SECTION 3 – FRANGIBLE STREET LIGHTING POLES

### 3.1 GENERAL

Frangible street lighting poles shall be designed to withstand loadings due to wind and the mass of the pole, brackets, and lanterns as outlined by the requirements of this section.

### 3.2 MATERIALS AND CONSTRUCTION

- 3.2.1 Poles shall be manufactured from steel and shall comply with the requirements in AS 4100, unless otherwise specified in the clauses of this section.
- 3.2.2 Threads shall be supplied for fasteners in accordance with AS 1275.
- 3.2.3 Exposed corners shall be machined or ground to a radius of 3mm minimum.
- 3.2.4 Nuts, bolts, and threaded holes shall be re-run after galvanising.
- 3.2.5 All extension joint(s) shall be designed to be screwed together using a self-drilling screw or otherwise fixed both sides of the pole extensions joints(s).
- 3.2.6 All internal corners, such as cut-outs for doors or slots, shall have a radius of five (5) times the plate thickness.
- 3.2.7 Slip base pole slip flanges (top and bottom) and slip washers shall be flat and free of protrusions, irregularities and deformations.

### 3.3 STRUCTURAL REQUIREMENTS

#### 3.3.1 Design Basis

- 3.3.1.1 Poles shall be designed to:
  - (a) provide an in-service fatigue life of not less than 50 years.
  - (b) withstand the required loadings and combination specified in Clauses 3.3.2 and 3.3.3.
  - (c) ensure all structural members conform with the requirements of AS 4100.
- 3.3.1.2 For the determination of the ultimate limit state, in accordance with AS 4100, the dead loads and wind loads shall be combined based on  $1.20G + W_u$ , in accordance with AS/NZS 1170.0.
- 3.3.1.3 Poles shall be designed to carry the following road lighting attachments:
  - (a) A Type 2 single and double street lighting bracket of 5m outreach designed and mounted in accordance with TCS 050.

- (b) A luminaire of mass 20kg with a projected area of 0.25m<sup>2</sup> mounted at the end of each bracket in accordance with TCS 065.

### **3.3.2 Dead Loading**

Poles shall be designed to support a combination of the self-weight of the structure and the attachments outlined in Section 3.3.1.5.

### **3.3.3 Wind Loading**

#### **3.3.3.1 General**

Poles shall be designed to support a combination of wind loads on the structure itself (Section 3.3.3.2) and wind loads due to the street lighting attachments (Section 3.3.3.3) outlined in Clause 3.3.1.5.

#### **3.3.3.2 Wind Loads on the Structure**

The wind loads on frangible street lighting poles and Type 2 single and double street lighting brackets due to the structure itself shall be determined in accordance with AS/NZS 1170.2 based on a design wind speed for the ultimate limit state of 45m/s and for the region applicable to the pole.

#### **3.3.3.3 Wind Loads Due to Street Lighting Attachments**

The wind loads on frangible street lighting poles due to luminaires shall be calculated from the luminaire details in Clause 3.3.1.5, Item (b), taken as applying at each luminaire fixing.

### **3.3.4 Serviceability Deflection**

#### **3.3.4.1 Serviceability Deflection Due to Dead Loads**

The serviceability deflection of the luminaires in the vertical plane through the bracket shall not exceed 2.5° of the luminaire mounting height.

#### **3.3.4.2 Serviceability Deflection Due to Wind Loads**

3.3.4.2.1 The serviceability deflection of the luminaires in the vertical plane through the bracket due to wind loading shall not exceed a rotation of 4° relative to the position assumed by the luminaires in the unloaded condition.

3.3.4.2.2 The serviceability wind loads shall be determined in accordance with Clause 3.3.3 based on a design wind speed for the serviceability limit state of 35m/s.

## **3.4 PHYSICAL ARRANGEMENT AND DIMENSIONS**

3.4.1 Slip base poles shall comply with Standard Drawing TC-1065.

3.4.2 Impact absorbing poles shall comply with Standard Drawing TC-1064.

### **3.5 FINISH**

- 3.5.1 All steel components of the pole (including the ground set section) shall be hot dip galvanised in accordance with AS/NZS 4680.
- 3.5.2 The coating mass requirements for a single surface shall not be less than 600 grams per square metre.
- 3.5.3 Average coating mass minimum shall be equivalent to an average coating thickness minimum of 85µm.
- 3.5.4 Thickness shall be measured in accordance with AS/NZS 4680, Appendix G.

### **3.6 PROTECTIVE COATING SYSTEM**

#### **3.6.1 General**

- 3.6.1.1 After galvanising, a protective coating system for the ground set section shall be applied, to:
  - (a) provide a minimum life of 50 years from the time the pole is first placed in service;
  - (b) be tough and durable;
  - (c) be impermeable; and
  - (d) be resistant to damage during transportation, installation and operation.
- 3.6.1.2 The protective coating material shall be one of the following:
  - (a) epoxy powder coating;
  - (b) painted film; or
  - (c) heat shrink.

#### **3.6.2 Epoxy Powder Coating**

- 3.6.2.1 DoT (Roads) requires a fusion bonded epoxy powder coating which will exhibit a tough and flexible film for protection from extreme environments.
- 3.6.2.2 The epoxy powder coating protective system shall meet the requirements of AS/NZS 4506.
- 3.6.2.3 The galvanised metal substrate may be prepared by grit blasting with angular grit or optionally chemically pre-treated, either by dried-in-place silicate chromate or by phosphating.
- 3.6.2.4 The powder coating may be applied by electrostatic spray, by fluidised bed dripping, or by flock spraying (non-electrostatic) onto the pre-heated pipe.
- 3.6.2.5 The finished powder coating shall be not less than 400 microns thick.
- 3.6.2.6 The powder coating shall be applied to external surfaces of the ground set section from the underneath face of the flange to a line 250mm above the bottom edge of the section.

#### 3.6.2.7 The powder coating shall exhibit:

- (a) corrosion resistance;
- (b) long life;
- (c) resistance to cathodic disbandment;
- (d) resistance to termites; and,
- (e) shall be puncture resistant.

#### 3.6.2.8 The powder coating shall be of a colour distinctively different to the colour of the galvanised coating on the ground set section. Red is preferred.

### 3.6.3 Painted Film

#### 3.6.3.1 After galvanising, the ground set section shall have a painted film protective coating applied to external surfaces from the underneath face of the flange to a line 250mm above the bottom edge of the section.

#### 3.6.3.2 The painted film is to be applied so that the thickness of the dry film is not less than 0.4mm.

#### 3.6.3.3 A light sand blast or suitable chemical treatment shall be given to the metal surface to ensure good adhesion of the paint.

### 3.6.4 Heat Shrink

#### 3.6.4.1 The heat shrink protective coating shall be a chemically inert polymer (such as polyolefin) or equivalent heat shrinkable sleeve material containing:

- (a) an integral closure patch; and
- (b) a highly tacky corrosion resistant adhesive sealant pre-coated inside the sleeve.

#### 3.6.4.2 The heat shrink shall totally envelop the circumference and the length (noting Clause 3.6.4.6) of the ground set section with a minimum 100mm jointing overlap.

#### 3.6.4.3 The heat shrink sleeve backing shall be at least 1.4mm thick.

#### 3.6.4.4 The high-tacky adhesive sealant layer shall be at least 1.0mm thick.

#### 3.6.4.5 The heat shrink shall be of a colour distinctively different to the colour of the galvanised coating of the ground set section. Black is the preferred colour.

#### 3.6.4.6 The top edge of the heat shrink shall be positioned 30mm below the underside of the flange on the base section of the pole.

#### 3.6.4.7 The supplier shall ensure correct bonding around the two cut-out sections for cable entry conduits.

#### 3.6.4.8 Installed heat shrink protective coatings exhibiting cracking, burnt areas, poor adhesion, excessive bubbling, incorrect positioning, incorrect sizing, or damage or flaws of any other kind may, at the discretion of DoT (Roads), be rejected at no cost to DoT (Roads).

### 3.6.5 Peel Strength Testing

#### 3.6.5.1 Peel strength testing shall apply to heat shrink only.

- 3.6.5.2 The heat shrink shall pass a peel strength test in accordance with ASTM D1000 - 17.
- 3.6.5.3 Peel strength testing shall be carried out by an appropriately qualified and experienced consultant acceptable to DoT (Roads).
- 3.6.5.4 The supplier shall provide evidence of satisfactory performance of the heat shrink under peel strength testing in accordance with Appendix A2.
- 3.6.5.5 All costs of testing are to be borne by the supplier.
- 3.6.5.6 The heat shrink must exhibit an adhesive failure of the adhesive with the backing such that, when peeled, the adhesive must remain on the galvanised surface due to the peel value of the galvanised surface.

### **3.7 MARKINGS**

Each street lighting pole shall be legibly and durably marked on the exterior surface of the pole near the base with the following information:

- (a) the name, trade name or trademark of the manufacturer or responsible supplier;
- (b) nominal pole height, catalogue number or marking which shall distinguish the particular pole from other similar items supplied and/or manufactured by the supplier; and
- (c) batch or serial number or other mark which will clearly identify the date of manufacture of the item.

### **3.8 PROOF-ENGINEERING**

- 3.8.1 Design of all poles covered by this specification shall be proof-engineered by an independent third-party appearing on the DoT (Roads) [Register of prequalified contractors & consultants](#) for Road and Bridge Design – Structures (Proof-Engineering).
- 3.8.2 Proof-engineering certification shall be submitted to DoT (Roads) in accordance with Appendix A2.

## SECTION 4 – PROTOTYPE POLE LOAD TESTING

### 4.1 GENERAL

- 4.1.1 Prototype pole load testing shall apply to impact absorbing poles only.
- 4.1.2 At the sole discretion of DoT (Roads), prototype pole load testing shall be carried out in accordance with this section when so ordered or directed.
- 4.1.3 Prototype testing shall be undertaken on a prototype of each unique pole to be supplied.
- 4.1.4 Prototype poles subject to load testing under this Section shall be manufactured in accordance with the details submitted in Appendix A2 of this specification and shall be representative of the poles supplied to DoT (Roads).
- 4.1.5 Prototype testing shall be carried out by an appropriately qualified and experienced consultant acceptable to DoT (Roads).
- 4.1.6 The supplier shall provide evidence of satisfactory performance of the pole under load testing in accordance with Appendix A2.
- 4.1.7 All costs of testing are to be borne by the supplier.
- 4.1.8 Where determined by DoT (Roads), DoT (Roads) may arrange for a suitably qualified person to be on site during testing.

### 4.2 TESTING

- 4.2.1 Prototype testing shall be carried out in accordance with AS/NZS 5100.6, Section 15.4, unless otherwise specified in the clauses of this section.
- 4.2.2 The pole, under testing, shall include the attachments outlined in Clause 3.3.1.3, supplied at no cost to DoT (Roads).
- 4.2.3 Points of application of the test load, method of applying the load and measuring instruments shall be subject to the approval of DoT (Roads).

### 4.3 COMPLIANCE CRITERIA

The criteria for acceptance for strength and serviceability shall be in accordance with AS/NZS 5100.6, Clause 15.4.5 and the following additional requirements:

- (a) The maximum elastic deflection at the top of the pole under the serviceability limit state test load shall not exceed 2.5° of the luminaire mounting height; and

- (b) After removal of the strength limit state test load, the permanent deformation at the top of the pole shall not exceed 1% of the nominal pole height.

#### **4.4 TESTING HISTORY**

- 4.4.1 The supplier shall submit to DoT (Roads) evidence of any previous prototype testing or equivalent satisfactory performance of each unique prototype pole in accordance with Appendix A2.
- 4.4.2 If evidence to support satisfactory performance of previous prototype testing or equivalent satisfactory performance is neither available, nor acceptable to DoT (Roads), a prototype of each unique pole shall be subject to load testing to evaluate serviceability and strength performance as detailed in this section.



## SECTION 5 – CRASH PERFORMANCE TESTING

### 5.1 GENERAL

- 5.1.1 Full-scale impact crash performance testing shall apply to impact absorbing poles only.
- 5.1.2 Crash performance testing is carried out to ensure that the pole performs as required to minimise the risk of injury to the vehicle occupants.
- 5.1.3 Crash performance testing shall be undertaken on a prototype of each unique pole to be supplied.
- 5.1.4 Prototype poles subject to crash performance testing under this Section shall be manufactured in accordance with the details submitted in Appendix A2 of this specification and shall be representative of the poles supplied to DoT (Roads).
- 5.1.5 Crash performance testing shall be carried out by an appropriately qualified and experienced consultant acceptable to DoT (Roads).
- 5.1.6 The supplier shall provide evidence of satisfactory performance of the pole under crash performance testing in accordance with Appendix A2.
- 5.1.7 All costs of crash testing are to be borne by the supplier.
- 5.1.8 Where determined by DoT (Roads), DoT (Roads) may arrange for a suitably qualified person to be on site during testing.

### 5.2 TESTING

- 5.2.1 For crash testing, impact absorbing poles shall be installed on a standard in-ground or else plate set base with the top of the pole flange positioned  $75\text{mm} \pm 25\text{mm}$  above ground level, and the floor pan of the crash vehicle shall be not less than 125mm above ground level.
- 5.2.2 The pole, under testing, shall include the attachments outlined in Clause 3.3.1.3, supplied at no cost to DoT (Roads).
- 5.2.3 Points of application of the crash test load, method of applying the load and measuring instruments shall be subject to the approval of DoT (Roads).
- 5.2.4 The crash vehicle is not to impact the pole flange.
- 5.2.5 The point of impact is to be not more than  $\frac{1}{4}$  width of the vehicle from the longitudinal centreline of the vehicle.

### 5.3 COMPLIANCE CRITERIA

- 5.3.1 In impacting the pole, the vehicle must be brought to rest by the pole in a controlled manner.
- 5.3.2 Any pitch, yaw or roll shall be such that the vehicle will not overturn or spin away from the pole.
- 5.3.3 The typical pole performance required is that for frontal impact by a vehicle, measured at the vehicle's centre of mass, will produce longitudinal and lateral ride-down accelerations as specified in ASSHTO MASH2 and as shown in Table 5.1 below.

Requirement	Requirement	MASH2 Reference
Test vehicle	1100C 1100 kg ( $\pm 55$ kg)	Table 2.1
Impact Speed	70 Km/h	Table 2.5
Impact Angle	0-5 degrees	Table 2.5
Preferred maximum occupant ride-down acceleration	15.0 G	Table 5-1B Section 5.2.2
Absolute maximum allowable occupant ride-down acceleration	20.49 G	Table 5-1B Section 5.2.2

**Table 5.1 – Pole performance criteria from AASHTO MASH2**

### 5.4 TESTING HISTORY

- 5.4.1 The supplier shall submit to DoT (Roads) evidence of any previous crash performance testing or equivalent satisfactory performance of each unique prototype pole in accordance with Appendix A2.
- 5.4.2 If evidence to support satisfactory performance of previous crash performance testing or equivalent satisfactory performance is neither available, nor acceptable to DoT (Roads), a prototype of each unique pole shall be subject to crash performance testing as detailed in this section.

## SECTION 6 – SUPPLY

### 6.1 GENERAL

- 6.1.1 All street lighting poles for DoT (Roads) projects shall be manufactured and supplied in accordance with the details submitted under Appendix A2 of this specification.
- 6.1.2 Each finished frangible street lighting pole shall be handled and individually packed in such a manner so as to prevent any damage to the pole or the protective coating during storage, handling and transport.

### 6.2 ASSEMBLY OF FRANGIBLE POLES

- 6.2.1 The poles shall be supplied assembled complete, with the exception that for transportation purposes, the octagonal base section may be supplied separately. If the base is supplied separately, the slip base mounting bolts and washers must be held captive with the pole flange or base flange. Where the poles are supplied fully assembled the slip base mounting bolt shall be tightened to a torque of 150Nm for transportation purposes only.
- 6.2.2 As indicated on Standard Drawings TC-1065, the slip base mounting bolts for slip base poles shall be installed with the nuts in the upper position to facilitate later re-torque to the  $90 \pm 10$  Nm operational torque. Note that at the time of installation the slip base mounting bolts are to be slackened off one at a time and re-torqued to  $90 \pm 10$  Nm.

## APPENDIX A – REQUIREMENTS FOR TYPE APPROVAL

(Normative)

### A1 GENERAL

- A1.1 Frangible street lighting poles supplied to DoT (Roads) shall hold current DoT (Roads) Type Approval.
- A1.2 To enable assessment for the purposes of granting Type Approval, the manufacturer / supplier is to submit a formal, written request for Type Approval to DoT (Roads), for each unique pole supplied, accompanied by the following for each unique pole.
- Documentation to demonstrate that the submitted product conforms to the requirements of DoT (Roads) Specification. This may be by means of submitting test results from approved and appropriately qualified independent testing organisations or providing the manufacturer's assurance that the product complies with each relevant paragraph of the specification, as appropriate.
  - An outline drawing showing the general presentation and overall dimensions of the submitted product.
  - Specific submissions detailed in the relevant section of this Appendix.
  - A complete working sample of the product for inspection purposes as detailed in Appendix A4; and
  - Documentation to demonstrate that the submitted product has been manufactured and supplied under an approved quality assurance system.

### A2 ALL POLES

#### A2.1 General

For both slip base and impact absorbing street lighting poles the supplier shall submit the following:

- A report detailing conformance with each relevant clause of this specification.
- Detailed workshop drawings of the pole including cross-sections and dimensions, material details, weld details, finish details.
- Proof engineering certification in accordance with section 3.8 of this specification.

#### A2.2 Protective Coating System

The supplier shall submit information of the protective coating system applied on the ground-set section in accordance with:

- Section A2.2.1 for epoxy powder coating;
- Section A2.2.2 for painted film; or
- Section A2.2.3 for heat shrink

### **A2.2.1 Epoxy Powder Coating**

The supplier shall submit details of the epoxy powder coating within a product specification sheet.

### **A2.2.2 Painted Film**

The supplier shall submit details of the painted film within a product specification sheet, with the following information:

- Paint manufacturer;
- Paint identification code;
- Type of materials in paint system;
- Description of surface preparation;
- Type of primer used, if any;
- Number of coats in system;
- Guaranteed minimum dry film thickness in millimetres (the actual thickness shall be measured by a thickness meter approved by DoT (Roads));
- Name and address of sub-contractor (if any) and details of processing to be done by the sub-contractor; and
- Copy of paint manufacturer's technical data sheets shall be supplied.

### **A2.2.3 Heat Shrink**

A2.2.3.1 The supplier shall submit:

- (a) Details of the heat shrink within a product specification sheet.
- (b) a report detailing the results of the peel strength test, in accordance with Section 3.6.5.

## **A3 IMPACT ABSORBING STREET LIGHTING POLES**

### **A3.1 General**

For impact absorbing poles the supplier shall submit all information requested in Section A2 and the additional information as detailed below.

### **A3.2 Testing**

A3.2.1 The supplier shall submit a report detailing the results of the following tests:

- (a) Prototype pole load test in accordance with Section 4.
- (b) Crash performance test in accordance with Section 5.

A3.2.2 The supplier shall submit a recording of the above tests in standard speed .mp4 format.

## **A4 SAMPLE PRODUCTS**

- A4.1 The supplier shall provide access at the manufacturers' premises, or other agreed location, for DoT personnel to inspect a sample of the product.
- A4.2 A sample of the product shall be designed and manufactured in accordance with this specification and shall be representative of the products supplied to DoT (Roads).
- A4.3 A sample of the product shall be inspected by DoT (Roads) to ensure compliance with this specification and with the drawings (submitted in accordance with the relevant section of this specification) of the product.
- A4.4 The supplier may submit to DoT (Roads) evidence of any previous sample testing or equivalent satisfactory checks for the product design. If evidence to support satisfactory performance of previous sample testing or equivalent satisfactory performance is neither available, nor acceptable to DoT (Roads), a sample of the product shall be subject to compliance testing as detailed in the relevant section of this Appendix.

## **A5 REVIEW PROCESS**

- A5.1 The information submitted by the supplier will be reviewed by DoT (Roads) to determine whether the fabricated pole will be Type Approved.
- A5.2 The decision to grant a Certificate of Type Approval is at the sole discretion of DoT (Roads).
- A5.3 DoT (Roads) may require additional information or testing to be carried out as part of its evaluation of the product.
- A5.4 If the product is approved, a Certificate of Type Approval will be provided to the supplier. Until such time as this Certificate is issued, the product is not to be used for DoT (Roads) works.
- A5.5 The supplier shall advise DoT (Roads) in writing of any changes in relation to the Type Approved product, DoT (Roads) reserves the right to review and approve / reject the design changes at DoT (Roads)' discretion.