

TCG 016 - 2015

Guideline

for VicRoads

Product Compliance Process

for

ITS and Electrical Products

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Foreword

This guideline has been developed by VicRoads. 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 guideline is intended for use in all relevant works undertaken by or on behalf of VicRoads.

VicRoads Standard Drawings, Specifications and Guidelines are available for downloading from VicRoads website at the following address under [Technical documents search : VicRoads](#) .

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Guideline 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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Revision History

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This guideline is intended to provide advice on VicRoads managed, Consultant driven, product compliance review process for on-road ITS and electrical products.

1.2 BACKGROUND

Traditionally, VicRoads has undertaken product compliance reviews internally. This Guideline lays out the process to enable products to be evaluated externally by VicRoads approved Product Compliance Consultants (Consultant).

The process of product compliance assessment typically requires a supplier to provide:

- Documentation that demonstrates compliance with VicRoads Specification and relevant Australian Standards;
- Required test reports from NATA accredited test facilities;
- A sample of the product for review; testing and possible field trial.

In order to provide efficiencies in the evaluation process, VicRoads has established a panel of Consultants who are able to undertake product compliance reviews and provide VicRoads with a report and an evidence-based compliance recommendation.

Where a product complies with all VicRoads requirements, VicRoads may issue a letter of approval and associated certificate.

1.3 PURPOSE OF PRODUCT COMPLIANCE

Poor uniformity and inconsistency of ITS devices for road side infrastructure affects the compatibility of equipment within the network and increases operation and maintenance costs. Therefore, a product compliance process is important.

Benefits of a product compliance review process include:

- Consistency of ITS and Electrical product standards;
- Consistency in the delivery of ITS devices;
- Consistency in the operation and maintenance of ITS devices;
- Facilitation of efficient maintenance practices;
- Efficient procurement of ITS devices;
- Full compatibility with existing ITS systems and infrastructure;

- Compliance with legal and statutory requirements;
- Improved road safety;
- Minimised financial risk to VicRoads; and
- Increased customer confidence.

1.4 TYPES OF APPROVAL

There are two types of product approval issued by VicRoads. These are:

- **Type Approval** – This is applied where there is a specific VicRoads specification or Australian Standard that directly applies to the product. Products that comply with the relevant specification or standard are issued with a letter of approval and a certificate of 'Type Approval'.
- **Product Acceptance** - This is applied where there is no specific VicRoads specification or Australian Standard that directly applies to the product. This type of product may be:
 - New technology that is intended to meet the performance requirements of specification or standard in a unique or different way; or
 - A completely new technology that is not adequately covered by any existing specification or standard.

This type of product is reviewed in order to determine whether it has benefits for use by VicRoads. Products that are considered to meet VicRoads requirements, even though there is no specification or standard, are issued with a letter of acceptance and a certificate of 'Product Acceptance'.

1.5 PRODUCT COMPLIANCE CONSULTANTS

Consultants are required to be part of a 'panel' of companies approved by VicRoads to provide a product compliance evaluation service.

In order to be part of the panel, Consultants are required to submit an application on a VicRoads approved form demonstrating the company's qualifications, expertise, experience and ability to undertake product evaluations.

Consultants will be granted approval to undertake product compliance evaluations for particular product types based on their demonstrated abilities.

SECTION 2 PRODUCT CATEGORIES

2.1 OVERVIEW

ITS and Electrical products range from simple devices such as a cable pit former to an extremely complex, safety critical, regulatory traffic control device such as a traffic signal controller.

The complexity involved and skills required to evaluate these products also varies from basic for a simple product to highly specialised for a complex device such as a traffic signal controller.

For this reason, products have been divided into the following categories:

- Simple;
- Medium; and
- Complex.

Each of these categories is treated differently based on the complexity of the device and whether or not the product is a regulatory device.

An overview of product categories and level of compliance checking required is provided in Appendix A.

2.2 PRODUCT CATEGORIES

2.2.1 Simple Products

Simple products are typically basic hardware type devices that require little or no testing. This type of product would typically not require engineering certification.

Some examples of simple products are:

- Traffic signal hardware;
- Traffic signal cables;
- Traffic signal pedestals
- Cable pit formers
- Pit lids;
- Rag bolt assemblies;
- 3m re-enforcing Cage;
- Road lighting brackets;
- Roadside cabinets; and
- Controller top hat.

2.2.2 Medium Products

Medium products are considered more complex than simple products typically requiring some physical testing, system compatibility testing and, in some cases, engineering certification.

Some examples of medium products are:

- Pedestrian detectors;
- Puffin detectors;
- Audio tactile drivers/transducers;
- AAWS systems;
- Ice warning systems;
- Electronic signs;
- Electrical distribution cabinet;
- Uninterruptable power supply;
- Help phone;
- Road lighting poles;
- Large Poles (MA/JUMA/JUP); and
- Road Lighting Luminaire.

2.2.3 Complex Products

Complex products typically require extensive testing to ensure correct operation and are generally:

- Safety related or safety critical;
- Regulatory traffic control devices;
- System compatibility critical;
- Device compatibility critical; and
- Data accuracy critical.

Some examples of complex products are:

- Traffic Signal Controller;
- Electronic Speed Limit Sign;
- Lane Use Sign;
- Freeway Data Station;
- Vehicle Detection Systems; and
- Traffic Signal Lantern.

SECTION 3 THE PRODUCT COMPLIANCE PROCESS

3.1 GENERAL

An ITS and electrical product supplier seeking VicRoads approval for a product shall submit a written request to VicRoads.

VicRoads will review the request and advise the Supplier if the product is considered suitable for a formal evaluation process to be undertaken. (A flowchart showing the process is provided in Appendix B).

Where required, the Supplier will directly engage a VicRoads approved Consultant to undertake a formal evaluation of the product. The Consultant will provide a detailed evaluation report. All costs associated with the engagement of a Consultant shall be borne by the Supplier.

VicRoads will only consider compliance assessment reports from VicRoads approved Consultants.

3.2 STANDARD PRODUCT

3.2.1 Overview

A standard product is a product for which there is an existing VicRoads specification and/or Australian Standard.

If the product is considered potentially suitable, a Product Acceptance (PA) number will be allocated and VicRoads file is set up.

If the product holds current approval from another state road authority, such approval may be taken into consideration when determining if a VicRoads compliance review is also required. If an approval from another State Road Authority is accepted, a certificate will be issued and the record is updated.

Note that an approval from another state road authority does not imply automatic product approval by VicRoads.

The typical compliance review process for each product category is outlined below.

3.2.2 Simple Product

When submitting a simple product, the Supplier:

- Shall submit all required documentation, including all required test reports, in accordance with VicRoads specification;
- Shall provide a copy of any existing approval that has been granted by another state road authority; and
- May choose to submit a statement of compliance to VicRoads.

VicRoads may choose to:

- Accept the product based on approval from another state road authority;
- Accept the product based on the submitted documentation;
- Undertake a simple compliance check; or
- Request that formal compliance evaluation be undertaken by a Consultant.

3.2.3 Medium and Complex Products

When submitting a medium or complex product, the Supplier shall:

- Submit details of the product including a copy of any existing approval that has been granted by another state road authority;
- VicRoads will provide the Supplier with a PA number;
- The Supplier will engage a Consultant to undertake an evaluation;
- Once the evaluation has been completed, the Consultant will provide a copy of the report to the Supplier and to VicRoads.

VicRoads may consider approval of the product based on approval from another state road authority.

Evaluation of a medium or complex product may involve 'off street' testing and possibly field trials. Any field trials shall be coordinated through VicRoads.

3.3 NON STANDARD PRODUCT

If a product is not covered by an existing specification and/or standard it is considered a 'non-standard' product. For this type of product, VicRoads will determine if it has potential benefit.

If the product is considered to have potential benefit, agreed assessment/test parameters will be developed between VicRoads, the Supplier and the Consultant. A PA number will be allocated and VicRoads file will set up.

If after consideration, VicRoads concludes a product has no potential benefit, VicRoads will advise the Supplier that the product will not be assessed.

3.4 PRODUCT EVALUATION REPORT

The Consultant will provide the Supplier and Vicroads with a written 'Evaluation Report' detailing the review process and the findings including a recommendation whether or not to approve the product.

A typical Product Evaluation Report format would be similar to the following:

- Part 1 - Introduction providing details of the product and it's intended use including any useful images of the product and sub-components;
- Part 2 – Details of all supporting documentation provided by the Supplier;
- Part 3 – Details of the specification, standard or other requirements that the product is being evaluated against;
- Part 4 – Details of the evaluation process conducted:
- Part 5 - Details providing an evidence based summary of compliance with each individual clause of VicRoads specification and any relevant Australian Standard;
- Part 6 – Details of any field trials that may have been conducted:
- Part 7 – Discussion (where required);
- Part 8 - Recommendation
- Appendices – Copies of all test reports, product data, product specifications and any other documentation provided by the Supplier.

VicRoads will review the report and if satisfied, issue a:

- Letter of approval and a Certificate of Type Approval for standard products; or a
- Letter of approval and a Certificate of Product Acceptance for non-standard products.

3.5 SUPPLIERS RIGHT TO CHALLENGE A RECOMMENDATION

If a Supplier disagrees with the Consultant's recommendation, the Supplier may choose to challenge the recommendation directly with VicRoads.

VicRoads will hear the grounds of any challenge and determine whether to re-examine the submitted documentation.

APPENDIX A PRODUCT COMPLIANCE CATEGORY REFERENCE

Product Compliance Category Reference

Category	Products	Device Type					System Critical			Compliance Check									
		Regulatory Traffic Control	Non-Regulatory Traffic Control	Road Safety	Other	Safety Critical	STREAMS	SCATS	Other	Self Assessment Pro-former	NATA	Proof Engineering	Other test	Document Review	Physical Review	System Compatibility	Off-street Trial	Field Trial	RMS Approval Considered
Simple	Lantern bracket				X					X			X	X					X
	Lantern hardware (target boards, visors, etc)				X					X			X	X					
	Detector feeder cable				X				X	X			X	X					X
	Detector loop cable				X				X	X			X	X					X
	Traffic signal power cable				X				X	X			X	X					
	Cable pit covers				X				X	X									
	Terminal assemblies				X				X				X	X					
	Type 2 pedestals			X					X				X	X					
	Cable Pits				X				X				X	X					
	Detector pits				X				X				X	X					
	Rag bolt assemblies				X				X				X	X					
	3m Re-enforcing cage				X				X				X	X					
	Road lighting brackets				X				X				X	X					
	ITS field cabinet				X				X	X			X	X					
	Universal roadside cabinet				X				X	X			X	X					
Controller top hat				X				X				X	X						
Medium	Pedestrian Detector		X	X					X	X			X	X					X
	Puffin detectors		X					X	X				X	X	X	X	X	X	X
	Audio tactile drivers/transducers		X						X				X	X					X
	Railway Active Advanced Warning Systems (AAWS)			X				X	X	X	X		X	X	X	X	X		
	Ice warning systems			X		X		X	X	X			X	X	X			X	
	Internally illuminated signs	X	X	X				X	X	X	X		X	X	X	X	X		
	Electrical distribution cabinet					X			X	X			X	X	X				
	Help phone			X				X	X	X			X	X	X			X	X
	Slip base road lighting poles			X		X			X		X		X	X					
	Rigid road lighting poles			X					X		X		X	X					
	Large poles (MA / JUMA / JUP)				X				X		X		X	X					
	Road lighting luminaire			X					X				X	X				X	X
	Uninterruptable Power Supplies (UPS)			X				X	X	X			X	X	X	X	X		
	Impact absorbing poles			X		X			X		X	X	X	X					X
Complex	Electronic Speed Limit Sign (ESLS)	X		X		X	X		X	X			X	X	X	X	X		
	Lane Use Sign	X		X		X	X		X	X		X	X	X	X	X			
	Freeway Data Station (FDS)		X				X		X	X			X	X	X	X	X	X	X
	Vehicle detection systems		X				X	X	X	X			X	X	X	X	X	X	X
	Traffic signal lantern	X		X		X		X	X				X	X	X	X	X	X	X
	Traffic signal controller	X		X		X		X	X			X	X	X	X	X	X	X	X

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APPENDIX B PRODUCT COMPLIANCE PROCESS FLOW CHART

