



Guardian SmartFlagger (Australian Version)

**TIPES CERTIFICATE
No. 24TMD-01**

19 December 2024

OFFICES IN:
ADELAIDE, BRISBANE, CANBERRA, LAUNCESTON,
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**NATIONAL TRANSPORT RESEARCH CENTRE
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Guardian SmartFlagger (Australian Version)

This Certificate is issued to Applicant:

Site 20/20,
24 Akerley Blvd #1,
Dartmouth,
NS B3B 1J3,
Canada

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www.site2020.com

Applicant's Original Objectives for the Product

The Guardian Smartflagger is a remotely operated traffic management device primarily designed and developed to be used at locations / in situations where a traditional STOP/SLOW bat would be adopted as the default solution. The device is intended mainly for use on low volume, local road sites where traffic is controlled to 40 km/h.

The product has the primary safety objective of locating its controller away from live traffic, thus significantly reducing the risk of being struck by any off-path or errant vehicles.

The device was first used in Canada and US in 2016/17 and has been used successfully since that date. At the time of the original Application (March 2021) it was reported that over 1,000 units were already in operation. A slightly modified version of the device has been developed for Australian usage – to cater for road users driving on the left-hand side of the centreline - and it is this version that has been the subject of the TIPES evaluation. The version evaluated retains the fabric signage on the beam and a two-aspect signal head.

Operational Guidance Documents

The Applicant has prepared a suite of guidance documents relating to the device and its usage. These were reviewed as part of the TIPES assessment, and this Certificate is issued with the condition that the latest version of the guidance be obtained and followed by all users of the device, except where superseded by local conditions and controls.

The suite of documents includes:

- An umbrella decision tree, which establishes a risk-based hierarchy for the selection of the most appropriate device from a range of traffic management options, based on the characteristics of the site and the roadworks to be undertaken. The decision tree reaffirms the intended use of the Guardian SmartFlagger where a STOP/SLOW bat would have historically been the default selection.
- An Operator's Guide (User Manual).
- Proposed standard traffic management layouts.

Road Agency Approval and Local Controls & Conditions

This Certificate is issued on the condition that all pertinent state and local road agency controls and conditions are satisfied with respect to the selection, prior approval, deployment, and usage of traffic management devices (generally) and the Australian version of the Guardian SmartFlagger (specifically). With respect to the latter, the Applicant has most recently responded to, and satisfied, PEP questioning regarding the possible incorporation of a 'STOP' sign on the gate arm as opposed to the fabric flag; the possible adoption of a three-aspect signal head; and tolerance to wind gusts.



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Scope of Certificate

This Certificate is issued in respect of the **Australian version of the Guardian SmartFlagger** (the Product) only, that is used as a traffic management device. The devices are most typically operated in pairs. The photograph immediately below demonstrates the Australian version of a single Guardian SmartFlagger in a 'closed' (traffic stopped) configuration, but without signals deployed.



Photograph acknowledgement: Site 20/20

Issued: 19 December 2024

Nigel Powers,
Governance Manager,
TIPES

Paul Hillier, Principal
Professional Leader,
NTRO Certification

This Certificate under the Transport Infrastructure Product Evaluation Scheme (TIPES) is issued by NTRO Certification, a dedicated business unit of NTRO. The Product has been assessed by an expert Product Evaluation Panel (PEP) as being fit for its intended usage provided that it is used and maintained as set out in the original application and in accordance with latest user guidance and applicable state and/or local road agency traffic management protocols and requirements.

THIS CERTIFICATE INCLUDES A SUMMARY RELATING TO THE ORIGINAL:

- Key factors relating to compliance with TIPES requirements
- Evaluation of Applicant's claims for the device including its safety record
- Assessment of typical applications and operational guidance, as set out in the documentation provided by the Applicant at that time.

KEY FACTORS ASSESSED:

Factor 1 – The foreseeable effectiveness of Guardian SmartFlagger as a traffic management device in Australia with consideration of the Applicant's objectives for the device and likely local usage.

Factor 2 – The Applicant's claimed benefits of the device's operation.

Factor 3 – The validity of testimonials and details / case studies of past usage of the original and Australian version of the device at roadworks sites and environments identified within Canada, USA and Australia respectively.

Compliance with operational guidance for users and state and/or local road agency controls and requirements is required, by all users of the device as required earlier in this Certificate.

PRODUCT QA

The proponent's document 'T1 Compliance Matrix', submitted with the original application details the Quality Assurance requirements for the product's manufacture and subsequent performance.

AUSTRALIAN TECHNICAL DOCUMENTS

- Australian Standard AS 1742 (various parts) – Manual of Uniform Traffic Control Devices.
- Austroads Guide to Traffic Management series.

Original Technical Evaluation and Opinion

The original technical evaluation of the original (Canada/US) and Australian versions of the device was conducted between March 2021 and December 2023 by ARRB Group Ltd / NTRO in accordance with the TIPES Guide for Applicants and Terms and Conditions (2020 edition). The technical opinion of the TIPES Product Evaluation Panel (PEP) was that the Australian version of the Guardian Smartflagger was an effective, remotely operated traffic management device, and totally consistent with the Applicant's highly specific stated objective for the device.

The PEP reached the opinion that the Applicant had successfully demonstrated that the Australian version of the device is a practical solution which would reduce the risk to a Traffic Controller of an impact with live traffic, when compared to operating a STOP/SLOW bat. This was supported by substantiated advice provided by the Applicant that the original version of the device has been utilised successfully and safely over an extensive period (i.e. in excess of 6-7 years in Canada and USA, with over 1,000 devices by state road agencies).

The PEP satisfied itself that the fine-tuned Australian version of the device was effective, from a success trial on low volume roads in Victoria in October 2023. The device was well received by operational staff during the trial.

This led to an Interim Certificate being issued to Applicant.

Since the issue of Interim Certificate, the Applicant has satisfied the PEP through wind loading calculations that the device is able to withstand typical wind gusts (maximum 80km/h). The Applicant also provided case study data and video footage of the successful usage of the device on low speed, high volume roads in USA. Satisfaction of these two remaining issues have led to the PEP authorising the issue of a Full Certificate.

However, it is important to note that this does not obviate the need for a user to secure local approval for usage – e.g. meeting local conditions requiring the provision of a 'STOP' sign on the gate arm and/or three, as opposed to two, phase signal head.

Conditions of Certification

1. Certification is issued subject to the following conditions:
 - a) Full TIPES certificates are subject to a review every three years.
 - b) Summary record be kept by all users of each application of the Australian version of the Guardian Smartflagger within Australia. The record shall include location descriptor (name, location etc.), type of road, involvement of sub-contractors, and any incidents. In addition, records of any local reviews of the device should also be maintained and made available to the TIPES Governance Board upon request.
 - c) The Technical Opinion of the PEP is issued in respect of the [Australian version of the Guardian SmartFlagger only](#), being the local version of the Product originally submitted for evaluation under TIPES by Site2020 in March 2021. It is expressly restricted to the Australian version of the Product having the composition, features and characteristics when submitted for TIPES evaluation. This Technical Opinion is not applicable to, or valid in respect of, the original Canadian / US version of the device or any subsequent modification, variation, enhancement, or redevelopment of the Product that significantly alters its objective and/ or primary usage, and any representation that this Technical Opinion is referable to any other product is expressly forbidden.
2. This Certificate and the Technical Opinion expressed within have been issued solely in respect of the Product identified by the Applicant as the Australian version of Guardian Smartflagger, originally submitted for product evaluation under TIPES by the Applicant in March 2021.

General Conditions of Certification

1. This Certificate:

a) Relates only to the product/device that has been originally named and described and is expressly limited to the product having the composition, features and characteristics as submitted to ARRB Group Ltd (now NTRO) for TIPES evaluation .

- Is not applicable to, or valid in respect of, any subsequent significant modification, variation, enhancement or redevelopment of the product/device.
- Any representation that this certificate is referable to any other product is expressly forbidden.

b) Is valid only within Australia.

c) Must be read and applied in its entirety.

d) Is copyright to NTRO and is the sole and exclusive property of NTRO

e) Is licensed solely to the Applicant for the promotion or sale of the Product by the Applicant and use of it may not be sub-licensed by the Applicant who may not authorise its use to any other person or entity for any purpose whatsoever.

f) Is governed by the laws of the State of Victoria, Australia and the jurisdiction of the courts of that State and courts of appeal therefrom.

2. References to publications, documents, specifications, legislation, regulations, standards, and other documents in this Certificate are where relevant, references to the current versions or issues of those documents at the date of issue, revision or any subsequent renewal of this Certificate, unless otherwise stated.

3. Unless otherwise cancelled or modified by NTRO, this Certificate remains valid for a period of 3 years from issue provided that the Product and its manufacture and/or fabrication, including all related documentation and relevant parts and processes thereof:

- a) Are maintained at or above the levels which have been assessed and found to be satisfactory by NTRO.
- b) Are checked as and when NTRO considers appropriate under arrangements that it will determine.

4. This Certificate has been prepared by NTRO at the request of, and for the benefit of, the Applicant. Interested parties should obtain independent professional advice about use of the product for any specific application.

5. NTRO has no liability whatsoever for any loss or damage, whether direct or indirect, suffered by any person arising from the use of the product by that person in reliance upon the content of this Certificate.

General Conditions of Certification (Cont.)

6. NTRO provides no warranty concerning:
 - a) The existence or ownership of any patent, intellectual property or similar rights subsisting in the product.
 - b) The rights of the Applicant to manufacture, supply, install, maintain, or market the product.
 - c) Any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship, and maintenance.
 - d) Any loss or damage, including personal injury, howsoever arising in connection with the product, including its manufacture, supply, installation, use, maintenance, and removal.
7. Any information relating to the manufacture, supply, installation, use, maintenance, and removal of the Product which is contained or referred to in the Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained, and removed. Such information does not in any way restate the requirements of the Australian Work Health and Safety (WHS) Act applicable at the time of issue of this Certificate, nor is it descriptive of any legislated or common law obligation or duty in operation at the date of issue, revision or renewal of this Certificate. Conformity with such information shall not amount to satisfying any statutory or common law duties or obligations.
8. The NTRO Certification and TIPES logo(s) & symbol(s) use are governed by NTRO.