

16th May 2013

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Our Ref: 11109085-A197

Dear Mr Almanza,

RE: SLED Euro Terminal Connected to BarrierGuard

The SLED Euro Terminal connected to VarioGuard has been shown to be acceptable for use on Highways Agency road schemes (refer to letter from TRL to Traffix Devices Inc., dated 31st July 2012, reference 11109085-A153).

Subsequent to this successful series of tests, Traffix Devices Inc. proposed to connect the SLED Euro Terminal to the BarrierGuard system.

Following a full review of the test documentation relating to the SLED Euro terminal to VarioGuard testing, TRL advised Traffix Devices Inc. that only one full scale impact test (to the requirements of EN1317-1: 2010 and ENV1317-4: 2002) would be required to validate the connection to BarrierGuard.

This was due to the fact that the end terminal of the VarioGuard system did not move during the approach 1, 2 and 4 tests (note, there is no approach 3 test within ENV1317-4). This was thought likely to be the same for the terminal of the BarrierGuard system, i.e. the BarrierGuard terminal was unlikely to move (and this was subsequently proven during the one completed test).

In addition, with regard to the approach 4 test, it was felt by TRL that as the impact point was on the SLED system, the change from the VarioGuard to the BarrierGuard profile was unlikely to change the essential characteristics of the system.

As a result, it was concluded that only the approach 5 test was necessary to ascertain the effect of changing from VarioGuard to BarrierGuard.

As a result of the successful completion of this approach 5 test, the SLED Euro Terminal connected to BarrierGuard (identified by the Test Report Numbers shown in Table 1) has been shown to be acceptable for use on Highways Agency road schemes (subject to the conditions stated) by meeting the performance criteria identified within the European Standard EN1317-1: 2010 and ENV1317-4: 2002, with the following configuration:

SLED Euro Terminal connected to BarrierGuard,
TRL Test Report Number TRL080B,
Traffix Devices

TRL

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Mandatory Speed Limit not to exceed 70mph

Description: Four free-standing, moulded plastic terminal modules, each 2.06 x 1.09 x 0.57m, were interconnected with 3 no. 1.08m 'T' pins. Longitudinal wire ropes were fitted internally within each module and anchored at each end. At the approach end of the terminal a steel nose assembly was fitted. Units no. 3 and 4 were each fitted with an anti-rotation frame and two re-direction panels. All units, with the exception of the approach unit, were filled with water (832 litres/ total unit weight 907kg nom.). The departure end was connected to a standard BarrierGuard barrier, using a transition unit. The transition unit was formed from a BarrierGuard end anchor unit, 2no. transition panels and a transition frame. The BarrierGuard barrier consisted of 5 no. 12m long sections, and the total length of the BarrierGuard barrier (including the end terminal) was 68.7mm.

Foundation conditions: The SLED system and the start of the BarrierGuard system (including the first pair of anchor pins) were installed on a concrete surface. The remainder of the BarrierGuard system was install on an asphalt running surface 50-80 mm thick on a concrete sub base 150-250 mm thick.

| Performance Class | Test Report No | Test House | Date | Test Type | Lateral Displacement Class | Exit Box Class | Severity Index Class (CFC180) |
|-------------------|------------------------|------------|------------------|-----------|----------------------------|----------------|-------------------------------|
| P4 | TRL015 (VarioGuard) | TRL, UK | 9 March 2012 | TT1.3.110 | D2,2 | Z1 | B |
| | TRL050 (VarioGuard) | TRL, UK | 12 April 2012 | TT4.3.110 | D1,1 | Z1 | B |
| | TRL061 (VarioGuard) | TRL, UK | 18 May 2012 | TT2.1.100 | D1,4 | Z2 | B |
| | TRL080B (BarrierGuard) | TRL, UK | 11 December 2012 | TT5.1.100 | D1,1 | Z1 | B |

Table 1

Performance Class: P4
Lateral Displacement Class: D2,4
Exit Box Class: Z2
Impact Severity Class: B

Use on other UK highways will be at the discretion of the relevant highway authority.

Traffix Devices Inc. will also be required to comply with the requirements of the Specification for Highway Works, in particular the quality assurance requirements given in Clause 104 and Annex A. To assist you in this, I am enclosing the form 'Submission for Compliance with EN 1317'. I am aware that some of the information may have already been provided, but the form has been enclosed to assist in the presentation of material that will allow the 'SLED Euro Terminal connected to BarrierGuard' to be listed in the List of Accepted and Registered Products when it is next revised. In particular, numbered drawings will be required which uniquely identify the 'SLED Euro Terminal connected to BarrierGuard'.

Traffix Devices Inc. will be responsible for defining any features of the highway, which would limit the use and operation of the 'The SLED Euro Terminal connected to BarrierGuard' such as supporting surface, foundation requirements, end anchorages, horizontal and vertical alignment etc. You will also be responsible for defining any environmental or material features that would restrict the use of your system.

The 'SLED Euro Terminal connected to BarrierGuard' will be included in the Highways Agency's List of Accepted and Registered Products. This can be obtained at the following Internet address: www.highways.gov.uk/business/8720.aspx

Where it is necessary to join the 'SLED Euro Terminal' to any road restraint system other than BarrierGuard, Traffix Devices Inc. will be responsible for demonstrating the performance of any transition and/or end termination to current Standards.

Traffix Devices Inc. shall remain responsible for the accuracy and content of all Drawings associated with the product.

The acceptance of the use of this system is based on the information that you have supplied. This acceptance does not indemnify you against any claims in law. The Highways Agency and/or TRL reserve the right to withdraw its acceptance if there is evidence that the system performs in a different way from that shown in the Initial Type Test or if it is necessary to do so for any other reason.

In the longer term, the harmonisation of EN1317 will introduce a system of third party product certification. The Highways Agency and TRL can give no guarantee that this current acceptance will be satisfactory to other Notified Body(s) undertaking this responsibility.

Yours sincerely,



Gavin Williams
Head of TRL's Vehicle Restraint Systems Team
Email: gwilliams@trl.co.uk

cc: Mr Daniel Ruth, Highways Agency

CEN COMPLIANCE ¹

Initial submission documents to be supplied for consideration of initial type test.

1. Test report in accordance with EN1317 Part1 Section 9.
 2. Video/high speed film of test annotated showing date, test number and performance class.
 3. Still photographs of complete installation including anchorage points.
 4. Still photographs of vehicle before and after impact.
 5. Full drawings of tested item.
 6. Certification from the manufacturer that the item tested complies with drawings supplied.
 7. Certificate from test house.
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Additional information, which will be required on acceptance of initial type test prior to installation.

8. Installation drawings.
9. Manufacturer's specification.
10. Manufacturer's installation instructions including foundation requirements and test methods to verify their performance.
11. Manufacturer's repair and maintenance manual.
12. Certificate of compliance with the quality management scheme for Manufacture of fencing components.²
13. Compliance with the Sector Scheme for the Supply, Erection and Repair of Vehicle Restraint Systems.²
14. Certificate of compliance for the Fabrication and installation of Bridge Parapets and Cradle Anchorages.³
15. Nominal loads (direct forces, moments and co-existent shears) to be transferred from the parapet to the structure or foundation.^{2&3}

Notes

1. *All documents, which are not in English, will have to be translated. If they are in a language other than French or German the promoter will be required to supply a full translation.*
2. *Items 12, 13 and 14 are required for safety barriers and Barriers.*
3. ***Items 14 & 15 are required for parapets or for systems to be placed on bridge decks or structures.***