

Our ref: HA 123/32/12
Your ref:

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29 September 2005

For the attention of Mr Darren Copeland

Dear Mr Copeland

VGSN 1000 – 3-Rail Steel Parapet

The VGSN 1000 3-RAIL N2 Steel Parapet system identified by MIRA, UK Test Report Numbers 05-1010209 (D0119) dated 12 August 2005 and 05-1010208 (D0118) dated 11 August 2005, for the TB32 and the TB11 tests respectively, have shown that the VGSN 1000 3-RAIL N2 Steel Parapet is acceptable for use on the Highways Agency road schemes where the mandatory speed limit is 70mph or less and has met the following performance criteria with the stated configuration:

Performance Class N2

Working width class W1 (Actual Normalised $WW_N = 0.5m$).

Severity index level Class B (CFC 180).

Height of parapet = 1.0m to top of top beam (See Note 1 & 2)

Length of the system tested = 30.0m. (See Note 3)

Post spacing = 3.66m

Un-factored ultimate loads for a post at failure (See Note 4) : Bending Moment $M_{ult} = 26.3 \text{ kNm}$
Co-existent Shear $V_{ult} = 50.1 \text{ kN}$

Notes.

- Actual parapet tested was 1.0m high when mounted on 450mm wide by 50mm high plinth. The Highways Agency specification requires a parapet to be mounted on a plinth between 50 to 100mm high.
- The Highways Agency design standard for vehicle parapets requires the following minimum heights measured from the adjoining paved surface to be used:

1000 mm -	for vehicle parapets except as below
	for all bridges over railways
1250 mm -	for bridges carrying motorways, or roads to motorway standards, from which pedestrians, animals, cycles and vehicles drawn by animals are excluded by order
or	
1500 mm -	for all other bridges
1400 mm -	for cycleways immediately adjacent to the vehicle parapet
1500 mm -	for accommodation bridges
1500 mm -	for very high containment level applications
1800 mm -	for bridleways immediately adjacent to the vehicle parapets

In addition mesh or solid infill on the face of the parapet will be required in some circumstances.

3. Where shorter lengths are used, or if the end conditions are changed, it will be necessary for VARLEY & GULLIVER Limited to specify how this will affect the performance of the parapet.
4. Un-factored nominal loads to be used in the design of the bridge deck; see BD 37/01 clause 6.7

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

You will also be required to comply with the requirements of the Specification for Highway Works, in particular the quality assurance requirements given in Cause 104 and Appendix 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 has already been provided, but the form has been enclosed to assist in the presentation of material that will allow 'VGSN 1000 3-RAIL N2 Steel Parapet' to be listed in the List of Accepted and Registered Products when it is revised. In particular a list of numbered drawings, which you wish to specify to describe the product in contract documents will be required which uniquely identify 'VGSN 1000 3-RAIL N2 Steel Parapet'.

VARLEY & GULLIVER Limited will be responsible for defining any features of the highway, which would limit the use and operation of 'VGSN 1000 3-RAIL N2 Steel Parapet' such as supporting surface, foundation requirements, horizontal and vertical alignment, environmental conditions, suitability for use in low temperature conditions, etc.

The use of the 'VGSN 1000 3-RAIL N2 Steel Parapet' will require a Departure from Standard for use on the trunk road network until it is included in the List of Accepted and Registered Products which can be obtained on request by writing to the following e-mail address: RoadRestraintSystems@highways.gsi.gov.uk.

Where it is necessary to join 'VGSN 1000 3-RAIL N2 Steel Parapet' to another parapet or barrier VARLEY & GULLIVER Limited will be responsible for demonstrating the performance of any transition and end termination to meet the Highways Agency's requirements.

The drawings provided have not been examined by the Highways Agency. VARLEY & GULLIVER Limited shall remain responsible for their accuracy and content.

The acceptance of the use of this system on the Highways Agency's road network is based on the information that you have supplied. The Highways Agency's acceptance does not indemnify you against any claims in law. The Highways Agency reserves the right to withdraw its approval if there is evidence that the system performs in a different way from that shown in the Initial Type Test or is required to do so for any other reason.

In the longer term, completion of EN1317 will introduce a system of third party product certification and I can provide give no guarantee that the current Highways Agency acceptance will be satisfactory to the Notified Body undertaking this responsibility.

Yours sincerely



Alan J Smith

Risk Management & Vehicle Restraints Team
Safety, Management & Strategy Group
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