

HighwayGuard Safety Barrier - Temporary

Product summary

Status	Accepted
Category	Temporary – Steel Longitudinal Barriers
Test Level	Test Level 3 (MASH): 100 km/h Test Level 4 (MASH): 100 km/h
Supplier	Highway Care International
Description	Temporary barrier made up of steel barrier segments joined using the HighwayGuard unique connectors



Introduction and purpose

This detail sheet supplements *VicRoads' Road Design Note 06-04 - Accepted Safety Barrier Products*. Please refer to RDN 06-04 for the current VicRoads acceptance status, information on the product assessment process and general acceptance conditions.

The technical details within this document have been extracted from information submitted to VicRoads by the Supplier and the recommended 'Conditions for Use' from the Austroads Safety Barrier Assessment Panel (ASBAP).

VicRoads requirements take precedence over the product manual and Austroads conditions. Where a departure from these requirements is required, users should understand the risks and document their engineering decisions.

For more detailed product information, refer to the individual product manual or contact the System Supplier.

Technical information

The HighwayGuard Safety Barrier should be designed, installed and maintained in accordance with the following VicRoads conditions for use.

These conditions for use have been based on an Austroads assessment of technical performance against AS/NZS 3845 and contain VicRoads specific requirements when necessary.

Summary Conditions for Use

Accepted configuration	HighwayGuard Safety Barrier - Temporary
Variants	HighwayGuard Standard - 58m pin spacing HighwayGuard LDS - 12m pin spacing
Deflection	1.93m
Product manual reviewed	Revision 1.0 – 12/19
ASBAP issue	HighwayGuard Standard - 16 December 2019 HighwayGuard LDS – 9 March 2020

Refer *VicRoads conditions for use (below)*.

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VicRoads Conditions for Use

Tested design requirements

System Type	Containment level	Vehicle mass (kg)	Point of Redirection (m)*		Tested article length (m)	Anchor/ Pin Spacing (m)*	Dynamic deflection (m)	Working width (m)	Notes
			Leading	Trailing					
Standard	MASH TL-3	2270	Interface between barrier and end terminal		120	58	1.93	2.47 ¹	1. Working width is the dynamic deflection plus system width. 2. Working width is the dynamic deflection plus vehicle roll allowance.
	MASH TL-4	10000	30	30	120	58	2.16	3.51 ²	
LDS	MASH TL-3	2270	Interface between barrier and end terminal		60	12	0.68	1.22 ¹	

Approved Terminals and Connections

<i>Crash Cushions or Terminals must be fitted to both ends of a barrier</i>	
Public Domain Products	
W-Beam Guardrail	Not permitted
Thrie-Beam Guardrail	Not permitted
Concrete Barrier	Not permitted
Proprietary Products	
BG800 Steel Safety	<u>HighwayGuard LDS:</u> <ul style="list-style-type: none"> See BG800 acceptance documents for conditions of use. The HighwayGuard BG800 transition must be used to connect the barriers
QUADGUARD Steel Rail Crash Cushion	<ul style="list-style-type: none"> See QuadGuard CZ Crash Cushion Technical Conditions for Use. The HighwayGuard to Quadguard Crash Cushion transition must be used to connect the terminal to the barrier. Not permitted as a terminal on a flare.
UNIVERSAL TAU-II Crash Cushion	<ul style="list-style-type: none"> See Universal Tau-II Crash Cushion Technical Conditions for Use. The HighwayGuard to Universal TAU-II transition must be used to connect the terminal to the barrier. Not permitted as a terminal on a flare.

Design Guidance

Minimum installation length	HighwayGuard Standard - 120 metres between crash cushions/terminals (tested article) HighwayGuard LDS – 60 metres between crash cushions/terminals (tested article)
System width	0.54 metres – Standard
Installation	This product must be installed and maintained in accordance with the Product Manual and Road Agency specifications. Road Agency specifications and standards shall have precedence.
Minimum distance to excavation	Recorded dynamic deflection
Slope limit	Side slope limit: 12 Horizontal to 1 Vertical (8%). Side slopes must be considered to minimise manual handling risks and site conditions.
Systems conditions	<ol style="list-style-type: none"> Installation without an end treatment listed above is NOT permitted. Installation on top of a kerb is not recommended. Flaring across the clear zone without a terminal listed above is NOT permitted.
Gore area use	Permitted
Pedestrian area use	Permitted – consider potential for snagging and deflection.

Cycleway use	Permitted – consider potential for snagging and deflection.
Frequent impact likely	Permitted
Remote location	Permitted
Median use	Permitted

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	Use	Accepted Speed (max)	Post/pin spacing (m)	Post/pin type	Pavement construction
Concrete (Standard Barrier System)	Not Permitted				
Concrete (LDS Barrier System)	Permitted	100 km/h	12	M24 x 330mm threaded rod with resin	Min 200mm reinforced Min 250mm non-reinforced
Deep lift asphaltic concrete (Standard Barrier System)	Not Permitted				
Deep lift asphaltic concrete (LDS Barrier System)	Permitted	100 km/h	12	M24 x 330mm threaded rod with resin	Min 250mm
Asphaltic concrete over granular pavement (Standard Barrier System)	Permitted	100 km/h	58	M30 x 365mm drop in pin, flat top pin	150mm asphalt concrete over granular subbase
Asphaltic concrete over granular pavement (LDS Barrier System)	Permitted	100 km/h	12	M24 x 330mm threaded rod with resin	150mm asphalt concrete over granular subbase
Flush seal over granular pavement	Not Permitted				
Unsealed compacted formation					

Note: Installation in pavement conditions not listed above have not been justified to the Panel's satisfaction.

Other considerations and comments

Attachment and Screens

Refer to Road Design Note 06-12 'Worksite Safety Barrier Screen'

Damaged Components

Damaged components must be replaced. Repaired components must not be used.

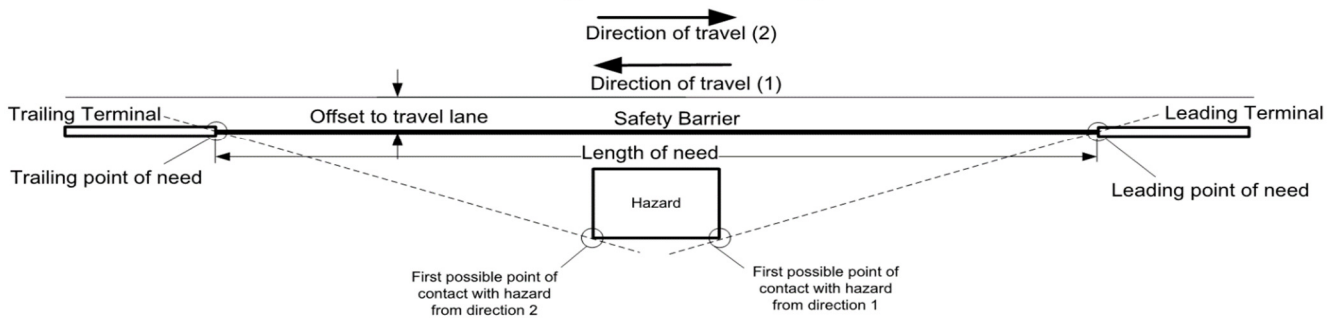
References

- Austroads Guide to Road Design – Part 6.
- VicRoads Supplement to Austroads Guide to Road Design – Part 6.
- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products.
- Product Installation Manual and Product Operational Manual refer licensed product supplier website.

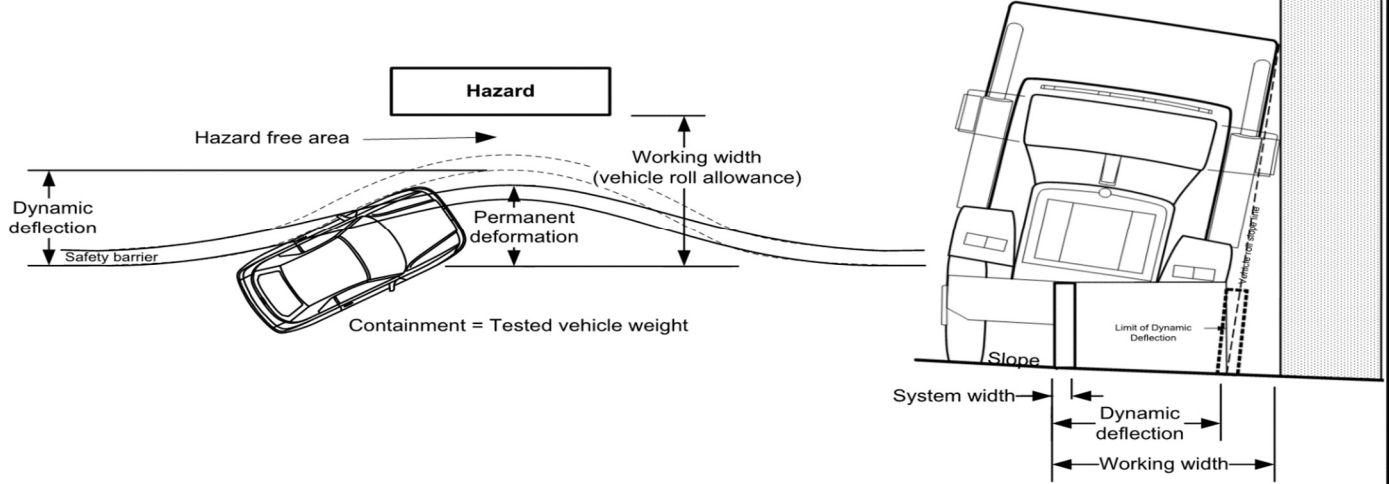
Detail Sheet – Update Summary

Issue	Approved	Amendment
Oct 2019	M-SSE	First edition
April 2020	M-SSE	HighwayGuard 'Standard' variant accepted for use. 'LDS' removed from document title to capture the HighwayGuard family of products.

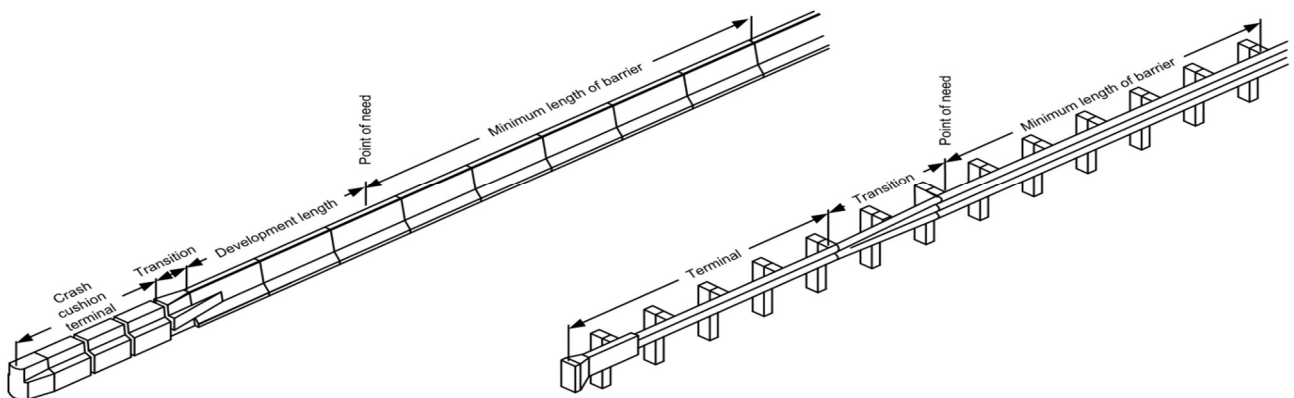
Design Terminology



Deflection Terminology



Terminal Terminology



Flare Terminology

