

# EZY-GUARD High Containment Barrier - Permanent

## Product summary

<b>Status</b>	Accepted
<b>Category</b>	Permanent – Semi Rigid Longitudinal Barriers
<b>Test Level</b>	MASH TL4: <b>100km/h</b> MASH TL3: <b>100km/h</b> (refer to design requirements)
<b>Supplier</b>	Ingal Civil Products
<b>Description</b>	Ezy Guard High Containment Barrier is a permanent longitudinal barrier.

## Introduction and purpose

This detail sheet is intended to supplement *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 Ezy Guard High Containment (HC) 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.



Typical installation arrangement shown above.

## Summary Conditions for Use

<b>Accepted configuration</b>	Ezy Guard High Containment Barrier – Permanent
<b>Variants</b>	Standard Installation Back to Back Installation Base plate installation Single post omissions
<b>Deflection</b>	1.77m metres
<b>Product manual reviewed</b>	March 2017 Release
<b>ASBAP issue</b>	5 December 2018

Refer *VicRoads conditions for use (below)*.

## VicRoads Conditions for Use

### Tested design requirements

Containment level	Speed (km/h)	Vehicle mass (kg)	Point of Redirection (m)*		Minimum length of barrier (m)	Post/Pin Spacing (m)	Dynamic deflection (m)	Working width (m)	Notes
			Leading	Trailing					
MASH TL-4	90	10,000	43.8	43.8	55.8	2.0 (max)	1.77	2.46	Performance values imposed on all variant(s)
MASH TL-3	100	2270			55.8	2.0 (max)	1.16	1.16	

### Approved Terminals and Connections

<i>Crash Cushions or Terminals must be fitted to both ends of a barrier</i>	
<b>Public Domain Products</b>	
W-Beam Guardrail	Permitted
Thrie-Beam Guardrail	Not permitted
<b>Proprietary Products</b>	
ET 2000 Plus Terminal	Refer to ET 2000 Plus Terminal Detail Sheet conditions of approved use
Trend 350 Steel Rail Terminal	Refer to Trend 350 Terminal Detail Sheet conditions of approved use

### Design Guidance

System width (m)	0.24
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	The minimum distance between the edge of the barrier and the edge of an excavation must be the greater of: <ul style="list-style-type: none"> <li>The dynamic deflection</li> <li>1.5 times the embedment depth of the post</li> <li>The minimum distance between the back of post and the edge of an excavation (see AustRoads Guide to Road Design Part 6: Roadside Design, Safety and Barriers, Appendix H3.1, Figure H2).</li> </ul>
Slope limit	1. Side slope limit: 10 Horizontal to 1 Vertical (10%) 2. Side slopes must be considered to minimise manual handling risks and site conditions.
Systems conditions	1. Anchor spacing greater than 2 metres is not permitted 2. Flaring across the clear zone without a terminal listed above is not permitted. 3. Installation on top of a kerb is not recommended, however if installed on top of a kerb, all system components must be free to operate. 4. Permanent Installations may be used in 110km/h speed zones
Minimum installation distance from batter hinge point of the slope (m)	0.5 - The proposed distance supersedes the one stated within the product & installation manual.
Gore area use	Refer to appropriate approved terminal conditions
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)	Pavement construction	Post/pin type
Concrete	Permitted	100 km/h	2.0m	Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product	Refer to the Product Manual
Deep lift asphaltic concrete	Permitted	100 km/h			
Asphaltic concrete over granular pavement	Permitted	100 km/h			
Flush seal over granular pavement	Permitted	100 km/h			
Unsealed compacted formation	Permitted	100 km/h			
Natural surface	Permitted	100 km/h			

## Other considerations and comments

### Design & Installation

Ezy Guard High Containment Barrier system has no relation and is not the equivalent of the High Containment performance level stated in AS5100, VicRoads Bridge Traffic Barrier Performance Levels and Design Loads, and VicRoads Guidelines for Bridge Approach and Departure Barrier.

Must conform to the requirement listed in references below, including full compliance of Specification 708.

### Damaged Components

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

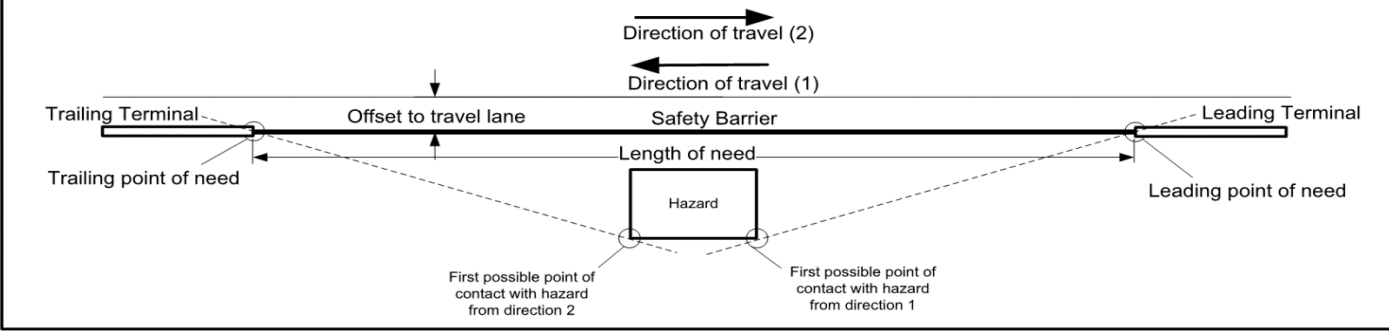
## References

- Austroads Guide to Road Design – Part 6.
- Product Installation Manual and Product Operational Manual refer licensed product supplier website.
- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products.
- VicRoads Road Design Note 06-08 The Use of Guard Fence.
- VicRoads Standard Drawing SD2001 – Kerb types
- VicRoads Standard Drawing SD3573 – Guidance on the verge and permissible slopes
- VicRoads Standard Section 204 – Earthworks
- VicRoads Standard Section 708 – Steel Beam Guard Fence
- VicRoads Supplement to Austroads Guide to Road Design – Part 6.

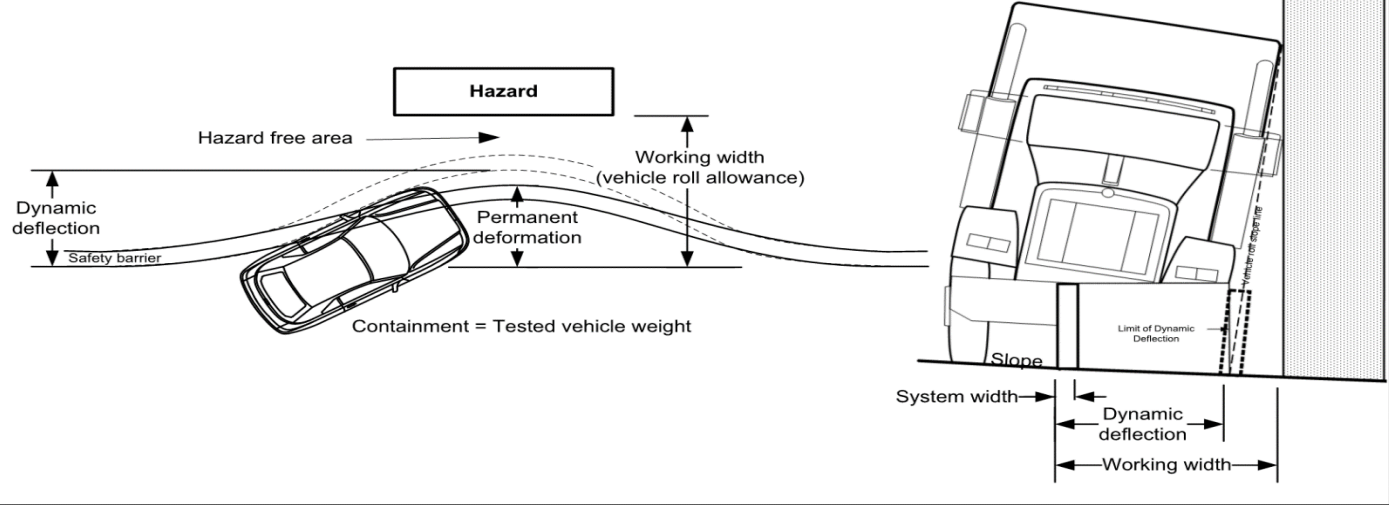
## Detail Sheet – Update Summary

Issue	Approved	Amendment
Aug 2017	M-SSD	First Edition
Jan 2019	M-SSE	Post Variants Inclusion & Omission MASH Update

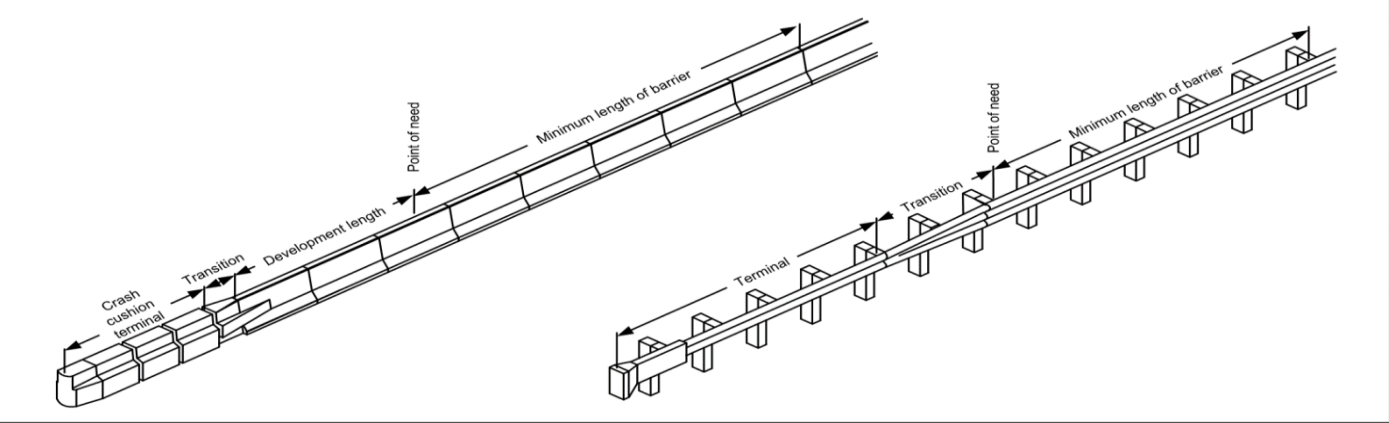
### Design Terminology



### Deflection Terminology



### Terminal Terminology



### Flare Terminology

