

# Defender Barrier 100 Steel Safety Barrier – Temporary

## Product summary

<b>Status</b>	Accepted
<b>Category</b>	Temporary – Steel longitudinal barrier
<b>Test Level</b>	MASH TL4: 100km/h (refer design requirements)
<b>Supplier</b>	Safe Barriers Pty Ltd
<b>Description</b>	Defender Barrier 100 is a temporary pinned steel 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 Defender Barrier 100 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.



Defender Barrier 100

## Summary Conditions for Use

<b>Accepted configuration</b>	Defender Barrier 100 HC Steel Safety Barrier - Temporary
<b>Variants</b>	Defender Barrier 100 LDS Steel Safety Barrier – Temporary (pinned at 9.15m spacing) Defender Barrier 100 FS Steel Safety Barrier - Temporary (Free Standing)
<b>Deflection</b>	2.47m (MASH TL-4) 2.3m (MASH TL-3)
<b>Product manual reviewed</b>	D100HC-M-1804 – April 2018 D100LDS-M-1804 – April 2018 D100FS-M-1804 - September 2018
<b>ASBAP issue</b>	HC & LDS Variant - 5 June 2018 FS Variant – 29 October 2018

Refer *VicRoads conditions for use (below)*.

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## VicRoads Conditions for Use

### Tested design requirements

System Type	Containment level	Tested Speed (km/h)	Vehicle mass (kg)	Point of Redirection (m)*		Minimum length of barrier (m)	Anchor/Pin Spacing (m)*	Dynamic deflection (m)	Working width (m)	Notes
				Leading	Trailing					
HC	MASH TL-4	90	10,000	7.8	7.8	97.5	48.14	2.47	3.31	1. Working width is the dynamic deflection plus system width
	MASH TL-3	100	2270	0	0	97.5	48.14	2.3	2.98 <sup>1</sup>	
LDS <sup>2</sup>	MASH TL-3	100	2270	0	0	78	9.15	0.88	1.56 <sup>1</sup>	2. Low Deflection System
FS <sup>3</sup>	MASH TL-3	100	2270	66.3	66.3	156	N/A	1.9	2.58 <sup>1</sup>	3 Free Standing System

### 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	Not permitted
Thrie-Beam Guardrail	Not permitted
Concrete Safety Barrier	Not permitted
<b>Proprietary Products</b>	
UNIVERSAL TAU-II Steel Rail Crash Cushion	<ul style="list-style-type: none"> <li>Refer to UNIVERSAL TAU-II Steel Rail Crash Cushion acceptance document for conditions of use.</li> <li>The TAU-II to Defender Barrier 100 HC (or LDS) transition must be used to connect the terminal to the barrier.</li> <li>Not permitted as a terminal on a flare.</li> <li>Transition must be pinned in accordance with the installation manual.</li> </ul>

### Design Guidance

System width (m)	0.68
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	Minimum distance between the edge of the barrier and the edge of an excavation to be the dynamic deflection of the system variant used.
Slope limit	Side slope limit: 10 Horizontal to 1 Vertical (10%).
Systems conditions	<ol style="list-style-type: none"> <li>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.</li> <li>Flaring across the clear zone without a terminal listed below is NOT permitted.</li> <li>Each Defender 100 FS barrier unit requires the installation of three (3) Ballast Boxes which are filled with concrete. Ballast Box washers shall be clearly identifiable for ease of inspection.</li> </ol>
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 – consider impact frequency of terminal
Remote location	Permitted
Median use	Permitted

## Foundation pavement conditions

Submitted Foundation Pavement Conditions						
Pavement	Use	System Type	Accepted Speed (max)	Post/pin spacing (m)	Pavement construction	Post/pin type
Concrete	Permitted	FS	100 km/h	N/A	Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product	N/A
Deep lift asphaltic concrete	Permitted	FS	100 km/h	N/A		N/A
Asphaltic concrete over granular pavement	Permitted	HC	100 km/h	48.14	150mm AC	30mm diameter x 500mm length steel ground anchor (no chemical)
		LDS		9.15	150mm compacted sub base	
		FS		N/A	Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product	N/A
Flush seal over granular pavement	Permitted	FS	100 km/h	N/A	Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product	N/A
Unsealed compacted formation	Not Permitted					
Natural surface	Not Permitted					

*Note: Installation in pavement conditions not listed above have not been justified to the ASBAP's or VicRoads' satisfaction; hence must be considered in the Extended Design Domain.*

## Other considerations and comments

### Attachment and Screens

VicRoads does not maintain a list of accepted worksite safety barrier screens. Screens should only be adopted after due consideration of [Road Design Note 06-12](#).

### Damaged Components

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

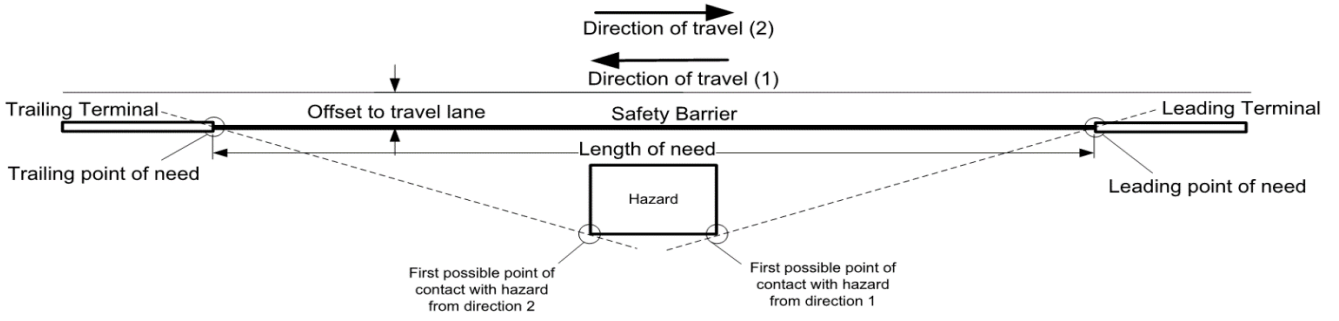
## References

- 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 Supplement to Austroads Guide to Road Design – Part 6.

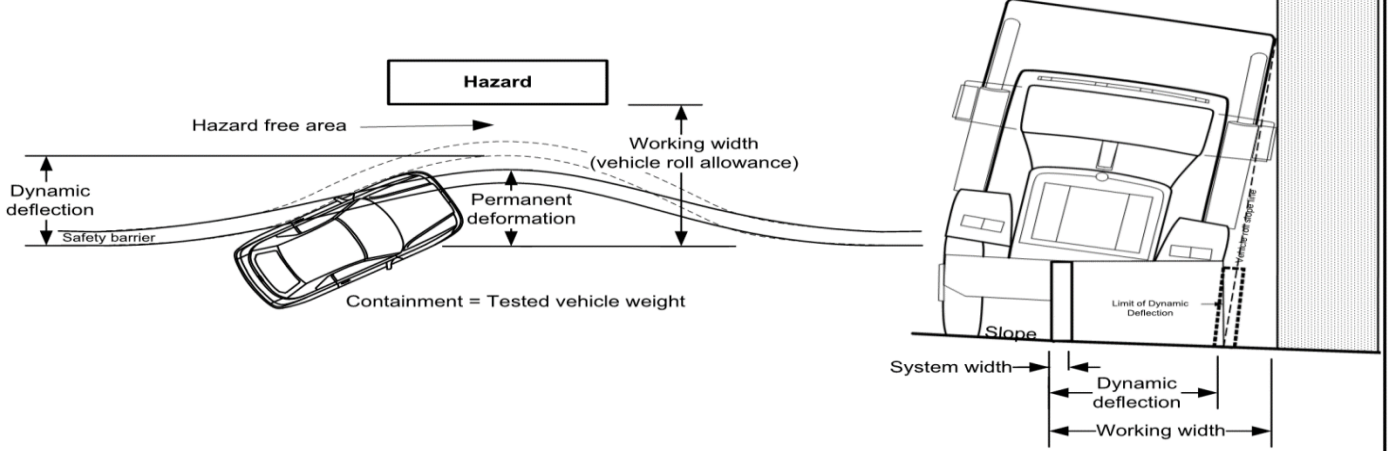
## Detail Sheet – Update Summary

Issue	Approved	Amendment
July 2018	M-SSD	First edition
Jan 2019	M-SSE	Acceptance of FS Variant

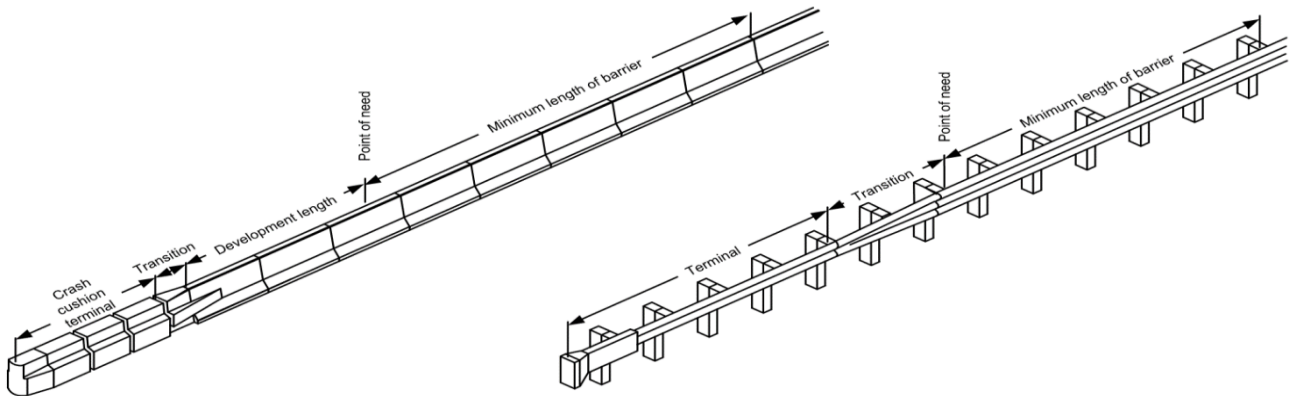
### Design Terminology



### Deflection Terminology



### Terminal Terminology



### Flare Terminology

