Detail Sheet

SENTRY W-Beam Steel Safety Barrier - Permanent

Product summary

Status	Accepted
Category	Permanent – Flexible Longitudinal Barriers
Test Level	MASH TL3: **100km/h**
Supplier	Australian Construction Products Pty Ltd
Description	Sentry W-Beam Steel Safety 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 Sentry W-Beam Steel 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	Sentry W-Beam Steel Safety Barrier – Permanent
Variants	Sentry Median Barrier (Back to Back Steel Longitudinal Barrier System)
Deflection	1.59m metres
Product manual reviewed	ACP Sentry Barrier W Beam System, Longitudinal Barrier - Product & Installation Manual April 2017 ACP Sentry Median Barrier, Longitudinal Median Barrier - Product & Installation Manual Version 1.3, April 2018
ASBAP issue	30 May 2017 for Sentry Barrier W Beam System Longitudinal Barrier 23 February 2018 for Sentry Median Barrier

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)	Anchor/Pin Spacing (m)*	Dynamic deflection (m)	Working width (m)	Notes
			Leading	Trailing					
MASH TL-3	100	2270	N/A		30	N/A	1.59	1.59	Dynamic Deflection imposed on all variant(s)

Approved Terminals and Connections

Crash Cushions or Terminals must be fitted to both ends of a barrier	
Public Domain Products	
W-Beam Guardrail	Permitted only for transitioning to concrete in accordance with SD 4081.
Thrie-Beam Guardrail	Not permitted
Proprietary Products	
X-Tension 350 Terminal	Refer to X-Tension 350 Terminal conditions of approved use

Design Guidance

System width (m)	0.201 for Sentry W-Beam Steel Safety Barrier 0.283 for Sentry Median Barrier (Back to Back Variant)
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	1.59 metres minimum distance between the edge of the barrier and the edge of an excavation.
Slope limit	Side slope limit: 6 Horizontal to 1 Vertical (16.7%).
Systems conditions	1. Flaring across the clear zone without a terminal listed below is not permitted. 2. 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. 3. To be installed in soil that meets or exceeds AASHTO Grade B standard.
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	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 (Sentry Median Barrier)

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	**Use**	**Accepted Speed (max)**	**Post/pin spacing (m)**	**Pavement construction**	**Post/pin type**
Concrete	Not Permitted	N/A	N/A	N/A	N/A
Deep lift asphaltic 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
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

High Pedestrian Areas

VicRoads note ejection of debris from the system of approximately 6 metres when impacted at 100km/h. Designers should consider this when locating high pedestrian areas adjacent to the rear of the barrier

Installation

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.

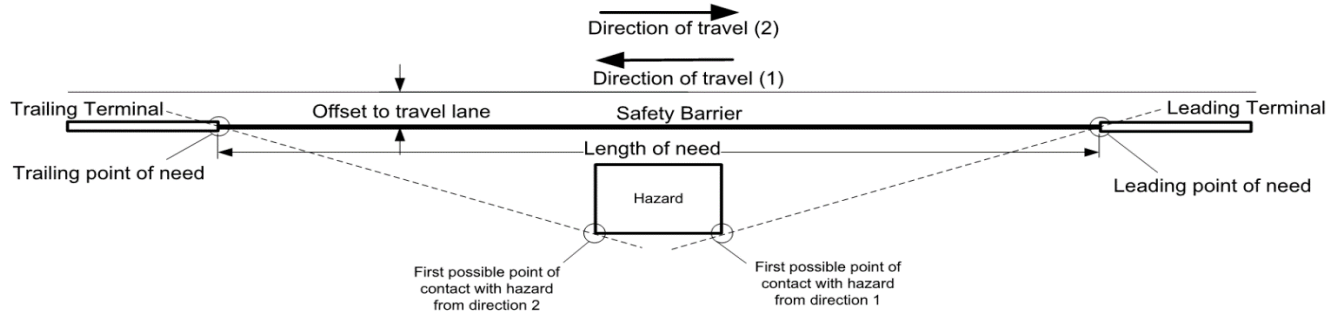
References

- 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.

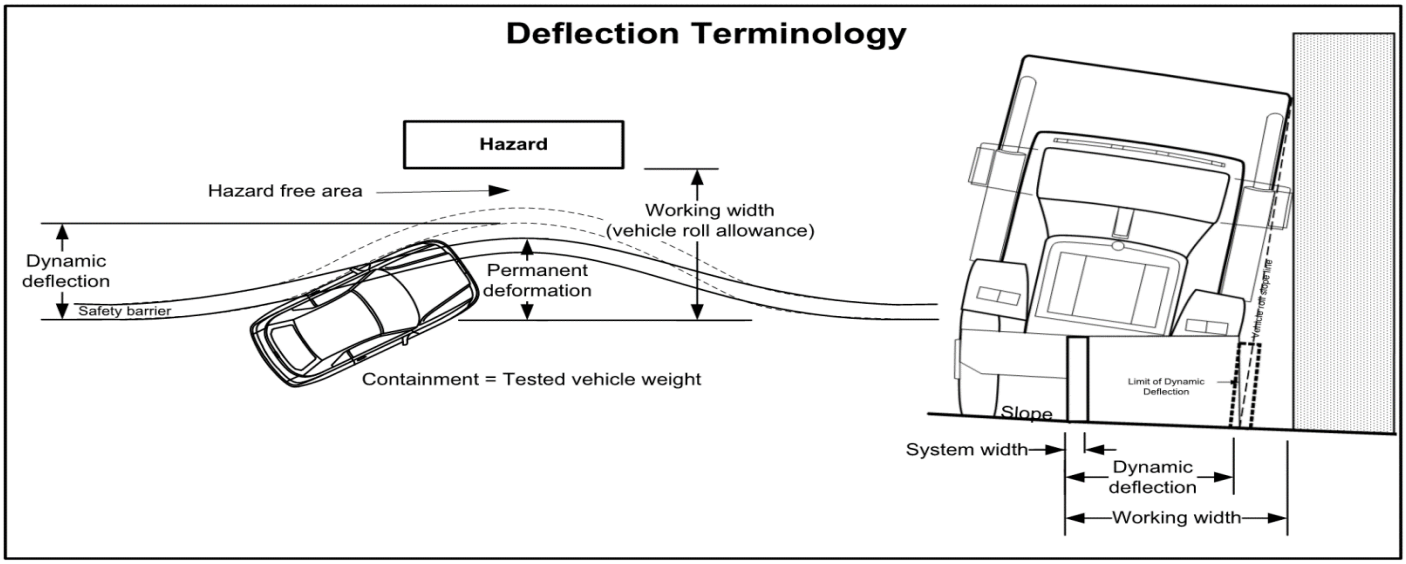
Detail Sheet – Update Summary

Issue	Approved	Amendment
July 2017	M-SSD	First edition
May 2018	M-SSD	Product variant inclusion
Jan 2019	M-SSE	Conditional acceptance of transition to Type B (W-Beam)

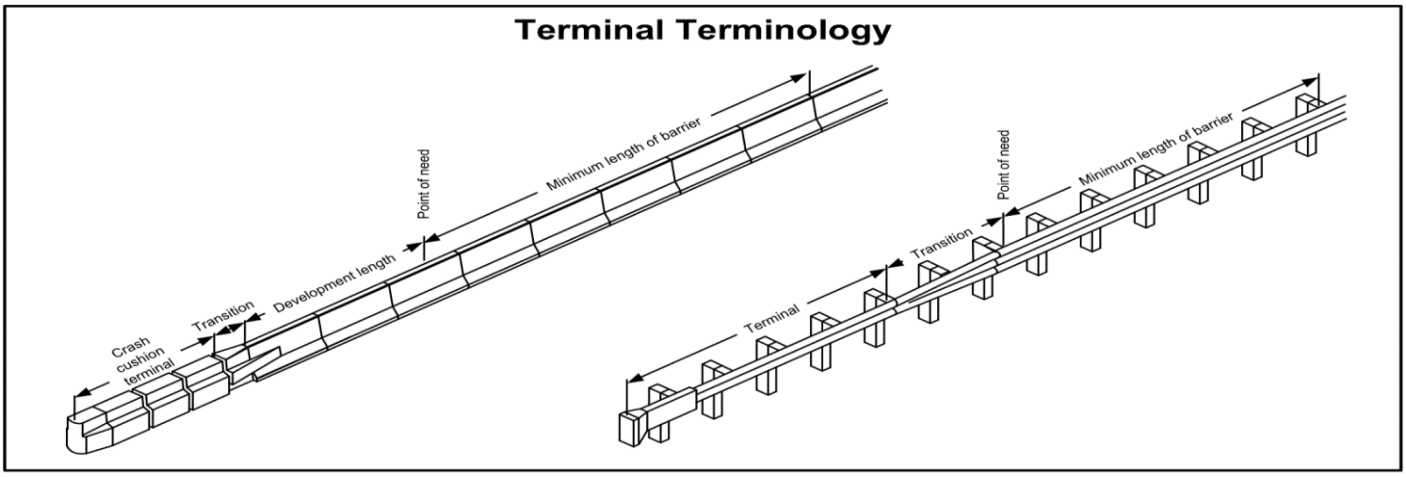
Design Terminology



Deflection Terminology



Terminal Terminology



Flare Terminology