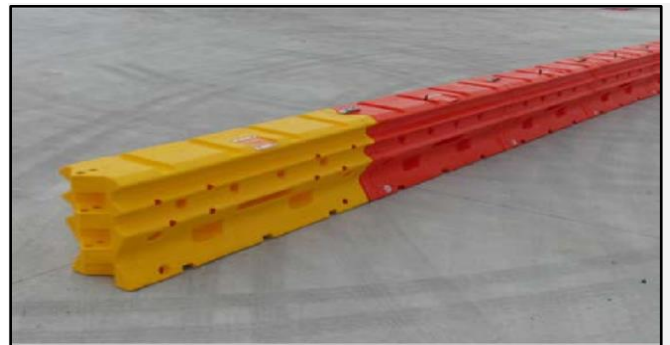


ARMORZONE Plastic Water Filled System – Temporary

Product summary

Status	Accepted
Category	Temporary – Water Filled Longitudinal Barriers
Test Level	Test Level 1 (NCHRP 350): 50km/h May be considered for operating speeds up to 70km/h (TL-2) with Manager SSE prior approval.
Supplier	Ingal Civil Products
Description	Temporary barrier made up of 2 metre long plastic units joined using the ARMORZONE twin pin and filled with 520 litres of water.



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.

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 ARMORZONE Plastic Water Filled System Barrier should be designed, installed and maintained in accordance with the following VicRoads conditions for use.

Summary Conditions for Use

Accepted configuration	ARMORZONE Plastic Water Filled System Barrier – Temporary <ul style="list-style-type: none"> • Orange barrier units • Yellow terminal end units
Variants	Nil
Deflection	1.5m metres
Product manual reviewed	Released October 2018
ASBAP issue	30 October 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)	Anchor/Pin Spacing (m)*	Dynamic deflection (m)	Working width (m)	Notes
			Leading	Trailing					
NCHRP 350 TL-2	70	2000	16	27	78	N/A	1.5	1.5	Minimum length includes two development lengths

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
Type F Concrete Safety Barrier	Not permitted
Proprietary Products	
Armorzone Plastic Water Filled Terminal System – Temporary	<ul style="list-style-type: none"> Terminal end unit (yellow in colour) must be empty. Permitted as a terminal on a flare

Design Guidance

System width (m)	0.45
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	1.50 metres minimum distance between the edge of the barrier and the edge of an excavation.
Slope limit	Side slope limit: 10 Horizontal to 1 Vertical (10%). Side slopes must be considered to minimise manual handling risks and site conditions.
Systems conditions	<ol style="list-style-type: none"> Flaring across the clear zone without a terminal listed below is not permitted. 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.
Gore area use	Permitted – consider speed and deflection limitations
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 – consider speed and deflection limitations

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	Use	Accepted Speed (max)	Post/pin spacing (m)	Pavement construction	Post/pin type
Concrete	Permitted	70km/h	Refer to the Product Manual	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				
Asphaltic concrete over granular pavement	Permitted				
Flush seal over granular pavement	Permitted				
Unsealed compacted formation	Permitted				
Natural surface	Permitted				

Other considerations and comments

Damaged Components

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

Approval for use at 70km/h

Armorzone may be considered for operating speeds up to 70km/h (TL-2) with Manager Safe System Engineering prior approval. All submissions must be emailed to the M-SSE and must demonstrate the following at a minimum:

1. Consideration of alternate safety barrier options,
2. Compliance with this detail sheet (e.g. length, deflection, terminals, maintenance),
3. Controls to guarantee the product is installed, inspected and maintained in accordance with the requirements of the licensed product supplier.

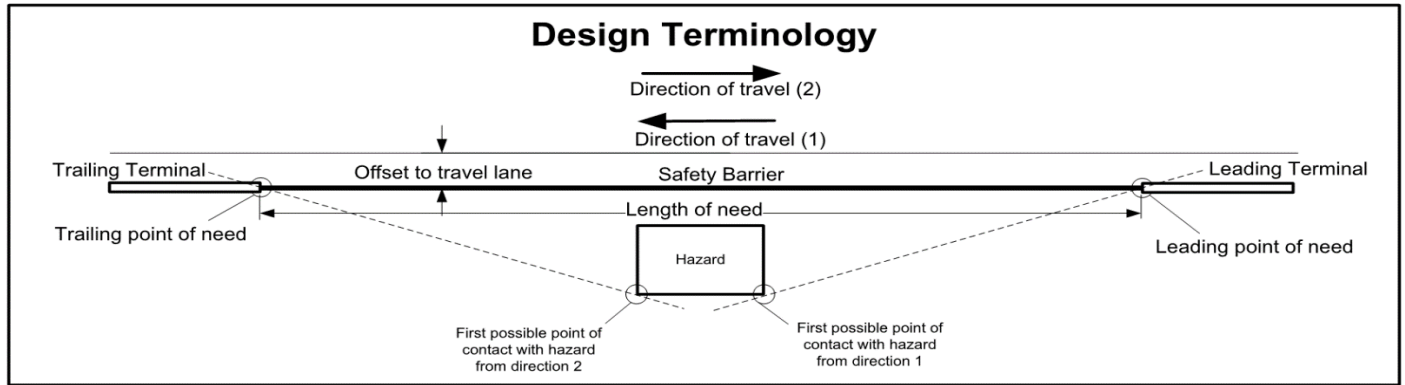
References

- 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.

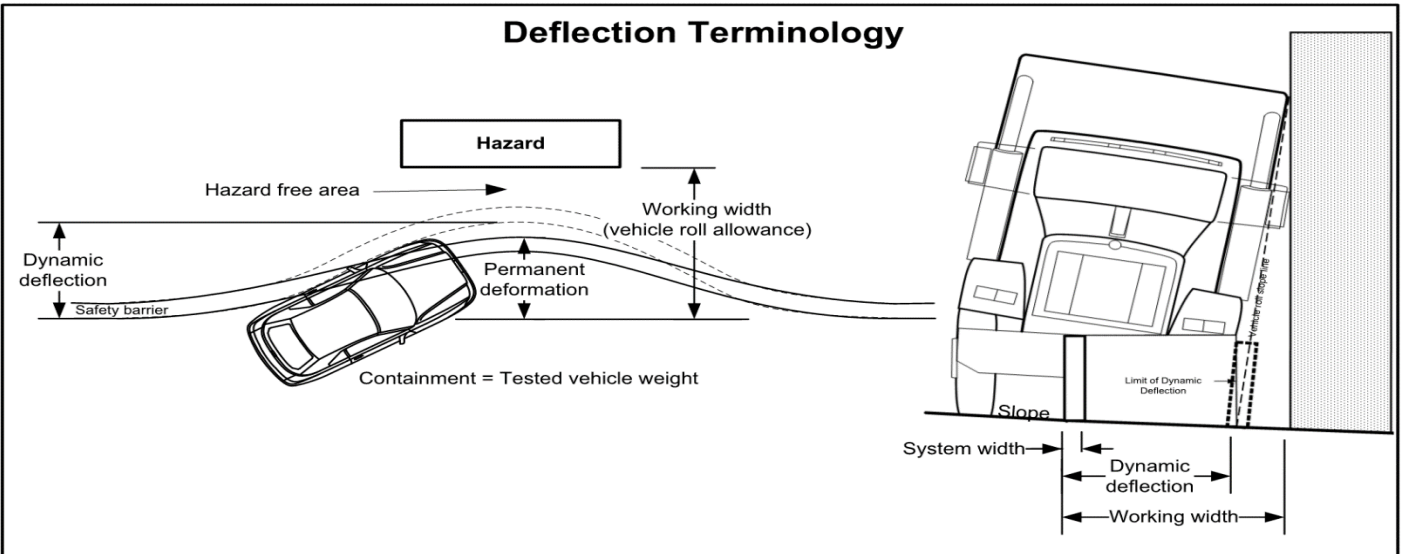
Detail Sheet – Update Summary

Issue	Approved	Amendment
Dec 2016	M-SSD	First edition
Jan 2019	M-SSE	New Supplier & ASBAP Condition of Use Update

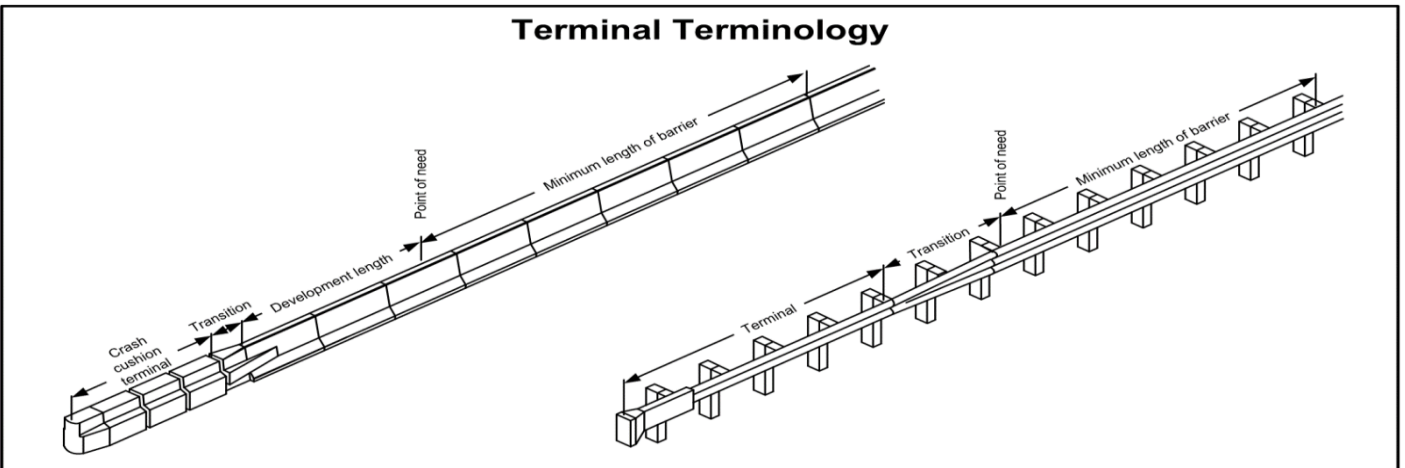
Design Terminology



Deflection Terminology



Terminal Terminology



Flare Terminology

