

Triton Concrete End Treatment (CET) - Temporary

Product summary

Status	Accepted
Category	Temporary- Gating Non-Redirective End Treatment
Test Level	Refer VicRoads Specific Conditions
Supplier	Boylan Group
Description	Triton Concrete End Treatment (CET) is a temporary freestanding plastic water filled terminal. It is non-redirective.



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 Triton CET 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	SLED Plastic Water Filled End Terminal – Temporary
Variants	None
Deflection	N/A (non-redirective)
Product manual reviewed	Triton Barrier Product Manual Revision F, July 2012
ASBAP issue	N.D.

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	Gating system		12.6	N/A	N/A	N/A	Speed restricted product

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 Safety Barrier	No temporary concrete barrier accepted in Victoria
Proprietary Products	
	Refer to Safety Barrier conditions for approved proprietary connections The last unit is to be connected to the longitudinal barrier via the proprietary transition

Design Guidance

System width (m)	0.6
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	30 metres minimum distance between the terminal and the start of a workzone
Slope limit	Side slope limit: 20 Horizontal to 1 Vertical (5%).
Systems conditions	<ol style="list-style-type: none"> 1. A minimum 18.5 metre x 6 metre clear run-out area is required, measured from the connection to the longitudinal safety barrier. 2. Installation on top of or adjacent to a kerb is not permitted. 3. Every unit (except the first) must be filled with water as per the manufacturer's specification. 4. Water filled inside each barrier unit must be supplemented with antifreeze agent, to the appropriate quantities advised within the Supplier Triton Barrier CET Product Manual. 5. Installation and maintenance to be in accordance with Supplier Triton Barrier CET Product Manual. 6. Damaged units to be replaced after impact. 7. For operating speeds of 80km/h, the 100km/h configuration is required and should contain pedestals under all sections, with the first section erected upside-down and a short pedestal.
Gore area use	Not Permitted
Pedestrian area use	Permitted – consider potential for snagging and deflection.
Cycleway use	Permitted – consider potential for snagging and deflection.
Frequent impact likely	Not Permitted
Remote location	Permitted
Median use	Not Permitted

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	Use	Accepted Speed (max)	Post/pin spacing (m)	Pavement construction	Post/pin type
Concrete	Permitted	70 km/h*			Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product.
Deep lift asphaltic concrete	Permitted				
Asphaltic concrete over granular pavement	Permitted				
Flush seal over granular pavement	Permitted				
Unsealed compacted formation	Permitted				
Natural surface	Not Permitted				

*Accepted Speed (max) for permitted pavement conditions must be considered in conjunction with the Speed limitation- Temporary End Treatments table below.

Speed limitations - Temporary End Treatments

Worksite Posted Speed	Freeways/Highways	Other rural and urban roads (>4000 vehicles)	Other rural and urban roads (<4000 vehicles)	Plastic Terminal Risk Assessment Considerations
100 90	Crash cushion only	Crash cushion only	Crash cushion only	Terminal performance: <ol style="list-style-type: none"> Runout area allowance Development length allowance Max operating speed; inc. out of hours Terminal visibility and impact likelihood:
80	Crash cushion only	Crash cushion only	Crash cushion preferred, or Plastic terminal with completed risk assessment	<ol style="list-style-type: none"> Visibility (Sightlines) Traffic Separation (Barrier Offset) Road Geometry (Alignment & Width) Road Conditions (Road Quality & Environmental) Traffic Conditions (Road Type & Work Hours) Traffic Control (Signs & Linemarking) Work Activities (Proximity to Terminal)
70 60	Crash cushion only	Crash cushion preferred, or Plastic terminal with completed risk assessment	Crash cushion preferred, or Plastic terminal with completed risk assessment	Plastic terminal risk assessments should be checked by a: <ol style="list-style-type: none"> Road Safety Auditor OH&S Co-ordinator, Manager or Equivalent
50 40	Crash cushion only, or As required, for "Short Term" works in accordance with RMA CoP Worksite Safety-Traffic Management ³	Any accepted safety barrier products	Any accepted safety barrier products	

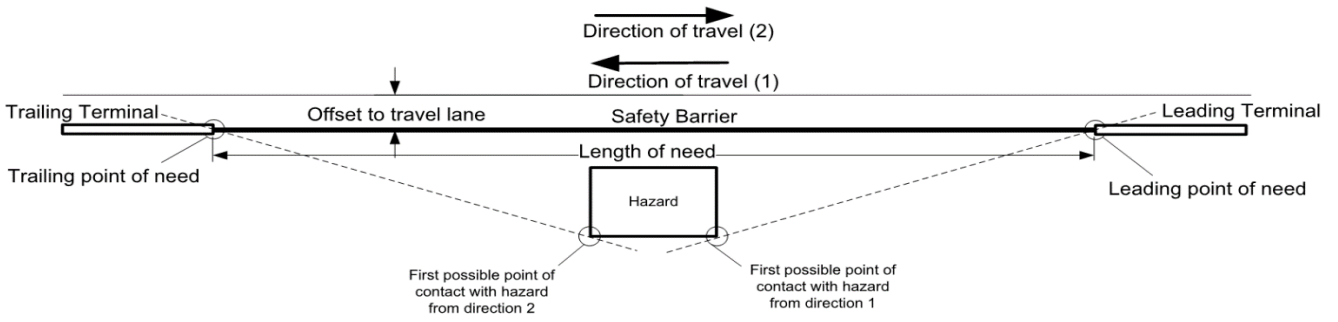
References

- 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.

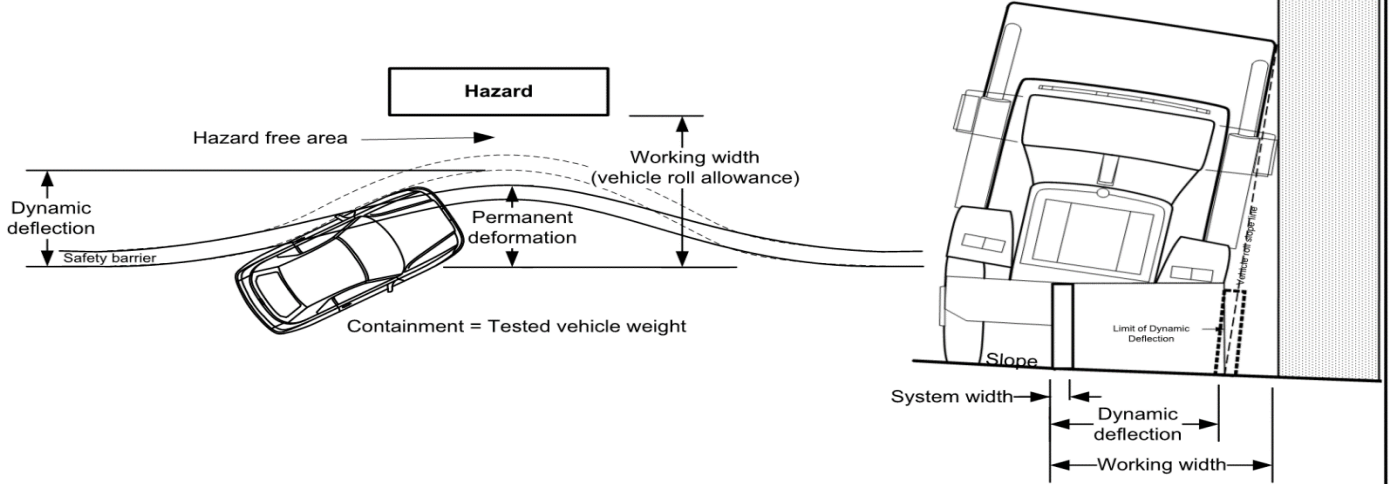
Detail Sheet – Update Summary

Issue	Approved	Amendment
Jan 2018	M-SSD	First edition
May 2018	M-SSD	Second edition
July 2018	M-SSD	Public Domain Concrete Barrier Terminal Connection Allowance

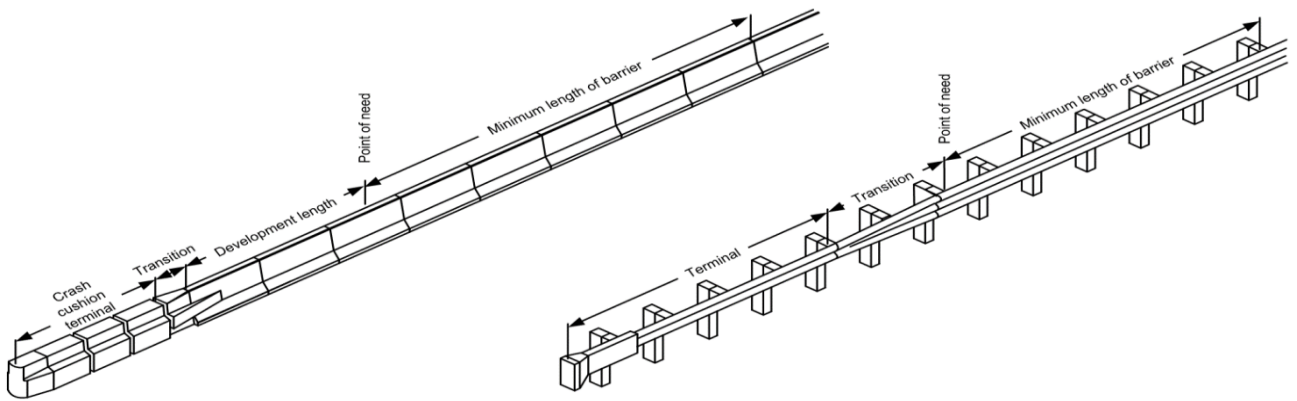
Design Terminology



Deflection Terminology



Terminal Terminology



Flare Terminology

