Detail Sheet

Energy Absorbing Tree/Pole Buffer - Permanent

Product summary

Status	Accepted for Trial Purposes Only
Category	Permanent – Non-redirective crash cushion / impact attenuator
Test Level	Not NCHRP 350 or MASH Rated: **50km/h**
Supplier	Roadside Services and Solutions Pty Ltd
Description	Energy Absorbing Tree/Pole Buffer is a Non-redirective crash cushion / impact attenuator

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.

VicRoads requirements take precedence over the product manual. 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 Energy Absorbing Tree/Pole Buffer (EATPB) should be designed, installed and maintained in accordance with the following VicRoads conditions for use.

These conditions for use have been based on technical performance against AS/NZS 3845 and contain VicRoads specific requirements when necessary.

Figure 1. Energy Absorbing Tree/Pole Buffer installed within nature strip shielding a solid timber power

Summary Conditions for Use

Accepted configuration	Energy Absorbing Tree/Pole Buffer, four layers of crash cell
Variants	Arrangement with more than four layers of crash cell
Deflection	N/A – Non-Redirective
Product manual reviewed	Roadside Services & Solutions Energy Absorbing Pole Buffer Product Manual, Version 1
ASBAP issue	N/A

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					
N/A	70[1]	1500[1]	N/A	N/A	N/A	N/A	N/A	N/A	Based on a four-layer configuration

Note 1. Refer system conditions for approved use. Tested conditions (vehicle mass and speed) are not MASH or NCHRP 350 compliant.

Approved Terminals and Connections

Crash Cushions or Terminals must be fitted to both ends of a barrier	
Public Domain Products	
W-Beam Guardrail	Not Permitted
Thrie-Beam Guardrail	Not Permitted
Type F Concrete Safety Barrier	Not Permitted
Proprietary Products	
All	Not Permitted

Design Guidance

System width (m)	0.57 (below ground foundation) 0.46 (buffer)
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.
System conditions	1. Accepted for use on roads with a posted speed limit of 50km/h or less; and 2. System must have no less than 4 layers of crash cells 3. Only be used to shield isolated hazards and as a standalone system (not in contact or attached to fixed road side objects or hazards) 4. All supplied units are to have the black plastic cover, concealing the crash cells 5. Adhered with class 1A reflective chevron sign with flexible poly substrate
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

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	**Use**	**Accepted Speed (max)**	**Post/Pin spacing (m)**	**Pavement construction**	**Post/pin type**
Concrete	Permitted	50	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. Concrete foundation supporting the EATPB must be minimum of 32MPa Naturally weak soil including sand must be compacted to achieve a net bearing capacity of 25MPa.	N/A
Deep lift asphaltic concrete					
Asphaltic concrete over granular pavement					
Flush seal over granular pavement					
Unsealed compacted formation					
Natural surface					

Other considerations and comments

Damaged Components

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

Product Use

The product must be used for its intended purpose. VicRoads does not endorse the suitability of the product for other purposes. Should the proponent be inclined to use the product outside the scope of purpose, then please contact: SafeSystemEngineering@roads.vic.gov.au.

Pre-Installation Confirmation

Local & Utility Authorities must be notified of any proposed installation prior to the commencement of works, as separate approval may be required.

Footing Requirement

Footing detail and associate technical requirements are outlined within the supplier's Product Installation Manual.

Prior to installing the product, contact dial before you dig or visit the website https://www.1100.com.au/.

References

- 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-SSE	1st Edition
May 2019	M-SSE	Updated pavement construction