

DETAIL SHEET

TREND 350 STEEL RAIL END TERMINAL - PERMANENT

VicRoads Requirements

Refer to Austroads - Safety Barrier System Acceptance Conditions for the TREND 350 Steel Rail Terminal. All requirements listed by Austroads have been adopted by VicRoads for use on the Victorian declared road network.

In this instance, VicRoads applies additional requirements/conditions for use of TREND 350 Steel Rail Terminal on the Victorian declared road network including:

- The terminal must be fitted with a black plastic motorcycle friendly cover that fits over the impact head and must include a white and black retro-reflective hazard marker.
- Elevated kerbs, islands, drainage structures or any other item that can affect the height at which a vehicle could impact the unit should not be placed 15m prior to the unit or along the length of the unit.

Please Note: VicRoads requirements take precedence over any Product Manual instructions and Austroads conditions where conflicting.

References

- Product Installation Manual and Product Operational Manual [refer licensed product supplier website](#)
- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products
- VicRoads Standard Drawing SD3571 and SD3545. (SD 3545 not yet updated with specific TREND details. Refer to TREND assembly manual).



Note: Delineation on head rail assembly to be black and white.


For further information please contact:

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Accepted safety barrier products are subject to periodic review and the information provided in this document may be superseded. Please refer to *Road Design Note 06-04 – Accepted Safety Barrier products* for the current VicRoads acceptance status.

Safety Barrier System Conditions

TREND 350 Steel Rail Terminal - Permanent

	Proponent	Ingal Civil Products
	Australian Distributor	Ingal Civil Products
	New Zealand Distributor	Ingal Civil Products NZ
	Date Issued	11 March 2015

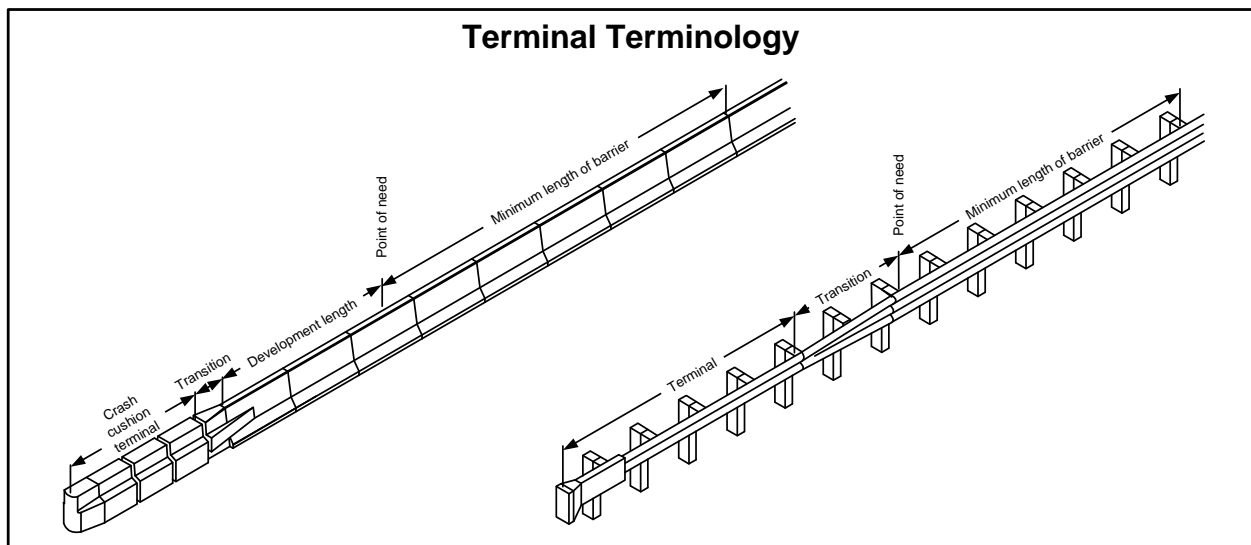
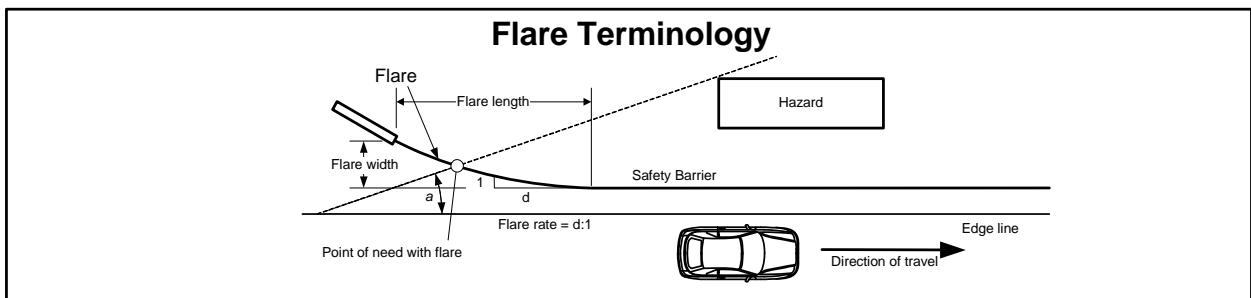
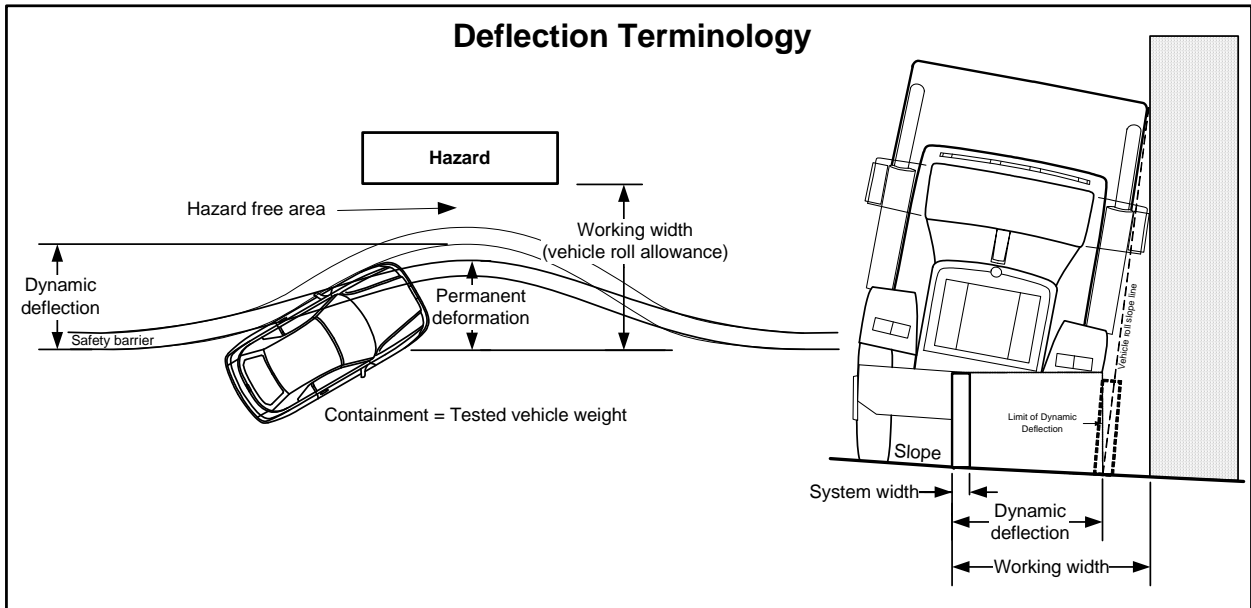
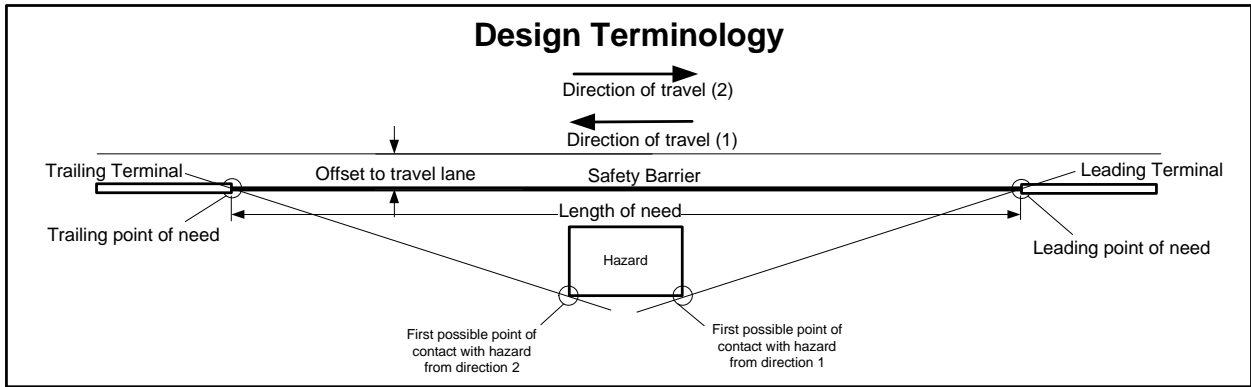
Status	Accepted – May be used on the classified road network. These acceptance conditions take precedence over any instructions in the Product Manual.
Variants accepted	11.9 metre TREND 350 Steel Rail Terminal - Permanent.
Variants NOT accepted	<ul style="list-style-type: none"> Variants that are not on the list above are not accepted. Variants accepted in other jurisdictions, but not accepted in the local jurisdiction, are NOT permitted.

Speed limit (km/h)	100 km/h. Permanent barriers accepted for 100km/h may be used in 110 km/h speed zones.	
Tested containment (kg)	2,000 kg at 100 km/h and 20°.	
Adopted dynamic deflection (Nominal 2 tonne vehicle)	100 km/h	1.2 metres (side impact on a non-flared installation).
	80 km/h	Use 100 km/h deflection.
	70 km/h	Use 100 km/h deflection.
	50 km/h	Use 100 km/h deflection.
	Deflections shown will be exceeded with high mass vehicles. Refer to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers Section 6 for design advice.	
Point of need	Post 3, 4.25 metres from the end of the Extruder Head.	
Development length	Not applicable.	
Minimum length of barrier between terminals	Not applicable.	
System width (m)	0.475 metres.	

System conditions	Not specified.
Terminal conditions	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 – not suitable for impact on the post side.
Pedestrian area use	Permitted – consider potential for snagging, deflection and rail splay.
Cycleway use	Permitted – consider potential for snagging, deflection and rail splay.
Frequent impact likely	Permitted.
Remote location	Permitted.
Median use	Permitted – not suitable for impact on the post side.
Minimum median width (m)	Not specified.
Flare (See Explanation of Terms diagram)	Not permitted on a flare.

Offset to travel lane (m)	Refer to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers, Section 6.3.5.	
Hazard free area beside barrier or terminal (Working Width)	Refer to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers, Section 6.3.16.	
Installation	The TREND 350 Steel Rail Terminal - Permanent must be installed and maintained in accordance with the Product Manual and Road Agency specifications. The Road Agency specifications and standards shall have precedence.	
Minimum distance to excavation	2.7 metres minimum distance between the edge of the barrier and the edge of an excavation. (Being 1.5 times the embedment depth of the anchor).	
Slope limit	Side slope limit: 10 Horizontal to 1 Vertical (10%).	
Foundation pavement conditions	Concrete	Permitted with coring holes.
	Deep lift Asphaltic Concrete	Permitted with coring holes.
	Asphaltic concrete over granular pavement	Permitted.
	Flush seal over granular pavement	Permitted.
	Unsealed compacted formation	Permitted.
	Natural surface	Permitted.
	Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product.	
Attachments and screens	<p>In accordance with the requirements of Australian/New Zealand Standard AS/NZS 3845, road furniture such as delineators, headlight screens, signs, lighting posts and fences for pedestrians, visual screens, debris screens, platforms for workers and other non-product hardware must not be attached to the product.</p> <p>Screens may be placed adjacent to the side of the product not exposed to traffic. The distance between the screen and the product shall be determined by a site specific risk assessment that considers the deflection distance.</p> <p>Screens must not have horizontal members that present a risk of impaling errant vehicles that impact the product.</p>	
Damaged components	Damaged components must be replaced. Repaired components must not be used.	
Delineation	The installed system shall include delineation as prescribed by Road Agency specifications and drawings.	
Traceability and markings	<p>Product markings shall be in accordance with marking/s prescribed by the current Australian/New Zealand Standard AS/NZS 3845 Road Safety Barrier Systems and Road Agency specifications. Traceability details that must be permanently fixed to the terminal are:</p> <ul style="list-style-type: none"> • Name of the product. • Manufacturer or distributor name. • Date of manufacture. • Model or version details of the product, if applicable. • Batch number, if applicable. • Serial number, if applicable. <p>Traceability details must be easily visible but unobtrusive and not be in a form that becomes prominent advertising. No advertising shall be displayed on the installation.</p>	

	Traceability must be in a form that will not be erased with use.
Notes	Conditions are based on drawings TR-STD-001, TR-STD-002 and the Product Manual supplied by the Proponent, dated November 2014. This acceptance will cease if there is any change in the product design or specifications.
	Only the Product Manual authorised by the Proponent shall be used in any marketing of the product.
	Acceptance of the TREND 350 Steel Rail Terminal - Permanent does not place any obligation on the Road Agency, or its contractors, to purchase or use the product.
	The Austroads Safety Barrier Assessment Panel may periodically re-assess the TREND 350 Steel Rail Terminal - Permanent. The Road Agency may withdraw or modify at any time, the acceptance status or conditions of use of the product without notice. Users should refer to the Road Agency web site to ensure they have the latest version of the conditions related to this product.



Safety Barrier terminology.vsd

For more information, refer to
Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers