

DETAIL SHEET

ET 2000 PLUS WITH SYT POSTS STEEL RAIL TERMINAL - PERMANENT

VicRoads Requirements

Refer to Austroads - Safety Barrier System Acceptance Conditions for the ET 2000 Plus with SYT Posts 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 ET 2000 Plus with SYT Posts Steel Rail Terminal on the Victorian declared road network including:

- Variants Accepted: Surface Mount ET 2000 Plus terminal as per CAB-STD-127 of the Product Installation Manual. Minimum acceptable concrete pad dimensions are 1.2m x 0.2m x 14.3m.
- 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; and
- Installation behind elevated kerbs, islands, drainage structures or any other items that can affect the height at which a vehicle could impact the unit is not recommended 15m prior to the unit or along the length of the unit, however if required, all system components must be free to operate.

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 (ET 2000 Plus with SYT Posts Steel Rail Terminal adopts grading, curve offset and run-out area the same as the X-Tensions and SKT350 shown)


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Accepted safety barrier products are subject to periodic review and the information provided in this document may be superseded.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

ET 2000 PLUS WITH SYT POSTS Steel Rail Terminal - Permanent

	Australian Distributor	Ingal Civil Products
	New Zealand Distributor	Ingal Civil Products NZ
	Date Issued	8 January 2016

Status	Accepted – May be used on the classified road network. These acceptance conditions take precedence over any instructions in the Product Manual.
Product accepted	15.24 metre ET 2000 PLUS WITH SYT POSTS Steel Rail Terminal - Permanent. <u>Variants</u> <ul style="list-style-type: none"> • Nil <u>Options</u> <ul style="list-style-type: none"> • Motorcyclist Protection Cover – Part no. 10007891 (colour determined by local Road Agency).
Product Manual accepted	Release 01/11.
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.

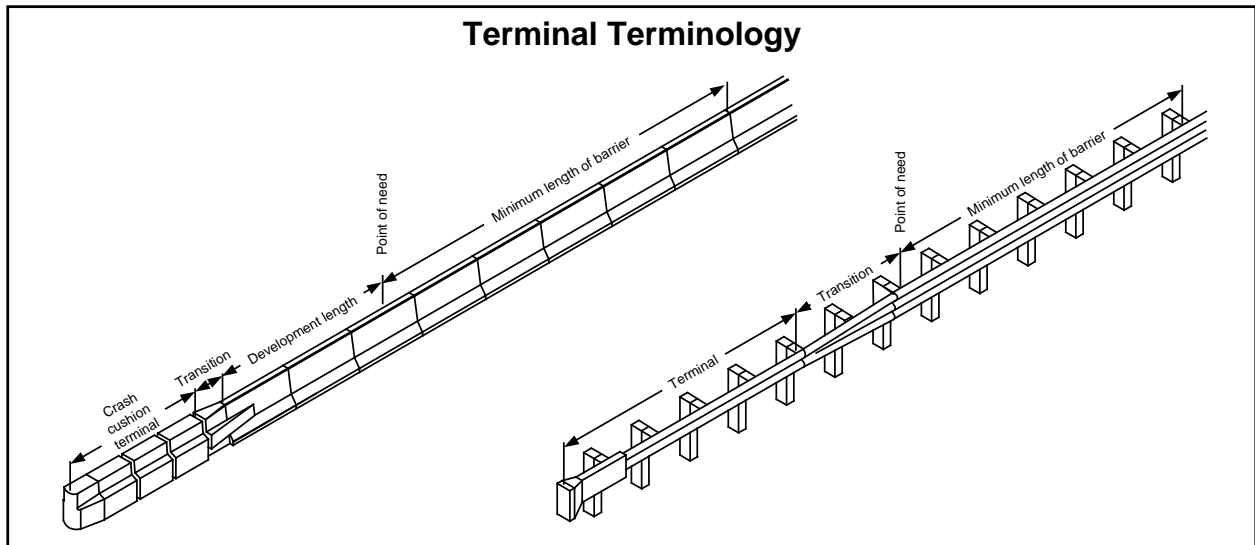
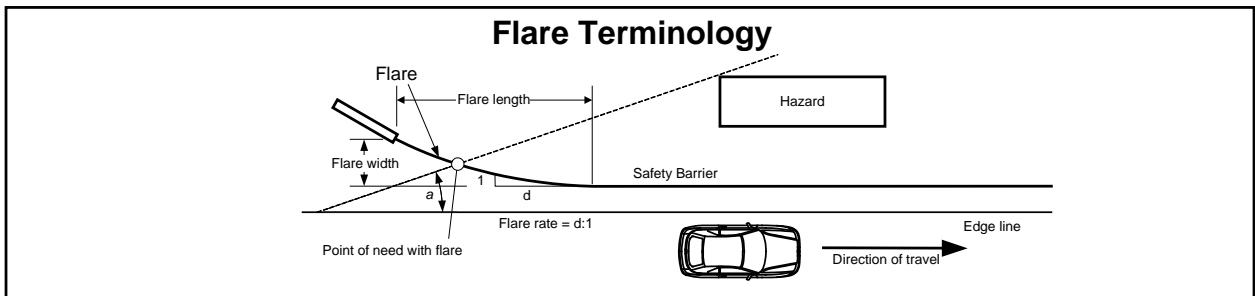
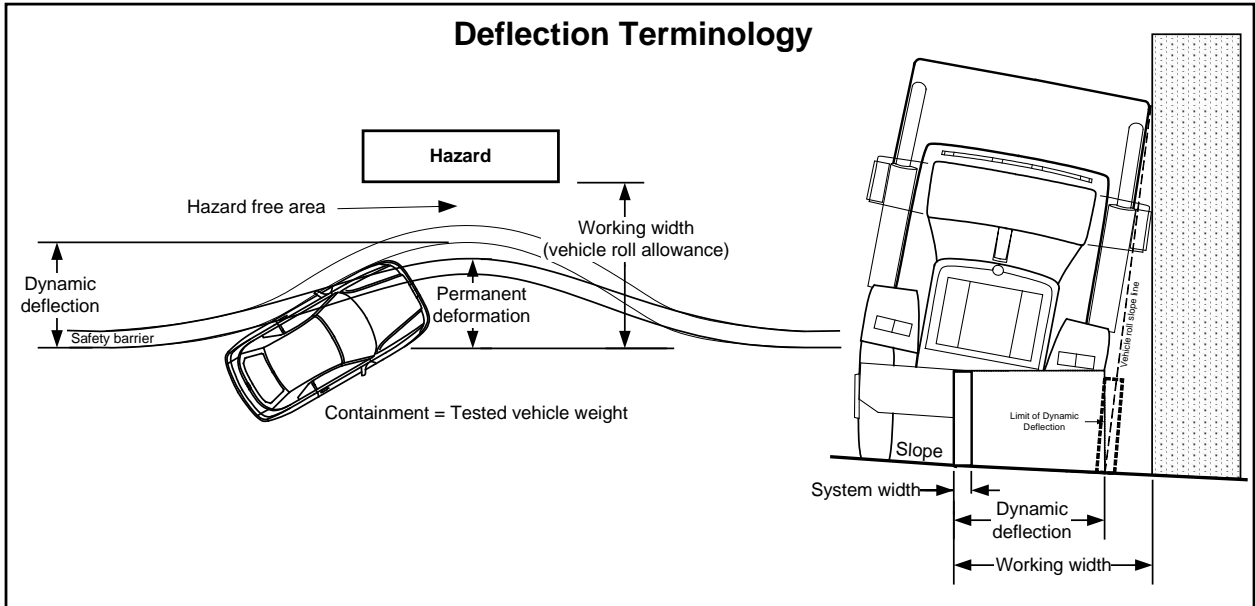
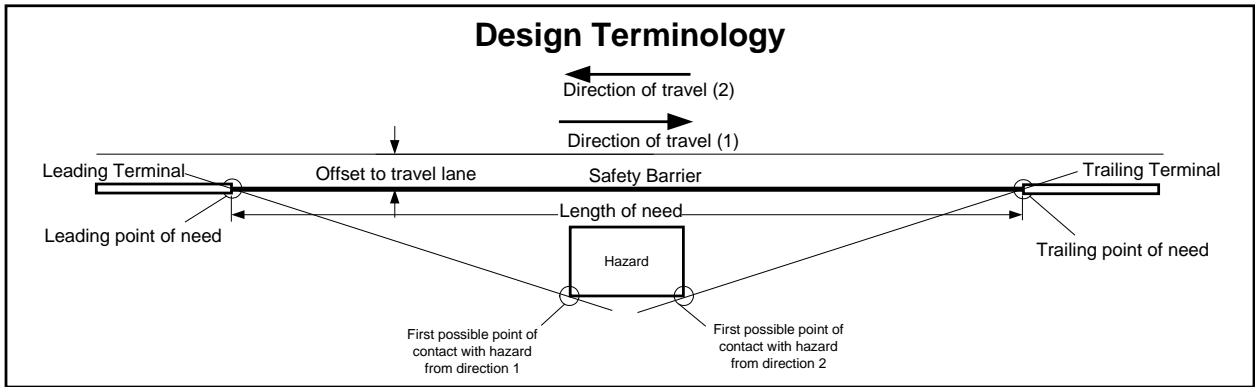
Speed limit (km/h)	100 km/h Permanent barriers accepted for 100km/h may be used in 110 km/h speed zones.	
Tested containment (kg)	2,000 kg at 100 km/h and 20°.	
Adopted dynamic deflection (Nominal 2 tonne vehicle)	100 km/h	0.9 metres for a side impact on a non-flared installation.
	80 km/h	Use 100 km/h deflection.
	70 km/h	Use 100 km/h deflection.
	50 km/h	Use 100 km/h deflection.
	Deflections shown may be exceeded with flared installations and/or 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, 4.3 metres from the end of the Extruder Head.	
Development length	Not applicable.	
Minimum length of barrier between terminals	Not applicable.	
System width (m)	0.45 metres.	

System conditions	1. Extruder head cover optional, determined by Road Agency. 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.	
Terminals and connections	W-Beam guardrail	Permitted.
	Thrie-Beam guardrail	Permitted.

	Type F Concrete Safety Barrier	Not permitted
	Proprietary product	See barrier conditions.
	Other	A terminal must be fitted to both ends of the barrier.
Gore area use	Permitted – not suitable for impact on the post side.	
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 - not suitable for impact on the post side.	
Minimum median width (m)	Not specified.	
Flare (See Explanation of Terms diagram)	Refer to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers Table 6.5 for design advice.	
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 ET 2000 PLUS WITH SYT POSTS 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	0.6 metres minimum distance between the back of post and the edge of an excavation, see Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers, Appendix H.3.1, Figure H2.	
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 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>	

	Screens must not have horizontal members that present a risk of impaling errant vehicles that impact the product.
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> <p>Traceability must be in a form that will not be erased with use.</p>
Notes	<p>Conditions are based on drawings 32G-OA, 704A-OA, 995A-OA, 14578, 33795, 33871, 33873, KING-OA, CAB-STD-129 and the Product Manual supplied by the Proponent (Release 01/11). This acceptance will cease if there is any change in the product design or specifications.</p> <p>Only the Product Manual authorised by the Proponent shall be used in any marketing of the product.</p> <p>Acceptance of the ET 2000 PLUS WITH SYT POSTS Steel Rail Terminal - Permanent does not place any obligation on the Road Agency, or its contractors, to purchase or use the product.</p> <p>The Austroads Safety Barrier Assessment Panel may periodically re-assess the ET 2000 PLUS WITH SYT POSTS Steel Rail Terminal - Permanent.</p> <p>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.</p>



Safety Barrier terminology.vsd

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