



Safety Barrier System Acceptance Conditions

QUADGUARD Steel Rail Crash Cushion - Permanent

		Distributor	Ingal Civil Products
		Date Issued	1 January 2020
Status	<p>Legacy – No new installations permitted. Existing installations may be maintained until the end of their service life.</p> <p>These acceptance conditions should be read in conjunction with the Product Manual and Transport for NSW Specification R132 – Safety Barrier Systems.</p> <p>These acceptance conditions take precedence over any instructions in the Product Manual.</p> <p>Transport for NSW may withdraw or modify this acceptance at any time without notice. Users should refer to the Transport for NSW website to ensure they have the latest version of the conditions related to this product.</p>		
Product accepted	<p>QUADGUARD Steel Rail Crash Cushion - Permanent</p> <p><u>Variants</u></p> <ul style="list-style-type: none"> • QUADGUARD HIGH SPEED Steel Rail Crash Cushion with tension strut backup or concrete backup. • QUADGUARD WIDE Steel Rail Crash Cushion with tension strut backup or Concrete Backup. <p>QUADGUARD ELITE Steel Rail Crash Cushion with tension strut backup.</p>		
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)	<p>100 km/h</p> <p>May be used in 110 km/h speed zones (permanent installations only).</p>		
Tested containment	<p>NCHRP 350 Test Level 2 (2000kg at 70km/h and 0°)</p> <p>NCHRP 350 Test Level 3 (820kg at 100km/h and 0°)</p> <p>NCHRP 350 Test Level 3 (820kg at 100km/h and 15°)</p> <p>NCHRP 350 Test Level 3 (2000kg at 100km/h and 0°)</p> <p>NCHRP 350 Test Level 3 (2000kg at 100km/h and 15°)</p>		
Accepted dynamic deflection	All speeds	Not specified. Refer to manufacturers recommendations.	
<p>Note: the accepted deflections are those measured in crash tests performed under controlled conditions. Crash tests represent an approximation of what is likely to be seen in the field. The use of interpolated/extrapolated deflection values is not accepted.</p>			

System conditions	<ol style="list-style-type: none"> 1. QUADGUARD Steel Rail Crash Cushions are available to shield hazards from 610mm to 3200mm wide. 2. The QUADGUARD Steel Rail Crash Cushion has 1 to 12 bays to accommodate speeds up to 110km/h. 3. The QUADGUARD Steel Rail Crash Cushion is non-gating. 4. 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. 	
Approved connections <i>[A terminal must be fitted to both ends of a barrier]</i>	W-Beam guardrail	Permitted – Quad-Beam to W-Beam
	Thrie-Beam guardrail	Permitted – Quad-Beam to Thrie-Beam
	Type F Concrete Safety Barrier	Permitted
	Proprietary product	See safety barrier conditions for approved proprietary connections
Gore area use	Permitted	
Pedestrian area use	Permitted – consider potential for snagging and deflection	
Cycleway use	Permitted – consider potential for snagging and deflection	
Median use	Permitted	
Slope limit	Side slope limit: 12 Horizontal to 1 Vertical (8%)	
Foundation pavement conditions	Concrete	Permitted
	Deep lift Asphaltic Concrete	Permitted with concrete pad or pinned steel plate or drivable pile anchors
	Asphaltic concrete over granular pavement	Permitted with concrete pad or pinned steel plate or drivable pile anchors
	Flush seal over granular pavement	Permitted with concrete pad or pinned steel plate or drivable pile anchors.
	Unsealed compacted formation	Permitted with concrete pad or pinned steel plate or drivable pile anchors
	Natural surface	Permitted with concrete pad or pinned steel plate or drivable pile anchors
	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 <u>must not be attached</u> 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>	
	Acceptance of this product does not place any obligation on Transport for NSW, or its contractors, to purchase or use the product.	