DEPARTMENT OF
INFRASTRUCTURE, PLANNING AND LOGISTICS

# Safety Barrier Technical Conditions for Use

## BG800 Steel Rail Safety Barrier - Permanent

**Issue Date:** 14 March 2022

**Proponent:** Highway Care International

**These conditions take precedence over any instructions in the Product Manual.**

This document is a summary of the Austroads Safety Barrier Assessment Panel's assessment of the technical performance of the product against AS/NZS 3845 Parts 1 or 2 only. It does not consider procurement practices by individual Road Agencies.

The Austroads Safety Assessment Panel may at any time, withdraw or modify this Technical Conditions for Use without notice.

These acceptance conditions should be read in conjunction with the Product Manual and Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers.

Acceptance of this product does not place any obligation on the Northern Territory Government or its contractors, to purchase or use the product.

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| Status | **Recommended for Acceptance** |
| Product accepted | BG800 Steel Rail Safety Barrier - Permanent<br><br>Variants<br>6 metre BG800 Steel Safety Barrier – Permanent sections.<br>12 metre BG800 Steel Safety Barrier – Permanent sections.<br>BG800 Full Height Terminal End (6 and 12 metre).<br>0.61 metre BG 800 5° Radius Section.<br>0.61 metre BG 800 10° Radius Section.<br><br>Variants that are NOT listed above are NOT recommended for acceptance. |
| Accepted impact speed | 100 km/h |
| Product manual reviewed | IMP-031 Issue 1.1 |
| Product Manual | https://az276019.vo.msecnd.net/valmontstaging/docs/librariesprovider35/manuals/bg800-manual-australia-amp-new-zealand---rev-c51847c7898cf6a15a1a9ff5200d30354.pdf?sfvrsn=364b1639_2 |

### Design Requirements

| Containment Level | Point of Redirection | | Tested Article Length (m) | Anchor/Post Spacing (m) | Dynamic Deflection (m) | Working Width (m) | Notes |
|---|---|---|---|---|---|---|---|
| | Leading (m) | Trailing (m) | | | | | |
| MASH TL3 | Interface between barrier and the end treatment | | 72 | 60 | 1.66 | 2.20 | |
| MASH TL4 | 36 | 36 | 72 | 60 | 2.31 | 3.66 | T-top lite must be attached for TL4 containment |

## Approved Connections

| *An accepted end treatment must be provided at both ends of all barrier installations* | |
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| **Public Domain Products** | |
| W-Beam Guardrail | Not Permitted |
| Thrie-Beam Guardrail | Not Permitted |
| Concrete | Permitted – BG800 to Thrie Beam to Type F Concrete Safety Barrier. The transition includes the Full Height Terminal End. |
| **Proprietary Products** | |
| SMART Crash Cushion | • Refer SMART Crash Cushion Technical Conditions for Use.<br>• The BG800 to SMART Crash Cushion transition must be used to connect the crash cushion to the barrier. The transition includes the Full Height Terminal End.<br>• Reverse impacts into the transition section can produce a greater occupant severity value than preferred. Where reverse impacts are possible (e.g. bi-directional traffic), a risk assessment must be completed and steps to mitigate the likelihood of reverse impact should be implemented. |
| UNIVERSAL TAU-M Crash Cushion | • Refer Universal Tau-M Crash Cushion Technical Conditions for Use.<br>• The BG800 to Universal Tau-M Crash Cushion transition must be used to connect the crash cushion to the barrier.<br>• Reverse impacts into the transition section can produce a greater occupant severity value than preferred. Where reverse impacts are possible (e.g. bi-directional traffic), a risk assessment must be completed and steps to mitigate the likelihood of reverse impact should be implemented. |
| QUADGUARD M10 CZ Crash Cushion | • Refer to QUADGUARD M10 CZ Crash Cushion Technical Conditions for Use.<br>• The BG800 transition to end terminal must be used to connect the crash cushion to the barrier.<br>• Reverse impacts into the transition section can produce a greater occupant severity value than preferred. Where reverse impacts are possible (e.g. bi-directional traffic), a risk assessment must be completed and steps to mitigate the likelihood of reverse impact should be implemented. |
| ABSORB-M Crash Cushion | • **The installation is restricted to an impact speed of 80 km/h or less.**<br>• Refer to Absorb-M Crash Cushion Technical Conditions for Use.<br>• The BG800 to Absorb-M Crash Cushion transition must be used to connect the crash cushion to the barrier.<br>• This is a gating device. |
| HIGHWAYGUARD LDS Safety Barrier | • Refer to HighwayGuard LDS Technical Conditions for Use<br>• The BG800 to HighwayGuard LDS Barrier transition must be used to connect the barriers. |
| **LEGACY:**<br>UNIVERSAL TAU-II Crash Cushion | • **LEGACY status recommended from 1 January 2021.**<br>• Refer Universal Tau-II Crash Cushion Technical Conditions for Use.<br>• The BG800 to Universal Tau-Ii Crash Cushion transition must be used to connect the crash cushion to the barrier. The transition includes the Full Height Terminal End.<br>• Reverse impacts into the transition section can produce a greater occupant severity value than preferred. Where reverse impacts are possible (e.g. bi-directional traffic), a risk assessment must be completed and steps to mitigate the likelihood of reverse impact should be implemented. |
| **LEGACY:**<br>QUADGUARD CZ Crash Cushion | • **LEGACY status recommended from 1 January 2021.**<br>• Refer QUADGUARD CZ Crash Cushion Technical Conditions for Use.<br>• The BG800 to Quadguard CZ transition must be used to connect the crash cushion to the barrier. The transition includes the Full Height Terminal End.<br>• Reverse impacts into the transition section can produce a greater occupant severity value than preferred. Where reverse impacts are possible (e.g. bi-directional traffic), a risk assessment must be completed and steps to mitigate the likelihood of reverse impact should be implemented. |

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| **LEGACY:**<br>ABSORB 350 Plastic Terminal | • **LEGACY status recommended from 1 January 2021.**<br>• **The installation is restricted to an impact speed of 70 km/h or less.**<br>• Refer to ABSORB 350 Terminal Technical Conditions for Use.<br>• The BG800 to AB350 Terminal transition must be used to connect the terminal to the barrier.<br>• This is a gating device. |

## Design Guidance

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| Minimum installation length | 60 metres between crash cushions/terminals (tested article) |
| System width (m) | 0.54 |
| Minimum distance to excavation (m) | 1.66 – TL3 - measured from the outer edge of the foot on the works side<br>2.31 – TL4 - measured from the outer edge of the foot on the works side |
| Side slope limit | 8% |
| System conditions | 1. 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.<br>2. All offsets are to be measured from the relevant outer edge of the foot. The foot is not trafficable.<br>3. T-top lite must be attached for TL4 containment. |
| Gore area use | Permitted |
| Pedestrian area use | Permitted |
| Cycleway use | Permitted |
| Frequent impact likely | Permitted |
| Remote location | Permitted |
| Median use | Permitted |

| **Foundation Pavement Conditions** | | | | | |
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| **Pavement Type** | **Use** | **Max Accepted Impact Speed (km/h)** | **Post/Pin Spacing (m)** | **Post/Pin Type** | **Pavement Construction** |
| Concrete | Permitted | 100 | 60 | M30 driven pin **TL3 only**<br>M24 x 460mm threaded rod with epoxy | Min 200mm reinforced<br>Min 250mm non-reinforced |
| Deep lift asphaltic concrete | | | | | Min 250mm |
| Asphaltic concrete over granular pavement | | | | | 150mm asphaltic concrete over 150mm granular subbase |
| Flush seal over granular pavement | | | | Driven pile anchor **TL3 only** | Min 150mm granular pavement |
| Unsealed compacted formation | | | | | Min AASHTO standard soil strength |

***Note: Installation in pavement conditions not permitted above have not been justified to the Panel's satisfaction.***