DB80 K150 Concrete Safety Barrier - Temporary

VicRoads Requirements

Refer to Austroads - Safety Barrier System Acceptance Conditions for the DB80 K150 Concrete Safety Barrier. 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 DB80 K150 Concrete Safety Barrier on the Victorian declared road network including:

- Where a high percentage of trucks are present, adopt a deflection of 1.94m. If deflection zones cannot be achieved, additional pinning of the units can be accepted after prior approval from VicRoads.

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

References

- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products
- Australian/New Zealand Standard AS/NZS 3845:1999 Cl.2.3.13
- Accepted safety barrier products are subject to periodic review and the information provided in this document may be superseded.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.

For further information please contact:
VicRoads Safe System Design team
60 Denmark Street
Kew, Vic, 3101
Telephone: 03 8391 7192
Email: SafeSystemDesign@roads.vic.gov.au

Detail Sheet- DB80 K150 – Revision Summary

<table>
<thead>
<tr>
<th>Issue</th>
<th>Approved</th>
<th>Date</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2017</td>
<td>NDS- SSD</td>
<td>June 2017</td>
<td>Minor Amendment - Name change</td>
</tr>
<tr>
<td>October 2017</td>
<td>NDS - SSD</td>
<td>October 2017</td>
<td>Updated ASBAP conditions</td>
</tr>
</tbody>
</table>
# Safety Barrier System Conditions

## DB80 K150 Concrete Safety Barrier - Temporary

<table>
<thead>
<tr>
<th>Australian Distributor</th>
<th>Orange Hire</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand Distributor</td>
<td>Hynds Pipe Systems Limited</td>
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</table>

### Date Issued
5 September 2017

### Status
Accepted – May be used on the Australian/New Zealand classified road network. These acceptance conditions take precedence over any instructions in the Product Manual.

### Product accepted
DB80 K150 Concrete Safety Barrier – Temporary (2, 4 and 6 metre units) consisting of Type F shape steel reinforced concrete barriers with tension bar coupling system, joint rotation limiting wedges and without intermediate ground attachment.

### Product Manual reviewed

### Variants NOT accepted
- 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)
Tested at 100 km/h (70 km/h if used with ABSORB 350 Plastic Terminal).

### Tested containment
- MASH Test Level 3 (2,270 kg 100 km/h and 25°) – 4 metre.
- EN1317-2 High Containment Level 1 (10,000 kg 70 km/h and 15°) – 6 metre.

### Tested dynamic deflection
- 100 km/h 1.44 metres

Note that deflections are measured in crash tests performed under controlled conditions. Designers should be aware that the deflection figures published as a test result may not be the deflection values achieved in the field for all impacts by errant vehicles dependent upon foundation conditions and roadside geometry.

### Working width
- 100 km/h 1.94 metres

Working width may be determined following a site specific risk assessment based upon type and speed of vehicles on the adjacent roadway. Working width (refer diagram) is the minimum width that is required to prevent an impacting vehicle from colliding with an object behind a road safety barrier system and includes both the dynamic deflection of the road safety barrier and the extra width to allow for vehicle roll.

### Point of redirection
Leading Point of Need is 36 metres from the interface between the terminal and the barrier.

### Minimum length of barrier between terminals
- 60 metres (4 metre units)
- 108 metres (6 metre units)

Minimum length is the tested article length.

### System width (m)
0.57 metres

### System conditions
1. Use of 2 metre units is restricted to tight radius curves and emergency openings.
2. Flaring across the clear zone without a terminal listed below is NOT
permitted.
3. 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.

<table>
<thead>
<tr>
<th>Terminals and connections</th>
<th>W-Beam guardrail</th>
<th>Not permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrie-Beam guardrail</td>
<td>Not permitted</td>
<td></td>
</tr>
<tr>
<td>Proprietary product</td>
<td>1. UNIVERSAL TAU-II STEEL RAIL CRASH CUSHION</td>
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<tr>
<td></td>
<td>• Permitted for use with DB80 K150 Concrete Safety Barrier - Temporary.</td>
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<tr>
<td></td>
<td>• May only be installed where reverse impacts are highly improbable and a risk assessment has been completed and steps undertaken to mitigate any risks identified.</td>
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<tr>
<td></td>
<td>• See UNIVERSAL TAU-II Steel Rail Crash Cushion acceptance document for conditions of use.</td>
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<td></td>
<td>• The TAU-II TRANSITION TO DELTA BLOC BARRIER must be used to connect the terminal to the barrier.</td>
<td></td>
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<tr>
<td></td>
<td>• Permitted as a terminal on a flare.</td>
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<tr>
<td></td>
<td>2. QUADGUARD CZ</td>
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<td></td>
<td>• Permitted for use with DB80 K150 Concrete Safety Barrier - Temporary.</td>
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<td>• May only be installed where reverse impacts are highly improbable and a risk assessment has been completed and steps undertaken to mitigate any risks identified.</td>
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<tr>
<td></td>
<td>• See QUADGUARD CZ acceptance document for conditions of use.</td>
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<tr>
<td></td>
<td>• The QUADGUARD CZ SYSTEM TRANSITION must be used to connect the terminal to the barrier.</td>
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<td></td>
<td>• Permitted as a terminal on a flare.</td>
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<td>3. ABSORB 350 PLASTIC TERMINAL - TEMPORARY</td>
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<td></td>
<td>• Permitted for use with DB80 K150 Concrete Safety Barrier - Temporary.</td>
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<td>• The installation is restricted to a speed limit of 70 km/h or less</td>
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<td></td>
<td>• See ABSORB 350 Plastic Terminal acceptance document for conditions of use.</td>
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<tr>
<td></td>
<td>• The AB350 TRANSITION TO DELTA BLOC BARRIER must be used to connect the terminal to the barrier.</td>
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<tr>
<td></td>
<td>• Permitted as a terminal on a flare.</td>
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<tr>
<td>Other</td>
<td>A terminal must be fitted to both ends of the barrier.</td>
<td></td>
</tr>
</tbody>
</table>

Gore area use  Refer to appropriate approved terminal conditions
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
### 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 DB80 K150 Concrete Safety Barrier - Temporary 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
1.44 metres minimum distance between the edge of the barrier and the edge of an excavation.
(Being the largest adopted dynamic deflection)

### Slope limit
Side slope limit: 15 Horizontal to 1 Vertical (7%).
Side slopes must be considered to minimise manual handling risks and site conditions.

### Foundation pavement conditions
<table>
<thead>
<tr>
<th></th>
<th>Permitted</th>
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<tbody>
<tr>
<td>Concrete</td>
<td></td>
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<tr>
<td>Deep lift Asphaltic Concrete</td>
<td></td>
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<tr>
<td>Asphaltic concrete over granular pavement</td>
<td></td>
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<tr>
<td>Flush seal over granular pavement</td>
<td></td>
</tr>
<tr>
<td>Unsealed compacted formation</td>
<td></td>
</tr>
<tr>
<td>Natural surface</td>
<td>Not permitted</td>
</tr>
</tbody>
</table>

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
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.

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.

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
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" or "product"] are:
- 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.

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.

Traceability must be in a form that will not be erased with use.

<table>
<thead>
<tr>
<th>Notes</th>
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<tbody>
<tr>
<td>Conditions are based on drawings in the Product Manual supplied by the Proponent, dated 15 January 2013 (Version 3.1). This acceptance will cease if there is any change in the product design or specifications.</td>
</tr>
<tr>
<td>Only the Product Manual authorised by the Proponent shall be used in any marketing of the product.</td>
</tr>
<tr>
<td>Acceptance of the DB80 K150 Concrete Safety Barrier - Temporary does not place any obligation on the Road Agency, or its contractors, to purchase or use the product.</td>
</tr>
<tr>
<td>The Austroads Safety Barrier Assessment Panel may periodically re-assess the DB80 K150 Concrete Safety Barrier - Temporary. 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.</td>
</tr>
</tbody>
</table>
Safety Barrier System Conditions: DB80 K150 Concrete Safety Barrier - Temporary

Design Terminology

- Direction of travel (2)
- Direction of travel (1)
- Trailing Terminal
- Offset to travel lane
- Safety Barrier
- Leading Terminal
- Length of need
- Hazard
- First possible point of contact with hazard from direction 2
- First possible point of contact with hazard from direction 1

Deflection Terminology

- Hazard
- Hazard free area
- Dynamic deflection
- Permanent deformation
- Containment = Tested vehicle weight
- Working width (vehicle roll allowance)

Flare Terminology

- Flare
- Flare length
- Flare width
- d
- Point of need with flare
- Flare rate = d:1
- Edge line
- Direction of travel
- Hazard

Terminal Terminology

- Crash length of barrier
- Terminal length of barrier
- Terminal length of frame
- Development length
- Point of need

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