DB80 K150 Concrete Safety Barrier - Temporary

Product summary

<table>
<thead>
<tr>
<th>Status</th>
<th>Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Temporary – Concrete Longitudinal Barriers</td>
</tr>
<tr>
<td>Test Level</td>
<td>Test Level 3 (MASH): 100 km/h</td>
</tr>
<tr>
<td>Supplier</td>
<td>Jaybro</td>
</tr>
<tr>
<td>Description</td>
<td>Temporary barrier (2, 4 and 6m units) consisting of Type F shape steel reinforced concrete barriers with tension bar coupling system, joint rotation limiting wedges and without intermediate ground attachment</td>
</tr>
</tbody>
</table>

Introduction and purpose

This detail sheet supplements VicRoads’ Road Design Note 06-04 - Accepted Safety Barrier Products. Please refer to RDN 06-04 for the current VicRoads acceptance status, information on the product assessment process and general acceptance conditions.

The technical details within this document have been extracted from information submitted to VicRoads by the Supplier and the recommended ‘Conditions for Use’ from the Austroads Safety Barrier Assessment Panel (ASBAP).

VicRoads requirements take precedence over the product manual and Austroads conditions. Where a departure from these requirements is required, users should understand the risks and document their engineering decisions.

For more detailed product information, refer to the individual product manual or contact the System Supplier.

Technical information

The DB80 K150 Concrete Safety Barrier should be designed, installed and maintained in accordance with the following VicRoads conditions for use.

These conditions for use have been based on an Austroads assessment of technical performance against AS/NZS 3845 and contain VicRoads specific requirements when necessary.

Summary Conditions for Use

<table>
<thead>
<tr>
<th>Accepted configuration</th>
<th>DB80 K150 Concrete Safety Barrier - Temporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variants</td>
<td>Nil</td>
</tr>
<tr>
<td>Deflection</td>
<td>1.44m</td>
</tr>
<tr>
<td>Product manual reviewed</td>
<td>Revision 01A – 15 March 2019</td>
</tr>
<tr>
<td>ASBAP issue</td>
<td>5 September 2019</td>
</tr>
</tbody>
</table>

Refer VicRoads conditions for use (below).
VicRoads Conditions for Use

Tested design requirements

<table>
<thead>
<tr>
<th>Containment level</th>
<th>Vehicle mass (kg)</th>
<th>Point of Redirection (m)*</th>
<th>Tested article length (m)</th>
<th>Anchor/Pin Spacing (m)*</th>
<th>Dynamic deflection (m)</th>
<th>Working width (m)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASH TL-3</td>
<td>2270</td>
<td>Leading 29.2</td>
<td>Trailing 29.2</td>
<td>61.17</td>
<td>N/A</td>
<td>1.44</td>
<td>1.94</td>
</tr>
</tbody>
</table>

Working width is the dynamic deflection plus system width

Approved Terminals and Connections

**Crash Cushions or Terminals must be fitted to both ends of a barrier**

### Public Domain Products
- W-Beam Guardrail: Not permitted
- Thrie-Beam Guardrail: Not permitted
- Concrete Barrier: Not permitted

### Proprietary Products

**QUADGUARD CZ Crash Cushion**
- See QUADGUARD CZ Crash Cushion acceptance document for conditions of use.
- The QUADGUARD CZ Crash Cushion transition must be used to connect the terminal to the barrier.
- 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.
- Leading and trailing points of redirection are considered to be 0.
- Not permitted as a terminal on a flare.

**UNIVERSAL TAU-II Crash Cushion**
- See Universal Tau-II acceptance document for conditions of use.
- The Universal TAU-II transition to DB80 Barrier must be used to connect the terminal to the barrier.
- 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.
- Not permitted as a terminal on a flare.
- Leading and trailing points of redirection are considered to be 0.

**ABSORB 350 PLASTIC TERMINAL - TEMPORARY**
- The installation is restricted to a speed of 70 km/h or less.
- Refer ABSORB 350 Plastic Terminal acceptance document for conditions of use.
- The ABSORB350 transition to DB80 Barrier must be used to connect the terminal to the barrier.
- Not permitted as a terminal on a flare.

**SLED PLASTIC TERMINAL - TEMPORARY**
- The installation is restricted to a speed of 80 km/h or less.
- Refer SLED Plastic Terminal acceptance document for conditions of use.
- The SLED End transition to DB80 Barrier must be used to connect the terminal to the barrier.
- Not permitted as a terminal on a flare.

**SMART CRASH CUSHION**
- Refer SMART Crash Cushion acceptance document for conditions of use.
- The Level III System Complete F shape barrier transition must be used to connect the crash cushion to the barrier.
- Leading and trailing points of redirection are considered to be 0.
- Not permitted as a terminal on a flare.

Design Guidance

**Minimum installation length**
- For 4m units: 61 metres between crash cushions/terminals (tested article)
- For 6m units: 66 metres between crash cushions/terminals (tested article)

**System width**
- 0.57 metres

**Installation**
- This product must be installed and maintained in accordance with the Product Manual and Road Agency specifications. Road Agency specifications and standards shall have precedence.
Minimum distance to excavation | Recorded 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.
Systems conditions | 1. Use of 2 metre units is restricted to light radius curves and emergency openings.
 | 2. Flaring across the clear zone without a terminal listed 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.
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

**Foundation pavement conditions**

<table>
<thead>
<tr>
<th>Pavement</th>
<th>Use</th>
<th>Accepted Speed (max)</th>
<th>Post/pin spacing (m)</th>
<th>Pavement construction</th>
<th>Post/pin type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>Permitted</td>
<td></td>
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<tr>
<td>Deep lift asphaltic concrete</td>
<td>Permitted</td>
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<tr>
<td>Asphalitic concrete over granular pavement</td>
<td>Permitted</td>
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<tr>
<td>Flush seal over granular pavement</td>
<td>Permitted</td>
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<tr>
<td>Unsealed compacted formation</td>
<td>Permitted</td>
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</tbody>
</table>

100 km/h

**Freestanding**

Foundation pavement conditions must be smooth and free of snag points, kerbs or obstructions that may interfere with the operation of the product. Refer to the Product Manual.

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

**Other considerations and comments**

**Damaged Components**

Damaged components must be replaced and repaired components must not be used.

**References**

- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products.

**Detail Sheet – Update Summary**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Approved</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>June 2017</td>
<td>M-SSE</td>
<td>Minor Amendment - Name change First edition</td>
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<tr>
<td>Oct 2019</td>
<td>M-SSE</td>
<td>Major changes Second edition</td>
</tr>
</tbody>
</table>
Design Terminology

- Direction of travel (2)
- Direction of travel (1)
- Trailing Terminal
- Offset to travel lane
- Safety Barrier
- Length of need
- Hazard
- Trailing point of need
- Leading Terminal
- Leading point of need
- 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
- Working width (vehicle roll allowance)
- Permanent deformation
- Containment = Tested vehicle weight
- System width
- Dynamic deflection
- Working width

Terminal Terminology

- Crash barrier
- Trailing
- Development length
- Point of need
- Minimum length of barrier
- Terminal
- Port of need
- Minimum length of barrier

Flare Terminology

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