UNIVERSAL TAU-M Crash Cushion

Product summary

<table>
<thead>
<tr>
<th>Status</th>
<th>Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Permanent – Re-directive crash cushions</td>
</tr>
<tr>
<td>Test Level</td>
<td>Test Level 3 (MASH): 100km/h</td>
</tr>
<tr>
<td>Supplier</td>
<td>Australian Construction Products</td>
</tr>
<tr>
<td>Description</td>
<td>UNIVERSAL TAU-M is an energy-absorbing non-gating and re-directive crash cushion</td>
</tr>
</tbody>
</table>

Introduction and purpose

This detail sheet is intended to supplement 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 UNIVERSAL TAU-M 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.

Typical installation arrangement shown above.

Summary Conditions for Use

<table>
<thead>
<tr>
<th>Accepted configuration</th>
<th>UNIVERSAL TAU-M Crash Cushion - Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variants</td>
<td>Connection to W-Beam and Thrie-Beam</td>
</tr>
<tr>
<td>Product manual reviewed</td>
<td>10 January 2018 – ENC 3883</td>
</tr>
<tr>
<td>ASBAP issue</td>
<td>2 December 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>Point of Redirection (m)</th>
<th>Tested article length (m)</th>
<th>Post/Pin Spacing (m)</th>
<th>Dynamic deflection (m)</th>
<th>Working width (m)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leading</td>
<td>Trailing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASH TL3</td>
<td>Fully directive</td>
<td>6.93</td>
<td>Refer Drawings</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MASH TL2</td>
<td>Fully directive</td>
<td>4.33</td>
<td>Refer Drawings</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Approved Terminals and Connections

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

Public Domain Products

- **W-Beam Guardrail**
  - Permitted - 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.

- **Thrie-Beam Guardrail**
  - Permitted - 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.

- **Type F Concrete Safety Barrier**
  - Permitted

Proprietary Products

Refer to safety barrier Technical Conditions for Use for approved proprietary connections.

Design Guidance

- **System length**
  - TL3 – 6.93 m
  - TL2 – 4.33 m

- **System width**
  - 0.762 m

- **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**
  - Not Applicable

- **Slope limit**
  - Side slope limit: Vertical (7%).

- **Systems conditions**
  - Installation on top of kerb is not recommended, however if installed on top of a kerb all system components must be free to operate.

- **Gore area use**
  - Permitted

- **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 – single sided installation only where rear impact is not possible
Foundation pavement conditions

<table>
<thead>
<tr>
<th>Pavement</th>
<th>Use</th>
<th>Accepted Speed (max)</th>
<th>Post/Pin spacing (m)</th>
<th>Post/pin type</th>
<th>Pavement Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>Permitted</td>
<td>100 km/h</td>
<td>Refer to drawings</td>
<td></td>
<td>200mm thick unreinforced or 150mm thick reinforced</td>
</tr>
<tr>
<td>Deep lift asphaltic concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphaltic concrete over granular pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Permitted</td>
</tr>
<tr>
<td>Flush seal over granular pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsealed compacted formation</td>
<td></td>
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</table>

Other considerations and comments

**Damaged Components**

Damaged components must be repaired in accordance with the product manual.

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>Dec 2019</td>
<td>M-SSE</td>
<td>First</td>
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