Sentryline-M Wire Rope Barrier System

Product summary

<table>
<thead>
<tr>
<th>Status</th>
<th>Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Permanent – Flexible Longitudinal Barriers</td>
</tr>
<tr>
<td>Test Level</td>
<td>Test Level 3 &amp; 4 (MASH): 100 km/h (refer to design requirements)</td>
</tr>
<tr>
<td>Supplier</td>
<td>Australian Construction Products</td>
</tr>
<tr>
<td>Description</td>
<td>Wire Rope Safety Barrier comprising four (4) tensioned wire ropes supported by rectangular steel posts.</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 Sentryline-M Wire Rope Barrier System 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>Sentryline-M Wire Rope Barrier System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variants</td>
<td>Nil</td>
</tr>
<tr>
<td>Deflection</td>
<td>3.02 m</td>
</tr>
<tr>
<td>Product manual reviewed</td>
<td>Rev B June 2020</td>
</tr>
<tr>
<td>ASBAP issue</td>
<td>19 June 2020</td>
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</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>Minimum length of barrier (m)</th>
<th>Anchor/Post 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 TL-3</td>
<td>13.5m from anchor</td>
<td>165</td>
<td>3.0</td>
<td>3.02</td>
<td>3.02</td>
<td></td>
</tr>
<tr>
<td>MASH TL-4</td>
<td>13.5m from anchor</td>
<td>165</td>
<td>3.0</td>
<td>3.02</td>
<td>3.05</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
  - Not permitted
- Thrie-Beam Guardrail
  - Not permitted
- Type F Concrete Safety Barrier
  - Not permitted

Proprietary Products

- Sentryline-M Terminal End
  - Non-release terminal.
  - This is a gating terminal. Gating terminals shall have a run-out area behind the terminal that is traversable and free of hazards. The run-out area is to be 18.5 m x 6 m from the point of redirection.

Design Guidance

- Minimum installation length: 165 metres between crash cushions/terminals (tested article)
- System width (m): 0.3
- 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: 10 Horizontal to 1 Vertical (10%).
  - Side slopes must be considered to minimise manual handling risks and site conditions.
- Systems conditions:
  - Installation on top of a kerb is not recommended.
- 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
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>3.0</td>
<td>Posts in 300mm diameter x 750mm deep concrete footings</td>
<td></td>
</tr>
<tr>
<td>Deep lift asphaltic concrete</td>
<td>Permitted</td>
<td>100 km/h</td>
<td>3.0</td>
<td>Posts in 300mm diameter x 750mm deep concrete footings</td>
<td></td>
</tr>
<tr>
<td>Asphaltic concrete over granular pavement</td>
<td>Permitted</td>
<td>100 km/h</td>
<td>3.0</td>
<td>Posts in 300mm diameter x 750mm deep concrete footings</td>
<td></td>
</tr>
<tr>
<td>Flush seal over granular pavement</td>
<td>Permitted</td>
<td>100 km/h</td>
<td>3.0</td>
<td>Posts in 300mm diameter x 750mm deep concrete footings</td>
<td></td>
</tr>
<tr>
<td>Unsealed compacted formation</td>
<td>Permitted</td>
<td>100 km/h</td>
<td>3.0</td>
<td>Posts in 300mm diameter x 750mm deep concrete footings</td>
<td></td>
</tr>
</tbody>
</table>

Minimum AASHTO standard soil with coring holes

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

Other considerations and comments

Minimum length of barrier
Refer VRS to AGRD Part 6; While shorter lengths than the tested article length are possible, the designer must consider how this will affect other performance values (e.g. deflection). Designers should consult with the product supplier or mitigate the risk through additional controls, such as reducing the posted speed.
In general, an alternate barrier type should be considered when shorter than the following: 60m.

Installation
Must conform to the requirement listed in references below, including full compliance of Specification 711.

Damaged components
Damaged components must be replaced. Repaired components must not be used.

References
- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products.
- VicRoads Standard Section 711 – Wire Rope Safety Barrier (WRSB)
- VicRoads Road Design Note 06-02 The Use of Wire Rope Safety Barriers (WRSB).
- VicRoads Standard Drawing SD2001 – Kerb types
- VicRoads Standard Drawing SD3573 – Guidance on the verge and permissible slopes
- VicRoads Standard Section 204 – Earthworks

Detail Sheet – Update Summary

<table>
<thead>
<tr>
<th>Issue</th>
<th>Approved</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>Sep 2020</td>
<td>M-RD&amp;SSE</td>
<td>First edition</td>
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