UNIVERSAL TAU II CRASH CUSHION

Details
Category: End Treatment
Sub Category: Crash Cushion
Main Material: Steel
Gating/Non Gating: Non-Gating
Redirective/Non-Redirective: Redirective
Permanent/Temporary: Permanent system but can also be used in temporary configurations

Description
The Universal TAU II crash cushion system is a fully redirective, non-gating crash attenuator and is suited for both narrow and wide hazards (hazards up to 2.6m wide).
The Universal TAU-II system is designed to shield the ends of median barriers and other fixed objects likely to be struck head-on, by absorbing and dissipating the kinetic energy of impacting vehicles.

Ownership
Lindsay Transportation Solutions/Barrier Systems
180 River Road, Rio Vista CA94571
Website: www.lindsay.com/transportation-solutions

Supplier
Australian Construction Products PTY Ltd (ACP)
PO Box 565 PANANIA NSW 2213
Phone 02 9772 4172 Fax 02 9792 6272
Website: www.acprod.com.au

Accepted Test Level
NCHRP 350 Test Level 2 (TL2): 70km/hr
NCHRP 350 Test Level 3 (TL3): 100km/hr

Drawing
Figure 1. Names of Basic System Parts
Design

- Design shall be in accordance with the Supplier Universal TAU II Product Manual.
- TAU-II system is designed to stand alone or attach to a permanent or portable concrete barrier.

System Configuration

- The Universal TAU-II systems are provided in lengths and capacities for both low speed and high speed applications.
- The system contains two types of Energy Absorbing Cartridges (EACs): Type A and Type B.
- The number of EACs used in a system will depend on the design speed.
  - TL2 System (70km/hr): contains four EACs
  - TL3 System (100km/hr): contains eight EACs
- For system configurations for other design speeds, refer to the ACP Universal TAU II Design Guide.

Hazard Widths

- The Universal TAU-II system can be applied to hazards with a width up to 2.6m (ideally suited for roadway hazards 1000mm-2440mm in width).
- As the panels telescope rearward during head-on impacts the hazard width must not prevent the panels from this movement.
- The panels can, through the use of a variable width diaphragm, be angled at 5 degrees to allow the unit to protect a wider hazard.

Backstop Assembly

- The unit has different backstop options, each having its own limitations in terms of widths of hazard that can be protected.
- Backstops can be attached directly to a barrier wall or a suitable structure, or installed as a stand-alone system.
- Backstop options available have been summarised in Table 1 below. Refer to Design Guide for backstop assembly details.

<table>
<thead>
<tr>
<th>Backstop Configuration</th>
<th>Type of Backstop Assembly Required</th>
<th>Narrow Installations (≤910mm)</th>
<th>Wide Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attached to Barrier/</td>
<td>Portable</td>
<td>Flush Mount Backstop (for</td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Concrete Barrier (PCB) Backstop</td>
<td>hazards exceeding width</td>
<td></td>
</tr>
<tr>
<td>Stand-Alone System</td>
<td>Compact Backstop</td>
<td>limitations of PCB)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Backstop Assembly Options

Foundation Configuration

- There are different foundation configurations depending on which type of backstop is being used (Compact or P.C.B).
- There are three approved anchoring foundation configurations for the Universal TAU-II system:
  1. Concrete pad over the length of the system
  2. Concrete anchor blocks at the Backstop and Front Cable Anchor locations
  3. Asphaltic Concrete Foundation
- Refer to Product Manual for Anchoring Foundation specifications.

Transition Requirements

- Various transition options are available for the Universal TAU-II system, including transitions to concrete, W-Beam and Thriebeam.
- Transitions are to be selected depending on the hazard being protected and which backstop is being used.
- Refer to Product Manual for recommended transition option drawings.

Limitations

- Not to be used on crossfalls steeper than 8%.
- Elevated kerbs, islands, drainage structures or any other item that can affect the height at which a vehicle could impact the unit should not be placed 15m prior to the unit or along the length of the unit. Refer RPDM Ch.8/8.2.2.2 for further discussion.

Installation & Maintenance

- Installation to be in accordance with the Supplier Universal TAU-II® Installation and Assembly Manual.
- When installing the EACs as a system, it is important that they are placed in accordance with the Supplier Universal TAU II Crash Cushion Installation Manual.
- Parts to be Replaced After impact:
  - Crushed cartridges and damaged slider panels.
- Parts Typically Re-useable After Impact:
  - Undamaged cartridges, diaphragms & most slider panels

References

- Supplier Universal TAU-II® Installation and Assembly Manual
- Universal TAU-II Crash Cushion Design Guide.