

Standard Guidelines for Product Review

## **Impact Attenuator; Permanent Section 00830.00**

August 6, 2009

### **00830.00 – Impact Attenuator, Permanent**

ODOT keeps four types of permanent attenuators on the Qualified Products List (QPL), but we may limit what is used on a project based on traffic counts, repair costs, and design criteria such as size or if it is gating or re-directive.

- NCHRP 350 Test Level 1
- NCHRP 350 Test Level 2
- NCHRP 350 Test Level 3
- NCHRP 350 Test Level 3 tested at 70 mph

Specifications - We require the product to comply with the following:

- (a) The attenuator shall be constructed so that its components are retained and will not be obstacles to nearby traffic if impacted.
- (b) The impacted attenuator shall not encapsulate the impacting vehicle so as to trap the occupants inside the impacting vehicle.
- (c) To have your product listed, you must show satisfactory compliance with the appropriate crash test standards set forth by NCHRP 350.
- (d) To be allowed in gore locations requiring Low Maintenance devices, you need to provide data for the NCHRP 350 3-37 test. You will need to submit videos and pictures clearly showing all damage to the test article. We will only approve devices for low maintenance applications that can be repaired in less than 2 hours after such an impact.

For those products that are approved for placement on the QPL, we will assign ODOT Attenuator Type(s) that summarize the “attributes” for that product. Our contract plans will call out for a specific “Attenuator Type” for each location. “Attenuator Types” are defined as follows:

Type A – Gating Device, Test Level 3, for shoulder use only. Narrow width, regular Maintenance.

Type B – Gating Device, Test Level 3, for shoulder, gore, & median use. Narrow width, regular Maintenance.

Type C – Non-Gating Device, Test Level 2, for shoulder, gore, & median use. Narrow width, regular Maintenance.

Type D – Non-Gating Device, Test Level 2, for shoulder, gore, & median use. Wide width, regular Maintenance.

Type E – Non-Gating Device, Test Level 3, for shoulder, gore, & median use. Narrow width, regular Maintenance.

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Type F – Non-Gating Device, Test Level 3, for shoulder, gore, & median use. Wide width, regular Maintenance.

Type G – Non-Gating Device, Test Level 2, for shoulder, gore, & median use. Narrow width, Low Maintenance.

Type H – Non-Gating Device, Test Level 2, for shoulder, gore, & median use. Wide width, Low Maintenance.

Type I – Not Used

Type J – Non-Gating Device, Test Level 3, for shoulder, gore, & median use. Narrow width, Low Maintenance.

Type K – Non-Gating Device, Test Level 3, for shoulder, gore, & median use. Wide width, Low Maintenance.

Type L – Non-Gating Device, Test Level 3 - High Speed, for shoulder, gore, & median use. Narrow width, Low Maintenance.

Type M – Non-Gating Device, Test Level 3 - High Speed, for shoulder, gore, & median use. Narrow width, Regular Maintenance.

Note: “Low Maintenance” is defined as less than 2 hours to repair damage from a hit equivalent to an NCHRP 350 TL-3 Test 3-31, not including traffic control.

To Apply for inclusion on the QPL, submit the following:

- [Preliminary Information for Product Evaluation Form](#).
- Completed “[Impact Attenuator Attribute Checklist](#)”.
- Independent test results showing compliance with specs listed above,
- 2 copies of the Videos of the crash testing.
- Copy of the approval letter from FHWA.
- Drawings showing exterior dimensions, mounting dimensions, and internal construction.
- 6 copies of product brochures with pictures, etc.
- 2 copies of the details for design criteria.
- 2 copies of the detailed installation instructions.
- Detailed repair instructions.
- List of limitations and precautions.
- Estimated cost for repair of an NCHRP 350 TL-3 Test 3-31 hit (materials only).

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- Estimated labor time to repair an NCHRP 350 TL-3 Test 3-31 hit (man-hours).
- Estimated cost for repair of an NCHRP 350 TL-3 Test 3-37 hit (materials only).
- Estimated labor time to repair an NCHRP 350 TL-3 Test 3-37 hit (man-hours).

Submit documentation to:

Oregon DOT - Product Evaluation Coordinator

800 Airport Road SE

Salem OR 97301-4798

<http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/QPL/QPIndex.shtml>