



COLORADO
Department of Transportation
Division of Project Support

Project Development Branch
Standards and Specifications Unit

Memorandum

DATE: November 23, 2015
FROM: Larry Brinck, Standards and Specifications Engineer
SUBJECT: Standard Guidelines for Review and Acceptance of an Impact Attenuator

- I. The attenuator shall be constructed so that its components are retained and will not be obstacles to nearby traffic if impacted.
- II. The impacted attenuator shall not encapsulate the impacting vehicle so as to trap the occupants inside the impacting vehicle.
- III. Submit videos and pictures clearly showing all damage to the attenuator.
- IV. Show satisfactory compliance with the appropriate crash test standards set forth by National Cooperative Highway Research Program Report 350 (NCHRP 350) or Manual for Assessing Safety Hardware (MASH) for both TL-2 and TL-3. NCHRP Report 350 should only be used for devices developed prior to 2011; otherwise, MASH testing criteria should be utilized, TL-2 is used for design speeds up to 45 miles per hour. TL-3 is used for speeds greater than 45 miles per hour or for the "Low Maintenance Category."
- V. Documentation shall be provided demonstrating that the impact attenuator is repairable after most normal impacts or in other words is not sacrificial in nature.
 - a. For the "*Impact Attenuator*" category, the documentation shall demonstrate that the average repair costs are less than 60% of its original value.
 - b. For the "*Impact Attenuator, Low Maintenance*" category, the documentation shall demonstrate that the attenuator can be repaired in less than 2 hours after impact (excluding traffic control setup and takedown) and that the average repair costs are \$1,000 or less.
 - c. Provided documentation may be based on a study
 - i. done in conjunction with crash testing; or,
 - ii. from actual results from one of the following states:
 1. Arizona
 2. Idaho
 3. Kansas
 4. Nebraska
 5. New Mexico
 6. Oregon
 7. Texas
 8. Utah
 9. Washington
 10. Wyoming
- VI. For those products that are approved for placement on the APL, we will assign CDOT Category for which the attenuator meets the criteria. Our contract plans will call out for a specific "Attenuator Category" for each location. See Category List above.

If you have any questions or comments, please contact Larry Brinck at 303-757-9474 or Joshua Keith at 303-757-9021