COLORADO DEPARTMENT OF TRANSPORTATION

PRE-APPROVED PRODUCT EVALUATION REQUEST & SUMMARY

APL Reference No. 3690-14

Product Evaluation Coordinator
Colorado Department of Transportation
4670 North Holly Street, Unit A
Denver, Colorado 80216

Material code: 630.08.03.00

FOR INTERNAL CDOT USE

Material code description full name: Traffic Zone, Mobile Impact Attenuator

PART 1

Product name: U-MAD TMA (100K)

Product category: Traffic Control\Crash Cushion, Temp\Truck Mounted Attenuator

Product representative (name & address):
Attn: Tony Smiley
Lindsay Transportation Solutions / Barrier Systems
180 River Road
Rio Vista, CA 94571
Phone: (707) 374-6800 FAX: (707) 374-6801
Web-site address: www.barriersystemsinc.com

Manufacturer (name & address):
Attn: Jaime Franco
Lindsay Transportation Solutions / Barrier Systems
180 River Road
Rio Vista, CA 94571
Phone: (707) 374-6800 FAX: (707) 374-6801
Web-site address: www.barriersystemsinc.com

Description of the product: (Include specific quantifiable details from tech data sheet. Advertising generalities are not appropriate.)

The U-MAD is a truck mounted attenuator that consists of an energy absorbing cartridge, a lifting device, and a mounting device. It is designed to absorb the collision energy of rear end impacts and prevent impacting vehicles from under-riding the truck. The cartridge is comprised of an aluminum and steel box structure containing energy absorbing elements. The U-MAD is to be mounted on a truck chassis with a uniform clearance of 11 to 13 inches between the bottom of the cartridge and the roadway. A 12 or 24 volt preassembled and mounted hydraulic system will be provided to raise/lower the TMA from 0 - 90 degrees. This comes standard with locking pins to manually lock the system in the up position.

Physical Specifications: Length is 13' 8", Width is 90", Height is 12' 6" Up Position, Weight is 1300 lbs.

The U-MAD TMA has passed the rigorous NCHRP 350 TL-2 and TL-3 criteria for both mandatory and optional tests with an arrow/message board attached. Cartridges are available in 70K and 100K sizes.

Restrictions, (installation and/or use):

The maximum speed in deployed (down) position should not exceed 25mph.

Use of the product, (be specific to CDOT highway activities only):

To be used on moving or stationary work zones. To be used on shadow vehicles during slow moving construction operations.

Benefits to CDOT, (how will your product enhance quality, improve safety, save money, be a better value then other manufacturer's products):

The system offers many different options for mounting systems, hydraulics, and controllers to make installation and maintenance as simple as possible. Optional support structures are available when clearance is required for truck salt spreading units, long truck decks and other equipment. The U-MAD rests upon the support structure when in the up position to significantly reduce wear and tear from the riggers of travel. After a typical design impact only the cartridge needs to be replaced.

Specifications, (listing those applicable is required) **& Certificate of Compliance** (required to certify compliance with listed specifications):

- [x] CDOT : Standard Specification 630.08
- [ ] ASTM :
- [ ] AASHTO :
- [x] FHWA : NCHRP 350 TL-2 and TL-3
- [ ] other :

Product testing, (from national/independent laboratories or universities) **& Certified Test Report** (CTR required to validate all claims):

- [ ] NTPEP-AASHTO :
- [ ] FHWA :
- [x] other : Transportation Research Center, Inc. (April - May 1997 thru July - August 2005)
- [ ] other :

State DOT Approvals, (current documentation required):

Sample submitted: [ ] yes [x] no [ ] n/a

Materials Safety Data Sheets (MSDS): [ ] yes [ ] no [x] n/a

Notes/Additional Comments

Cartridges are interchangeable with the U-MAD Trailer Mounted Attenuator, reducing inventory costs.