COLORADO DEPARTMENT OF TRANSPORTATION

PRE-APPROVED PRODUCT EVALUATION REQUEST & SUMMARY

APL Reference No. 2394-12

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, Mobil Impact Attenuator

PART 1

Product name: ABSORB 350

Product category: TC\Crash Cushion, Temporary\Impact Attenuator, Temporary

Product representative (name & address):
Attn: Tony Smiley
Lindsay Transportation Solutions / Barrier Systems
505 Crown Point Ave.
Omaha, NE 68110
Phone: (209) 483-3049 FAX: (707) 374-6801

Manufacturer (name & address):
Attn: Jaime Franco - Product Specialist
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

Web-site address: www.barriersystemsinc.com

Description of the product: (Include specific quantifiable details from tech data sheet. Advertising generalities are not appropriate.)
The Absorb 350 System consists of three components: nose assembly, interchangeable modules, and the transition. Absorb 350 has been successfully tested to meet the requirements of NCHRP Report 350 TL-2 (44 mph) and TL-3 (62 mph). It is a non-redirective, gating, water filled crash cushion. The system is approved for attachment to permanent or portable concrete barrier as well as construction and permanent reactive tension Quickchange Movable Barrier. The cartridges are made of high density polyethylene and the steel components of ASTM A-36 mild steel. All steel structural elements are galvanized to ASTM-123. Each separate element of the interchangeable module is 2 inches wide, 32 inches tall and 39-1/2 inches long, and weighs 110 lbs empty and 717 lbs when filled with water. The steel attachment transition hardware weighs approximately 175 lbs and is connected to the hard point using two through bolts. Quickly installed drop through pins are used to connect each element to another element, to the transition and to the nose piece. The total length of the standard TL-2 (5 element) system is 19' and the TL-3 (9 element) 32'. Configuration chart provides suggested arrays for speeds less than TL-2; between TL-2 and TL-3 and above TL-3 to 75 mph. System requires no foundation and can be set on virtually any surface to include dirt, asphalt, gravel and concrete.

Restrictions, (installation and/or use):
Used only where non-gating system is appropriate; must be used with appropriate anti-freeze protection in climates where water freezing potential exists.

Use of the product, (be specific to CDOT highway activities only):
Where non-redirective applications are appropriate. Exits, edge of road and wide medians are primary locations where the system is applicable.

Benefits to CDOT, (how will your product enhance quality, improve safety, save money, be a better value then other manufacturer's products):
Quick installation (30 minutes or less) and easy maintenance after impact resulting in reduced crew exposure. Narrow profile (24") reduces potential for impact. Superior performance to sand barrels in protecting narrow hazards. Can be attached to a 12" stick of temporary barrier to protect hard points & damaged guardrail ends. Only system designed to protect temporary & permanent movable barrier. Transfers with the barrier through the Barrier Transfer Machine. Transitions to accommodate virtually any type of barrier currently approved, is available as standard items. A non-standard transition is available to accommodate two barriers coming together to form a single hard point.

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

- [x] CDOT : Safety Selection Guide (Crash Attenuators and End Treatments)
- [x] ASTM : A-36 and A-123 for steel components; B-209 for nose piece aesthetic cover
- [x] AASHTO : Roadside Design Guide
- [x] FHWA : NCHRP Report 350 Test Level 2 and Test Level 3
- [ ] other :

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

- [ ] NTPEP-AASHTO :
- [x] FHWA : Acceptance Letters: HSA-CC66 (5-11-2000), HSA-CC66A (6-27-2000), HSA-10/CC66B (12-09-2003)
- [x] other : Safe Technologies, Inc. (February 2000) (April 2000) (May 2000)
- [ ] other :

State DOT Approvals, (current documentation required):
CA, IL, MI, NE, NV, TX

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

Notes/Additional Comments
Currently approved in 33 states. Elements are of a plastic component with steel side bars and end plate hinge assemblies and evaporation cap with tether to protect fill port and appropriate fasteners. Nose piece has an aluminum skin on the front portion to provide an aesthetic cover and location for attaching appropriate traffic control signing. This skin is fabricated from 5052 H32 in conformance with ASTM B-209 and is attached with adhesives and pop rivets (QMB system only). Installation manual, appropriate drawings and configuration chart provided with each system.