



U.S. Department
of Transportation

**Federal Highway
Administration**

June 28, 1995

400 Seventh St., S.W.
Washington, D.C. 20590

Refer to: HNG-14

J. M. Essex, P.E.
Vice President, Sales
Energy Absorption Systems, Inc.
One East Wacker Drive
Chicago, Illinois 60601

Dear Mr. Essex:

Your March 1 letter to Mr. William A. Weseman referenced an earlier meeting you had with members of my staff, during which you provided videotapes and a written report documenting the National Cooperative Highway Research Program (NCHRP) Report 350 test level 3 (TL-3) performance of your Energite III (Sand Barrel) crash cushion. At that meeting, you requested that this office delay formal action on your request pending implementation of changes reflecting the metrication transition and of an educational campaign designed for the end-user of your product.

On May 30 you wrote to Mr. Weseman requesting the Federal Highway Administration (FHWA) to proceed with our review process and to respond to some specific issues addressed in that second letter.

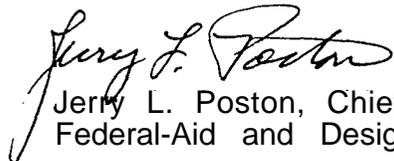
Each module in the Energite III array consists of a solid plastic barrel with a lid. The amount of sand placed in each barrel and its center of gravity are controlled by an inner cone that rests inside each of the three lightest weight modules. Based on some preliminary crash tests to evaluate the performance of an Energite III array per the NCHRP Report 350 matrix for a TL-3, non-redirective crash cushion, a 12-barrel standard array was selected for compliance testing. From front to back, the tested array consisted of one single 90-kg (200-pound) module, two rows of single 180-kg (400-pound) modules, one single 320-kg (700-pound) module, two rows of two 320-kg (700-pound) units, one row of two 640-kg (1400-pound) units, and finally, one row of two 960-kg (2100-pound) units. Each module was spaced approximately 150 mm to 200 mm apart, with the rear-most barrels at least 300 mm from the shielded object with a minimum 760-mm lateral offset from the corner of the hazard.

The NCHRP Report 350 tests 3-40 through 3-44 were conducted on the array described above. Test results are shown on the enclosed excerpts from the Energite III crash test report dated May 1994. The occupant risk measurements are summarized on Table C-1 from the report, which is also enclosed.

Based on the above noted test results, we concur with your finding that the Energite III array, as tested, fully meets the NCHRP Report 350 requirements for a TL-3 non-redirective crash cushion and it may continue to be used on the National Highway System (NHS) when selected by a highway agency. All requirements pertaining to the use of a proprietary product on federally-funded projects (except exempt non-NHS projects) remain in effect. By a copy of this letter, we will inform our field offices of this determination.

Two other items addressed in your May 30 letter concerned the selection of a design procedure that will address the multiple test level designations contained in the NCHRP Report 350 and FHWA's current position on the use of single-row sand barrels in work zones. We believe it appropriate to address both of these concerns in a separate letter and we will do so in the near future.

Sincerely yours,



Jerry L. Poston, Chief
Federal-Aid and Design Division

2 Enclosures