

February 11, 2003

HSA-10/B111

Mr. J.C. Brown  
President  
Creative Building Products  
6409 Highview Drive  
Ft. Wayne, IN 46818-1385

Dear Mr. Brown:

In your October 7 letter, you requested acceptance of your water-filled plastic traffic barrier at NCHRP Report 350 test level 2 (TL-2) and included copies of crash test videotapes and test reports prepared by KARCO Engineering, L.L.C. in Adelanto, California. In reviewing the test reports, it became apparent that they were inadequate because they failed to describe the test article, they included no detailed drawings of your barrier, and they misinterpreted the evaluation criteria recommended in NCHRP Report 350. Based on this misinterpretation, test report No. KAR22078-04 concluded that the pickup truck test was unsuccessful. A "corrected" report merely excluded the summary page, and did not add any description or drawings of your barrier. On November 7, 2002, you sent me a set of material specifications and dimensioned drawings of the 426 Barrier units. Each unit is made from 8-mm (5/16-inch) thick low-density polyethylene and stands 1070-mm (42-inches) tall, including a 180-mm (7-inch) vertical reveal, a 445-mm (17.5-inch) lower sloped face, and a 445-mm (17.5-inch) upper sloped face. The base width is 610 mm (24 inches) and the top width is approximately 250 mm (10 inches). Three 13-mm (½-inch) diameter galvanized steel cables threaded through three 50-mm (2-inch) holes in the barrier segments connect the 1830-mm (6-ft) long units. The three cables are connected together at each end of the barrier installation with standard cable clips (U-bolts). These details are shown on the Enclosure to this letter that was received electronically on February 4.

Staff members have reviewed the crash test videos and agree that your 426 Barrier meets the appropriate evaluation criteria for an NCHRP Report 350 test level 2 (TL-2) barrier. The vehicle was not redirected, but rather captured by the barrier, which reportedly deflected 3.14 m (10.3 ft) when struck at 73 km/h (45.4 mph) by the 2000-kg pickup truck. The same barrier deflected 0.9 m (37 in) when impacted by the 820C vehicle at the TL-3 speed of 100.7 km/h (62.6 mph) and 20 degrees. In both tests, the vehicles impacted near the mid-point of a 32-unit line of barriers. Thus, a minimum of sixteen 1830-mm (6-foot) long segments would normally be required in advance of the area in which the reported deflection would be acceptable to the using agency. Impacts nearer either end would most likely result in far greater deflections and possible penetrations of the barrier. In both the high speed small car test and in the lower TL-2 speed pickup truck test, occupant impact velocities and ridedown accelerations were well below the NCHRP Report 350 maximum allowable values of 12 m/sec and 20 g's.

**Based on review of the actual crash tests and the drawings that you provided separately, I will consider your 426 Barrier, as shown on the enclosure, to be acceptable for use as a TL-2 barrier (based on the pickup truck test) on the National Highway System (NHS) when selected by the appropriate authority. Please be advised that future requests will be returned without action if the accompanying test reports do not include the information identified in Chapter 6 (Test Documentation) of NCHRP Report 350 or contain errors resulting from misinterpretation of test results.**

**Please note also the following standard provisions that apply to FHWA letters of acceptance:**

- **Our acceptance is limited to the crashworthiness characteristics of the devices and does not address their conformity with the Manual on Uniform Traffic Control Devices.**
- **Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.**
- **Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.**
- **You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.**
- **You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that it will meet the crashworthiness requirements of FHWA and NCHRP Report 350.**
- **To prevent misunderstanding by others, this letter of acceptance shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.**
- **The 426 Barrier may include patented components and considered to be a proprietary product. The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411.**

**Sincerely yours,**

**(original signed by Michael S. Griffith)**

**Michael S. Griffith  
Acting Director, Office of Safety Design  
Office of Safety**

**Enclosure**

NB: All edges have 1/4" radius

**Barricade**  
**426 HW**  
**Highway**

**CBP**

Designer: Dominic Larin  
From Les plastiques  
Maioly

7 January 2002

Measures in inches

"Spin well" for water filing

