



U.S. Department
of Transportation
**Federal Highway
Administration**

JUL 10 2003

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

Refer to: HSA-10/SS-117

Mr. Ron Riker
Caminoverde, Incorporated
103 Regent Drive
Brownwood, Texas 76801

Dear Mr. Riker:

Thank you for your letter of June 26 requesting Federal Highway Administration (FHWA) acceptance of your company's Shur-Tite® socket system as a breakaway sign support system for use on the National Highway System (NHS). Accompanying your letter was a report from the Texas Transportation Institute and videos of the crash tests. You requested that we find the Shur-Tite® socket system acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

Introduction

Testing of the supports was in compliance with the guidelines contained in the NCHRP Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features. Requirements for breakaway supports are those in the American Association of State Highway and Transportation Officials' (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

The Caminoverde Shur-Tite socket system consists of a 3-inch diameter, 17-inch long pipe socket in a concrete footing. The socket is fabricated with a hole near the toe to permit concrete to flow in, locking the socket into place. The 2-3/8-inch signpost is then placed into the socket and secured into place with a wedge of high density polyethylene. The system was tested with a fiberglass post and with an ASTM 1011 Grade 55 steel post.

Testing

Pendulum testing was conducted on your company's devices. The mass of the test bogie was 820 kg in all tests. The complete device as tested is shown in the enclosures.



Test #	NCHRP 350	Speed	Post Material	Post Diam.	Occup. Speed	Delta V
1	3-60, Strong Soil	34.2 km/h	Fiberglass	2.375" OD	No Contact	0.2 m/s
2	3-60 Strong Soil	34.8 km/h	Steel 0.095 wall	2.375" OD	No Contact	1.0 m/s

Occup. Speed: Occupant Impact Speed: Speed at which a theoretical front seat occupant will contact the windshield. In meters per second

Delta V: Speed change of the test vehicle. In meters per second.

Findings

Velocity changes were all within acceptable limits, and the only stub remaining was the top of the socket which projected no more than 1 inch above the ground. The results of testing met the FHWA requirements and, therefore, the devices described above and shown in the enclosed drawings for reference are acceptable for use as Test Level 3 devices on the NHS under the range of conditions tested, when proposed by a State.

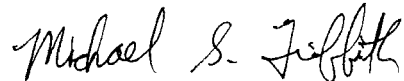
Please note the following standard provisions that apply to FHWA letters of acceptance:

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor 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 they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number SS-117 shall not be reproduced except in full. As this letter and the supporting documentation which support it become public information, it will be available for inspection at our office by interested parties.
- The Caminoverde Shur-Tite ® Socket System is a patent-pending product and will be considered "proprietary." The use of proprietary devices specified on Federal-aid projects, except exempt, non-NHS projects: (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, a copy of which is enclosed.

- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device. Patent issues are to be resolved by the applicant and the patent owner.

Sincerely yours,



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

Enclosure