



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

1200 New Jersey Ave., S.E.  
Washington, DC 20590

December 6, 2007

In Reply Refer To:  
HSSD/SS-157

Mr. Reinhardt F. Cyphers  
Addresses of Distinction, LLC  
907 New Franklin Road  
LaGrange, GA 30240

Dear Mr. Cyphers:

In your mail correspondence of October 18, 2007, you requested the Federal Highway Administration's (FHWA) acceptance of your company's aluminum tubes as a breakaway sign support. You referenced our acceptance letter SS-28 which reported on small sign support testing conducted in "weak" soil by the Florida Department of Transportation (DOT). In that letter we accepted as breakaway 3 inch (89 mm) diameter, 6061-T6 alloy aluminum tubes of 0.187 inches (4.75 mm) thickness when no more than one sign support was used within a seven foot span. The posts pulled out of the ground partially or completely, allowing the vehicle to gradually come to a stop. The two sign supports that you request to use have: (1) a diameter of 2.875 inches (73 mm) with a wall thickness of 0.203 inches (5.16 mm) and (2) a diameter of 2.375 inches (60 mm) with a wall thickness of 0.154 inches (60 mm). The three sign posts are compared in the following table:

Sign Post	Florida DOT	Addresses of Distinction, LLC	Addresses of Distinction, LLC
Diameter	3.5 in (89 mm)	2.875 inches (73 mm)	2.375 inches (60 mm)
Wall Thickness	0.187 in (4.75 mm)	.203 inches (5.16 mm)	0.154 inches (60 mm)
Alloy	6061-T6	6063-T52	6063-T52
Tensile Strength	45 ksi (310 MPa)	30 ksi (207 MPa)	27ksi (186MPa)
Yield Strength	40 ksi (275 MPa)	25 ksi (173 MPa)	21ksi (145Pa)
Cross Sectional Area	1.951 in <sup>2</sup> (1257 mm <sup>2</sup> )	1.70 in <sup>2</sup> (1099mm <sup>2</sup> )	1.70 in <sup>2</sup> (1099 mm <sup>2</sup> )
Anti-Rotation Hardware	Unknown	Yes	Yes

In addition to the Florida DOT sponsored testing to which you referred, earlier tests of 4 inch (100 mm) diameter thin-walled aluminum tubes were conducted in "strong" soil. These posts, which were fitted with anti-rotation hardware below the ground, fractured upon impact and were found to be crashworthy.

**MOVING THE**  
**AMERICAN**  
**ECONOMY**

Your company's aluminum tube sign supports are smaller diameter and made of weaker alloy than the posts already found to be crashworthy in either strong or weak soil. Therefore your request regarding the two aluminum tube sizes to be used as sign supports as stated above is acceptable for use on Federal-aid highway projects when requested by a State.

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

- This 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 the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others this letter of acceptance designated as number SS-157 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.
- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device for which the applicant is not the patent holder. The acceptance letter is limited to the crashworthiness characteristics of the candidate device, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

Sincerely yours,



George E. Rice, Jr.  
Acting Director, Office of Safety Design  
Office of Safety

FHWA:HSSD:MLupes:tb:x66994:11/27/07

File: s://directory folder/mlupes/SS157-Addressees of Distinction Alum Tube.doc  
cc: HSSD (Reader, HSA; Chron File, HSSD; M.Lupes, HSSD  
M.Bloschock, HSSD; M.McDonough, HSSD)