

Refer to: HSA-10/WZ-41 Amendment #1

Mr. Henry Ross
United Rentals Highway Technologies
880 North Addison Road
P.O. Box 7050
Villa Park, Illinois 60181-7050

Dear Mr. Ross:

This is in response to your letter of March 25, 2003, requesting Federal Highway Administration (FHWA) acceptance of your company's Type I and Type II barricades using 0.350-inch thick polyethylene panels in widths up to 36 inches as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter was a sample of the panel material and references to tests of previously accepted barricades that support your request. You requested that we find these devices 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

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This later memorandum lists devices that are acceptable under Categories I, II, and III.

Your Type I and II barricades were crash tested using ½ inch plywood panels which were 24 inches wide. A brief description of the tested barricades follows:

The three barricades tested featured 24 inch long and ½ inch thick plywood panels. The legs are 12 ga, 1 ¼ x 1 ¼ mm steel angles conforming to ASTM specification A-499 grade 60 rail steel. The width of the plywood panels was either 8 inches or 12 inches, depending upon the model.

The panels are riveted to the legs using 5/16" x 3/4" semi-tubular aluminum rivets (alloy 5056, 0 tempered) with a 3/4" head diameter. Each barricade also had a Toughlite 2000 warning light manufactured by WLI Industries, mounted with standard vandal-resistant hardware with cupped washer. The heaviest of the barricades weighed approximately 25.5 pounds with the light in place.

Full-scale automobile testing was conducted on your company's barricades and they were found acceptable per FHWA Acceptance Letter WZ-41, dated June 6, 2000. Your current request is that these barricades be considered acceptable when:

1. panels of 0.350 inch thick high-density polyethylene are used, and/or
2. the same configuration of Type I and Type II barricades, using plywood and 0.350 polyethylene panels, when used in a 36 inch wide configuration.

You referenced the following prior letters of acceptance:

WZ-6 to Bent Manufacturing dated 11-23-1998 (generic up to 36 inches wide)

WZ-36 to Protection Services dated May 24, 2000 (up to 36 inches wide)

WZ-46 to Traffix dated July 31, 2000 (HDPE 24 inches wide)

WZ-66 to United Rentals dated September 10, 2001 (0.300 inch thick polypropylene panels)

WZ-88 to Barricade Light and Rental dated March 28, 2002 (0.350 inch thick HDPE panels)

WZ-112 to Camsco Services dated March 28, 2002 (0.800 inch thick HDPE extruded panels)

Findings

We concur that your request falls within the range of generic Type I and Type II barricades that have been crash tested and accepted (notwithstanding the fact that some of the tests you referenced were conducted with private funds). Therefore, the Type I and Type II Barricades described above and detailed in the enclosed drawings are acceptable for use 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 WZ-41 Amendment #1 shall not be reproduced except in full and accompanied by WZ-41. 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.
- If parts of your barricades are patented then it may be considered "proprietary." 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, 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.
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Sincerely yours,

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

Enclosures

FHWA:HSA-10:NArtimovich:tb:x61331:6/18/03
File: h://directory folder/nartimovich/WZ41-AUR
cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N. Artimovich, HSA-10)