

Refer to: HSA-10/WZ-111

Ms. Bonnie Ruggless
Bonnie's Barricades
1547 Michigan Street
Des Moines, IA 50314-3532

Dear Ms. Ruggless:

Thank you for your letter of February 26, 2002, requesting Federal Highway Administration (FHWA) acceptance of your company's A-frame vertical panels as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter was a dimensioned drawing of the device. You requested that we find this device acceptable under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features" by virtue to its similarity to crash-tested Type II barricades.

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.

The vertical panel uses the same materials as the Manual on Uniform Traffic Control Devices (MUTCD) Type II barricades which were crash tested by the Bent Manufacturing Company and found acceptable in the FHWA Acceptance Letter WZ-06 of November 23, 1998, and distributed by the FHWA as generic models in FHWA Acceptance Letter WZ-54 of September 15, 2000. The significant differences between the tested Type II barricade and the vertical panel you requested are:

1. The width of the tested device was 36 inches. The vertical panel is 12 inches wide.
2. The weight of the tested device was 30 pounds. The vertical panel is 18.3 pounds.
3. The tested barricade had two horizontal plywood rails. The vertical panel has one vertical rail
4. The barricade was tested with a lightweight warning light. The vertical panel has none.

Because the materials you propose to use are identical to those in the crash tested Type II barricade, and the proposed vertical panel is significantly narrower and lighter than the tested barricade, we concur that the vertical panel, as discussed above and detailed in the enclosures, can be expected to perform in a similar manner to the tested barricade. Therefore, it is acceptable for use on the NHS under the range of conditions the Type II barricade was tested, when proposed by a State.

Please note the following standard provisions, which 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 MUTCD.
- 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-111 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.

Because this vertical panel uses commonly available materials and is based on a generic barricade design, it will also be considered generic and can be fabricated by any agency or contractor that chooses to select this design, as long as it conforms to the enclosed design details.

Sincerely yours,

A. George Ostensen
Program Manager, Safety

Specifications for Generic Crashworthy Barricades – METRIC UNITS

Barricades	Vertical Panel
Frame	1156 mm long, 12 ga steel angle, 31.75 x 31.75 mm “A-Frame” design 12.7 mm fasteners
Panels	13-mm thick plywood
Panel Height	610 mm
Panel Width	305 mm
Fastener Hardware	1/4"-20 x 1" Steel Carriage Bolt, Class 1 1/4"-20 x 1" Steel Hex Lock Nut
Height to top	1040 mm
Mass	13.2 kg

Specifications for Generic Crashworthy Barricades – ENGLISH UNITS

Barricades	Vertical Panel
Frame	45.5mm long, 12 ga steel angle, 1.25 x 1.25 mm “A-Frame” design 1/2 inch fasteners
Panels	1/2 inch thick plywood
Panel Height	24 inch
Panel Width	12 inches
Fastener Hardware	1/4"-20 x 1" Steel Carriage Bolt, Class 1 1/4"-20 x 1" Steel Hex Lock Nut
Height to top	41 inches
Mass	30 pounds