

Refer to: HSA-10/WZ-89

Mr. Chuck Gauger
Vice President and General Manager
Plasticade Products
7700 Austin Avenue
Skokie, IL 60077

Dear Mr. Gauger:

Thank you for your letter of July 27, 2001, requesting Federal Highway Administration (FHWA) acceptance of your company's *Verticalcade* as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). You also wrote on October 29, 2001, requesting acceptance of your company's Type III barricade. Accompanying your letters were product specifications and a comparison between your product and other crashworthy devices. You requested that we find these vertical panel channelizers and Type III barricades 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.

A brief description of the devices for which you are requesting acceptance follows:

The Plasticade Verticalcade vertical panel is blow-molded from UV stabilized low-density polyethylene plastic. They are 43 inches tall and taper from 8 5/8 x 1 1/8 inches at the top to 12 1/2 x 6 inches at the bottom. The vertical portion itself, with retro-reflective sheeting attached, weighs 4 pounds. The available bases are 20 or 30 pounds of black rubber. As it is a vertical panel it is considered to fall within FHWA Category 2 for work zone traffic control devices.

The Plasticade Type III Barricade is an 8-foot wide barricade similar to the 4-foot wide version tested for Recycled Plastic Products and the 8-foot wide version tested by Plastic Safety Systems. You asked us to consider extrapolating the results without additional crash testing. This barricade, which uses components primarily supplied by Recycled Plastic Products, is described as follows: The horizontal rails, or “legs,” are 1217-mm long and are placed 1225 mm apart. Underneath each end of the legs rubber pads are attached to increase friction with the pavement. On the top center of each leg is bolted a 127 mm x 76 mm steel plate, to which is welded a 72 mm diameter x 3.06 mm wall x 200 mm long steel tube. These steel tubes support the vertical upright masts which are 88 mm square x 5.08 mm wall x 1521 mm long High Density Polyethelene (HDPE) plastic. To these vertical masts are bolted (with 1/4 - 20 bolts and nuts with washers) three 205 mm wide x 22.75 mm thick x 2435 mm long HDPE honeycomb extrusions. The vertical uprights are spaced approximately 2000 mm apart so that they are approximately 150 mm from the ends of the HDPE extruded barricade panels.

Findings

The Verticalcade is similar to other crash tested vertical panels, and significantly lighter and smaller than plastic drums (for which it is an alternative) which are crashworthy Category One devices. Therefore, the Verticalcade described above and shown in the enclosed drawings for reference is acceptable for use as a Test Level 3 device on the NHS under the range of conditions tested, when proposed by a State. This acceptance does not include the use of warning lights affixed to the device.

Should you wish to market the Verticalcade with a warning light affixed to the top it should be crash tested both head-on and at 90 degrees using a 820C test vehicle impacting at 100 km/hr. Although plastic drums with lights are considered Category One devices, the violent whipping action of a vertical panel carrying a light may propel the light towards the windshield.

Your Type III barricade is also similar to the tested barricades. As you intend to use the same components as the tested barricades, your type III barricade, described above, will also be acceptable for use.

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 the will meet the crashworthiness requirements of FHWA and NCHRP Report 350.

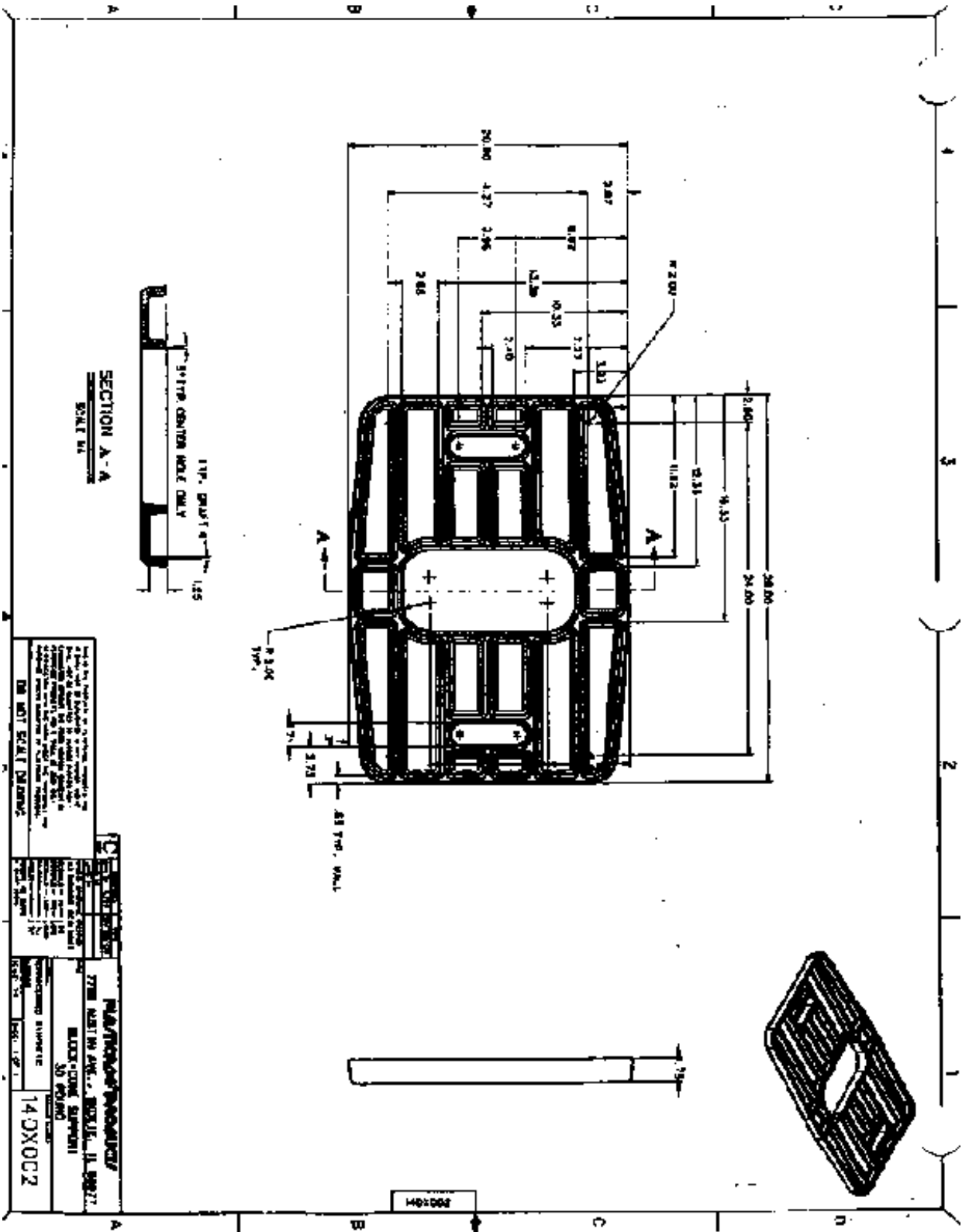
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-89 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.
- The Plasticade Verticalcade and Type III barricades may include patented components and if so are 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 types 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.

Sincerely yours,

Michael L. Halladay
Acting Program Manager, Safety

Enclosure

FHWA:HSA-10:NArtimovich:tb:x61331:2/01/02
File: WZ89PlasticadeJan.wpd
cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N. Artimovich, HSA-10)



SECTION A - A
SCALE 1:1

17% DRIFT 8"
ENTER CENTER HOLE ONLY
1.25

PART/PROCESS/PRODUCTION 27TH MAIN AVE., ROCKFORD, IL 60027	
BLACK-ONK SUPPLY 30 POUND	14DX002
DIM NOT SCALE DRAWING	

