

Mr. John Lund, Chief Engineer
 Cortina Companies
 10706 West Grand Avenue
 Franklin Park, Illinois 60131

Dear Mr. Lund:

Thank you for your letter of August 15, 2003, requesting Federal Highway Administration (FHWA) acceptance of your company's Type I and Type II steel-legged barricades with waffleboard panels as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter were detailed drawings and material specifications of the barricades. You requested that we find them 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 are those lightweight devices which are to be self-certified by the vendor, Category II devices are other lightweight devices which need individual crash testing but with reduced instrumentation, Category III devices are barriers and other fixed or heavy devices also needing crash testing with normal instrumentation, and Category IV devices are trailer mounted lighted signs, arrow panels, etc. for which crash testing requirements have not yet been established. 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.

Specifications for Cortina SteelCade Barricades

Product Number	Top Panel	Bottom Panel	Top Sheeting	Bottom Sheeting	Mass	Mass With Light
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SteelCade Type I Barricades

97-03-001	12"	8"	EGR Sheeting	None	8.7 kg	10.2 kg
97-03-001-01	12"	8"	Hi-Intensity Sheeting	None	8.7 kg	10.2 kg
97-03-001-02	12"	8"	SEG Sheeting	None	8.7 kg	10.2 kg
97-03-001-11	12"	8"	Prismatic w/arrow	None	8.7 kg	10.2 kg

SteelCade Type II Barricades

97-003-002	8"	8"	EGR Sheeting	EGR Sheeting	8.2 kg	9.7 kg
97-03-002-01	8"	8"	Hi-Intensity Sheeting	Hi-Intensity Sheeting	8.2 kg	9.7 kg

SteelCade Type II Barrel Eliminators

97-03-002-02	12"	8"	Hi-Intensity Sheeting	Hi-Intensity Sheeting	8.7 kg	10.2 kg
97-03-003-01	12"	8"	EGR Sheeting	EGR Sheeting	8.7 kg	10.2 kg
97-03-003-01-11	12"	8"	Prismatic w/arrow	EGR Sheeting	8.7 kg	10.2 kg

The larger (12") panels are 610 mm x 308 mm x 19.05 mm thick. The thickness steps down to 11.43 mm at each end. They are of a waffleboard configuration, with the panel face being 3.00 mm and the ribs being 2.50 to 3.00 mm thick. The mass of the larger panels is 0.80 kg maximum. The smaller (8") panels are similar with dimensions of 610 mm x 156 mm and a mass of 0.55 kg maximum. All panels are made from copolymer polypropylene resin.

The 1150 mm long legs are of angle iron configuration, 31.75 mm x 31.75 mm x 12 gage steel. They are formed from hot rolled steel sheet or strip stock, AISI Grade 1015 to 1020. Each leg has a mass of 1.45 kg maximum. Panels are attached to the legs in the factory using 6.35 mm diameter steel/aluminum rivets. The steel center shank is 3.80 mm which is only slightly less than the 4.15 mm root diameter of the threads of the 1/4-20 bolts used in the original crash tested generic barricade (FHWA Letter WZ-6 to Bent Manufacturing, Generic version in WZ-85 dated November 15, 2001.) The legs are joined at the pivot point with 12.7 mm x 25 mm long steel bolts.

Testing

Full-scale automobile testing was conducted on all-plastic barricades using your company's plastic panels. These were found acceptable in our letters to Dicke Tool Company (WZ-17 dated July 20, 1999) and to The Cortina Companies (WZ-47 dated July 19, 2000.) Type I and II Generic barricades, which your barricades conform to, are detailed in our Memorandum WZ-85 dated November 15, 2001.

Findings

Because the barricades described above and in the enclosed drawings have either been successfully crash tested or conform to FHWA's generic barricade specifications, they will be acceptable for use on the NHS under the range of conditions that the generic barricades were tested, when proposed by a State. These barricades may be field assembled from the component parts supplied by Cortina. When a contractor attaches a lightweight warning light to the top of any of these barricades, the hardware shall be replaced with the tamperproof hardware provided by the light manufacturer.

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-165 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 Cortina Companies' barricades contain components which are patented and 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 by a highway agency* for use on Federal-aid 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. These provisions do not apply to exempt Non-NHS projects. 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,

John R. Baxter, P.E.
Director, Office of Safety Design
Office of Safety

Enclosures

FHWA:HSA-10:NArtimovich:tb:x61331:10/7/03

File: h://directory folder/nartimovich/WZ165-CortinaFIN

cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N. Artimovich, HSA-10)