

October 12, 2004

Refer to: HSA-10/WZ-77

Mr. Peter Speer  
Bunzl Extrusion Tacoma Incorporated  
3110 70<sup>th</sup> Avenue East  
Tacoma, Washington 98424

Dear Mr. Speer:

This is in response to your letter of February 27, 2001, requesting modification to the Federal Highway Administration (FHWA) acceptance of your company's T3B Plastic Type III Barricades as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). We initially accepted this barricade in our letter to you dated June 29, 2000, and numbered WZ-39. That letter also accepted modifications that used perforated square steel tubes (PSST) as the vertical and horizontal elements of the barricade frame. We subsequently accepted this barricade with lightweight warning lights and modified supporting legs (acceptance letter WZ-63 dated December 6, 2000). You have now requested that we find this barricade 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" with the following modifications to the upright supports:

2 each 50 x 50 mm x 5 mm thick A-36 steel L-channel uprights when used in conjunction with either of the accepted PSST or angle iron support legs.

2 each 38 x 38 mm x 3.5 mm thick hot-rolled high carbon steel L-channel or angle uprights when used in conjunction with either of the accepted PSST or angle iron support legs.

### **Introduction**

The T3B Barricade is a plastic, lightweight, portable Type III barricade. The T3B 25.4mm x 210mm hollow plastic barricade panels are made from a specially formulated polyolefin plastic, and the vertical uprights are 44.5-mm square thermoplastic tubing extrusions. The support legs are 14 ga, 50.8-mm square perforated galvanized mild steel tubing. One 150-mm tall PSST stub is welded to each support leg, and the vertical uprights are inserted into them. Testing of your 2438-mm (8 foot) wide version of this barricade was discussed in our letter WZ-39. The fasteners used were 7.94 mm (5/16") bolts with Nylock nuts and steel washers to attach panels to the uprights. As an alternative, PSST upright frame elements have been found acceptable.

Component	Composition	Dimensions	Weight
Barricade foot	14 ga PSST or Qwik-punch	2 x 2 x 60 inch w/ PSST Stub	12 lb
Upright, first option	6 gage A36 L channels	2 x 2 inch	12.2 lb
Upright, second option	10 gage hot rolled high carbon L channels	1.5 x 1.5 inch	7.6 lb
T3B 8-inch panels	Thermoplastic	¾ x 8 ¼ x 96 inch	5.25 lb
Hardware	Steel	Various	2.0 lb

### Analysis

Successful crash tests of steel-framed Type III barricades have typically used Telespar-type perforated square steel tubes or hot-rolled high-carbon steel L-channels (“angle iron”). You requested angle iron uprights of A-36 steel or hot-rolled high-carbon steel. The successful test of the “generic” type III barricade (covered in acceptance letters WZ-6 and WZ-54) used high-carbon steel. Our acceptance letter WZ-40, dated June 6, 2000, reported on the Illinois L-Channel Type III Barricade which used angle iron of A-36 steel. As a result of this successful test of a generic state design, we find your use of A-36 angle iron uprights acceptable.

### Findings

A type III Barricade fabricated from Davidson Plastic/Bunzl Extrusion hollow horizontal rails (maximum 1220 mm (4 feet)) and:

2 each 50 x 50 mm x 5 mm thick A-36 steel L-channel when used in conjunction with either of the accepted PSST or angle iron support legs, or

2 each 38 x 38 mm x 3.5 mm thick hot-rolled high carbon steel L-channel or angle when used in conjunction with either of the accepted PSST or angle iron support legs,

will be acceptable for use as Test Level 3 devices on the NHS under the range of conditions tested, when proposed by a State.

### General:

The conditions stated in our previous letter on the T3B barricade (WZ-39) remain in effect. Barricades fabricated from plastic upright elements may be too flexible when used with a sign panel and not be used unless crash tested.

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 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 WZ- 77, shall not be reproduced except in full.
- The T3B™ Type III Barricade is a proprietary device. 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 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,

***/Original Signed by/***

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

Enclosures

FHWA:HSA-10:NArtimovich:tb:x61331:10/7/04

File: h://directory folder/nartimovich/WZ77-BunzFIN1

cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;

N. Artimovich, HSA-10)