



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

October 28, 1999

400 Seventh St., S.W.  
Washington, D.C. 20590

Refer to: FMHS

Mr. John Sarkisian  
National Sales Manager  
Market Displays International  
38271 W. Twelve Mile Road  
Farmington Hills, Michigan 48331-3041

Dear Mr. Sarkisian:

Thank you for your letter of June 15 requesting Federal Highway Administration (FHWA) acceptance of certain of your company's portable sign stands as crashworthy traffic control devices for use in work zones on the National Highway System. The letter was a follow-on to your December 10, 1998, letter which included a comparison of your company's stands to other portable sign stands that had been tested by the Texas Transportation Institute. You requested that we find Model 4814SSCK, 30CAM, 40CAM, and 4814CS portable sign stands acceptable for use on the National Highway System based on their similarity to the crash tested stands. On September 9, 1999, you provided additional information and also requested acceptance of two additional stands, the 4814NSCK and the 3612DLK.

Unifying features of these six "X-footprint" stands is that they consist of steel or aluminum telescoping legs, a vertical upright to support the roll-up sign, and a diamond shaped sign panel supported by horizontal and vertical fiberglass ribs (1220-mm (48-inch) square or 914-mm (36-inch square signs.) A significant deviation, however, is the mid-height mast of the 4814CS stand. Whereas the other three stands support the roll-up sign frame near the base, the 4814CS attaches to the middle of the sign bracing. We are not aware of any examples of a sign stands like that tested in the public domain. This stand will require crash testing prior to our review for acceptance.

The five remaining stands have little or no metal structure above the point at which the vertical fiberglass cross-bracing is enclosed. We have observed crash tests where roll-up signs mounted in this manner pass over the vehicle generally only doing minor damage to the windshield. No impacts have been observed where the windshield was penetrated. Of course, vehicle speed and trajectory are not affected to any great degree in tests of "compact" sign stands of this sort. These five signs are summarized in the following table and illustrated in the enclosed drawings:

Model #	Leg construction	Base	Sign Ht.	Upright	Mast	Ht to Top
30CAM	STEEL 1830 mm TELESCOPE (72")	WELD	324 mm (12.75")	STEEL 667 mm	FIBERGLASS	2050 mm (80.75")
40CAM	STEEL 1830 mm TELESCOPE (72")	1 SPRING	324 mm (12.75")	STEEL 667 mm	FIBERGLASS	2050 mm (80.75")
4814SSCK	ALUMINUM 1830 mm TELESCOPING (72")	1 SPRING	324 mm (12.75")	ALUM 667 mm	FIBERGLASS	2050 mm (80.75")
4814NSCK	ALUMINUM 1830 mm TELESCOPING (72")	WELD	1324 mm (2.75")	ALUM 667 mm	FIBERGLASS	2050 mm (80.75")
3612DLK*	ALUMINUM 1625 mm TELESCOPING (64")	2 SPRING	305 mm (12")	ALUM 585 mm	FIBERGLASS	1855 mm (73")

\* The 3612DLK holds a 914-mm square roll-up sign. The other stands hold 1220-mm square roll-up signs.

On July 16, 1998, we wrote to you and accepted the 4814 DLK /4814 HDK portable sign stands as being similar to stands that were successfully tested for the Texas Department of Transportation. These sign stands also have no metal structure above the low base-mast holding the bottom of the fiberglass cross brace. The signs listed above can expected to perform in the same manner.

Therefore, your company's portable sign stands 4814SSCK, 30CAM, 40CAM, 4814NSCK, and 3612DLK are acceptable for use on the National Highway System when requested by a State, subject to the conditions noted below. Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity of the devices with the Manual on Uniform Traffic Control Devices. Presumably, you will supply potential users with sufficient information on design and installation requirements to ensure proper performance. We anticipate that the States will require certification from MDI that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance. To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-20, shall not be reproduced except in full.

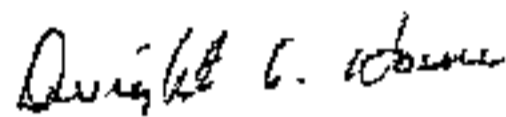
You asked that we find these signs acceptable with a 9.52-mm (3/8-inch) thick vertical fiberglass rib. The "compact" type signs tested for Texas Department of Transportation used the 6.35-mm (1/4-inch) thick vertical rib. Until the thicker rib is verified by crash testing of your sign stands we recommend that the 6.35-mm thick vertical rib be used.

The following conditions apply to the five portable sign stands described above:

- Sign panel must be plastic/fabric "roll-up" type material
- Vertical support above base is ~~6.35~~-mm thick x 31.75-mm wide (3/8-inch thick x 1 1/4-inch wide) fiberglass 9.52
- Horizontal brace is 4.76-mm thick x 31.75-mm wide (3/16-inch thick x 1 1/4-inch wide) fiberglass
- No metal mast may be used to support the sign (above the low base mass assembly)
- \* • Stands using thicker fiberglass ribs, lights, or flag assemblies should be tested to assess crashworthiness

If any of these devices is a patented product, it will 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.

Sincerely yours,



Dwight A. Horne  
Director, Office of Highway Safety  
Infrastructure

3 Enclosures