



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

1200 New Jersey Ave., SE  
Washington, D.C. 20590

September 9, 2011

In Reply Refer To:  
HSST/ WZ-307

John M. Pasakarnis  
Dicke Safety Products  
1201 Warren Avenue  
Downers Grove, Illinois 60515

Dear Mr. Pasakarnis:

This is in response to your January 21, 2011, correspondence requesting the Federal Highway Administration's (FHWA) acceptance of your company's TF60 Portable Sign Stand as a crashworthy traffic control device for use in work zones and elsewhere on the National Highway System. Accompanying your letter was the FHWA Office of Safety Design form and drawings of the stand. You requested that we find this device acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

This letter is the acknowledgement of the FHWA's acceptance of your request and includes the original completed form, your January 21 letter explaining your request, and drawings of the relevant sign stands.

Sincerely yours,

Michael S. Griffith  
Director, Office of Safety Technologies  
Office of Safety

Enclosures

FHWA:HSSI:NArtimovichr:ms:x61331:8/23/11  
File: s://directory folder/HSST/Artimovich/WZ307\_Dicke\_TF60.dotx  
cc: HSSI (NArtimovich)



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Enclosures

Page 1	<b>FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter</b>	Letter Number
		Date
<b>Contact Info</b>	<b>Petitioner / Developer Name and Address:</b>	
	Dicke Safety Products 1201 Warren Avenue Downers Grove, IL 60515	
	I hereby certify that the device(s) covered by this Acceptance Letter meet(s) the crash – worthiness test and evaluation requirements of the FHWA and NCHRP Report 350.	
<b>Signature</b>	<i>John M. Paradanis</i>	
<b>Telephone #</b>	(630) 324-5209	
<b>Email Address</b>	john@dicketool.com	
	<b>Laboratory / Engineer Name and Address</b>	
<input type="checkbox"/>	I hereby certify that the testing that supports this Acceptance Letter was conducted in accordance with NCHRP Report 350 guidelines, that the device(s) tested is/are accurately described on this form, and that the test results indicate that the device meets all applicable NCHRP Report 350 evaluation criteria.	
<input type="checkbox"/>	I have evaluated the requested modifications to these devices previously found acceptable by the FHWA in Acceptance Letter WZ-____, and hereby certify that, in my opinion, the modifications do not adversely affect the crash performance of the devices. I also certify that these devices are accurately described on this form.	
<b>Signature</b>		
<b>Telephone #</b>		
<b>Email Address</b>		
<b>Keywords:</b>	TF60 with a Light	
	<b>Type of Device (See page 3)</b> X-Footprint Sign Stand	
	<b>Composition of Sign or Rail substrate (See Page 3)</b> Aluminum – Solid	
	<b>Thickness of substrate (inches):</b>	
	<b>Height of sign from the ground (inches), if applicable: (See Page 3)</b> Tall: 60 to 71 inches above the pavement	
	<b>Flags and or lights present during test? Indicate number of each:</b>	
	# of flags: 2	# of lights: 1      Weight of lights: 21.00 ea.
<b>Device Name</b>		
<b>Detailed Desc. Of Device, Materials, sizes, Fasteners, Substrates Foundation, Aux. Features Ballast, etc.</b>	(May be attached on separate page(s) See attached submittal letter.	

Page 2	<b>FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter</b>		Letter Number
			Date
	<b>Mandatory Attachments</b>		
	<b>Attachment # 1: Test data summary page(s)</b>		
	Attach. #1a	Test #	
	Attach. #1b	Test #	
	Attach. #1c	Test #	
	Attach. #1d	Test #	
Alternative	<b>Attachment # 1: Description and discussion of modification(s) to crash tested and/or accepted device.</b>		
	Date: 01/21/2011		
	<b>Attachment # 2: PDF drawing(s) of device(s)</b>		
	Attach. #2a	Drawing Title: WZ Submittal Letter (PDF)	
		Drawing #:	
	Attach. #2b	Drawing Title: TF60 Drawing (PDF)	
		Drawing #:	
	Attach. #2c	Drawing Title: SLIP-60 Drawing (PDF)	
		Drawing #:	
	Attach. #2d	Drawing Title: WZ-99 Summary Page (PDF)	
		Drawing #:	
	Attach. #2e	Drawing Title:	
		Drawing #:	
	Attach. #2f	Drawing Title:	
		Drawing #:	
	Attach. #2g	Drawing Title:	
		Drawing #:	

Page 3	<b>FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN</b>	Letter Number
	<b>Category 2 Work Zone Device Acceptance Letter</b>	Date

**Please select from the following Keywords for “Type of Device”:**

Longitudinal Channelizing Barricade  
 Curb (Curb channelizer system with or without road tubes or other channelizers)  
 Drum  
 H-Footprint Sign Stand  
 X-Footprint Sign Stand  
 Trailer Mounted Signs (Does not include arrow boards or variable message signs or other Category 4 trailer mounted devices.)  
 Automated Flagger Device (not trailer mounted)  
 Tripod Sign Stand  
 Type I Barricade  
 Type II Barricade  
 Type III Barricade  
 Vertical Panel  
 Intrusion Detector  
 Ballast (Action relates to ballast on one or more devices)  
 Channelizer (Individual units unlike cones, road tubes, or drums)

**Please select from the following Keywords for “Sign Substrate”:**

Roll-up / Fabric (with fiberglass spreaders – aluminum or steel spreaders are not allowed.)  
 Plywood  
 Aluminum – Solid  
 Aluminum – Laminate  
 Corrugated Plastic  
 Extruded Plastic  
 Waffleboard Plastic  
 Wood / Lumber

**Please select from the following Keywords for “Height of Sign”:**

The distance to the lowest point on the sign is:

Low	12 to 18 inches above the pavement
Mid-A	20 to 24 inches above the pavement
Mid-B	25 to 36 inches above the pavement
Mid-C	37 to 59 inches above the pavement
Tall	60 to 71 inches above the pavement
Oversized	72 inches and taller

Page 4	<b>FEDERAL HIGHWAY ADMINISTRATION</b>			Letter Number
	<b>OFFICE OF SAFETY DESIGN</b>			
	<b>Category 2 Work Zone Device Acceptance Letter</b>			Date

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, or 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 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.
- If the subject of this letter is a patented device it is 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. 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 Federal Highway Administration 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.



# DICKE SAFETY PRODUCTS

1201 Warren Avenue • Downers Grove, IL 60515 • Ph: 877.891.0050 • Fax: 630.969.3973

January 21, 2011

Mr. Nick Artimovich, II  
 Highway Engineer  
 Federal Highway Administration  
 Office of Safety Design  
 1200 New Jersey Avenue, SE HSSD  
 Washington, DC 20590

Dear Mr. Artimovich,

This inquiry is in regards to a previously tested and accepted stand that was replaced years ago with a new and slightly revised stand. The previous stand (SLIP-60) was tested and accepted with a light mounted on top (WZ-99). There were a number of design features in the SLIP-60 that were phased out, so that model was discontinued and essentially replaced with the TF60. The similarities between these stands may be seen below in Table #1 as well as the attachments.

Table #1 – Stand Comparison

Model:	Stand Wt:	Base Width:	Base Length:	Sign Ht:	Light Ht:
SLIP-60	47.0 lbs	65 inches	135 inches	60.0 inches	128.0 inches
TF60	49.0 lbs	75 inches	134 inches	60.0 inches	134.0 inches

Request #1:

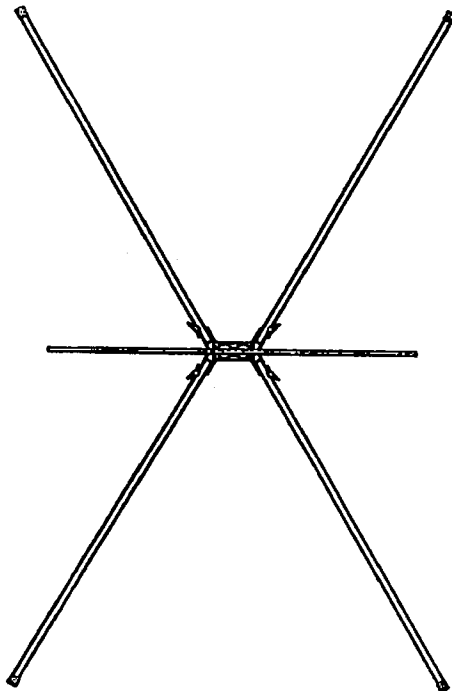
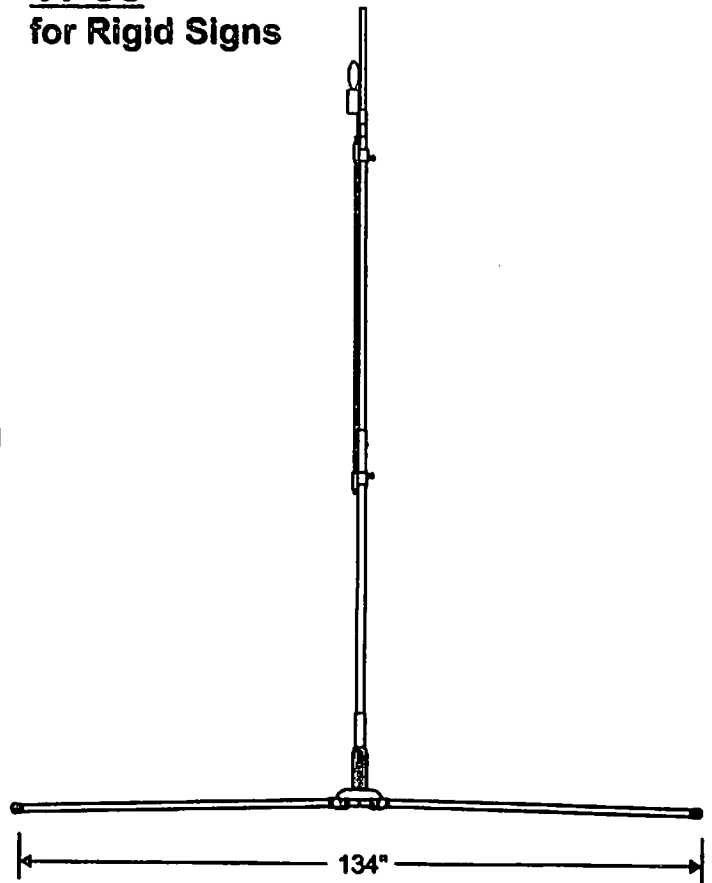
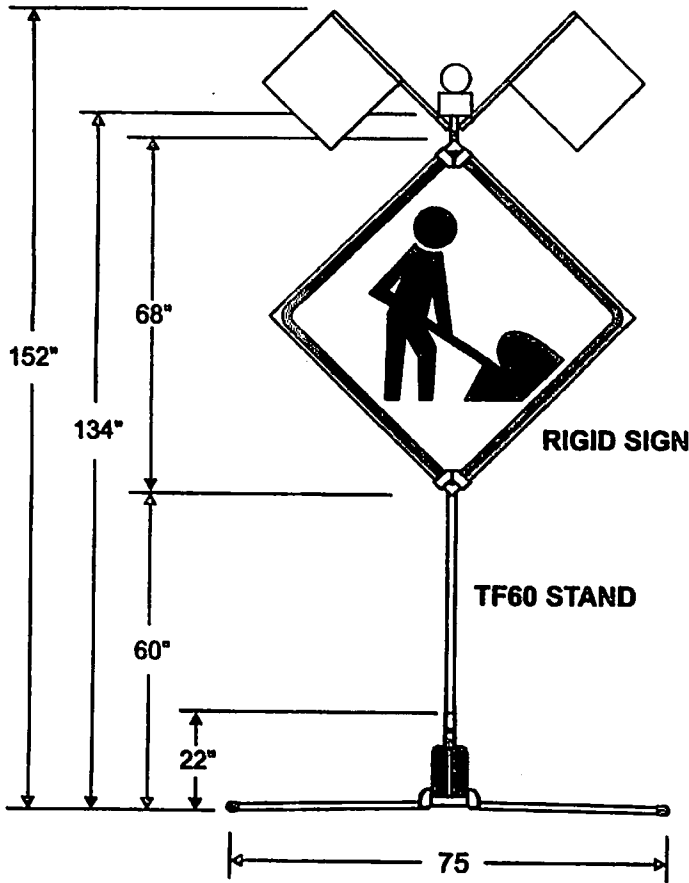
Based on the enclosed information and previous test data, we are seeking acceptance of sign stand TF60 w/ Light. We believe this to be a reasonable request because the stand differences are minor. The main difference being the mounting height for the light. Since the light is mounted higher on the TF60 than the SLIP-60, we believe it is fair to assume that this configuration will perform as well or better than the original. As such, we contend that there will be no effect on the windshield impact data.

Should you need any further documentation, please let me know.

Sincerely,

John M. Pasakarnis  
 Dicke Tool Company  
 630-969-0050 x28  
[john@dicketool.com](mailto:john@dicketool.com)

**TF60**  
for Rigid Signs



**TF60 STAND**

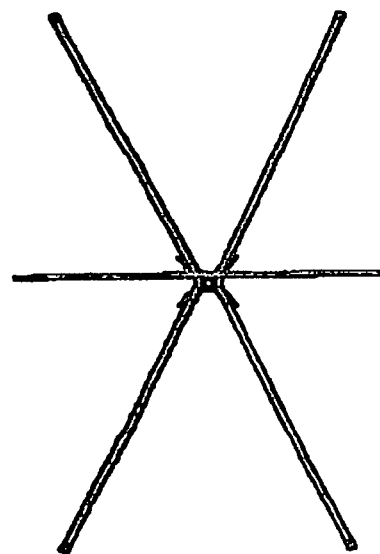
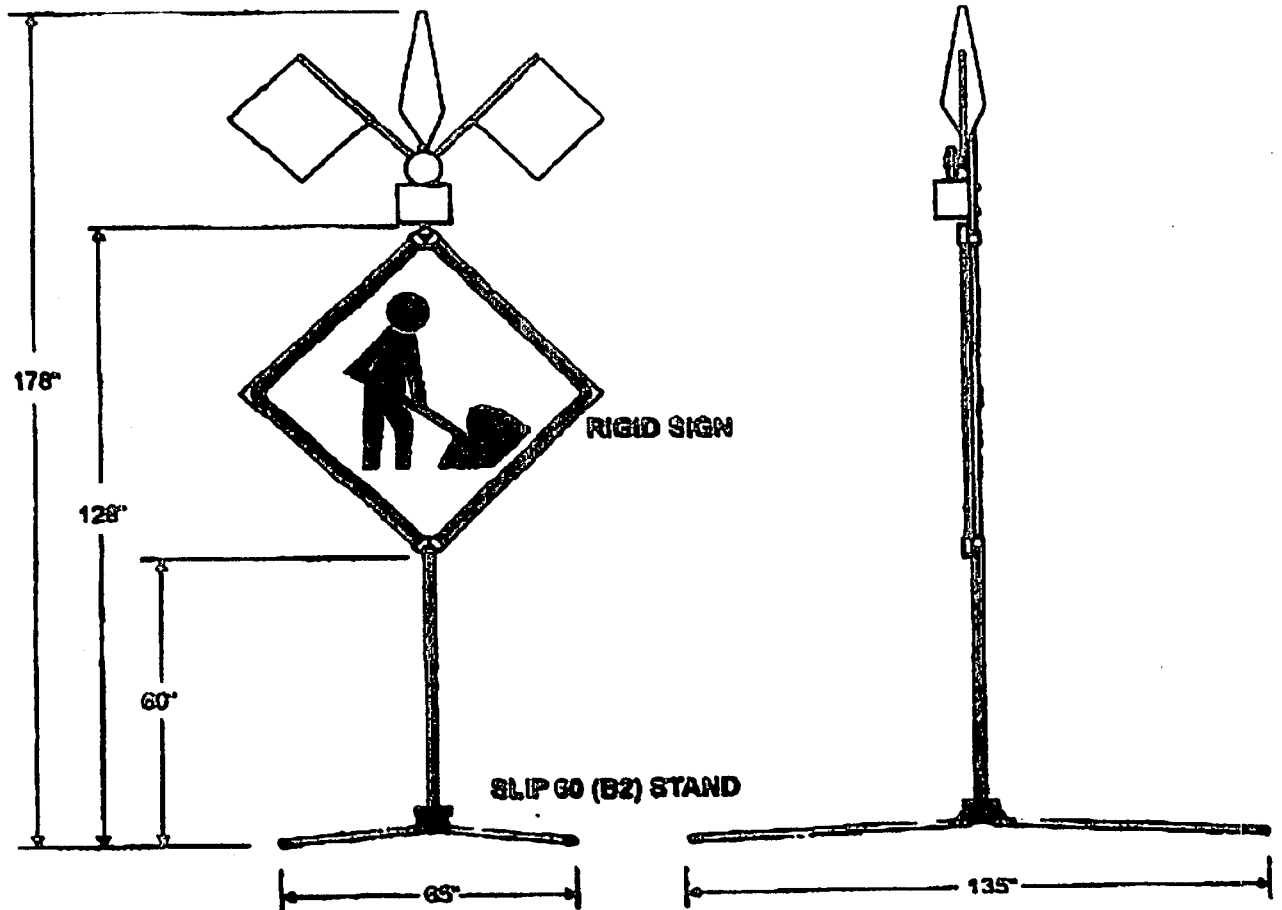
- ⦿ Base- Steel with heavy duty dual spring system (1/2" dia. steel wire).
- ⦿ Mast- 2 stage telescoping, 1-1/4" and 1'sq. aluminum tubing
- ⦿ Legs- 1-1/4" sq. alum. tubing
- ⦿ Panel- 48" x 48" Rigid .080 -.125 aluminum
- ⦿ Flags- 18" x 18" vinyl with 30" staff
- ⦿ Light - 21 lbs

**Weight: TF60 - Rigid**

Sign - .080 Alum.	18 lb.
Sign Stand	49 lb.
Light	21 lb.
<b>Total</b>	<b>88 lb.</b>







**Features:**

- Base - Steel with break-away slip plate design
- Mast - Bottom- 1-3/4" sq. steel with .083 wall  
Top- 1-1/2" sq. aluminum tubing with .100" wall thickness
- Legs - 1-1/4" sq. x .100" wall x 72" long aluminum legs
- Sign - 48" x 48" x .060 Aluminum, Brackets
- Stand Only - 47 lbs.
- Light - 21 lbs

**Slip60 Sign Stand Configuration B2**

System Nos. 60 and 61 With Three Wooden Staff Flags

3. (Systems 62 and 63, Test No. D-32) SLIP-60 Stand. A rigid mounted portable sign support with a 1219 x 1219 mm sign mounted at a height of 1638 mm from the ground. This stand is the same as the SLIP- 60 tested as systems 60 and 61 except that no warning light was attached to the top supported a 2.00 mm thick aluminum sign. Tested at both 90 degrees and head-on.

#### Testing

Full-scale automobile testing was conducted on your company's devices. Two stand-alone examples of the device were tested in tandem, one turned 90 degrees and the next placed six meters downstream struck head-on, as called for in our guidance memoranda. The complete device as tested is shown in Enclosure 1. The crash test is summarized in the table below:

Test Number	D-29	D-31	D-32
Test Article	DF-4503	SLIP-60	SLIP-60
Sign	1219 x 1219 mm roll up	1219 x 1219 mm 2 mm aluminum	1219 x 1219 mm 2 mm aluminum
Height to Sign Bottom	1518 mm (60 in)	1613 mm (60 in)	1651 mm (65 in)
Height to Sign Top	3239 mm	3277 mm	3300 mm (130 in)
Flags or lights	With flags	Empco Light	None
Test Article Mass	20.5 kg	32 kg	30.6 kg
Total Mass of Ballast	none	250 kg	250 kg
Vehicle Inertial Mass	897 kg	897 kg	883 kg
Impact Speed, Head-on	104.5 km/hr	88.9 km/hr	97.8 km/hr
Impact Speed, 90 Deg.	107.7 km/hr	107.8 km/hr	101.5 km/hr
Velocity Change*	0.89 m/sec	5.25 m/sec	1.02 m/sec
Vehicle crush	Minor cracks, scrapes on bumper and roof	Minor damage to bumper and lights	Minor roof deformation
Occupant Compart. Intrusion	None	None	None
Windshield Damage	None	None	None

\* Velocity change of vehicle was measured after striking both test articles. In test D-30 the brakes malfunctioned between impacts so the "velocity change" shown above does not reflect the action of the test article.

#### Findings

Damage was limited to dents on the bumper, grill, hood, and roof. There was no windshield damage nor passenger compartment intrusion due to the test articles. The results of the testing met the FHWA requirements and, therefore, the devices described above and shown in the enclosed drawings for reference are acceptable for use on the NHS under the range of conditions tested, when proposed by a State.