



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

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

August 29, 2012

In Reply Refer To:  
**WZ-319**

Matt Racine  
Accuform Signs  
16228 Flight Path Drive  
Brooksville, Florida 34604

Dear Mr. Racine:

This letter is in response to your request for the Federal Highway Administration (FHWA) to review a roadside safety system for eligibility for reimbursement under the Federal-aid highway program.

Name of system:	FRC786 Tilt Adjust Stand – Spring Version
Type of system:	X-Footprint Portable Sign Stand
Test Level:	NCHRP Report 350 Test Level 3
Testing conducted by:	N/A
Date of request:	April 24, 2012
Date initially acknowledged:	May 8, 2012
Date of completed package:	July 16, 2012

### **Decision**

The following device is eligible, with details provided in the form which is attached as an integral part of this letter:

- FRC786 Tilt Adjust Stand – Spring Version

Based on a review of crash test results submitted by the manufacturer certifying the device and subsequent modifications described herein meets the crash test and evaluation criteria of the National Cooperative Highway Research Program (NCHRP) Report 350, the device is eligible for reimbursement under the Federal-aid highway program. Eligibility for reimbursement under the Federal-aid highway program does not establish approval or endorsement by the FHWA for any particular purpose or use.

The FHWA, the Department of Transportation, and the United States Government do not endorse products or services and the issuance of a reimbursement eligibility letter is not an endorsement of any product or service.

## **Requirements**

To be found eligible for Federal-aid funding, roadside safety devices should meet the crash test and evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350 or the American Association of State Highway and Transportation Officials' Manual for Assessing Safety Hardware (MASH).

## **Description**

The initial device, the FRC750 stand, was the subject of FHWA Letter WZ-286 dated November 12, 2009. Your present request is to modify that stand as follows:

1. The locking mechanism changed from a push button to a pin sliding guide, as shown in the enclosed drawing, to be more user friendly.
2. A spring mechanism was added to the base to add flexibility and shed wind gusts. It also helps to reduce the potential for tip-over of the stand from wind and reduce the amount of strain on the threaded stud.
3. The clamp was changed from a tightening bracket to a weld nut on a threaded stud/arm know, making it easier to secure the roll up sign to the stand.

You also provided the following comparisons supporting the fact that the proposed changes are insignificant with regard to crash performance:

1. The heights are similar and within 2" of each other.
2. The breaking points of both versions are the same.
3. The changes do not affect the structure of the stand but improve human interaction.

You provided this information in your "Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware" dated July 16, 2012. A copy is enclosed for reference.

## **Summary and Standard Provisions**

Therefore, the system described in FHWA Letter WZ-286 and modified as described above, and detailed in the enclosed drawings is eligible for reimbursement and may be installed under the range of conditions initially crash tested.

Please note the following standard provisions that apply to FHWA eligibility letters:

- This finding of eligibility does not cover other structural features of the systems, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may influence system conformance with NCHRP Report 350 criteria will require a new reimbursement eligibility letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals safety problems, or that the system is significantly different from the version that was crash tested, we reserve the right to modify or revoke this letter.
- You are expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You are expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the crash test and evaluation criteria of the NCHRP Report 350.

- To prevent misunderstanding by others, this letter of eligibility is designated as number WZ-319 and shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed at our office upon request.
- This letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder.
- The FHWA does not become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.
- Accuform sign stands are patented products and considered proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects: (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with the 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.

Sincerely yours,

A handwritten signature in black ink that reads "Michael S. Griffith". The signature is written in a cursive style with a large initial "M" and a distinct "S" and "G".

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

Enclosures

# **Request for Federal Aid Reimbursement Eligibility Of Highway Safety Hardware**

**July 16, 2012**

**By:**

**Matthew Racine  
Accuform Signs  
16228 Flight Path Drive  
Brooksville, FL 33604**

**To whom it may concerns:**

I request the following devices be considered eligible for reimbursement under the Federal-aid highway program.

System Type: WZ: Crash Worthy Work Zone Traffic Control Devices  
Device Name/Variant: FRC750 Tilt-Adjust, Roll-Up Sign Stand/FRC786 Tilt-Adjust, Roll-Up Sign Stand with Spring  
Testing Criterion: NCHRP Report 350  
Test Level: TL3

By submitting this request for review and evaluation by the Federal Highway Administration, I certify that the product(s) was (were) tested in conformity with the National Cooperative Highway Research Program (NCHRP) Report 350 and that the test/evaluation results meet the appropriate evaluation criteria in the NCHRP.

Contact Name: Matthew Racine  
Company Name: Accuform Signs  
Address: 16228 Flight Path Drive  
City/State/Zip: Brooksville/FL/33604  
Country: USA

**Product Description**

The roll-up signs are held in place with fiberglass substrate rail which is then clamped to the post of the tilt adjust stand. The post assembly has a large spring, which acts as a damper when the sign is blown by the wind. This relieves the amount of stress applied to the threaded stud, which is connected to a ball. The ball is between two plates held together by a socket head screw and adjustable handle. The top plate can be loosen allowing the post assembly to tilt up to 20° in any direction.

The post assembly is connected to the base of the stand. The legs telescope allowing the stand to have a foot prints either 44" x 27" or 65" x 43". The four legs are connected to a bracket that guides the legs in the upright and down position. A spring inside each leg holds it in desired position. A handle is used to assist in the positioning of the legs and designed to be ergonomically friendly.

**Modifications from FRC750 Roll-Up Sign Stand**

The new spring version stand functions the same as the current tilt adjust stand with only a few changes. The changes are listed below.

1. The locking mechanism changed from a push bottom to a pin sliding guide, which is more users friendly, ergonomic, and fast.

2. Spring adds flexibility to withstand gusts from the wind and any other weather related items. This helps reduce the potential of tip-over of the stand from the wind and reduce the amount of strain on the threaded stud.
3. The clamp was changed from a tightening bracket to a weld nut on a threaded stud/arm knob, which makes it easy to secure the roll-up sign to the stand.

#### **Reason for seeking approval for modification**

When comparing the two products and reviewing the test done with the FRC750 Tilt Adjust Stand, we believe the changes will not affect the results of the stand due to the following reason.

1. The heights are similar and only higher by 2" higher.
2. The breaking points for both versions are the same.
3. The changes don't critically change the structure, but improves on the human interaction.

#### **Crash Testing**

Required Test Number: 3-71 (820C)

#### **Narrative Description:**

The FRC750 has been successfully crash-tested to the National Cooperative Highway Research Program Report 350 (NCHRP 350) testing procedures for Test 3-71 (100 km/her) in both normal and perpendicular orientations. The sign stand is equipped with a 48" x 48" (1219 mm x 1219 mm) diamond sign- lightweight and flexible safety-orange colored coated fabric supported by fiberglass cross-ribs. The sign stand is designed to achieve a 12" (305 mm) minimum bottom sign height, while keeping the overall height of the device to a minimum.

To represent both typical and worst-case usage, it is anticipated that a smaller or lighter mass sign (Typically 36" x 36" (914 mm x 914 mm)) of same material with cross-ribs other than tested may be used without creating an unfavorable crash-results.

Evaluation Results: PASS

Full Scale Crash Testing was done in compliance with MASH by the following accredited crash test laboratory (cite the laboratory's accreditation status as noted in the crash test reports.):

Laboratory Name: E-Tech Testing Services, Inc.  
Laboratory Contact: John F. LaTurner, P.E.  
Address: 3617 B Cincinnati Avenue  
Rocklin, CA 95765 USA

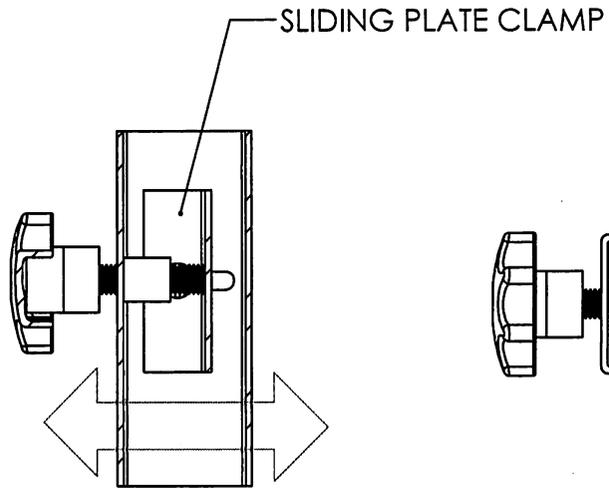
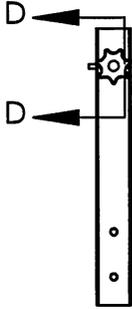
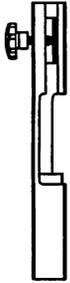
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Report: 343

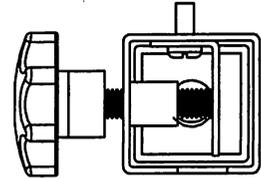
Project: 75-8142

Date: 08/2009

# FRC750 - TILT ADJUST STAND

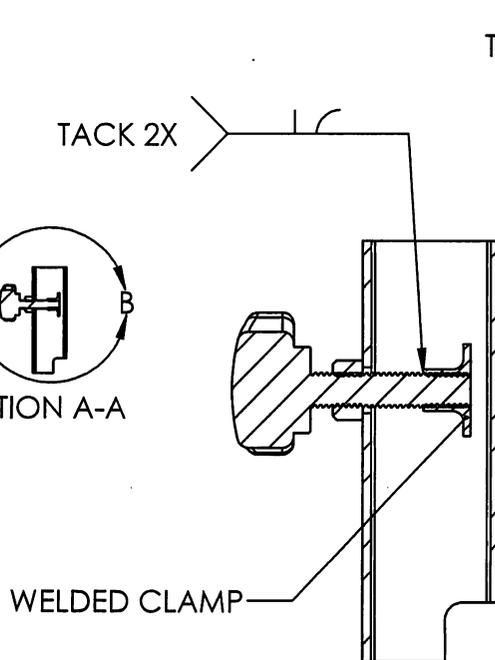
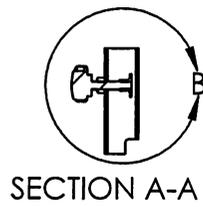
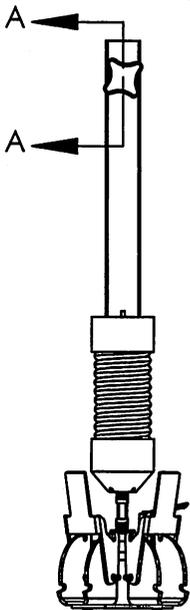
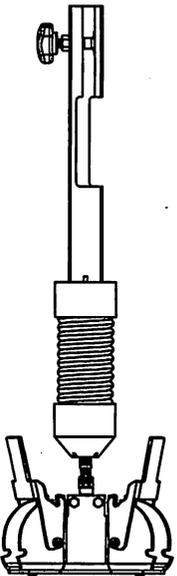
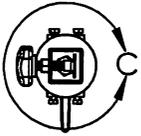


SECTION D-D  
SCALE 1 : 2

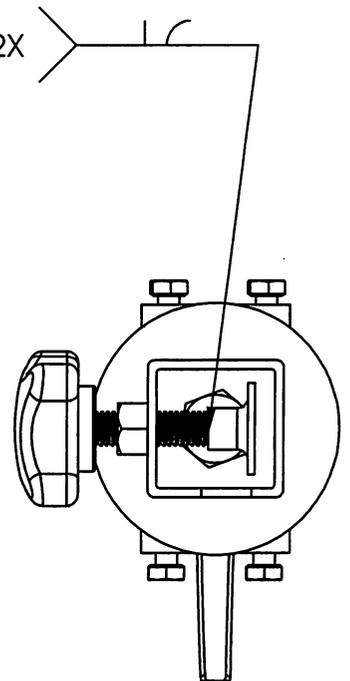


DETAIL E  
SCALE 1 : 2

# FRC786 - TILT ADJUST STAND W/SPRING



DETAIL B  
SCALE 1 : 2



DETAIL C  
SCALE 1 : 2