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

# Memorandum

Subject: **INFORMATION**: Federal-aid Reimbursement Eligibility Process For Safety Hardware Devices

Date: November 12, 2015

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

In Reply Refer To: HSST

To: Division Administrators
Directors of Field Services
Federal Lands Highway Division Engineers

## Purpose

The purpose of this memorandum is to share information on two important changes pertaining to the Federal-aid reimbursement eligibility process for roadside safety hardware and a specific action resulting from one of the changes. The information pertains to: 1) a policy change related to hardware modifications made to devices tested to National Cooperative Highway Research Program Report 350 (NCHRP 350) guidelines, 2) a revision to our Federal-aid reimbursement eligibility process for safety hardware devices, and 3) an action resulting from the revised eligibility process related to devices tested to *Manual for Assessing Safety Hardware* (MASH) guidelines.

## Information

### Policy change for hardware modifications for devices tested to NCHRP 350 guidelines

In 2009, the American Association of State Highway and Transportation Officials (AASHTO) published MASH. Since January 1, 2011, FHWA has required that all new roadside safety hardware for which a Federal-aid reimbursement eligibility letter is sought be tested to MASH criteria. For non-significant modifications to hardware originally tested to NCHRP 350 criteria, FHWA has determined Federal-aid eligibility based on analyzing the changes relative to the NCHRP 350 criteria, and has not required new MASH crash testing.

In an effort to encourage installation of MASH crash tested devices, after December 31, 2015, FHWA will not accept requests for Federal-aid eligibility determinations for any modification based on previous crash testing performed using NCHRP 350 criteria. All modifications to an NCHRP 350-tested device will require testing under MASH in order to receive a Federal-aid reimbursement eligibility letter from FHWA.

Going forward, modifications to NCHRP 350-tested devices that have, in the past, been based on engineering analysis, finite element modeling, or through other analysis will no longer receive FHWA eligibility letters. The Federal Register notice announcing this new policy can be found on our website.

**Revision to the Federal-aid reimbursement eligibility process**

As part of the agency's review to evaluate and improve the eligibility process, FHWA has revised the Federal-aid reimbursement eligibility process for safety hardware devices. The revised process includes many improvements to enhance the quality of the information FHWA receives and increase the transparency of our process. I encourage you to look at the revised process and review the highlights of the changes in FHWA's November 12, 2015 open letter to all in the highway safety hardware and roadside design community.

One change to our process warrants particular attention, as it has led to a specific action. The revised process reads

> "An FHWA letter that states a device is eligible for Federal-aid reimbursement may list issues identified by the testing criteria as reportable even if existence of the issue does not represent a failure of the test."

MASH states

> "Although not a specific factor in assessing test results, integrity of the test vehicle's fuel tank is a potential concern. It is preferable that the fuel tank remains intact and not be punctured. Damage to, or rupture of, the fuel tank, oil pan, or other features that might serve as a surrogate of the fuel tank should be reported."

To be fully transparent, the Office of Safety will now document in the Federal-aid reimbursement eligibility letters any information from the related crash test reports of damage to the fuel tank, oil pan, or other features that might serve as a surrogate of the fuel tank.

**Action taken for letters related to MASH crash tested devices**

Through our recent review of all eligibility letters related to MASH crash tested devices, the following letters have been reissued with new language added since fuel tank (or surrogate) damage was reported in one or more crash tests:

1) Letter CC-100B: Trinity Slotted Rail Terminal (SRT)

2) Letter CC-115: Trinity SOFT-STOP Terminal (also called Vertically Loading Terminal)

Please note these devices are still eligible for Federal-aid reimbursement.

These revised letters are attached and can be found at our website http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/ where we post all Federal-aid reimbursement eligibility letters.

Division Offices should inform state transportation agencies about these changes to the Federal-aid reimbursement eligibility process for roadside safety hardware and the action resulting from the changes.

If you have any questions or comments, please contact Michael Griffith at (202) 366-9469 or Brian Fouch at (202) 366-0744.

Attachments

cc: SAFETYFIELD

U.S. Department
of Transportation
Federal Highway
Administration

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

November 12, 2015

In Reply Refer To:
HSST/CC-115

Mr. Brian Smith
Trinity Highway Products, LLC
2525 North Stemmons Freeway
Dallas, Texas 75207

Dear Mr. Smith:

This letter updates eligibility letter CC-115 issued on December 19, 2011 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.

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|---|---|
| Name of system: | Trinity SOFT-STOP Terminal |
| Type of system: | W-Beam Guardrail Terminal |
| Test Level: | MASH Test Level 3 (TL-3) |
| Testing conducted by: | Texas Transportation Institute |
| Task Force 13 Designator: | SEW22 |
| Date of request: | September 3, 2010 |
| Date initially acknowledged: | September 30, 2010 |
| Date of completed package: | September 3, 2010 |

Based on a review of crash test results submitted by the manufacturer certifying the device described herein meets the crashworthiness criteria of the American Association of State Highway and Transportation Officials (AASHTO) "Manual for Assessing Safety Hardware" (MASH), the device is eligible for reimbursement under the Federal-aid highway program. MASH states "Although not a specific factor in assessing test results, integrity of a test vehicle's fuel tank is a potential concern. It is preferable that the fuel tank remains intact and not be punctured. Damage to or rupture of the fuel tank, oil pan, or other feature that might serve as a surrogate of the fuel tank should be reported." One test report that accompanied the request for Federal-aid reimbursement eligibility (titled *MASH TEST 3-31 on the Vertically Loading Terminal*) indicated "A small cut was noted in the fuel tank." A second test report that accompanied the request (titled *MASH TEST 3-35 on the Vertically Loading Terminal*) indicated "there was a very small puncture in the gas tank." Eligibility for reimbursement under the Federal-aid highway program does not establish approval or endorsement by 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

**Decision:**
The following device was found eligible, with details provided below:

- Trinity SOFT-STOP guardrail terminal.

**Requirements**
Roadside safety devices should meet the guidelines contained in the American Association of State Highway and Transportation Officials' Manual for Assessing Safety Hardware. The FHWA memorandum "Identifying Acceptable Highway Safety Features" of July 25, 1997, and the FHWA/AASHTO MASH Implementation Plan provide further guidance on roadside hardware design.

**Description and Crash Testing**
Your letter of September 3, 2010, enclosed for reference, describes the Trinity SOFT-STOP in detail. Your letter also detailed the crash test matrix that was evaluated for the device. The MASH tests 3-30, 3-31, 3-32, 3-33, 3-34, 3-35, and 3-37) were conducted in reasonably close conformity with the guidelines. The test data summary sheets from the individual crash test reports are enclosed for reference.

We concur that MASH test 3-36 may be waived because the SOFT-STOP will not be connected to any stiffer device than W-beam guardrail, and test 3-35 showed that the performance of the system when impacted at an angle by the 2270P was satisfactory. We concur that the substitution of the 1100C vehicle to evaluate the reverse direction impact was appropriate. We concur that test 3-38 is not necessary because the SOFT-STOP is not a staged device and that your calculations predict crashworthy performance with the 1500A vehicle.

**Findings**
Therefore, the system described and detailed in the enclosed letter is eligible for reimbursement and should be installed under the range of conditions tested, when such use is acceptable to a highway agency.

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

- This finding of eligibility is limited to the crashworthiness characteristics of the systems 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 system will require a new letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the system being marketed is significantly different from the version that was crash tested, we reserve the right to modify or revoke this letter.
- 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 review, and that it will meet the crashworthiness requirements of the FHWA and the MASH.
- To prevent misunderstanding by others, this letter of eligibility is designated as number CC-115 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.
- The Trinity SOFT-STOP terminal is a patented product 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.
- 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 finding of eligibility is limited to the crashworthiness characteristics of the candidate system, 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,

Michael S. Griffith

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

U.S. Department
of Transportation
Federal Highway
Administration

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

November 12, 2015

In Reply Refer To:
HSST/CC-100B

Mr. Brian Smith
Trinity Highway Products, LLC
2525 North Stemmons Freeway
Dallas, Texas 75207

Dear Mr. Smith:

This letter updates eligibility letter CC-100B issued on December 5, 2012 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: Slotted Rail Terminal (SRT) MASH
Type of system: Terminal End Section
Test Level: MASH Test Level 3 (TL-3)
Testing conducted by: Texas Transportation Institute
Task Force 13 Designator: SEW12c
Date of request: September 28, 2012
Date initially acknowledged: September 28, 2012
Date of completed package: October 16, 2012

**Decision**
The following device is eligible, with details provided:

- Slotted Rail Terminal (SRT) MASH

Based on a review of crash test results submitted by the manufacturer certifying the device described herein meets the crash test and evaluation criteria of the American Association of State Highway and Transportation Officials (AASHTO) "Manual for Assessing Safety Hardware" (MASH), the device is eligible for reimbursement under the Federal-aid highway program. FHWA is not revising the earlier eligibility determinations, but is updating this letter to address the statement in MASH that "Although not a specific factor in assessing test results, integrity of a test vehicle's fuel tank is a potential concern. It is preferable that the fuel tank remains intact and not be punctured. Damage to or rupture of the fuel tank, oil pan, or other feature that might serve as a surrogate of the fuel tank should be reported." This letter is updated to note that a test report that accompanied your request for Federal-aid reimbursement eligibility (titled *MASH TEST 3-30 on the SRT-MASH*) indicated that there was "a hole in the oil pan." 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 MASH.

**Description**
The device and supporting documentation are described in the attached form.

**Summary and Standard Provisions**
Therefore, the system described and detailed in the attached form is eligible for reimbursement and may be installed under the range of conditions previously tested.

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

- This letter provides a AASHTO/ARTBA/AGC Task Force 13 designator that should be used for the purpose of the creation of a new and/or the update of existing Task Force 13 drawing for posting on the on-line 'Guide to Standardized Highway Barrier Hardware' currently referenced in AASHTO Roadside Design Guide.
- 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 MASH 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 MASH.
- To prevent misunderstanding by others, this letter of eligibility is designated as number CC-100B 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.

Sincerely yours,

Michael S. Griffith

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