



U.S. Department
of Transportation
Federal Highway
Administration

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

December 18, 2015

In Reply Refer To:
HSST/CC-87D

Mr. Bret Eckert P.E.
Engineering Applications Manager
Trinity Highway Products
3617 Cincinnati Avenue
Rocklin, CA. 95677

Dear Mr. Eckert:

This letter is in response to your August 1, 2014 request for the Federal Highway Administration (FHWA) to review a roadside safety device, hardware, or system for eligibility for reimbursement under the Federal-aid highway program. This FHWA letter of eligibility is assigned FHWA control number CC-87D and is valid until a subsequent letter is issued by FHWA that expressly references this device.

Decision

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

- QUEST System Modification

Scope of this Letter

To be found eligible for Federal-aid funding, modified roadside safety devices should meet the crash test and evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350. However, the FHWA, the Department of Transportation, and the United States Government do not regulate the manufacture of roadside safety devices. Eligibility for reimbursement under the Federal-aid highway program does not establish approval, certification or endorsement of the device for any particular purpose or use.

This letter is not a determination by the FHWA, the Department of Transportation, or the United States Government that a vehicle crash involving the device will result in any particular outcome, nor is it a guarantee of the in-service performance of this device. Proper manufacturing, installation, and maintenance are required in order for this device to function as tested.

This finding of eligibility is limited to the crashworthiness of the system and does not cover other structural features, nor conformity with the Manual on Uniform Traffic Control Devices.

Eligibility for Reimbursement

FHWA previously issued an eligibility letter for the roadside safety system described in your pending request. Your pending request now identifies a modification to that roadside safety system.

The original roadside safety device information is provided here:

Name of system: QUESTtm
Type of system: Crash Cushion
Date of original request: January 28, 2005
Date of original FHWA eligibility letter: February 17, 2005
FHWA Control number: HSA-10/CC-87

The pending modification(s) consists of the following changes:

1. Elimination of separate Product and Assembly manuals and provides a singular Product Description Assembly Manual for the QUEST System family.

FHWA concurs with the recommendation of the accredited crash testing laboratory as stated within the attached form.

Full Description of the Eligible Device

The device and supporting documentation, including reports of the crash tests or other testing done, videos of any crash testing, and/or drawings of the device, are described in the attached form.

Notice

If a manufacturer makes any modification to any of their roadside safety hardware that has an existing eligibility letter from FHWA, the manufacturer must notify FHWA of such modification with a request for continued eligibility for reimbursement. The notice of all modifications to a device must be accompanied by:

- Significant modifications – For these modifications, crash test results must be submitted with accompanying documentation and videos.
- Non-signification modifications – For these modifications, a statement from the crash test laboratory on the potential effect of the modification on the ability of the device to meet the relevant crash test criteria.

FHWA's determination of continued eligibility for the modified hardware will be based on whether the modified hardware will continue to meet the relevant crash test criteria.

You are expected to supply potential users with sufficient information on design, installation and maintenance 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 test and evaluation criteria of the NCHRP Report 350.

Issuance of this letter does not convey property rights of any sort or any exclusive privilege. This letter is based on the premise that information and reports submitted by you are accurate and correct. We reserve the right to modify or revoke this letter if: (1) there are any inaccuracies in the information submitted in support of your request for this letter, (2) the qualification testing was flawed, (3) in-service performance or other information reveals safety problems, (4) the system is significantly different from the version that was crash tested, or (5) any other information indicates that the letter was issued in error or otherwise does not reflect full and complete information about the crashworthiness of the system.

Standard Provisions

- To prevent misunderstanding by others, this letter of eligibility designated as FHWA control number CC-87D 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 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.
- If the subject device is a patented product it may be considered to be 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,



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

Enclosures

Request for Federal Aid Reimbursement Eligibility Of Highway Safety Hardware

Submitter	Date of Request:	August 01, 2014	<input checked="" type="radio"/> New <input type="radio"/> Resubmission
	Name:	Bret Eckert, P.E.	
	Company:	Trinity Highway	
	Address:	3617 Cincinnati Ave. Rocklin, CA 95765	
	Country:	USA	
	To:	Michael S. Griffith, Director FHWA, Office of Safety Technologies	

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

[Help](#)

System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level
'CC': Crash Cushions, Attenuators, & Terminals	<input checked="" type="radio"/> Physical Crash Testing <input type="radio"/> FEA & V&V Analysis	QUEST System	NCHRP Report 350	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 NCHRP Report 350 (Report 350) and that the evaluation results meet the appropriate evaluation criteria in the Report 350.

Identification of the individual or organization responsible for the product:

Contact Name:	Barry Stephens, P.E.	Same as Submitter <input type="checkbox"/>
Company Name:	Trinity Highway	Same as Submitter <input checked="" type="checkbox"/>
Address:	3617 Cincinnati Ave. Rocklin, CA 95765	Same as Submitter <input checked="" type="checkbox"/>
Country:	USA	Same as Submitter <input checked="" type="checkbox"/>

PRODUCT DESCRIPTION

<input type="radio"/> New Hardware	<input checked="" type="radio"/> Modification to Existing Hardware	Non-Significant - Effect is positive or Inconsequential
<p>The QUEST is a redirective, non-gating crash cushion described in FHWA Acceptance Letter CC-35 series. The QUEST Systems utilize a combination of tubular rails and shaper rail assemblies within a support framework and w-beam side panels. This inconsequential component modification eliminates separate Product and Assembly manuals and provides a singular Product Description Assembly Manual for the QUEST System family. In addition, the layout of the manual is changed to the current Trinity Highway format.</p> <p>This component modification for the revision of the QUEST System Product and Assembly manuals is considered Non-Significant and will have an inconsequential effect.</p>		

CRASH TESTING

A brief description of each crash test and its result:

Required Test Number	Narrative Description	Evaluation Results
3-30 (820C)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
S3-30 (700C)	Not Applicable	
3-31 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-32 (820C)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
S3-32 (700C)	Not Applicable	
3-33 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-34 (820C)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
S3-34 (700C)	Not Applicable	
3-35 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-36 (820C)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
S3-36 (700C)	Not Applicable	
3-37 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-38 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-39 (2000P)	No changes to the actual QUEST System product have occurred. All changes are limited to the QUEST System manual documents.	WAIVER REQUESTED
3-40 (2000P)	Not Applicable	
S3-40 (700C)	Not Applicable	
3-41 (2000P)	Not Applicable	
3-42 (820C)	Not Applicable	
S3-42 (700C)	Not Applicable	
3-43 (2000P)	Not Applicable	
3-44 (2000P)	Not Applicable	

Full Scale Crash Testing was done in compliance with Report 350 by the following accredited crash test laboratory (cite the laboratory's accreditation status as noted in the crash test reports.):

Testing Laboratory's signature concurs that these modifications are considered Non-Significant and the effect is positive or inconsequential.		
Laboratory Contact Signature:	john.laturner@trin.net	<small>Digitally signed by john.laturner@trin.net DN: cn=john.laturner@trin.net Date: 2014.09.01 12:42:39 -0700</small>
Laboratory Name:	E-Tech Testing Services, Inc.	
Laboratory Contact:	John LaTurner, P.E.	Same as Submitter <input type="checkbox"/>
Address:	3617 B Cincinnati Ave. Rocklin, CA 95765	Same as Submitter <input type="checkbox"/>
Country:	USA	Same as Submitter <input checked="" type="checkbox"/>
Accreditation Certificate Number and Date:	A2LA Certificate # 989.01 Expiration Date: 11/30/2015	

Submitter Signature*: bret.eckert@trin.net

Digitally signed by
bret.eckert@trin.net
DN: cn=bret.eckert@trin.net
Date: 2014.08.01 12:50:46 -0700

Submit Form

ATTACHMENTS

Attach to this form:

- 1) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
- 2) A drawing or drawings of the device(s) that conform to the Task Force-13 Drawing Specifications [[Hardware Guide Drawing Standards](#)]. For proprietary products, a single isometric line drawing is usually acceptable to illustrate the product, with detailed specifications, intended use, and contact information provided on the reverse. Additional drawings (not in TF-13 format) showing details that are key to understanding the performance of the device should also be submitted to facilitate our review.

FHWA Official Business Only:

Eligibility Letter		AASHTO TF13	
Number	Date	Designator	Key Words



December 14, 2015

Mr. William P. Longstreet
 Highway Engineer, Safety Design Team
 Office of Safety Technologies, Rm E71-107
 Federal Highway Administration
 U.S. Department of Transportation
 1200 New Jersey Avenue, SE
 Washington, DC 20590

Re: Clarification for QUEST® FHWA

Mr. Longstreet,

Thank you for discussing the QUEST® Eligibility Form discrepancy discovered via phone. The submitter of the form (Trinity Highway) inadvertently referenced the incorrect FHWA correspondence. FHWA Acceptance Letter CC-35 was noted but it should have read CC-87:

PRODUCT DESCRIPTION

<input type="radio"/> New Hardware	<input checked="" type="radio"/> Modification to Existing Hardware	Non-Significant - Effect is positive or Inconsequential CC-87
<p>The QUEST is a redirective, non-gating crash cushion described in FHWA Acceptance Letter CC-35 series. The QUEST Systems utilize a combination of tubular rails and shaper rail assemblies within a support framework and w-beam side panels. This inconsequential component modification eliminates separate Product and Assembly manuals and provides a singular Product Description Assembly Manual for the QUEST System family. In addition, the layout of the manual is changed to the current Trinity Highway format.</p> <p>This component modification for the revision of the QUEST System Product and Assembly manuals is considered Non-Significant and will have an inconsequential effect.</p>		

The remainder of the document appears to be accurate. Please advise if any further clarification is required. Thanks again for point out this discrepancy.

Best regards,

Paul L. Kruse
 Paul L. Kruse, PE
 E-TECH Manager
 paul.kruse@trin.net



3617 Cincinnati Ave, Rocklin, CA 95765
(916) 645-8181 Fax No (916) 645-3495

October 30, 2015

Mr. William P. Longstreet
Highway Engineer, Safety Design Team
Office of Safety Technologies, Rm E71-107
Federal Highway Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: QUEST[®] Disclosure of Financial Interest, FHWA Review for Eligibility Letter

Mr. Longstreet,

On behalf of Trinity Highway Products, LLC ("THP"), I am responding to your email requesting details of any financial interest that the crash test laboratory has in the QUEST[®] system, manufactured by THP.

As noted in THP's request for eligibility for reimbursement under the Federal-aid highway program for this product, the QUEST[®] system was previously deemed eligible by the FHWA, pursuant to HSA-10/CC-87 and HSA-10/CC-87A.

The QUEST[®] technology is the commercial embodiment of intellectual property that is protected by patents that are owned by THP. THP does not pay royalties for sales of the QUEST[®] system. The QUEST[®] system was designed and developed by engineers at Energy Absorption Systems Inc. (EAS). The patent holders of record for the QUEST[®] system are John F. LaTurner, Michael H. Oberth, and Douglas E. Wilkinson and all, Mr. LaTurner, Mr. Oberth as well as Mr. Wilkinson, were employed by EAS. The associated United States Patent Office patent application numbers (7,396,184, 7,484,906 & 7,758,277) are assigned to Energy Absorption Systems, Inc. / Trinity Industries, Inc.

EAS sponsored certain crash tests of the QUEST[®] system; such tests were conducted by E-Tech Testing Services, an independent, wholly-owned subsidiary of THP. E-Tech Testing Services is an International Standards Organization ("ISO") 17025 accredited laboratory with American Association for Laboratory Accreditation (A2LA) Mechanical Testing certificate 989.01. Full-scale crash testing on the QUEST[®] system was performed in accordance with testing criteria, as set forth by the National Cooperative Highway Research Program ("NCHRP") in the NCHRP Report 350 (1993).

Please advise if further information is required by the FHWA. We look forward to continuing to work with the FHWA in regards to the QUEST[®] and other Roadside Safety Hardware.

Sincerely,

A handwritten signature in black ink that reads "Bret Eckert". The signature is written in a cursive style with a large initial "B" and a long horizontal stroke at the end.

Bret Eckert, P.E.
Engineering Applications Manager
Trinity Highway

Office 916-644-9131
bret.eckert@trin.net

From: [John Lefevore](#)
To: [Lefevore, Jill \(A2LA\)](#)
Subject: RE: CASS S3 Post Sleeve Clamp
Date: Thursday, December 03, 2015 1:50:44 PM

It's available at A2LA's website



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Your query returned 1 records

Certificate#	Organization	Contact	City, State	Country	Phone	Comm Code	Field	Standard	Expiration
989.01	E-TECH Testing Services	Paul Kruse	Rocklin, CA	United States	916 644 9102	C1	Mechanical	ISO/IEC 17025:2005	11/30/2017