

May 17, 2024

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

In Reply Refer To: HSST-1/WZ-456

Ryan Mornan PowerPak 225 N Rte 303 Unit 108 Congers, NY 10920

Dear Mr. Mornan:

We received your correspondence of June 29, 2023, requesting issuance of a reimbursement eligibility letter under the Federal-aid highway program for the roadside safety system, device, design, product, or hardware (collectively "device") described below. This letter is assigned Federal Highway Administration (FHWA) control number WZ-456.

ELIGIBILITY LETTERS

The FHWA issues Federal-aid reimbursement eligibility letters for new roadside safety devices that are crash tested in accordance with the industry standard of the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH).

FHWA, the Department of Transportation, and the United States (government) do not regulate roadside safety devices, crash test facilities, or the manufacturing industry. Issuance of eligibility letters is discretionary and provided only as a service to the states. FHWA may, at its discretion, decline to issue, revise, or rescind an eligibility letter. Eligibility letters are only issued by the FHWA headquarters Office of Safety.

Eligibility letters are issued only as notice to the states that a device is eligible for reimbursement under the Federal-aid highway program. They do not establish approval or certification for any other purpose. Issuance of an eligibility letter is not a prerequisite or requirement for state transportation agencies seeking to use Federal-aid funds for roadside safety devices. State agencies may use a device for which an eligibility letter has not been issued and seek Federal-aid reimbursement.

FEDERAL-AID REIMBURSEMENT

The request for issuance of this letter certified the device was crash tested in accordance with the industry standard of AASHTO's MASH. This eligibility letter is based on that certification and the material offered in support of its issuance. The device described below is eligible for reimbursement under the Federal-aid highway program.

Name of system: Rock Road Safety WB300 Type of system: Work Zone Test Level: Test Level 2 Testing conducted by: Applus IDIADA KARCO Engineering, LLC Date of request: June 29, 2023

Information about the device, including material such as the eligibility request, crash test reports, drawings, or images are included in one or more attachment(s) to this letter.

Eligibility letter WZ-456 is inapplicable to devices, optional equipment, alternate materials, or other features that were not crash tested in accordance with AASHTO's MASH.

This letter is issued only for the subject device as crash tested under AASHTO's MASH. Later modification(s) of the device are not eligible for Federal-aid reimbursement under this letter. Notice of later modification(s) should be given to transportation agencies, facility owners, and operators (collectively "agencies").

Agencies should be provided appropriate information about the device's design, installation, maintenance, materials, and mechanical properties.

Issuance of this letter is discretionary, and it may be revised or rescinded at FHWA's discretion. This letter is not a determination of compliance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) or ownership of any intellectual property rights.

This eligibility letter is not a determination by the government that a crash involving the subject device will result in any particular outcome. It is limited to only the device's eligibility for Federal-aid reimbursement.

INTELLECTUAL PROPERTY

Issuance of this eligibility letter does not convey property rights of any sort nor any exclusive privilege. This letter is not authorization or consent by the government for the use, manufacture, or sale of any patented or proprietary system, device, design, product, or hardware for which the requester is not the patent owner. Eligibility letters are not an expression of any view, position, or determination by the government as to the validity, scope, or ownership of any intellectual property rights to a specific device. These letters do not grant, impute, suggest, or otherwise establish any ownership, distribution, or licensing rights to the requester. The government expresses no opinion about the intellectual property rights relating to any device for which this or any other eligibility letter is issued.

PUBLIC DISCLOSURE

To prevent any misunderstanding, and as discussed above, this eligibility letter is assigned FHWA control number WZ-456. It should only be reproduced in full with its attachment(s). This letter and the material offered by the requester supporting its issuance is public information. All eligibility letters and supporting material are subject to public disclosure under the Freedom

of Information Act (FOIA). Eligibility letters are available to the public at <u>https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/</u>.

If you have any questions please contact Aimee Zhang at <u>Aimee.Zhang@dot.gov</u>.

Sincerely,

Amy S. Fox

Amy S. Fox Acting Director, Office of Safety Technologies Office of Safety

Enclosures

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Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

	Date of Request:	June 29, 2023		New	○ Resubmission	
	Name:	Ryan Mornan				
Company: PowerPak						
omit	Address:	225 N Rte 303 Unit 108 Congers, NY, 1				
Suł	Country:	United States of America				
	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.

Device & Testing Criterion - Enter from right to left starting with Test Level !-!-							
System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level			
'WZ': Crash Worthy Work Zone Traffic Control Devices	 Physical Crash Testing Engineering Analysis 	Rock Road Safety WB300	AASHTO MASH	TL2			

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 AASHTO Manual for Assessing Safety Hardware and that the evaluation results meet the appropriate evaluation criteria in the MASH.

Individual or Organization responsible for the product:

Contact Name:	Ryan Mornan	Same as Submitter 🔀				
Company Name: PowerPak		Same as Submitter 🔀				
Address:	225 N Rte 303 Unit 108 Congers, NY, 10920	Same as Submitter 🔀				
Country:	United States of America	Same as Submitter 🔀				
Enter below all disclosures of financial interests as required by the FHWA `Federal-Aid Reimbursement Eligibility Process for Safety Hardware Devices' document.						
PowerPak is the manufacturer and marketer of device.						

Applus IDIADA KARCO Engineering, LLC (IDIADA KARCO) is an independent research and testing laboratory having no affiliation with any other entity. IDIADA KARCO is actively Involved In data acquisition and compliance/certification testing for a variety of government agencies and equipment manufacturers. The principals and staff of IDIADA KARCO have no past or present financial, contractual or organizational interest in any company or entity directly or indirectly related to the products that KARCO tests. If any financial interest should arise, other than receiving fees for testing, reporting, etc., with respect to any project, the company will provide, In writing, a full and immediate disclosure to the FHWA.

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Same as Submitter

PRODUCT DESCRIPTION

New Hardware or Significant Modification	Modification to Existing Hardware						
The PowerPak Road Rock Safety WB300 is a water-filled longitudinal channelizing device (LCD) designed to provide a clear visual indication of the intended travel path through a construction work zone while providing demarcated separation between the traveling public and pedestrians. The as-tested Road Rock Safety WB300 system consists of filled modules joined together with 2.00 in (51.00 mm) Diameter, 34.00 in (864.00 mm) neight carbon steel grade S235 tube with a wall thickness of (3/32 in.) 2.38 mm with a hot dipped galvanized inish. The as-tested system is 154.00 ft. (46.94 m) long measured from end to end. The as tested condition is free standing on concrete without anchoring. The modules were filled with water up to approximately 18.00 n (457.00 mm). The as-tested water-filled modules are 80.00 in. (2,032.00 mm) long by 18.00 in. (457.00 mm) vide by 36.00 in. (914.00 mm) tall. The Road Rock Safety WB300 is not designed to function as a positive parrier, but instead its designed and tested as a Longitudinal Channelizing Device (LCD).							
	CRASH TESTING						
By signature below, the Engineer affiliated with the testing laboratory, agrees in support of this submission that all of the critical and relevant crash tests for this device listed above were conducted to meet the MASH test criteria. The Engineer has determined that no other crash tests are necessary to determine the device meets the MASH criteria.							
Engineer Name:	Fadi Alset						
Engineer Signature:	Fadi Alset Digitally signed by Fadi Alset o-Ap email-fadi alset@idata.abate.co.Ap	Alset plus Idiada Karco, ou, com, c=US 7 -07'00'					
Address:	9270 Holly Road Adelanto, CA 92301	Same as Submitter					

Country: United States of America

A brief description of each crash test and its result:

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Required Test	Narrative	Evaluation Results
2-90 (1100C)	Applus IDIADA KARCO Test No. P43070-01. Test Date April 20, 2023. Crash Test Report No. TR-P43070-01-NC for MASH 2016 Test 2-90 Crash Test of PowerPak Rock Road Safety WB300. An 1100C test vehicle approached the test article at a nominal speed of 44.00 mph (70.00 km/h). The Rock Road Safety WB300 was oriented at 15.0° and the vehicle's centerline was positioned to the center of module 11 of the Rock Road Safety WB300. The Rock Road Safety WB300 was impacted at a velocity of 45.15 mph (72.66 km/h) and an angle of 15.7°. The vehicle penetrated the system in a controlled manner. The occupant compartment was not penetrated and the maximum deformation into the occupant compartment 0.00 in. (0.00 mm). The Rock Road Safety WB300 met all the requirements for MASH Test 2-90.	PASS
2-91 (2270P)	Applus IDIADA KARCO Test No. P43071-01. 2-91 (2270P) Test Date APRIL 20, 2023. Crash Test Report No. TR-P43071-01-NC for MASH 2016 Test 2-91 Crash Test of PowerPak Rock Road Safety WB300. An 2270P test vehicle approached the test article at a nominal speed of 44.00 mph (70.00 km/h). The Rock Road Safety WB300 was oriented at 25.0° and the vehicle's centerline was positioned to the center of module 11 of the Rock Road Safety WB300. The Rock Road Safety WB300 was impacted at a velocity of 43.92 mph (70.69 km/h) and an angle of 25.1°. The vehicle over ride the system. The occupant compartment was not penetrated and the maximum deformation into the occupant compartment was 0.00 in. (0.00 mm). The Rock Road Safety WB300 met all the requirements for MASH Test 2-91.	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.):

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Laboratory Name: Applus IDIADA KARCO Engineering, LLC.			
Laboratory Signature:	FadiAlset		
Address:	9270 Holly Road Adelanto, CA 92301	Same as Submitter	
Country:	United States of America	Same as Submitter	
Accreditation Certificate Number and Dates of current Accreditation period :	TL 371: April 27, 2022 - April 27, 2025		

Submitter Signature*: Ryan Mornan Digitally signed by Ryan Mornan Date: 2023.06.26 16:26:29 -04:00

Submit Form

ATTACHMENTS

Attach to this form:

1) Additional disclosures of related financial interest as indicated above.

- 2) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
- 3) 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 relevant to understanding the dimensions and performance of the device should also be submitted to facilitate our review.

FHWA Official Business Only:

Eligi	bility Letter	
Number Date		Key Words

MASH Test 2-90 Summary

0.000 seconds 0.200 seconds	nds 0.400 seconds	0.600 seconds 0.800 seconds
	_31'-1 <mark>1</mark> " [9.5m]-]	
		7'-7" [2.3m]
General InformationTest AgencyApplus IDIADA KARCOTest NumberP43070-01Test Designation2-90Test Date04/20/23	Impact ConditionsImpact VelocityImpact AngleLocation / Orientation1.92 in. towards the Kinetic EnergyMinimum Kinetic Energy141.0 kip-ft (191.0	Occupant Risksm/h)Longitudinal OIV24.9 ft/s (7.6 m/s)Lateral OIV1.3 ft/s (0.4 m/s)Longitudinal RA4.2 gKiloJoules)KiloJoules)THIV25.6 ft/s (7.8 m/s)
Test Article Name / Model Road Rock Safety WB300	Exit Conditions Exit Velocity 15 17 mph (24 41	km/b) Exit ASI 0.42
TypeLongitudinal Channelizer Installation Length	AngleNot Applicable (Vehicle didn't Final Vehicle Position 31.12 ft. (9.49 m) To Passenger Side 7.58 ft. (2.31 m) downstream Exit Box Criteria MetNot Applicable	texit the system) Test Article Deflections n from CIP Static Working Width Not Applicable
Test Vehicle Type / Designation	Vehicle SnaggingNone Vehicle PocketingNone Vehicle StabilitySatisfactory Maximum Roll Angle13.1° Maximum Pitch Angle6.1° Maximum Yaw Angle 129.0°	Debris Field (longitudinal)38.2 ft. (11.6 m) Debris Field (lateral)9.9 ft. (3.00 m) <u>Vehicle Damage</u> Vehicle Damage Scale01-FD-4 CDC01FRLW3 Maximum Intrusion0.0 in. (0.0mm)

Figure 2 Summary of Test 2-90

MASH Test 2-91 Summary



Figure 2 Summary of Test 2-91





PowerPak Civil & Safety 225 N Rte 303 Unit 108 Congers, NY 10920

REV	DESCRIPTION	BY	DATE
А	INITIAL RELEASE FOR QUOTE	SDH	4/23/16
0	Revised Core Thru & Added Recesses to Hinge Fingers to Strengthen RELEASE FOR PATTERN	SDH	9/25/16
1	Revisions from Pattern Review	SDH	3/1/17
2	Removed Draft from inside Fingers Adjusted height of drain hole	SDH	3/9/17

			PRODUCT:	WATER FILLED BA	RRIER	PART NO:	TBD
		UNLESS OTHERWISE SPECIFIED UNITS ARE IN INCHES	SCALE:	0.125	FINISH:	TBD	
		TOLERANCES					
		FRACTIONS +/- 1/32 ANGLES +/-1° .xx +/- 0.03 .xxx +/- 0.015		B	٩RR	IER	OF 2
ſ	PROPRIETARY AND CONFIDENTIAL		DRAWN BY:		DATE:	APPROVED BY:	DATE:
			SHAWN HI	EIPP	9/25/16	RUSSELL FAWKES	9/28/16
_	THE INFORMATION CONTAINED IN THIS DRAWING		SIZE	DWG NO:		•	REV
	ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF POWERPAK CIVIL & SAFETY IS PROHIBITED		D	BARRIE	ER_	5FINGER	1

POWERPAK CIVIL & SAFETY 225 N Rte 303 Unit 108 Congers, NY 10920 USA

REV	DESCRIPTION	ΒY	DATE

SECTION B-B

		PROJECT NO:	BARRIER		part no: E	3 a r r i e r
	UNLESS OTHERWISE SPECIFIED UNITS ARE IN INCHES	SCALE:	0.125	FINISH:	AS NOTED	
	TOLERANCES	ΤΙΤΙΕ·			FR	SHEET I
	FRACTIONS +/-		RA	RRIF		UNEET 1
	ANGLES +/- .xx +/- .xxx +/-					
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE EXCLUSIVE PROPERTY OF POWERPAK CIVIL & SAFETY ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF POWERPAK CIVIL & SAFETY IS PROHIBITED		DRAWN BY:		DATE:	APPROVED BY:	DATE:
		S.HEIPP		4/19/23	R.MORNAN	4/19/23
		S I Z E	DWG NO:			R E V
			BARRIER			02

