Michael van der Vlist  
Laura Metaal Road Safety  
Rimburgerweg 40, 647 XX Kerkrade  
Netherlands  

Dear Mr. van der Vlist:  

This letter is in response to your August 23, 2017 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 B-295 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:  

- SafeZone MASH TL-4 Standard  

Scope of this Letter  

To be found eligible for Federal-aid funding, new roadside safety devices should meet the crash test and evaluation criteria contained in the American Association of State Highway and Transportation Officials’ (AASHTO) Manual for Assessing Safety Hardware (MASH). 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

Based solely on a review of crash test results and certifications submitted by the manufacturer, and the crash test laboratory, FHWA agrees that the device described herein meets the crash test and evaluation criteria of the American Association of State Highway and Transportation Officials’ Manual for Assessing Safety Hardware (MASH). Therefore, the device is eligible for reimbursement under the Federal-aid highway program if installed under the range of tested conditions.

Name of system: SafeZone MASH TL-4 Standard
Type of system: Rigid/Semi-Rigid Barriers
Test Level: MASH Test Level 4
Testing conducted by: Crashtest-service.com GmbH
Date of request: August 23, 2017

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

This eligibility letter is issued for the subject device as tested.

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 AASHTO’s MASH.

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 B-295 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,

Michael Griffith
Director, Office of Safety Technologies
Office of Safety

Enclosures
### Summary of Crash Test Results

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Test Agency</td>
<td>CrashTestService.com/Geneva (CTs)</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Test Agency</td>
<td>CrashTestService.com/Geneva (CTs)</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Date</td>
<td>May 2, 2017</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>Type</td>
<td>Side Zone</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
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<tr>
<td>11. Deceleration (ft/s²)</td>
<td>1.05</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>12. Test Article Damage</td>
<td>None</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
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<tr>
<td>13. Test Article Details</td>
<td>Dynamic Deflection</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td>14. Vehicle Damage</td>
<td>Moderate</td>
<td>CrashImpactTest.png</td>
<td>15.2 m (50 ft)</td>
<td>None</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This is an unpublished report for the client mentioned above that may hence not appear in any publication without the client’s express permission. The views herein are those of the author and not necessarily those of the client.
1. Sequential Photographs

2. Plan View

3. Cross-Sectional View

4. General Information
   - Test Agency: crash-test-service.com GmbH (CTS)
   - Test Standard: MASH Test TL 3-11
   - CTS Test No.: 16647
   - Date: April 24, 2017

5. Test Vehicle
   - Type: Sedan
   - Length: 62.34 m
   - Width: 22.86 m
   - Height: 2.54 m

6. Soil Type and Condition
   - Type of Soil: Asphalt
   - Soil Strength: 1/5
   - Condition: Cloudy, d = 15.4 cm (5.92 in)

7. Test Vehicle
   - Type/Designation: 2500
   - Make and Model: 2013 Dodge Ram Pickup
   - Curb: 2329 kg (5135 lb)
   - Test Inertial: 2503 kg (5577 lb)
   - Dummy: 1 kg (lb)
   - Gross Static: 2503 kg (5577 lb)

8. Impact Conditions
   - Speed: 94 km/h (58 mph)
   - Angle: 25 degrees
   - Location/Orientation: 1.5 m (59.1 in) before transition of elements V & VI

9. Exit Conditions
   - Speed: 84 km/h (52 mph)
   - Angle: Not obtainable

10. Post-Impact Trajectory
    - Vehicle Stability: Satisfactory
    - Stopping Distance: 1.9 m (75 in)
    - Lateral In Fron: 3.9 m (13 ft)
    - Vehicle Snagging: None
    - Vehicle Pocketing: None

11. Occupant Risk
    - Impact Velocity
      - Longitudinal: 4.37 ms (14.34 ft/s)
      - Lateral: 4.11 ms (13.48 ft/s)
    - Ridiculum Accelerations (10 m/s):
      - Longitudinal: -4.06 g
      - Lateral: -9.17 g

12. Test Article Damage
    - Classification: Moderate
    - Particulars: None

13. Test Article Defects
    - Dynamic Deflection: 1.70 m (66.9 in)
    - Permanent Deflection: 1.76 m (61.1 in)
    - Dynamic Working Width: 2.86 m (81.1 in)
    - Permanent Working Width: 1.31 m (63.4 in)

14. Vehicle Damage
    - Classification: Moderate
    - VDS: 11L085
    - CDC: 11DF23V
    - Ma.: Exterior Deflection: 270 mm (1.18 in)
    - Ma.: Interior Deflection: 13 mm (0.5 in)
    - OCV: LF000000
# Summary of Crash Test Results

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<tbody>
<tr>
<td>Agency: CTS</td>
<td>Speed: 10.4 ft/s (3.1 m/s)</td>
<td>Trajectory: S</td>
<td>7,500 lbs (3,397 kg)</td>
<td>Safe Zone: Yes</td>
<td>Location/Condition: Yes</td>
<td>Inclined Plane: No</td>
<td>Driving Conditions: 1A</td>
<td>Speed: 43 mph (70 km/h)</td>
<td>0.43 degrees</td>
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</tbody>
</table>
A.1 Maker's drawings of the item to be tested

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