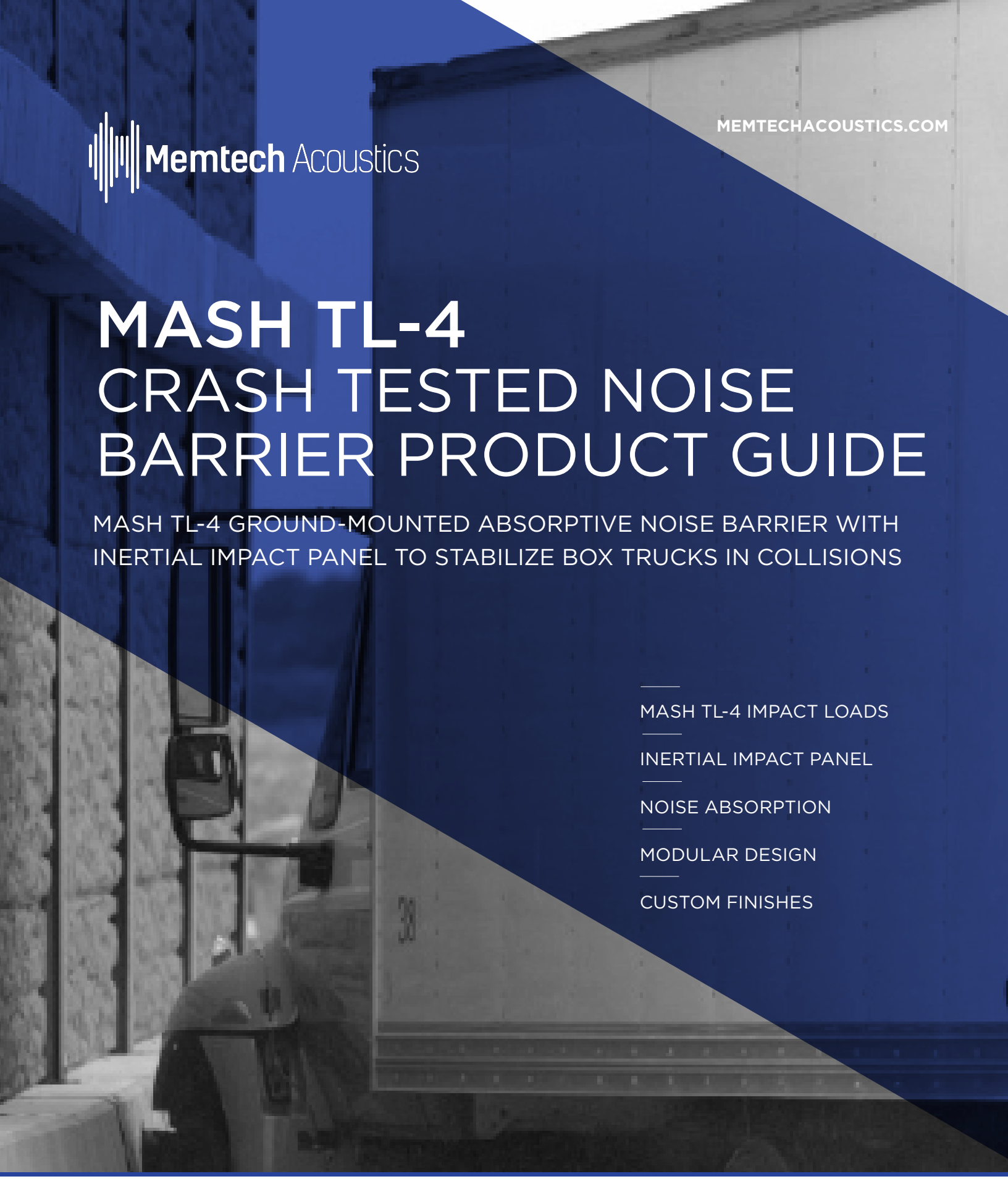
Memtech Acoustics

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MASH TL-4 CRASH TESTED NOISE BARRIER PRODUCT GUIDE

MASH TL-4 GROUND-MOUNTED ABSORPTIVE NOISE BARRIER WITH INERTIAL IMPACT PANEL TO STABILIZE BOX TRUCKS IN COLLISIONS



- MASH TL-4 IMPACT LOADS
- INERTIAL IMPACT PANEL
- NOISE ABSORPTION
- MODULAR DESIGN
- CUSTOM FINISHES

Memtech Acoustics supplies noise barrier and retaining wall systems that serve the needs of the transportation, building and energy sectors.

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Drawings and product details are for information and/or illustrative purposes only, and may vary.
Please contact your local Memtech representative for the most current product information.

This system has completed MASH (Manual for Assessing Safety Hardware) crash testing, so you can be confident it will hold up when it is needed most and will not fail in real world scenarios.

As dictated by AASHTO (the American Association of State Highway and Transportation Officials), impact speed and angle represent the worst practical conditions. The noise barrier system meets the TL-4 criteria of 80 kips.



AASHTO MASH TL-4 CRITERIA

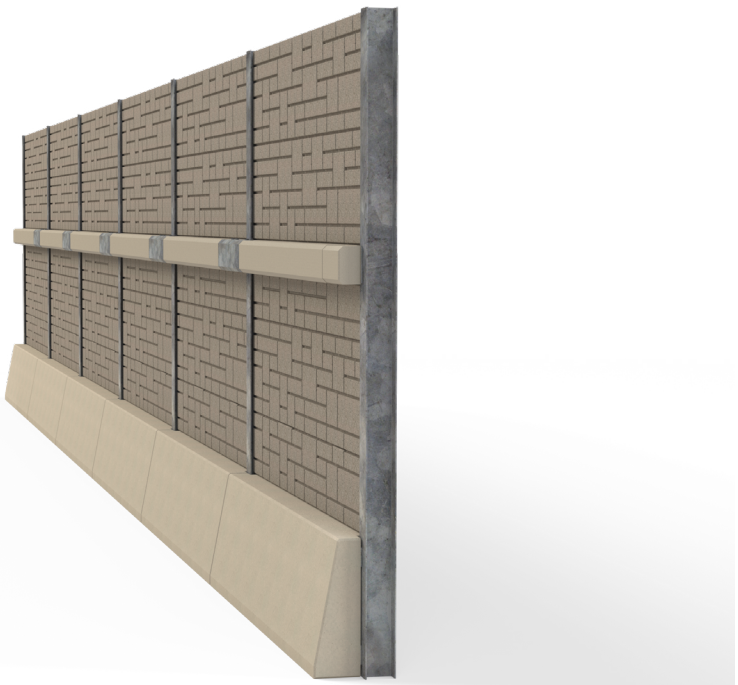
Criteria	AASHTO MASH
Vehicle	10,206 kg (22,500 lb) Box Truck
Speed	93 km/h (58 mph)
Impact Angle	15°
Test No.	4-12

INTRODUCING: THE MASH TL-4 CRASH TESTED SYSTEM

The MASH TL-4 System is a modular, absorptive, ground-mounted noise barrier system. Like the TL-3 system, it is built for roadside use, but it has been tested to MASH TL-4 conditions.

- 39” (1,000mm) high precast steel reinforced concrete single slope traffic barrier with proprietary connection to the noise barrier post.
- Integral inertial impact panel placed at 10’ elevation to ensure protection of the wall from soft portions of the truck.
- W-10 (W250) post ground mounted post design.
- Overall crash tested height of noise barrier system installation above pavement was 17.3’ (5.273m), however, designs can vary.







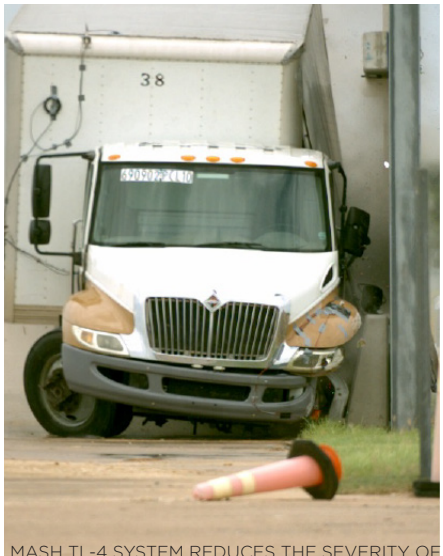
MANUAL FOR ACCESSING SAFETY HARDWARE (MASH) TEST LEVEL 4, TEXAS A&M TRANSPORTATION INSTITUTE PROVING GROUND, COLLEGE STATION, TX



A 22,500 LB (10,206KG) TRUCK IMPACTS THE MASH TL-4 SYSTEM AT 58MPH ON A 15°ANGLE



THE MASH TL-4 SYSTEM STABILIZES THE VEHICLE AFTER IMPACT



MASH TL-4 SYSTEM REDUCES THE SEVERITY OF THE CRASH

ABOUT THE ABSORPTIVE PANEL

The absorptive panel is made of a durable, lightweight cementitious/wood composition product. It is made of chemically neutralized and mineralized organic softwood shavings which are specially processed to an acoustically engineered size and are bonded together under pressure with Portland cement.

The material is sound-absorbent, non-combustible, vermin and rot proof. It is self-draining and highly resistant to weather exposure including: freeze-thaw, road de-icing chemicals and fungicides.

Noise barrier systems are engineered to each site, specifying the size for posts and the depth and diameter of footings. Standard steel posts or optional concrete posts can be accommodated.

The MASH TL-4 Noise Barrier System is available in the standard colors and finishes below. Custom colors and finishes available.

FEATURES

- MASH TL-4 Crash Tested
- Additional precast concrete Panel
- Double sided absorptive – with 0.80 NRC on both highway and residential
- Modular design
- Easy installation
- Lightweight
- Non-combustible
- Non-absorptive panels are available

TYPICAL APPLICATIONS

- Roads and Highways

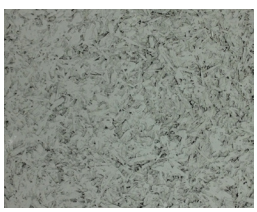
STANDARD COLORS


1004B NATURAL


1082D TAN


1538B GREY


02589 TAN

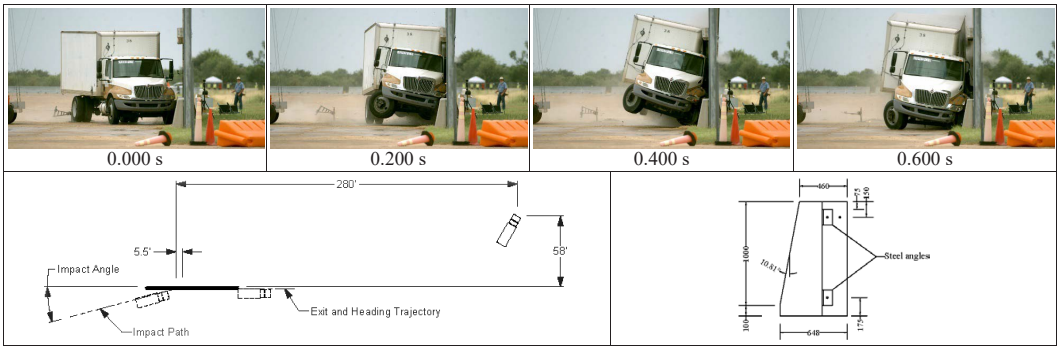

09187 GREY


11988 BROWN

*This palette serves as a guide only; The material's real-life texture will offer a variance in color. Color appearance also varies depending on time-of-day, light reflectance, etc.

MASH TL-4 CRASH TEST 4-12 SUMMARY

TR No. 690902-PCL10



General Information
- Test Agency ..... Texas A&M Transportation Institute (TTI)
- Test Standard Test No. ..... MASH Test 4-12
- TTI Test No. 690902-PCL10
- Test Date 2020-07-15

Test Article
- Type ..... Longitudinal Barrier – Soundwall
- Name ..... Proprietary Traffic Barrier with Soundwall
- Installation Length ..... 75 ft (22.86 m)
- Material or Key Elements .... Five 15 ft (4.562 m) long sections of concrete barrier, 3.3 ft (1 m) above pavement x 2.1 ft (0.648 m) wide at the base x1.5 ft (0.46 m) at top, with Durisol® soundwall panels. Six W10x33 (W250x49) x 24.8 ft (7.56 m) steel posts at 15 ft (4.57 m)
- **Soil Type and Condition** ..... Concrete footers (2 ft (610 mm) diam. x 8 ft (2438 mm) deep) in native clay soil

Test Vehicle
- Type/Designation 10000S
- Make and Model ..... 2012 International 4300 SUT
- Curb ..... 13,490 lb (6119 kg)
- Test Inertial ..... 22,420 lb (10170 kg)
- Dummy ..... No dummy
- Gross Static ..... 22,420 lb (10170 kg)

Impact Conditions
- Speed ..... 57.8 mi/h (93.0 km/h)
- Angle ..... 14.9 degrees
- Location/Orientation ..... 5.5 ft (1.7 m) upstream 2-3

Impact Severity ..... 166 kip-ft (224 kJ)

Exit Conditions
- Speed ..... Remained in contact
- Trajectory/Heading Angle .... to end of barrier

Occupant Risk Values
- Longitudinal OIV ..... 6.6 ft/s (2.0 m/s)
- Lateral OIV ..... 11.5 ft/s (3.5 m/s)
- Longitudinal Ridedown ..... 3.5 g
- Lateral Ridedown ..... 8.7 g
- THIV ..... 4.1 m/s
- ASI 0.7

Max. 0.050-s Average
- Longitudinal ..... −1.9 g
- Lateral ..... 6.0 g
- Vertical ..... −2.3 g

Post-Impact Trajectory
- Stopping Distance ..... 280 ft downstream 58 ft twd field side

Vehicle Stability
- Maximum Yaw Angle ..... 14 degrees
- Maximum Pitch Angle ..... 5 degrees
- Maximum Roll Angle ..... 12 degrees
- Vehicle Snagging ..... No
- Vehicle Pocketing ..... No

Test Article Deflections
- Dynamic ..... 6.6 inches (167 mm)
- Permanent ..... 1.0 inch (25 mm)
- Working Width ..... 32.1 inches (815 mm)
- Height of Working Width ..... 201.7 inches (5123 mm)

Vehicle Damage
- VDS ..... NA
- CDC ..... NA
- Max. Exterior Deformation ..... 14.0 inches (356 mm)
- OCDI ..... NA
- Max. Occupant Compartment Deformation ..... 6.5 inches (165 mm)

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2020-08-31

Note: OIV = Occupant Impact Velocity; THIV = Theoretical Head Impact Velocity; ASI = Acceleration Severity Index; NA = Not Applicable.

Figure 5.6. Summary of Results for *MASH* Test 4-12 on Proprietary Traffic Barrier with Inertial Panel and Soundwall System

Test article: proprietary traffic barrier with Durisol® soundwall panels, as named in TTI test report 690902-PCL10. Memtech Acoustics supplies this system.

SEQUENTIAL PHOTOGRAPHS FOR TEST NO. 690902-PCL10 (REAR VIEW).


0.000 s


0.100 s


0.200 s


0.400 s


0.500 s


0.700 s