Memtech Acoustics

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MASH TL-3 CRASH TESTED NOISE BARRIER PRODUCT GUIDE

GROUND-MOUNTED ABSORPTIVE NOISE BARRIER SYSTEM CRASH-TESTED TO MASH TL-3 CONDITIONS

- MASH TL-3 IMPACT LOADS
- INTEGRATED PRECAST BARRIER
- 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 condition which is traditionally set at 85th percentile level. Passenger vehicles selected to represent 2nd and 90th percentile.



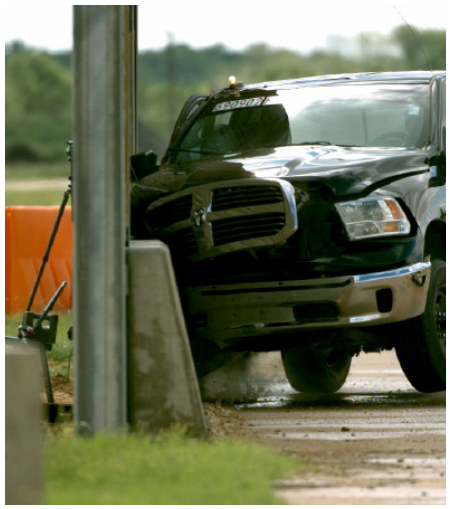
AASHTO MASH TL-3 CRITERIA

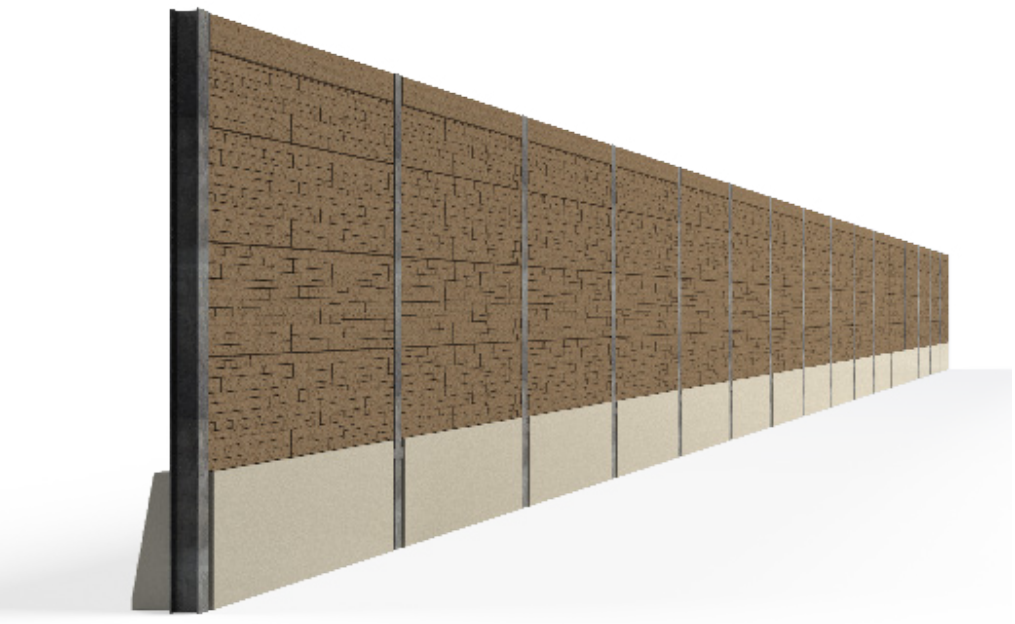
Criteria	AASHTO MASH
Vehicle	1100 kg (2425 lb) Small Car 2270 kg (5000 lb) Pickup
Speed	100 km/h (62 mph)
Impact Angle	Small Car 25° Pickup 25°
Test No.	Small Car 3-10 Pickup 3-11

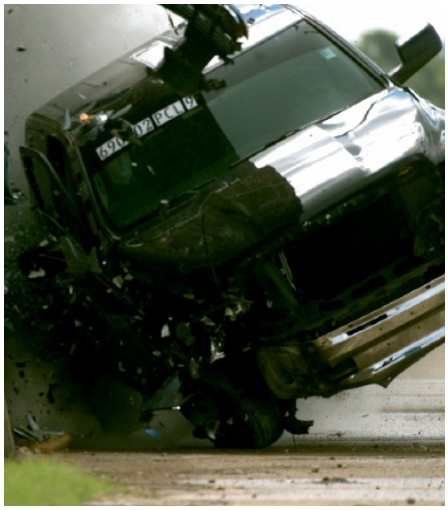
INTRODUCING: THE MASH TL-3 CRASH TESTED SYSTEM

The MASH TL-3 System is a modular absorptive ground mounted noise barrier system with an integrated precast concrete crash railing.

- 39" (1,000mm) high precast steel reinforced concrete single slope traffic barrier with proprietary connection to the noise barrier post
- W-10 (W250) post ground mounted post design
- Overall crash tested height of soundwall system installation above pavement was 17.3' (5.273m), however, designs can vary.









MARKING IMPACT ZONE

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-3 Noise Barrier System is available in the standard colors and finishes below. Custom colors and finishes available.

STANDARD COLORS



1004B NATURAL



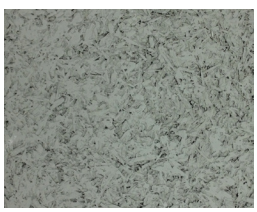
1082D TAN



1538B GREY



02589 TAN



09187 GREY



11988 BROWN

FEATURES

- MASH TL-3 Crash Tested
- Double sided absorptive – with 0.80 NRC on both highway and residential
- Modular design
- Easy installation
- Lightweight
- Non-combustible
- Non-absorptive panels are an option as well

TYPICAL APPLICATIONS

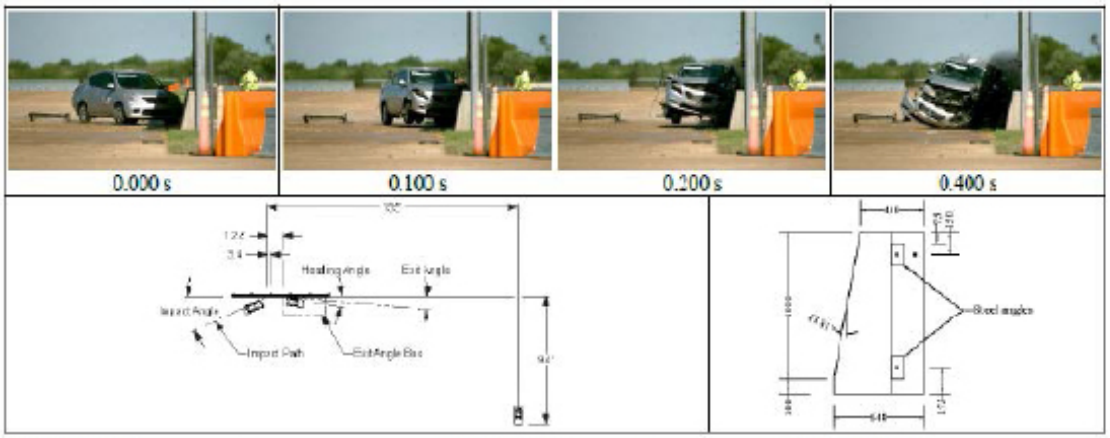
- Roads and Highways
- Residential Developments
- Rail Applications
- Industrial and Commercial sites
- Utility/Hydro Stations





*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-3 CRASH TEST 3-10 (SMALL CAR) SUMMARY

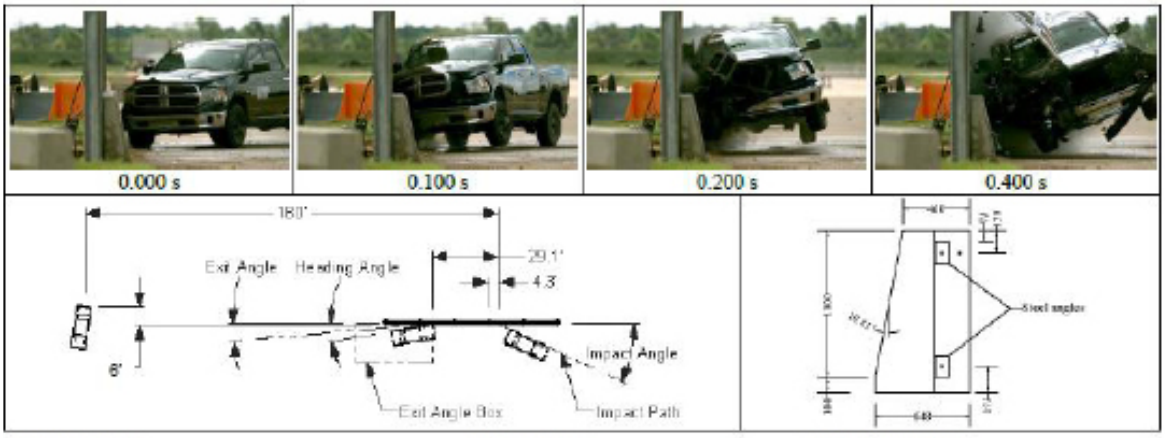


General Information		**Impact Conditions**	**Post-Impact Trajectory**
Test Agency	Texas A&M Transportation Institute (TTI)	Speed	62.7 mi/h (100.9 km/h)	Stopping Distance	195 ft (60 m) dc 94 ft (29 m) twd traffic
Test Standard Test No.	MASH Test 3-10	Angle	24.8°		
TTI Test No.	609932-PCL8	Location/Orientation	3.4 ft (1.0 m) upstream of joint 2-3	**Vehicle Stability**	
Test Date	2020-04-01			Maximum Yaw Angle	40°
Test Article		Impact Severity	56 kip-ft (75.9 kJ)	Maximum Pitch Angle	3°
Type	Longitudinal Barrier – Soundwall	**Exit Conditions**		Maximum Roll Angle	18°
Name		Speed	46.9 mi/h (78.7 km/h)	Vehicle Snagging	No
Installation Length	75 ft (22.86 m)	Trajectory/Heading Angle	0.0° / 5.4°	Vehicle Pocketing	No
Material or Key Elements	Five 15 ft (4.562 m) long sections of concrete barrier, 3.3 ft (1 m) high x 2.1 ft (0.648 m) wide at the base x1.5 ft (0.46 m) at top, with Durisol® molded brick panels	**Occupant Risk Values**		**Test Article Deflections**	
		Longitudinal OIV	21.3 ft/s (6.5 m/s)	Dynamic	1.1 inches (28 mm)
		Lateral OIV	28.2 ft/s (8.6 m/s)	Permanent	None
		Longitudinal Ridedown	5.3 g	Working Width	20.6 inches (670 mm)
		Lateral Ridedown	9.9 g	Height of Working Width	189.0 inches (4775 mm)
Soil Type and Condition	Concrete footers (2 ft (810 mm) diam. x 8 ft (2438 mm) deep) in native clay soil	THIV	11.0 m/s	**Vehicle Damage**	
		ASI	2.4	VDS	11LFQ8
Test Vehicle		**Max. 0.050-s Average**		CDC	11FLEW5
Type/Designation	1100C	Longitudinal	-11.0 g	Max. Exterior Deformation	11.0 inches (279 mm)
Make and Model	2014 Nissan Versa	Lateral	18.3 g	OCDI	LF0020900
Curb	2380 lb (1004 kg)	Vertical	-4.2 g	Max. Occupant Compart. Deformation	2.0 inches (51 mm)
Test Inertial	2423 lb (1099 kg)				
Dummy	166 lb (75 kg)				
Gross Static	2589 lb (1174 kg)				

Figure 5.7. Summary of Results for *MASH* Test 3-10 on Traffic Barrier with Soundwall System.

Test article: proprietary traffic barrier with Durisol® soundwall panels, as named in the test reports shown. Memtech Acoustics supplies this system.

MASH TL-3 CRASH TEST 3-11 (PICK-UP TRUCK) SUMMARY



General Information		**Impact Conditions**	**Post-Impact Trajectory**
Test Agency	Texas A&M Transportation Institute (TTI)	Speed	61.0 mi/h (98.2 km/h)	Stopping Distance	180 ft (55 m) downstream 6 ft (1.9 m) twd field side
Test Standard Test No.	MASH Test 3-11	Angle	24.7°		
TTI Test No.	609902-PCL8	Location/Orientation	4.3 ft (1.3 m) upstream of joint 3-4	**Vehicle Stability**	
Test Date	2020-03-31			Maximum Yaw Angle	39°
Test Article		Impact Severity	110 kip-ft (149 kJ)	Maximum Pitch Angle	7°
Type	Longitudinal Barrier – Soundwall	**Exit Conditions**		Maximum Roll Angle	30°
Name		Speed	47.6 mi/h (76.6 km/h)	Vehicle Snagging	No
Installation Length	75 ft (22.86 m)	Trajectory/Heading Angle	1.1° / 6.1°	Vehicle Pocketing	No
Material or Key Elements	Five 15 ft (4.582 m) long sections of concrete barrier, 3.3 ft (1 m) high x 2.1 ft (0.648 m) wide at base x1.5 ft (0.46 m) at top, with Durisol® molded brick panels	**Occupant Risk Values**		**Test Article Deflections**	
		Longitudinal OIV	20.3 ft/s (6.2 m/s)	Dynamic	5.3 inches (135 mm)
		Lateral OIV	25.6 ft/s (7.8 m/s)	Permanent	None
		Longitudinal Ridedown	5.7 g	Working Width	30.8 inches (782 mm)
		Lateral Ridedown	12.0 g	Height of Working Width	188.0 inches (4775 mm)
Soil Type and Condition	Concrete footers (28 (610 mm) diam. x 8 ft (2438 mm) deep) in native clay soil	THIV	10.1 m/s	**Vehicle Damage**	
		ASI	1.7	VDS	01RFQ5
Test Vehicle		**Max. 0.050-s Average**		CDC	01FREW4
Type/Designation	2270P	Longitudinal	-10.2 g	Max. Exterior Deformation	16.0 inches (406 mm)
Make and Model	2015 RAM 1500 Pickup Truck	Lateral	-13.4 g	OCDI	RF0020000
Curb	5010 lb (2277 kg)	Vertical	-2.9 g	Max. Occupant Comp. Deformation	5.0 inches (127 mm)
Test Inertial	5061 lb (2291 kg)				
Dummy	166 lb (75 kg)				
Gross Static	5216 lb (2366 kg)				

Figure 6.6. Summary of Results for *MASH* Test 3-11 on Traffic Barrier with Soundwall System.