



General Information

Test Agency Texas A&M Transportation Institute (TTI)
 Test Standard Test No. MASH Test 5-12
 TTI Test No. 609591-03-3
 Test Date..... 2018-07-03

Test Article

Type Longitudinal Barrier - Bridge Rail
 Name..... PennDOT PA Bridge Barrier
 Installation Length 149 ft-10 inches
 Material or Key Elements 24-inch tall x 18-inch thick reinforced concrete wall with two HSS 5x4x3/8 rails at 37 inches and 50 inches

Soil Type and Condition Concrete bridge deck, damp

Test Vehicle

Type/Designation 36000V
 Make and Model..... 2008 Freightliner CL120 & 2002 Utility 53ft
 Curb 28,750 lb
 Test Inertial 79,280 lb
 Dummy..... None
 Gross Static..... 79,280 lb

Impact Conditions

Speed 49.9 mi/h
 Angle 14.8°
 Location/Orientation 23 inches dwnstrm of post 5

Impact Severity

Exit Conditions

Speed 44.0 mi/h
 Exit Traj./Heading Angle 4.2°/0.8°

Occupant Risk Values

Longitudinal OIV 3.0 ft/s
 Lateral OIV 13.5 ft/s
 Longitudinal Ridedown 8.9 g
 Lateral Ridedown 20.5 g
 THIV 13.8 ft/s
 PHD 21.2 g
 ASI 1.4

Max. 0.050-s Average

Longitudinal -2.4 g
 Lateral -6.9 g
 Vertical 12.8 g

Post-Impact Trajectory

Stopping Distance 270 ft downstream
 8 ft toward traffic

Vehicle Stability

Maximum Yaw Angle 25°
 Maximum Pitch Angle 35°
 Maximum Roll Angle 22°
 Vehicle Snagging No
 Vehicle Pocketing No

Test Article Deflections

Dynamic (View Partially Obscured) 20 inches
 Permanent 7.0 inches
 Working Width 51.9 inches
 Working Width Height 130.8 inches

Vehicle Damage

VDS NA
 CDC NA
 Max. Exterior Deformation 18 inches
 OCDI NA
 Max. Occupant Compartment Deformation 2.5 inches

Figure 7.6. Summary of Results for MASH Test 5-12 on PennDOT PA Bridge Barrier.