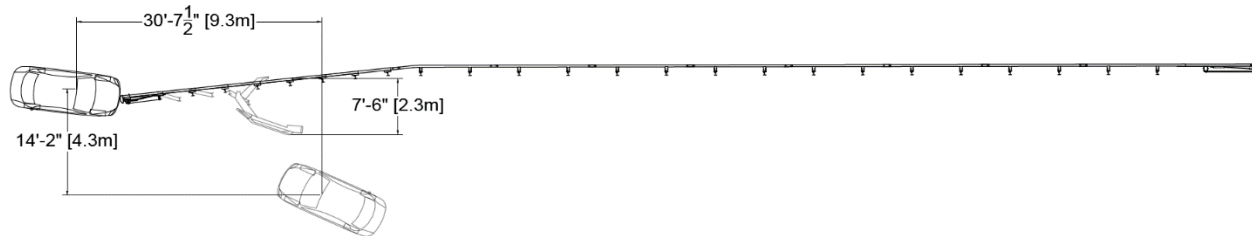
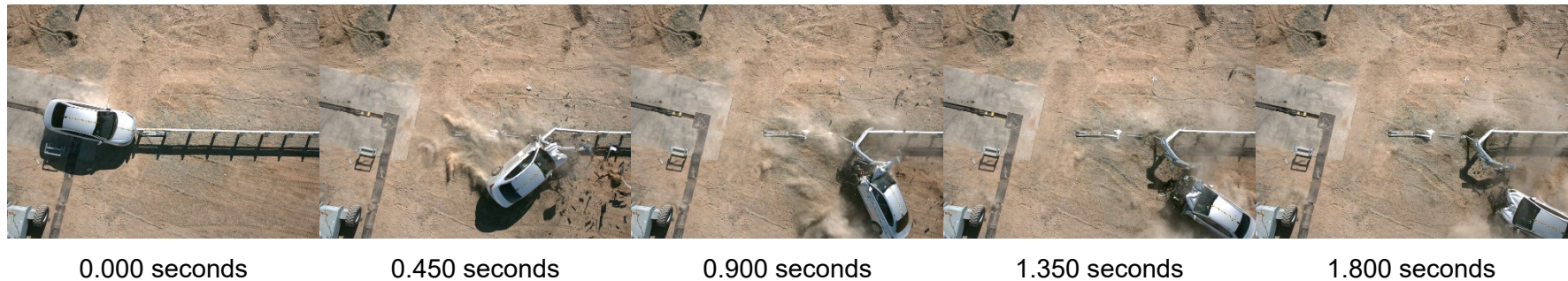


MASH 2016 Test 3-32 Summary



GENERAL INFORMATION

Test Agency..... Applus IDIADA KARCO
Test Number..... P43091-01
Test Designation..... 3-32
Test Date..... 12/12/23

TEST ARTICLE

Name / Model..... 4F-T flared terminal
Type..... Terminal
Installation Length..... 141.4 ft. (43.1 m)
Terminal Length..... 34.4 ft. (10.5 m)
Road Surface..... Smooth, concrete to fine silty soil

TEST VEHICLE

Type / Designation..... 1100C
Year, Make, and Model.... 2019 Kia Rio
Curb Mass..... 2,469.1 lbs (1,120.0 kg)
Test Inertial Mass..... 2,436.1 lbs (1,105.0 kg)
Gross Static Mass..... 2,601.4 lbs (1,180.0 kg)

Impact Conditions

Impact Velocity..... 62.47 mph (100.53 km/h)
Impact Angle..... 4.0° relative to downstream rail
Location / Orientation..... 3.5 in. from the center of the
Impact Head
Kinetic Energy..... 317.8 kip-ft (430.8 kJ)
Minimum KE Required..... 288.0 kip-ft (390.0 kJ)

Exit Conditions

Exit Velocity..... N/A
Exit Angle..... N/A
Final Vehicle Position..... 30.6 ft. (9.3 m) Downstream
14.2 ft. (4.3 m) Right
Vehicle Snagging..... Satisfactory
Vehicle Pocketing..... Satisfactory
Vehicle Stability..... Satisfactory
Maximum Roll Angle..... -33.7 °
Maximum Pitch Angle..... 56.1 °
Maximum Yaw Angle..... 153.2 °

Occupant Risk

Longitudinal OIV..... 28.9 ft/s (8.8 m/s)
Lateral OIV..... -3.6 ft/s (-1.1 m/s)
Longitudinal RA..... -20.4 g
Lateral RA..... -7.3 g
THIV..... 29.2 ft/s (8.9 m/s)
PHD..... 21.4 g
ASI..... 0.99

Test Article Deflections

Static..... 6.0 ft. (1.8 m)
Dynamic..... 7.9 ft. (2.4 m)
Working Width..... 7.5 ft. (2.3 m)
Debris Field..... N/A

Vehicle Damage

Vehicle Damage Scale..... 12-FD-7
CDC..... 12FDEW2
Maximum Deformation.... (0.0 in.) 0.0 mm

Figure 2 Summary of Test 3-32