



General Information

Test Agency Texas Transportation Institute
 Test No. 405181-11
 Date 06/20/01

Test Article

Type Bridge Rail
 Name Natchez Trace Bridge Rail
 Installation Length (m) 21.5
 Material or Key Elements ... Concrete Beam and Post on Curb

Soil Type and Condition Concrete Pavement, Dry

Test Vehicle

Type Production
 Designation 820C
 Model 1997 Geo Metro
 Mass (kg)
 Curb 845
 Test Inertial 820
 Dummy 76
 Gross Static 896

Impact Conditions

Speed (km/h) 99.9
 Angle (deg) 19.8

Exit Conditions

Speed (km/h) 77.6
 Angle (deg) 4.6

Occupant Risk Values

Impact Velocity (m/s)
 x-direction 6.0
 y-direction 7.3
 THIV (km/h) 32.9
 Ridedown Accelerations (g's)
 x-direction -4.0
 y-direction -5.3
 PHD (g's) 5.5
 ASI 1.81
 Max. 0.050-s Average (g's)
 x-direction -10.7
 y-direction -13.8
 z-direction -3.7

Test Article Deflections (m)

Dynamic 0
 Permanent 0
 Working Width N/A

Vehicle Damage

Exterior
 VDS 01RFQ2
 CDC 01REK2
 &01RYEW2

Maximum Exterior
 Vehicle Crush (mm) 230

Interior
 OCDI FS0002000

Max. Occupant Compartment
 Deformation (mm) 40

Post-Impact Behavior

(during 1.0 s after impact)
 Max. Yaw Angle (deg) -47
 Max. Pitch Angle (deg) -5
 Max. Roll Angle (deg) 21

Summary of results for test 405181-11, *NCHRP Report 350* test 3-10.