

# Crash Tests

## New Car Safety

### Smart Fortwo

02/2008 on 12/2009 - Dual Frontal

#### Overall Evaluation



#### Overall Score

Variant: 3 dr hatch

27.83 out of 37

Engine: 1 litre

Category: Light Car

Australasian model has head-protecting side airbags as standard

The left-hand-drive European model was tested by Euro NCAP. Australasian specifications may vary and therefore models sold in Australasia might provide different levels of protection to those described on this page. The Australasian model has side airbags standard and should offer better side protection than the model tested by Euro NCAP.

#### Model History and Safety Features

The tested model of Smart fortwo will be launched in Australia and New Zealand early in 2008.

Dual front airbags and side airbags with head-protection are standard equipment in Australasia. Antilock brakes (ABS), electronic brake distribution (EBD) and electronic stability control (ESC) are also standard. An intelligent seat belt reminder is fitted to the driver seat.

The front seat belt buckles are mounted on the seats and the upper anchorages are adjustable. These features improve the fit of the seat belt. Pretensioners are fitted to the front seat belts to reduce slack in the event of a crash.

#### Overall Evaluation: 4

4 stars. The fortwo scored 12.85 out of 16 in the offset crash test. The passenger compartment held its shape well. Protection from serious leg injury was marginal for the driver and passenger.

The vehicle scored 13.98 out of 16 in the side impact crash test. There was a slight risk of serious chest and head injury for the driver.

#### Frontal Offset Crash Test

Body region scores out of 4 points each: Head/neck 4 pts, chest 3.13 pts, upper legs 1.72 pts, lower legs 4 pts.

The passenger compartment held its shape well in the offset crash test. The brake pedal moved rearwards by 14 mm. The accelerator pedal moved downwards 15mm. The steering wheel hub moved 66mm forwards, 26 mm upward and 14 mm sideways. The front ("A") pillar moved 8 mm rearwards. All doors remained closed during the crash. After the crash both doors could be opened with normal effort.

The airbag cushioned the head of the driver and contact was stable. Steering column and dash components were a potential source of injury for the driver's knees. The passenger's head was cushioned by the airbag. Dash components were a potential source of injury for the passenger's knees.

#### Side Impact Crash Test

Body region scores out of 4 points each: Head 3.14 pts, chest 2.84 pts, abdomen 4 pts, pelvis 4 pts.

The vehicle tested by Euro NCAP was not eligible for an optional pole impact test, since it did not have head-protecting side airbags. This can earn an extra 2 points.

The Australasian fortwo has standard head-protecting side airbags and so can be expected to offer better protection in side impacts than the tested European model.

#### Pedestrian rating (v4.1)



Child head impacts	4
Adult head impacts	0.01
Upper leg impacts	Zero
Lower leg impacts	6
Total (out of 36)	10.01

Offset crash test at 64km/hr



#### Injury Measurements

Refer to the information sheet 'How the tests are done'	Offset Crash Test at 64km/h (v4.1)		Side Impact Crash Test at 50km/h (v4.1)
	Driver	Passn	Driver
Head			
- HIC	353	445	356
- Acceleration (g for 3ms)	48.5	51.1	75.5
Neck			
- Shear (kN)	0.3	0.69	
- Tension (kN)	1.4	1.57	
- Extension (Nm)	19.5	15.9	
Chest			
- Acceleration (g for 3ms)			
- Compression (mm)	20.13	28.07	27.58
- Viscous Criterion (m/s)	0.07	0.12	0.23
Abdomen			
- Force (kN)			0.97
Pelvis			
- Force (kN)			1.5
Upper Legs Force (kN)			
- Left	2.69	0.15	
- Right	3.02	0.37	
Knee Displacement (kN)			
- Left	0	0	
- Right	6.63	0	
Lower Legs Force (kN)			
- Left	1.95	1.35	
- Right	1.58	1.31	
Index (Upper   Lower)			
- Left	0.35   0.24	0.33   0.16	
- Right	0.33   0.16	0.37   0.15	

#### Bonus points (maximum 5)

Pole Test: Not eligible - no head protecting side airbags

Seat Belt Reminders: 1

#### Modifiers for offset test scores

Head	No deduction
Chest	No deduction
Upper leg	Variable & conc. loading for driver & passenger
Lower leg	No deduction
Foot score	Score 4 pts
Structure	

#### Modifiers for side impact test scores

Head		
Chest	Backplate load	0.5 pts deduction
Upper leg		
Lower leg		
Foot score		
Structure		



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