# **Crash Tests**

## New Car Safety

### Fiat Bravo/Ritmo

06/2008 on 12/2009 - Frontal+Side+Head

#### **Overall Evaluation**

Overall Score Variant: 5 door hatch LHD

32.5 out of 37 Engine: 1.9 litre Category: Small Car

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.

#### **Model History and Safety Features**

The tested model of Fiat Bravo was introduced in New Zealand during 2007. This model is known as the Ritmo in Australia.

Dual front airbags, side airbags and head-protecting side curtains are standard equipment. Antilock brakes (ABS), electronic brakeforce distribution (EBD), emergency brake assist and electronic stability control (ESC) are also standard in New Zealand. ESC is optional on the Emotion variant in Australia and this 5-star rating only applies where ESC is fitted. The Emotion without ESC is a 4-star rating. Intelligent seat belt reminders are fitted to both front seats.

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. A three point seat belt is fitted to the centre rear seat. This provides better protection than a two point (lap) seat belt.

#### **Overall Evaluation: 5**

5 Stars. The Bravo scored 12.77 out of 16 in the offset crash test. The passenger compartment held it shape well. Protection from serious leg injury was marginal for the passenger.

The vehicle scored 15.73 out of 16 in the side impact crash test and a further two points in the optional pole test.

### Frontal Offset Crash Test

Body region scores out of 4 points each: Head/neck 4 pts, chest 3.29 pts, upper legs 2.29 pts, lower legs 3.20 pts.

The passenger compartment held its shape well in the offset crash test. The brake pedal moved forwards by 78mm. The clutch pedal moved downwards 4mm. The steering wheel hub moved 16mm forward and 3 mm upward. The front ("A") pillar moved 6 mm rearwards. All doors remained closed during the crash. After the crash the driver's door could be opened with high manual effort.

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

#### Side Impact Crash Test

Body region scores out of 4 points each: Head 4 pts, chest 3.73 pts, abdomen 4 pts, pelvis 4 pts.

The vehicle was eligible for an optional pole impact test since it had head-protecting side airbags. The manufacturer decided to go ahead with the pole test and the vehicle earned a further two points.

#### Pedestrian rating (v4.1)

Child head impacts	6.5
Adult head impacts	3.69
Upper leg impacts	0.37
Lower leg impacts	5.4
Total (out of 36)	15.96



Offset crash test at 64km/hr

#### **Injury Measurements**

Refer to the information sheet	Offset Crash Test at 64km/h		Side Impact
'How the tests are done'	(v4.1)		Crash Test aa
			50km/h (v4.1)
	Driver	Passn	Driver
Head			
- HIC	368	241	25
<ul> <li>Acceleration (g for 3ms)</li> </ul>	48.3	41.2	16.5
Neck			
- Shear (kN)	0.54	0.33	
- Tension (kN)	2.03	0.67	
- Extension (Nm)	10	10.2	
Chest			
<ul> <li>Acceleration (g for 3ms)</li> </ul>			
- Compression (mm)	27.07	22.26	14.24
<ul> <li>Viscous Criterion (m/s)</li> </ul>	0.12	0.09	0.09
Abdomen			
- Force (kN)			0.5
Pelvis			
- Force (kN)			2.24
Upper Legs Force (kN)			
- Left	0.38	1.61	
- Right	1.44	0.55	
Knee Displacement (kN)			
- Left	1.9	7.6	
- Right	2.9	0.4	
Lower Legs Force (kN)			
- Left	2.08	2.26	
- Right	1.88	1.88	
Index (Upper   Lower)			
- Left	0.43   0.25	0.37   0.2	
- Right	0.3   0.58	0.36   0.18	

Bonus points (maximum 5) Pole Test: 2 pts Seat Belt Reminders: 2		
Modifiers fo	r offset test scores	
Head		
Chest		
Upper leg	Variable Loading D & P	
Lower leg		
Foot score		

Structure

No deduction No deduction 1 pt deduction L&R D&P No deduction 4 points

#### Modifiers for side impact test scores Head

Chest Backplate load Upper leg Lower leg Foot score Structure 0.27 pt deduction



Version 1, Published on: 15/05/2009 Published by New Car Assessment Program PO Box 1555 Canberra ACT Australia 2601