

# ANCAP Safety Rating

## VOLVO S90 (October 2016 - onwards)



Volvo S90

### This ANCAP safety rating applies to:

Make / Model	Volvo S90
Year Range	October 2016 - onwards
Variant(s)*	All variants
Vehicle Type	Large Car

The tested model of Volvo S90 was introduced in Australia and New Zealand in October 2016. This ANCAP safety rating applies to all variants.

Dual frontal, side chest and side head airbags (curtains) are standard. A driver knee airbag is standard on European models however the knee airbag is not fitted to Australasian models and scoring has been adjusted. Autonomous emergency braking (AEB), lane support systems (LSS), adaptive cruise control (ACC) and intelligent speed assistance (ISA) are standard.

A full list of safety features and technologies can be viewed within the *Safety Features & Technologies* table on page 2 of this report.

### Injury Outcomes.

#### Full Width Frontal

Driver      Rear Passenger      Driver      Front Passenger



#### Side Impact

Driver



#### Pole

Driver



#### Whiplash Protection

Rear      Front



### Test Results Summary.

<b>Airbags</b>	Dual Frontal, Side, Head
<b>Adult Occupant Protection</b>	91% (34.73 out of 38)
- Full Width Frontal Test#	6.95 (out of 8)
- Frontal Offset Test#	6.57 (out of 8)
- Side Impact Test#	8.00 (out of 8)
- Pole Test#	7.42 (out of 8)
- Whiplash Protection Test	2.79 (out of 3)
- AEB (City)	3.00 (out of 3)
<b>Child Occupant Protection</b>	80% (39.33 out of 49)
<b>Safety Assist</b>	93% (11.20 out of 12)
- Speed Assistance System	2.50 (out of 3)
- Seat Belt Reminders	3.00 (out of 3)
- Lane Support System	2.70 (out of 3)
- AEB (Interurban)	3.00 (out of 3)
<b>Pedestrian Protection</b>	76% (32.29 out of 42)
<b>ANCAP Safety Rating</b>	★★★★★
<b>Rating Year<sup>^</sup></b>	2017

# Scaled scores. Total test score out of 16.00 points.

### Adult Occupant Protection.

#### Full Width Frontal Test

Each body region is scored out of 4 points

Driver		Rear Passenger	
Head:	4.00 points	Head:	4.00 points
Neck:	4.00 points	Neck:	3.70 points
Chest:	4.00 points	Chest:	2.24 points
Upper legs:	1.88 points	Upper legs:	4.00 points

In the full width frontal test, driver head, neck and chest protection was good. Upper leg protection was marginal. Chest protection for the rear passenger was marginal but that of other body regions was good or acceptable.

#### Frontal Offset Test

Each body region is scored out of 4 points

**Driver / Front Passenger** (lesser of each)

Head / neck:	4.00 points
Chest:	4.00 points
Upper legs:	2.00 points
Lower legs:	3.13 points

The passenger compartment held its shape well in the frontal offset test. Driver and passenger contact with the frontal airbags was stable.

#### Side Impact Test

#### Pole Test

Each body region is scored out of 4 points

Head:	4.00 points	Head:	4.00 points
Chest:	4.00 points	Chest:	2.84 points
Abdomen:	4.00 points	Abdomen:	4.00 points
Pelvis:	4.00 points	Pelvis:	4.00 points

Good protection was provided for the driver in the side impact test. The side airbags performed well. In the more severe side pole test, protection of the chest was acceptable and that of other body regions was good.

#### Whiplash Protection

Front / Rear:	1.79 points
Rear:	1.00 points
AEB (City):	3.00 points

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### Child Occupant Protection.

#### Crash Test Performance

6 year old child:	10.33 points
10 year old child:	12.00 points

#### Child Safety Features & Child Seat Installation

Safety features:	5.00 points
Installation check:	12.00 points

**NOTE:** The child restraints tested by Euro NCAP are relevant to the European market. For Australasian consumers, this information should be used as a guide to vehicle features only. For more detailed information about Australian child restraints visit [childcarseats.com.au](http://childcarseats.com.au).

### Pedestrian Protection.

#### Pedestrian Test

Scored out of 42 points

Adult & child head impacts:	19.81 points
Upper leg impacts:	0.48 points
Lower leg impacts:	6.00 points
AEB (VRU):	6.00 points

The Volvo S90 scored 32.29 points out of 42 points. The S90 has an 'active' bonnet. Sensors in the bumper detect when a pedestrian has been hit and actuators raise the bonnet to provide greater clearance to rigid structures in the engine bay. The vehicle was tested with the bonnet in the raised (deployed) position. Protection against head injury was almost entirely good. The protection provided by the bumper to pedestrians' legs was good for all test locations and maximum points were scored. However, protection of the pelvis was poor at nearly all test locations. (Euro NCAP v8.3)



### Score Deductions.

#### Deductions from full width frontal test scores

Head:	No deductions
Chest:	No deductions
Upper legs:	-2.00 points (knee airbag not fitted to Australasian variants)
Lower legs:	No deductions

#### Deductions from frontal offset test scores

Head:	No deductions
Chest:	No deductions
Upper legs:	-2.00 points (knee airbag not fitted to Australasian variants)
Lower legs:	No deductions

#### Deductions from side impact test score

Chest:	No deductions
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#### Deductions from pole test score

Head:	No deductions
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### Safety Features & Technologies.

Safety Feature / Safety Assist Technology	Availability
Seat belts (three-point, lap/sash) for forward-facing seats	S
Seat belt pretensioners (front)	S
Seat belt pretensioners (rear outboard)	S
Intelligent seat belt reminder (driver)	S
Intelligent seat belt reminder (front passenger)	S
Intelligent seat belt reminder (2 <sup>nd</sup> row seats)	S
Airbag - Frontal (driver)	S
Airbag - Frontal (passenger)	S
Airbag - Side, chest protection (front seats)	S
Airbag - Side, chest protection (2 <sup>nd</sup> row seats)	S
Airbag - Side, head protection (front seats)	S
Airbag - Side, head protection (2 <sup>nd</sup> row seats)	S
Airbag - Knee (driver)	E
Airbag - Knee (front passenger)	X
Head restraints for all seats	S
Active bonnet	S
Adaptive cruise control (ACC)	S
Adaptive front lighting	S
Antilock braking system (ABS)	S
Autonomous emergency braking (AEB)	
- City	S
- Interurban	S
- Vulnerable road user	S
Automatic headlights	S
Automatic high beam	S
Blind spot monitoring (BSM)	S
Electronic brakeforce distribution (EBD)	S
Electronic stability control (ESC)	S
Emergency brake assist (EBA)	S
Electronic Data Recorder (EDR)	S
Emergency Stop Signal (ESS)	S
Lane support system (LSS)	S
Daytime running lights (DRL)	S
Hill launch assist	S
Reversing collision avoidance	S
Speed assistance - automatic / intelligent speed limiting	S
Speed assistance - manual speed limiting	S
Speed assistance - speed sign recognition & warning	S
Tyre pressure monitoring system (TPMS)	O
Fatigue monitoring	S
Pre-crash systems	S
Roll stability system	S
Rollover occupant protection systems	S
Secondary collision brake assist	S
Smart key with safety functions	O
Trailer stability control	S
Run off road mitigation and protection	S

S = Standard on all variants.  
O = Optional on base variant. May be standard on higher variants.  
V = Not available on base variant but standard or optional on higher variants.  
X = Not available on any variant.  
E = Available in Europe but not available on any Australasian variant.

These specifications are subject to change. Please check with the manufacturer for the latest specifications.

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### Safety Assist.

#### Speed Assistance System (SAS)

Scored 2.50 out of 3.00 points

Speed information:	0.5
Speed assistance (manual):	1.0
Speed assistance (automatic / intelligent):	1.0

#### AEB (Interurban)

Scored 3.00 out of 3.00 points

Autonomous emergency braking (AEB):	1.5 out of 1.5
Forward collision warning (FCW):	1.0 out of 1.0
Human machine interface (HMI):	0.5 out of 0.5

#### Seat Belt Reminder (SBR)

Scored 3.00 out of 3.00 points

Driver and passenger:	Pass
Rear:	Pass

#### Lane Support Systems (LSS)

Scored 2.70 out of 3.00 points

Lane keep assist (LKA):	1.0 out of 1.0
Land departure warning (LDW):	1.5 out of 1.5
Human machine interface (HMI):	0.2 out of 0.5

The standard 'City Safety' autonomous emergency braking system scored full points in tests of its performance at highway speeds. Complete collision avoidance was seen in all scenarios and at all test speeds. The S90 is equipped with an intelligent speed assistance system which informs the driver of the speed limit and allows the driver to set the limit appropriately.

#### Approaching a stationary vehicle:

18.00 out of 18.00 points for Forward Collision Warning (FCW)



#### Approaching a slow moving vehicle:

11.00 out of 11.00 points for Autonomous Emergency Braking (AEB)



#### Approaching a braking vehicle with short headway:

2.00 out of 2.00 points for AEB, 2.00 out of 2.00 points for FCW



#### Approaching a braking vehicle with long headway:

2.00 out of 2.00 points for AEB, 2.00 out of 2.00 points for FCW



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### Injury Values & Measurements.

Body Region	Frontal offset test at 64km/h (v7)		Full width frontal test at 50km/h (v1)		Side impact test at 50km/h (v7)	Oblique pole test at 32km/h (v7)
	Driver	Front Passenger	Driver	Rear Passenger	Driver	Driver
<b>Head</b>						
HIC	116.00	217.00	372.00	384.00	62.00	336.67
Acceleration (g for 3ms)	37.10	47.30	63.10	60.00	30.40	58.28
<b>Neck</b>						
Shear (kN)	0.83	0.56	0.32	0.97	-	-
Tension (kN)	1.11	0.64	1.64	1.98	-	-
Extension (Nm)	4.10	14.40	27.80	11.40	-	-
<b>Chest</b>						
Compression (mm)	21.55	17.44	14.39	28.54	12.48	34.37
Viscous criterion (m/s)	0.08	0.07	0.05	0.19	0.11	0.97
<b>Abdomen</b>						
Compression (mm)	-	-	-	-	13.65	23.50
<b>Pelvis</b>						
Force (kN)	-	-	-	-	0.34	-
<b>Upper legs</b>						
Femur force left (kN)	0.92	0.01	1.99	0.08	-	-
Femur force right (kN)	1.19	0.04	2.71	0.17	-	-
Knee displacement left (mm)	1.19	0.00	1.65	1.01	-	-
Knee displacement right (mm)	1.93	1.06	3.95	0.48	-	-
<b>Lower legs</b>						
Force left (kN)	2.82	2.56	-	-	-	-
Force right (kN)	3.30	2.06	-	-	-	-
Index (upper / lower) left	0.29 / 0.26	0.28 / 0.19	-	-	-	-
Index (upper / lower) right	0.28 / 0.23	0.27 / 0.18	-	-	-	-
<b>Intrusion Measurements</b>						
<b>Steering column</b>						
Forward (mm)	-74	-	-73	-	-	-
Upward (mm)	-18	-	-4	-	-	-
Sideways (mm)	-7	-	5	-	-	-
<b>Pedals</b>						
Accelerator - rearward (mm)	-3	-	-	-	-	-
Accelerator - upward (mm)	-9	-	-	-	-	-
<b>A-Pillar</b>						
Rearward (mm)	2	-	-	-	-	-

\* **Model Variants:** ANCAP safety ratings do not automatically extend to variants that have different body styles, engine configurations, driven wheels or occupant restraint systems (e.g. fewer airbags). In these cases, ANCAP considers technical evidence submitted by manufacturers before deciding on extending a rating to additional variants of a model. For further information about the application of ANCAP safety ratings to model variants, see the ANCAP Variant Policy.

^ **Rating Year:** The Rating Year denotes the year requirements against which a vehicle has been assessed. The Rating Year is determined by ANCAP and may be based on the year in which a new vehicle model is first launched into the Australian and/or New Zealand markets; the year in which the vehicle was tested (if tested by Euro NCAP); or, for vehicles which hold an existing ANCAP safety rating, the year in which the rating was updated (or earlier applicable year).

### Assessment Details.

Tested Make / Model	Volvo S90
Tested Vehicle(s) Built	2016
Tested Body Type	Sedan
Tested Vehicle Kerb Weight	1828 kg
Tested Vehicle Engine	2.0 litre diesel
Tested By	Euro NCAP
Assessed By	Euro NCAP
Document Reference	S90_16
Document Created / Revised	17 March 2017
Rating Published	March 2017
Rating Updated	n/a



Frontal offset test at 64km/h