



2017 TOP SAFETY PICK+

2017 BMW 5 series

Large luxury car



2017 BMW 5 series

CRASHWORTHINESS

- Small overlap front G
- Moderate overlap front G
- Side G
- Roof strength G
- Head restraints & seats G

CRASH AVOIDANCE & MITIGATION

- Front crash prevention SUPERIOR with optional equipment
- Headlights G with optional equipment

- CHILD SEAT ANCHORS (LATCH) EASE OF USE A

Check for NHTSA recalls ⓘ

The photos and videos shown here may be of a different model, model year or body type from the one selected. The ratings of one vehicle often apply to other models if they are built on the same platform. In addition, a test of a vehicle from one model year may apply to earlier or later model years if the vehicle hasn't been significantly redesigned.



Small overlap front — Action shot taken during the small overlap frontal crash test.



Small overlap front — The dummy's position in relation to the door frame, steering wheel, and instrument panel after the crash test indicates that the driver's survival space was maintained well.



Small overlap front — The frontal and side curtain airbags worked well together to keep the head from coming close to any stiff structure or outside objects that could cause injury.








Small overlap front — The driver's space was maintained well, and risk of injuries to the dummy's legs and feet was low.



2017 BMW 5 series small overlap test

Applies to 2017 models

Other model years

Model year	Front overlap		Side	Roof strength	Head restraints & seats	Front crash prevention
	Small	Moderate				
2017	G	G	G	G	G	 SUPERIOR
2016	M	G	G	G	G	 SUPERIOR
2015	M	G	G	G	G	 SUPERIOR
2014	M	G	G	G	G	 SUPERIOR
2013	M	G	G	G	G	 BASIC autobrake not tested
2012	M	G	G	G	G	
2011	M	G	G	G	G	
2010		G	M		G	
2009		G	M		G	
2008		G	M		G	
2007		G			A	
2006		G			A	
2005		G			A	
2004		G			A	
2003		G				
2002		G				
2001		G				
2000		G				
1999		G				
1998		G				
1997		G				

Small overlap front

Test details

Applies to 2017 models

Overall evaluation	G
Structure and safety cage	G
Injury measures	
Head/neck	G

Chest	G
Hip/thigh	G
Lower leg/foot	G
Restraints and dummy kinematics	G

Important: Frontal crash test ratings should be compared only among vehicles of similar weight.

The BMW 5 series was redesigned for the 2017 model year.

Structure

The driver space was maintained well, with maximum intrusion of the lower interior of 12 cm at the footrest. Upper interior intrusion measured 2-3 cm at the instrument panel and upper hinge pillar.

Injury measures

Measures taken from the dummy indicate a low risk of any significant injuries in a crash of this severity.

Restraints and dummy kinematics

The dummy's movement was well controlled. The dummy's head loaded the frontal airbag, which stayed in front of the dummy until rebound. The side curtain airbag deployed and has sufficient forward coverage to protect the head from contact with side structure and outside objects.

Tested vehicle specifications

Tested vehicle	2017 BMW 540i 4-door
Weight	3,831 lbs.
Side airbags	front and rear head curtain airbags and front seat-mounted torso airbags
Wheelbase	117 in.
Length	195 in.
Width	74 in.
Engine	3.0 L turbocharged 6-cylinder
EPA ratings	20 mpg city / 30 mpg highway

How this test is conducted

Technical measurements

Measures of occupant compartment intrusion on driver side

Test ID	CEN1706
Lower occupant compartment	
Lower hinge pillar max (cm)	5
Footrest (cm)	12
Left toepan (cm)	11
Brake pedal (cm)	5
Parking brake (cm)	
Rocker panel lateral average (cm)	3
Upper occupant compartment	
Steering column	0
Upper hinge pillar max (cm)	3
Upper dash (cm)	2
Lower instrument panel (cm)	2

Driver injury measures

Test ID	CEN1706
Head	
HIC-15	183
Peak gs at hard contact	no contact
Neck	
Tension (kN)	0.6
Extension bending moment (Nm)	23
Maximum Nij	0.26
Chest maximum compression (mm)	23
Femur (kN)	
Left	0.5
Right	1.1
Knee displacement (mm)	
Left	1
Right	1
Knee-thigh-hip injury risk (%)	
Left	0
Right	0
Maximum tibia index	
Left	0.33
Right	0.49
Tibia axial force (kN)	
Left	3.0
Right	2.5
Foot acceleration (g)	
Left	139
Right	80

Moderate overlap front

Test details

Applies to 2017 models

Overall evaluation	G
Structure and safety cage	G
Injury measures	
Head/neck	G
Chest	G
Leg/foot, left	G
Leg/foot, right	G
Restraints and dummy kinematics	G

Important: Frontal crash test ratings should be compared only among vehicles of similar weight.

The BMW 5 series was redesigned for the 2017 model year. Moderate overlap frontal ratings are assigned by the Institute based on a test conducted by BMW as part of **frontal crash test verification**.

Injury measures

Measures taken from the dummy indicate a low risk of any significant injuries in a crash of this severity.

Restraints and dummy kinematics

Dummy movement was well controlled. The driver side curtain airbag deployed during the crash. After the dummy moved forward into the frontal airbag, its head contacted the side curtain airbag.

Tested vehicle specifications

Tested vehicle	2017 BMW 540i 4-door
Weight	3,859 lbs.
Side airbags	front and rear head curtain airbags and front seat-mounted torso airbags
Wheelbase	117 in.
Length	195 in.
Width	74 in.
Engine	3.0 L turbocharged 6-cylinder
EPA ratings	20 mpg city / 30 mpg highway

How this test is conducted

Technical measurements

Measures of occupant compartment intrusion on driver side

Test ID	VTF1708
Footwell intrusion	
Footrest (cm)	1
Left (cm)	1
Center (cm)	1
Right (cm)	1
Brake pedal (cm)	2
Instrument panel rearward movement	
Left (cm)	1
Right (cm)	1
Steering column movement	
Upward (cm)	-2
Rearward (cm)	-5
A-pillar rearward movement (cm)	0

Driver injury measures

Test ID	VTF1708
Head	
HIC-15	87
Peak gs at hard contact	no contact
Neck	
Tension (kN)	0.9
Extension bending moment (Nm)	9
Maximum Nij	0.26
Chest maximum compression (mm)	26
Legs	
Femur force - left (kN)	0.8
Femur force - right (kN)	0.7
Knee displacement - left (mm)	6
Knee displacement - right (mm)	3

Maximum tibia index - left	0.32
Maximum tibia index - right	0.37
Tibia axial force - left (kN)	2.2
Tibia axial force - right (kN)	1.9
Foot acceleration (g)	
Left	46
Right	77

Side

Test details

Applies to 2017 models

Overall evaluation	G
Structure and safety cage	G
Driver injury measures	
Head/neck	G
Torso	G
Pelvis/leg	G
Head protection	G
Rear passenger injury measures	
Head/neck	G
Torso	G
Pelvis/leg	G
Head protection	G

Side crash test ratings can be compared across vehicle categories.

The BMW 5 series was redesigned for the 2017 model year. Side ratings are assigned by the Institute based on a test conducted by BMW as part of **side crash test verification**.

Injury measures

Driver — Measures taken from the dummy indicate a low risk of any significant injuries in a crash of this severity.

Passenger — Measures taken from the dummy indicate a low risk of any significant injuries in a crash of this severity.

Head protection

Driver — The dummy's head was protected from being hit by any hard structures, including the intruding barrier, by a side curtain airbag that deployed from the roof.

Passenger — The dummy's head was protected from being hit by any hard structures, including the intruding barrier, by a side curtain airbag that deployed from the roof.

Tested vehicle specifications

Tested vehicle	2017 BMW 540i 4-door
Weight	3,867 lbs.
Side airbags	standard front and rear head curtain airbags and standard front seat-mounted torso airbags
Wheelbase	117 in.
Length	195 in.

Width	74 in.
Engine	3.0 L turbocharged 6-cylinder
EPA ratings	20 mpg city / 30 mpg highway

How this test is conducted

Technical measurements

Measures of occupant compartment intrusion on driver side

Test ID	VTS1706
B-pillar to longitudinal centerline of driver's seat (cm)	-22.5
Negative numbers indicate the amount by which the crush stopped short of the seat centerline.	

Driver injury measures

Test ID	VTS1706
Head HIC-15	95
Neck	
Tension (kN)	0.7
Compression (kN)	0.4
Shoulder	
Lateral deflection (mm)	28
Lateral force (kN)	1.1
Torso	
Maximum deflection (mm)	37
Average deflection (mm)	33
Maximum deflection rate (m/s)	4.97
Maximum viscous criterion (m/s)	0.74
Pelvis	
Iliac force (kN)	0.8
Acetabulum force (kN)	1.0
Combined force (kN)	1.7
Left femur	
L-M force (kN)	0.3
L-M moment (Nm)	76
A-P moment (Nm)	-31

Passenger injury measures

Test ID	VTS1706
Head HIC-15	132
Neck	
Tension (kN)	0.2
Compression (kN)	0.2
Shoulder	
Lateral deflection (mm)	22
Lateral force (kN)	1.0
Torso	
Maximum deflection (mm)	20
Average deflection (mm)	19
Maximum deflection rate (m/s)	1.69
Maximum viscous criterion (m/s)	0.17
Pelvis	

Iliac force (kN)	0.9
Acetabulum force (kN)	0.9
Combined force (kN)	1.8
Left femur	
L-M force (kN)	0.6
L-M moment (Nm)	50
A-P moment (Nm)	40

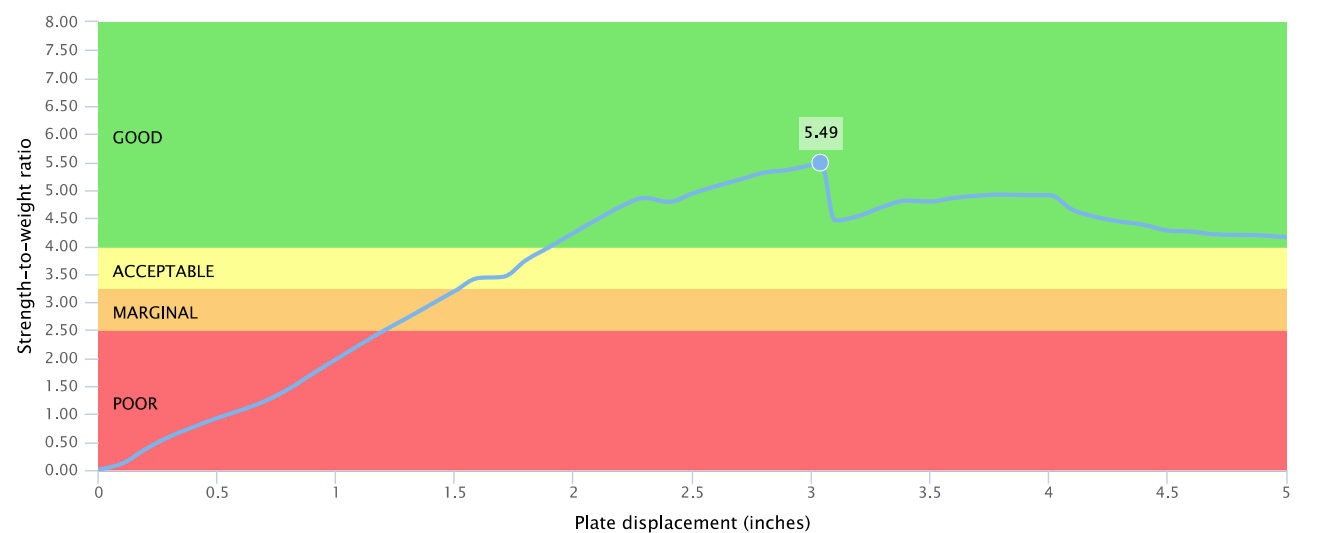
Roof strength

Test details

Applies to 2017 models

Overall evaluation	G
Curb weight	3,822 lbs
Peak force	20,991 lbs
Strength-to-weight ratio	5.49
Tested vehicle	2017 BMW 540i 4-door

Roof strength test ratings can be compared across vehicle categories.



In the test, the strength of the roof is determined by pushing a metal plate against one side of it at a slow but constant speed. The force applied relative to the vehicle's weight is known as the strength-to-weight ratio. This graph shows how the ratio varied as the test of this vehicle progressed. The peak strength-to-weight ratio recorded at any time before the roof is crushed 5 inches is the key measurement of roof strength.

A good rating requires a strength-to-weight ratio of at least 4. In other words, the roof must withstand a force of at least 4 times the vehicle's weight before the plate crushes the roof by 5 inches. For an acceptable rating, the minimum required strength-to-weight ratio is 3.25. For a marginal rating, it is 2.5. Anything lower than that is poor.

How this test is conducted

Head restraints & seats Power leather seat

Test details

Applies to 2017 models

Overall evaluation	G
Dynamic rating	G
Seat/head restraint geometry	G

Important: Ratings for head restraints & seats should be compared only among vehicles of similar weight.

Seat type

Power leather seat

How this test is conducted

Technical measurements

Seat type	Power leather seat
Geometry	
Backset (mm)	23
Distance below top of head (mm)	-13
Seat design parameters	
Pass/fail	Pass
Max T1 acceleration (g)	15.9
Head contact time (ms)	59
Force rating	1
Neck forces	
Max neck shear force (N)	0
Max neck tension (N)	436

Front crash prevention

Details

Applies to 2017 models

System details	
▶ optional Frontal Collision Warning with City Collision Mitigation	
Package name	
▶ optional Driving Assistance Plus Package	
Overall evaluation	<div><div></div><div>SUPERIOR with optional equipment 6 points total</div></div>

Forward collision warning

This system meets the National Highway Traffic Safety Administration's criteria for forward collision warning. 1 point

Low-speed autobrake**2 points**

In the 12 mph IIHS test, this vehicle avoided a collision.

High-speed autobrake**3 points**

In the 25 mph IIHS test, this vehicle avoided a collision.

Tested vehicle

2017 BMW 540i 4-door

How this rating is determined

With Frontal Collision Warning with Extended Collision Mitigation only

Details

Applies to 2017 models

System details

- ▶ optional Frontal Collision Warning with Extended Collision Mitigation

Package name

- ▶ optional Driver Assistance Plus II

Overall evaluation**SUPERIOR**
with optional
equipment
6 points total

Forward collision warning

This system meets the National Highway Traffic Safety Administration's criteria for forward collision warning.

1 point

Low-speed autobrake**2 points**

In the 12 mph IIHS test, this vehicle avoided a collision.

High-speed autobrake**3 points**

In the 25 mph IIHS test, this vehicle avoided a collision.

Tested vehicle

2017 BMW 540i 4-door

How this rating is determined

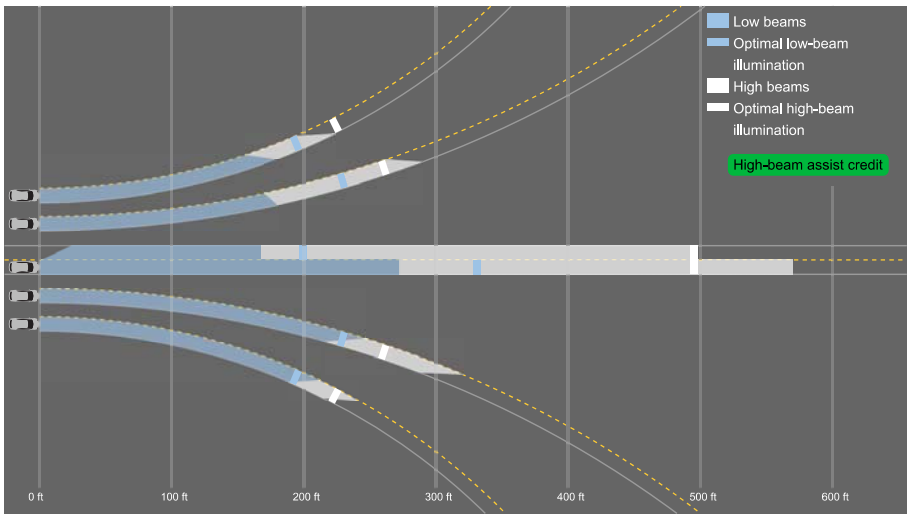
Headlights

Test details

Ratings are given for 2 different headlight variations available for this vehicle.

Trim level(s)	530i trim equipped with Premium package 540i trim equipped with Premium package 530xi trim equipped with Premium package 540xi trim equipped with Premium package 530i trim equipped with Lighting package 540i trim equipped with Lighting package 530xi trim equipped with Lighting package 540xi trim equipped with Lighting package
Low-beam headlight type	LED projector
High-beam headlight type	LED projector
Curve-adaptive?	Yes
Automatically switches between low beams and high beams (high-beam assist)?	Yes
Overall rating	C

Distance at which headlights provide at least 5 lux illumination:



Low beams

On the straightaway, visibility was fair on both sides of the road. On curves, visibility was good on both right curves, fair on the sharp left curve and inadequate on the gradual left curve.

The low beams never exceeded glare limits.

High beams

On the straightaway, visibility was good on both sides of the road. On curves, visibility was good on the gradual left and both right curves and fair on the sharp left curve.

High-beam assist compensates for some limitations of this vehicle's low beams on the straightaway and all 4 curves.

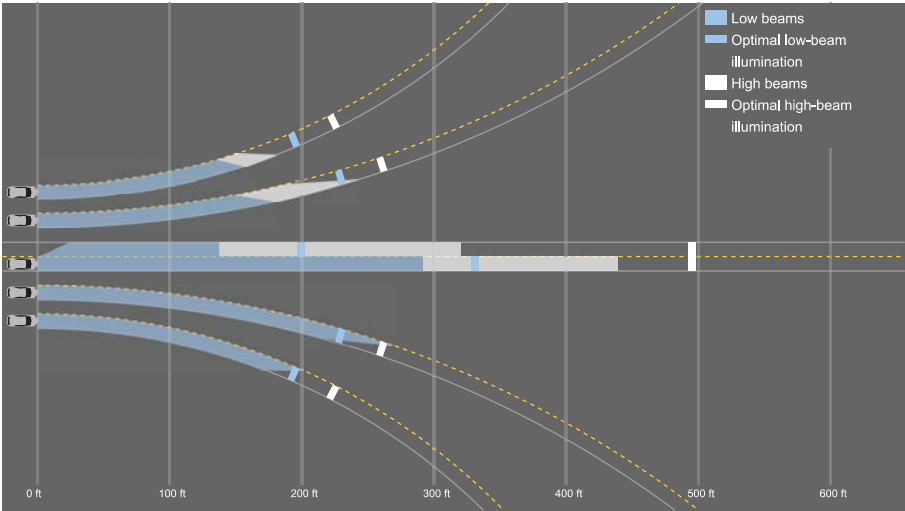
How this test is conducted

Trim level(s)	530i trim 540i trim 530xi trim
---------------	--------------------------------------

540xi trim

Low-beam headlight type	LED projector
High-beam headlight type	LED projector
Curve-adaptive?	Yes
Automatically switches between low beams and high beams (high-beam assist)?	No
Overall rating	M

Distance at which headlights provide at least 5 lux illumination:



Low beams

On the straightaway, visibility was fair on the right side of the road and inadequate on the left side. On curves, visibility was good on the gradual right curve, fair on the sharp right curve and inadequate on both left curves.

The low beams never exceeded glare limits.

High beams

On the straightaway, visibility was fair on the right side of the road and inadequate on the left side. On curves, visibility was fair on both right curves and inadequate on both left curves.

How this test is conducted

Technical measurements

Trim level(s)	530i trim equipped with Premium package 540i trim equipped with Premium package 530xi trim equipped with Premium package 540xi trim equipped with Premium package 530i trim equipped with Lighting package 540i trim equipped with Lighting package 530xi trim equipped with Lighting package 540xi trim equipped with Lighting package
Low-beam headlight type	LED projector
High-beam headlight type	LED projector
Curve-adaptive?	Yes
High-beam assist?	Yes

Overall rating
Applies to 2017 models



LOW BEAMS	Average minimum useful illumination distance (5 lux)	Amount glare exceeded threshold
Straightaway right edge	83.1 m	None
Straightaway left edge	51.2 m	None
250m radius right curve, right edge	67.2 m	None
250m radius left curve, left edge	52.6 m	None
150m radius right curve, right edge	59.6 m	None
150m radius left curve, left edge	49.0 m	None

HIGH BEAMS	Average minimum useful illumination distance (5 lux)
Straightaway right edge	173.5 m
Straightaway left edge	151.4 m
250m radius right curve, right edge	90.1 m
250m radius left curve, left edge	81.9 m
150m radius right curve, right edge	68.5 m
150m radius left curve, left edge	61.4 m

Trim level(s)	530i trim 540i trim 530xi trim 540xi trim
Low-beam headlight type	LED projector
High-beam headlight type	LED projector
Curve-adaptive?	Yes
High-beam assist?	No
Overall rating Applies to 2017 models	M

LOW BEAMS	Average minimum useful illumination distance (5 lux)	Amount glare exceeded threshold
Straightaway right edge	89.0 m	None
Straightaway left edge	42.0 m	None
250m radius right curve, right edge	66.7 m	None
250m radius left curve, left edge	46.5 m	None
150m radius right curve, right edge	54.0 m	None
150m radius left curve, left edge	42.6 m	None

HIGH BEAMS	Average minimum useful illumination distance (5 lux)
Straightaway right edge	133.8 m
Straightaway left edge	97.2 m
250m radius right curve, right edge	69.0 m
250m radius left curve, left edge	58.4 m
150m radius right curve, right edge	55.3 m
150m radius left curve, left edge	47.3 m

Child seat anchors (LATCH) ease of use 540i — leather seats

Details

Applies to 2017 models

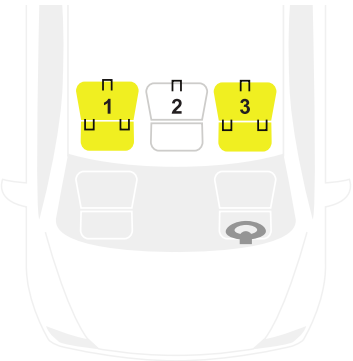
Overall evaluation **A**

How this rating is determined

Vehicle trim	540i
Seat type	leather

This vehicle has 2 rear seating positions with complete child seat attachment (LATCH) hardware.

It has 1 additional seating position with a tether anchor only.



Good
Acceptable
Marginal
Poor
<input type="checkbox"/> Seating positions that rely on borrowed lower anchors or have only a tether anchor available are not rated.
Tether anchor
Lower anchors
Lower anchor(s) can be borrowed from adjacent position(s)
No hardware available

Details by seating position

1	Tether anchor
	easy-to-find location
	no other hardware could be confused for anchor
	Lower anchors
	not too deep in seat
	not too much force needed to attach
	difficult to maneuver around anchors
2	Tether anchor
	easy-to-find location
	no other hardware could be confused for anchor
	Lower anchors
	none available
3	Tether anchor
	easy-to-find location

no other hardware could be confused for anchor

Lower anchors

not too deep in seat

not too much force needed to attach

difficult to maneuver around anchors

Technical measurements

Seat position 21 3

Lower anchor A	
Open access rated	Yes
Depth	Visible
Force (lbs)	0
Clearance angle (degrees)	49
Lower anchor B	
Open access rated	Yes
Depth	Visible
Force (lbs)	0
Clearance angle (degrees)	51
Tether anchor	
Location	Rear deck
Confusing hardware present	No
Has contrasting label within 3 inches of tether anchor	Yes

Seat position 22 2

Lower anchor A	
No lower latch for this seat position	
Lower anchor B	
No lower latch for this seat position	
Tether anchor	
Location	Rear deck
Confusing hardware present	No
Has contrasting label within 3 inches of tether anchor	Yes

Seat position 23 1

Lower anchor A	
Open access rated	Yes
Depth	Visible
Force (lbs)	0
Clearance angle (degrees)	51
Lower anchor B	
Open access rated	Yes
Depth	Visible
Force (lbs)	0
Clearance angle (degrees)	49
Tether anchor	
Location	Rear deck
Confusing hardware present	No
Has contrasting label within 3 inches of tether anchor	Yes

