

5.2.3. Car to bicycle scenario

5.2.3.1. Collision warning

When the AEBS has detected the possibility of a collision with a bicycle crossing the road at a constant speed of 15 km/h- a collision warning shall be provided as specified in paragraph 5.5.1. and shall be provided no later than the start of emergency braking intervention.

The collision warning may be aborted if the conditions prevailing a collision are no longer present.

5.2.3.2. Emergency braking

When the system has detected the possibility of an imminent collision- there shall be a braking demand of at least 5.0 m/s² to the service braking system of the vehicle.

The emergency braking may be aborted if the conditions prevailing a collision are no longer present

This shall be tested in accordance with paragraph 6.67. of this Regulation.

5.2.3.3. Speed range

The system shall be active at least within the vehicle speed range between [20/35] km/h and 60 km/h and at all vehicle load conditions-, unless deactivated as per paragraph 5.4.

5.2.3.4. Speed reduction by braking demand

In absence of driver's input which would lead to interruption according to paragraph 5.3.2., the AEBS shall be able to achieve an impact speed that is less or equal to the maximum relative impact speed as shown in the following table:

- (a) With unobstructed perpendicularly crossing bicycles with constant speeds from 10 to 15 km/h;
- (b) In unambiguous situations (e.g. not multiple bicycles);
- (c) On flat, horizontal, **straight (no curves, no intersections)** and dry roads;
- (d) In maximum mass and mass in running order conditions;
- (e) In situations where the anticipated impact point of the crankshaft of the bicycle is displaced by not more than 0.2 m compared to the vehicle longitudinal centre plane;
- (f) In ambient illumination conditions of at least 2000 Lux without blinding of the sensors (e.g. direct blinding sunlight).
- (g) In absence of weather conditions affecting the dynamic performance of the vehicle (e.g. no storm, not below 0°C) and
- (h) In absence of **extreme highly dynamic** driving conditions (e.g. harsh cornering **or turning**).

[Homework after AEBS-12: Split (h) into 2 separate items]

(h) In absence of **extreme highly dynamic** driving conditions (e.g. harsh cornering).

(i) In absence of significant turning events of the AEBS vehicle (e.g. at an intersection) affecting the system performance

It is recognised that the performances required in this table may not be fully achieved in other conditions than those listed above. However the system shall not deactivate or unreasonably switch the control strategy in these other

conditions. This shall be demonstrated in accordance with Annex 3 of this Regulation.

Maximum Impact Speed (km/h) for M₁* (new types from 2024 and all types after 2028)

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
20	0	0
25	0	0
30	0	0
35	0	0
38	0	0
40	10	0
45	25	25
50	30	30
55	35	35
60	40	40

* For **subject vehicle** relative speeds between the listed values (e.g. 53 km/h), the maximum relative impact speed (i.e. [30/30] km/h) assigned to the next higher relative speed (i.e. 55 km/h) shall apply. For masses above the mass in running order, the maximum relative impact speed assigned to the maximum mass shall apply.

Maximum Impact Speed (km/h) for N₁ vehicles* (new types from 2024 and all types after 2028)

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
20	0	0
25	0	0
30	0	0
36	0	0
38	15	0
40	25	0
45	30	25
50	35	30
55	40	35
60	45	40

* For subject vehicle speeds between the listed values (e.g. 53 km/h), the maximum impact speed (i.e. [35]/[30] km/h) assigned to the next higher subject vehicle speed (i.e. 55 km/h) shall apply. For masses above the mass in running order, the maximum relative impact speed assigned to the maximum mass shall apply. "

Maximum Impact Speed (km/h) for M₁* (existing types until 2028)

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
30	[10]	[10]
35	0	0
38	[0]	[0]
40	10	10 [0]
45	25	25
50	30	30
55	35	35
60	40	40

* For subject vehicle speeds between the listed values (e.g. 53 km/h), the maximum relative impact speed (i.e. 30/30 km/h) assigned to the next higher relative speed (i.e. 55 km/h) shall apply. For masses above the mass in running order, the maximum relative impact speed assigned to the maximum mass shall apply.

Maximum Impact Speed (km/h) for N₁ vehicles* (existing types until 2028)

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
30	[15]	[10]
35	15 [0]	0
38	[15]	[0]
40	25	10
45	30	25
50	35	30
55	40	35
60	45	40

* For subject vehicle speeds between the listed values (e.g. 53 km/h), the maximum impact speed (i.e.35/30 km/h) assigned to the next higher subject vehicle speed (i.e. 55 km/h) shall apply. For masses above the mass in running order, the maximum relative impact speed assigned to the maximum mass shall apply. "