

CONTROLLING VEHICLE SPEED

STOPPING DISTANCE

Driving too fast is a major cause of fatal accidents. You should adjust your speed to address road surface, road conditions, curves, visibility, hills and traffic conditions.

PERCEPTION DISTANCE + REACTION DISTANCE + BRAKING DISTANCE = TOTAL STOPPING DISTANCE

Perception Distance. The distance your vehicle travels, in ideal conditions, from the time your eyes see a hazard until your brain recognizes it. Keep in mind certain mental and physical conditions can affect your perception distance. It can be affected greatly depending on visibility and the hazard itself. The average perception time for an alert driver is $1\frac{3}{4}$ seconds. At 55 mph this accounts for 142 feet traveled.

Reaction Distance. The distance you will continue to travel, in ideal conditions, before you physically hit the brakes, in response to a hazard seen ahead. The average driver has a reaction time of $\frac{3}{4}$ second to 1 second. At 55 mph this accounts for 61 feet traveled.

Braking Distance. The distance your vehicle will travel, in ideal conditions, while you are braking. At 55 mph on dry pavement with good brakes, it can take about 216 feet.

Total Stopping Distance. The total minimum distance your vehicle has traveled, in ideal conditions, with everything considered, including perception distance, reaction distance and braking distance, until you can bring your vehicle to a complete stop. At 55 mph, your vehicle will travel a minimum of 419 feet.

The Effect of Speed on Stopping Distance. The faster you drive, the greater the impact or striking power of your vehicle. When you double your speed from 20 to 40 mph the impact is 4 times greater. The braking distance is also 4 times longer. Triple the speed from 20 to 60 mph and the impact and braking distance is 9 times greater. At 60 mph, your stopping distance is greater than the length of a football field. Increase the speed to 80 mph and the impact and braking distance are 16 times greater than at 20 mph. High speeds greatly increase the severity of accidents and stopping distances. By slowing down, you can reduce braking distance.

The Effect of Vehicle Weight on Stopping Distance. The heavier the vehicle, the more work the brakes must do to stop it and the more heat they absorb. The brakes, tires, springs, and shock absorbers on heavy vehicles are designed to work best when the vehicle is fully loaded. Empty trucks require greater stopping distances because an empty vehicle has less traction.

