

Winter Driving - Techniques That Matter

By Bryan Lowes

As drivers, there are steps we can all take to help prevent the flurry of road crashes we see as winter approaches. Traction matters, and your driving techniques have a big impact on preventing crashes.

Traction is the grip the tire has on the road and is the most important factor in maintaining control of your vehicle. There is little or no grip on icy roads. If you have ever lost control of your vehicle on ice, you know there was little you could do to stop the slide.

It's important to have the right kinds of tires for winter conditions. When the ambient temperature is below 10 degrees centigrade, watch out. Tires start to lose their flexibility and ability to maintain good contact with the road surface.

Summer Tires have smoother treads to reduce wear, with gaps between tread blocks to allow rain to be channeled away and not lubricate the road surface.

All Season Tires are anything but – actually not much different from summer tires when it comes to traction. They should be called Three Season Tires as they are simply not suitable for driving on snow or ice as their grip is insufficient.

A third option is the All Weather Tire, which has much better traction in winter, and legally qualifies for use from October 1 to March 31. Look for the snowflake symbol on the tire.

The clear winner for heavy snow and ice is the pure Winter Tire, with a chemical composition that remains flexible at low temperatures. This is the tire you want if you frequently drive mountain passes or off-road in the winter.

All Weather and Winter tires have much larger tread blocks which, in combination with the softer, more flexible rubber help the tire to maximize the mechanical interlock with the road surface to maintain steering control as well as the ability to accelerate and brake.

Even though drivers have the right tire for the road conditions they often drive the same way in winter as they do in summer. This is a problem because:

- **Available traction in sub-zero temperatures will shrink to as little as 10% of the traction available in mid-summer.**
- **Traction can change dramatically on different parts of the road** – shade from trees, pooled water and roads on

bridges over water are often icier.

- **When traction is reduced to 10% it will take 10 times further to stop** from a given speed than in the summer!!!

So how do we cope with reduced traction?

The most important thing is to slow down! Braking distance increases as a squared factor with increased speed, i.e. **twice the speed, four times the braking distance**. Reduce speed before you need to brake. Look far ahead to see when you will need to slow down or stop. Slowing from 80 km/hr to 40 km/hr will reduce the braking distance to only one quarter of what it took at 80 km/hr.

Vehicle brakes are very powerful – much more than the engine of the car, in fact. They can easily lock up the wheels when available traction is insufficient. Anti-Lock Brake Systems (ABS) sensors reduce brake pressure as soon as they detect the slightest lockup. **You can only stop as fast as the ABS allows.**

The best winter driving techniques include:

- Increase following distances to give you more time to react to the driver in front of you.
- Use the transmission to control speed on downhills and before the stop sign.
- Drive so you can stop well back from stop signs - the road close to stop signs and intersections turns to ice from engine heat and late braking from other drivers.
- Slow before curves. Reduced lateral traction also reduces available traction for steering control. Avoid braking in curves if possible.
- Make all acceleration, braking and steering smoothly and progressively to avoid overpowering available traction.
- Practice in a no-traffic area to get a feel for how your vehicle behaves in the snow.

Blaming weather and other drivers is how people try to offload responsibility for crashes that can be avoided by equipping your car with the right tires and driving appropriately. Check road conditions before you head out. The best decision if the weather is nasty could be to stay home or go later after the roads are cleared. Safe travels!

Bryan Lowes worked over 40 years in traffic safety and driver education.