

COLD RUBBER COMFORT



Climate change is altering Canada's winter conditions coast to coast, but drivers and their vehicles still need to be ready for the snow, sleet, freezing rain and cold temperatures that are sure to come. To help you stay safe by preventing and avoiding collisions, we spoke to experts from Michelin, Bridgestone and Element Fleet Management about preparing the vehicle and its tires for winter, selecting the most appropriate winter tires and the best winter strategies for drivers.

While many Canadians still call them snow tires, winter is the more appropriate descriptive term. The Canadian Rubber Association suggests "cold-weather" tires because the rubber is designed to remain elastic rather than stiffen at temperatures as low as -30°C . The CRA also notes that these tires offer up to 50-percent or more traction than all-seasons.

"The right rubber compound gives you more grip and a faster stop in colder temperatures," says Carl Nadeau, Michelin's driving expert. "If you're on summer or all-season tires, you're trying to steer and stop on the equivalent of four large hockey pucks—I simply wouldn't drive a car equipped with all-seasons in -10°C ."

"The right rubber compound gives you more grip and a faster stop in colder temperatures."

—Carl Nadeau, Michelin's driving expert

Our experts recommend installing winter tires before temperatures fall below 7°C or as Justin Hayes, product manager for Bridgestone Americas Tire Operations, says, as soon as it's cold enough to see your breath. As important, Element's Bill Jones, director of product manager and Mark Blake, case manager—managed maintenance note that regardless of temperature, winter tires must be installed prior to the respective provinces' mandated install dates.

What follows is a list of steps to take to ensure that winter driving—and driving with winter tires—is as safe and effective as possible.

Vehicle preparation:

- 1) Check alignment (wheels pointing in the right direction) because misalignment can cause the vehicle to pull left or right, or behave unpredictably. The degree of pull and unpredictability may be annoying or dangerous, says Michelin's Nadeau.
- 2) Check tire balance and rebalance if necessary to avoid vibration, which is felt in the steering wheel, seat or floorboards at higher speeds.
- 3) Swap all-season tires for winter tires only after checking the winter tires for wear.
- 4) Check all fluid levels and temperature ratings.
- 5) Pay attention to your windshield wipers as every vehicle's tires could be spraying salt, sand, slush, snow and other debris, cautions Bridgestone's Hayes.
- 6) Regularly check tire pressure to ensure it meets the OEM specifications found on the driver's side door sticker. On average, Hayes notes that tire pressure drops about one psi for every 5.5°C dip in air temperature. Insufficient air reduces the efficiency of the centre of the tire's contact patch and makes the sidewall softer which affects the vehicle's ability to precisely change direction. Over-inflation makes the tire too stiff and reduces grip, while increasing wear in the middle of the contact patch and the degree of side bite on/in corners.
- 7) Pack a winter emergency kit that includes the items recommended by Transport Canada: windshield wiper fluid, ice scrap, fuel line anti-freeze, booster cables, kitty litter, traction mats, shovel, flashlight with free batteries, road flares, reflective vest, a "survival candle" and matches, extra clothing, blanket, emergency food pack, water, a charged cell phone.

Driver behaviour:

- 1) Dress appropriately, says Nadeau. Coats, hats and scarves mustn't impede the drivers' vision or ability to turn their heads and bodies. The size and tread of the footwear must allow the driver to comfortably and securely position a foot on the accelerator, brake or clutch.
- 2) Both hands on the wheel at all times at the 9 and 3 o'clock positions, says Nadeau, "because the further apart your hands are on the wheel, the more precise your control." As well, if a driver has just one hand on the wheel or the hands aren't properly positioned, when an avoidance maneuver is required, chances are the overcorrection will be so significant, the vehicle will be thrown into a slide or spin, cautions Nadeau.
- 3) Relax your hands! "The tighter your grip, the less sensitivity you have, which reduces your ability to hear what your vehicle is telling you through your fingers," says Nadeau.
- 4) Be close enough to the foot pedals that you can fully engage your thigh muscles in the event of a hard-braking event, advises Nadeau.
- 5) Look as far ahead as you can to see what might require an avoidance maneuver.
- 6) Slow down. On even the most perfect winter day, your tires are likely to react differently due to colder temperatures, which may reduce grip and increase the time required to stop.
- 7) Watch for black ice. Nadeau says that in fact, black ice will look slightly different than the regular road surface, but constant awareness and an ability to always look far down the road is the key to noticing it.
- 8) Take a defensive driving course—ideally during the cold weather. Practice your actions until the correct behaviour becomes the embedded reaction. For example, hard brake repeatedly until you can keep the wheels absolutely straight, because as Nadeau points out, turning while braking can drastically reduce the stopping efficiency and send the vehicle off-course.
- 9) Find a quiet spot with no other traffic, for example a country road or parking lot, and try hard braking and turning at very slow speeds to see how your vehicle and tires react. Be aware that local law enforcement could give you a ticket if you're found testing emergency maneuvers. Nadeau suggests racetracks as an alternative.



Justin Hayes, product manager for Bridgestone Americas Tire Operations, recommends switching to winter tires as soon as it's cold enough to see your breath.

sporty sedan, such as an Audi or BMW, a common commuter-vehicle or a hardworking pick-up, asks Hayes who advises relying on the tire representative to recommend the most appropriate tire.

- 4) Invest only in tires with the *Three-Peak Mountain Snowflake Symbol* (also referred to as the *Alpine* symbol) on the sidewall, which meet Transport Canada's specific snow traction performance requirements, and have been *designed specifically for use in severe snow conditions*.
- 5) If the vehicle operates primarily in urban locations, it's likely roads are quickly cleared after a snowfall while in rural areas, it may be up to 24-hours or more. Will the winter tires more often meet slush or deep snow? The more "cut-up" the winter tire looks, the greater the number and depth of the sipes and slots/grooves and the more capable it will be in snow. "Think about how well snow sticks to snow when you're making a snowman

or snowball—you want your winter tire to store some snow in those slots and sipes to maximize your tire's grip in snow," adds Hayes. "On ice, which is slippery due to the incredibly thin layer of water on top of it, a tire engineered with Mutli-Cell compound soaks that water up like a sponge so the tire makes contact with the ice."

- 6) Always buy the identical winter tires for all four wheels and stick with the OEM tire size specified on the door placard or use the industry standard optional tire size within the same load range/speed rating, say Jones and Blake. As Transport Canada states: "Mixing tires with different tread patterns, internal construction, and size degrades the stability of the vehicle and should be avoided."
- 7) Protect your winter tire investment by storing them in a cool dry location, avoid temperature and humidity fluctuations and protect them from the sun to preserve them for next season. Clean the tires or drive the vehicle through a car wash before storing to remove road dirt and contaminants, say Jones and Blake. **C.A.R.**

Selecting a winter tire:

- 1) Follow your firm's winter tire policy.
- 2) Start the assessment and purchasing process well before the weather grows cooler to ensure model availability and avoid the late fall changeover rush, suggest Element's Jones and Blake.
- 3) Is the vehicle more performance-oriented, for example, a