



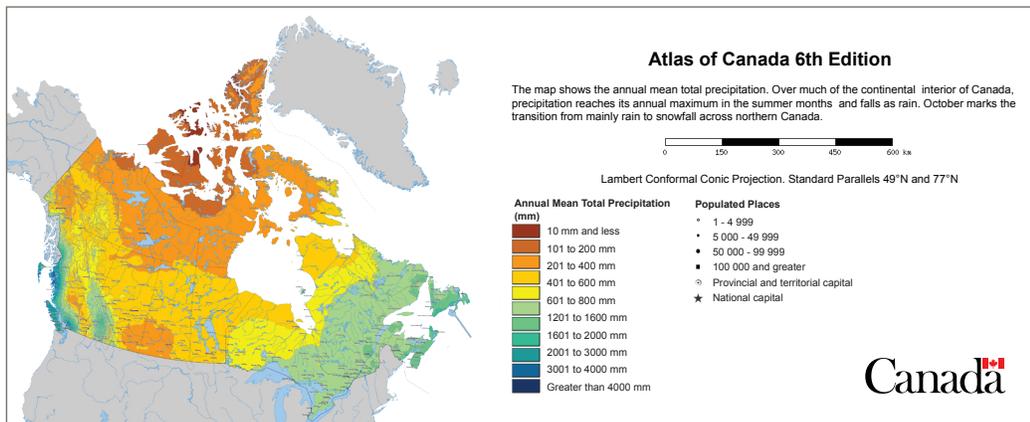
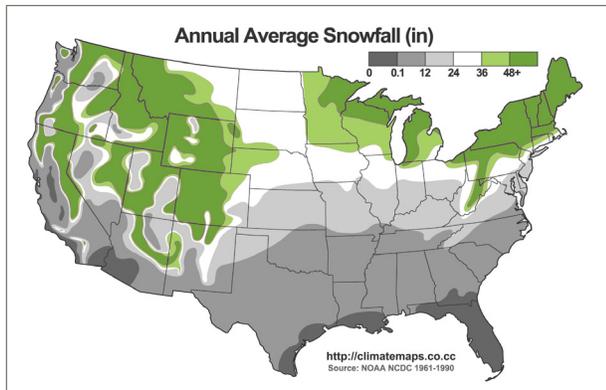
WHITE PAPER

Winter Tires

Introduction

According to the Federal Highway Administration accidents caused by winter weather result in 150,000 injuries and 2,000 deaths each year on average. In Canada, when it comes to winter driving, nearly 30% of car accidents occur on snowy or icy roads. A strong fleet safety program should include winter driving policies. Driving too quickly is the main cause of accidents in winter conditions. The best tip is to slow down in snowy or icy situations. It is also important to avoid abrupt acceleration, braking and turns. Doing so can cause vehicles to lose traction resulting in collisions.

The Snow Belt is defined as the northern parts of the U.S., primarily the Midwest and the Northeast that are subject to considerable snowfall due to lake effect snow. However, there are many mountainous areas of the west that also receive a considerable amount of snow. As a guideline, you may consider providing Snow Belt options for drivers who live in areas with 40" or more of snowfall annually. If you have drivers who drive in these areas, please read below for Snow Belt specific strategies that will improve fleet safety.



Safe winter driving strategies

All-Wheel Drive and Four-Wheel Drive

Many vehicles are two-wheel drive, which means that only the front or rear wheels get power. Vehicles that have all-wheel drive or four-wheel drive can power all four wheels. For example, if the rear wheels are slipping, the front ones can often pull you through—or vice versa. Automakers often use “all-wheel drive” and “four-wheel drive” interchangeably, but true four-wheel drive provides low-range gearing, which helps in serious off-road conditions.

This is also why some drivers become confused as some believe that AWD will give them the same functionality of 4WD. Typically 4WD vehicles also have a more aggressive tire tread which also enhances the capabilities in adverse weather conditions. As a result, some drivers get a false sense of security when it comes to AWD because they think that all-wheel drive or four-wheel drive lets them go fast on slippery roads. However, the systems provide maximum traction when accelerating from a stop and traveling straight ahead, but they provide no added benefit when braking or cornering.

It is important that we continually educate drivers on the dangers of driving in adverse weather.

Some studies also suggest that two-wheel drive vehicles equipped with the proper winter (snow) tires outperform AWD vehicles with all season tires.

Additionally, vehicles with all-wheel drive and four-wheel drive generally cost more than their two-wheel drive counterparts. And with their extra weight and components, they can also reduce gas mileage by 1 mpg or more.

Winter Tires and All-Season Tires

Winter Tires (also known as snow tires) have deeper tread patterns specifically designed to dig down and bite into snow and ice. Plus they are made from softer rubber compounds that retain flexibility in cold weather, allowing the tire to better conform to the surface of the road.

Winter tires are often confused with all-season tires—however there is a big difference between the two.

Winter Tires

- Perform well in all types of winter conditions—snow, ice, sleet, slush, wet and even cold dry roads
- Feature tread designs made specifically for ice, snow and other severe winter conditions

- Specially formulated tread rubber that stays flexible at low temperatures for better vehicle control
- Aggressive tread on a snow tire reduces snow build up
- Can provide enhanced braking performance in snowy and icy conditions

All-Season Tires

- Designed to help provide traction and grip in wet and snowy conditions
- Made to help provide stable handling and even tread wear in both wet and dry conditions
- Offer traction in a variety of different weather conditions, winter tires surpass them when it comes to traction in snow and ice

It's recommended vehicles go back to regular tires when spring arrives, which adds to the vehicle's total cost of ownership. This is because winter tires generally don't grip as well as regular all-season tires on hot pavement, which compromises braking and causes faster wear.

Another option to consider is tire chains or studded tires. Throughout North America there are laws that dictate when you can, should, and absolutely must use them, as well as when it's not permitted. Some states will post signage or declare a snow emergency to indicate that tire chains or studded tires are required. AAA maintains a list of current laws on their website:

Studded tire state laws- <http://drivinglaws.aaa.com/laws/studded-tires/>

Tire chain state laws- <http://drivinglaws.aaa.com/laws/tire-chains/>

* Winter tires should not affect tire pressure sensors or the tire pressure monitoring system in the vehicle

5 tips to ensure best winter tires

If you decide to adjust your policy to allow drivers to install winter tires, here are some tips to pass along to ensure that they are able to select, install and maintain the proper winter tires for their vehicles:

1. Procure your winter tires as soon as possible. It is important to remember that tire manufactures produce only a limited amount of winter tires each winter driving season, and supplies become even scarcer as the season goes on. It can be particularly difficult to find tires for vehicles that require unique or uncommon tire sizes.
2. Vehicle handling is best improved when tires of the same type, size, speed rating and load index are applied on all four wheels. Because of the higher traction qualities of winter tires in winter weather conditions, installing only two winter tires on the front of a vehicle without two winter tires on the rear can cause unsafe handling characteristics, especially in the case of front-wheel drive vehicles.
3. Tires marked "M + S" indicate that they are "mud and snow" tires, commonly known as "all-season" tires. While these generally provide safe all-weather performance, they may not always be suitable for severe snow conditions. Tires that meet specific snow traction performance requirements in both the U.S. and Canada are marked with a symbol depicting three mountain peaks with a snowflake in the middle. Selecting tires with this symbol is the best way to ensure reliability in severe snow conditions.
4. For all types of tires, proper air pressure extends tire tread life, improves safety, and reduces fuel consumption, so it is important to maintain proper air pressure at all times. Because tire pressure decreases as temperatures drop, we recommend checking the pressure more frequently—at least once a month—when the tires are cold. The best time to get an accurate air pressure reading is after the car has been sitting for a few hours.
5. Please keep in mind that some areas—like Quebec and parts of British Columbia and Colorado, for example—have laws in place that require the usage of winter tires or other traction control devices during much of the cold weather season.

Conclusion

We can learn a lesson in winter driving safety from the Canadian province of Quebec, which mandates that all vehicles have winter tires. Since the law was passed, there has been a 17% decrease in winter accidents. Weather conditions can be unpredictable, so you really need to prepare up front. Wheels can help you identify impacted drivers through our annual replacement analysis where we provide the average snow fall by zip code based on National Oceanic Atmospheric Administration (NOAA).

If you have any questions about winter driving—please contact a member of your Wheels Account Team or info@wheels.com.