



KAL TIRE TESTS WORN TIRES BACKGROUND

1. THE RESULTS

Various tires were tested at five different tread depths to see how they performed in everyday winter driving conditions. Here's a summary of the findings highlighting the performance of the premium (five star) winter tire, economy (three-star) winter tire and the 3-season tire:

A worn five-star premium tire can outperform a new 3-season tire in certain conditions.

- **Ice braking:** On an icy road at 30 kilometres per hour, the 75 per cent worn five-star premium winter tire stopped in 29.7 metres; 2.6 m sooner than the new 3-season, which stopped at 32.3 m.
- **Snow cornering:** The 75 per cent worn premium winter tire held a corner 4.3 per cent better than the new 3-season tire.

No two winter tires are created equal. The five-star premium winter tire outperformed the three-star economy winter tire in *all* tests over *all* stages of wear.

- **Ice braking:** The 75 per cent worn premium winter tire stopped in 29.7 m; the 75 per cent worn economy winter tire stopped in 32.5 m.
- **Snow cornering:** The 75 per cent worn premium winter tire cornered 26 per cent better than the 75 per cent worn economy winter tire.

Braking performance declines significantly between 50 and 75 per cent wear.

- **Ice braking:** When the premium winter tire went from 50 to 75 per cent worn, it took an extra 3.1 m to brake on ice. The economy winter tire took an extra 4.8 m.
- **Snow braking:** When the premium tire went from 50 to 75 per cent worn, it took an extra 4.4 m to brake on snow. The economy winter tire took an extra 4.3 m to stop.

2. THE TIRES

A premium or 'five star' tire is a tire that achieved five stars for tests such as cornering and braking on ice and slush as part of Kal's Tire Testing 2015 tire testing program on new tires. An economy or 'three star' tire is a tire that only achieved three stars on those tests.

Each tire was tested at the following levels of tread wear:

	Tread Wear	Corresponding Tread Depth
NEW	0 per cent wear	(12/32")
	25 per cent wear	(9.5/32")
HALF WORN	50 per cent wear	(7/32")
	75 per cent wear	(4.5/32")
BALD	100 per cent wear	(2/32")

3. THE TESTS

To ensure consistent tests and accurate results, even the most minute variables, such as track and wind temperature, were monitored. Identical vehicles were used and tests were repeated numerous times at identical speeds, always with the driver not knowing the specifics of the tire being tested at the time. Tests were conducted in BC in rugged, natural winter conditions drivers face every day.

Braking distance: To test the braking distance of each tire, a vehicle approached a marked line at a consistent speed and the braking distance was measured in metres. The approach speed varied by driving surface to closely represent how most Canadians would drive on that surface. On dry pavement, the vehicles were tested at a consistent speed of 90 kilometres per hour, 70 kilometres per hour on wet surfaces, 50 kilometres per hour on loose snow and 30 kilometres per hour on ice surfaces.

Cornering: The cornering test demonstrates the lateral traction capabilities of the tire over dry, wet, snowy and icy surfaces. A vehicle was driven in a radius circle and speed was slowly and progressively increased until the tire could no longer hold the corner and would slip out.

4. THE DRIVERS

The independent tire testing group was led by Alan Sidorov, an international race car driver, tire tester and leading driving instructor at Sidorov Professional Driver Training. His team includes rally champions, advanced driving instructors and vehicle development testers as well as former RCMP and military officers with extensive driving experience. The drivers had the qualifications to drive a vehicle with consistent precision, every time.

5. THE TIRE TESTING TECHNOLOGY

The data was gathered using industry-leading testing technology (factory calibrated annually) to measure precise driving lines, speed, GPS information and G-Force measurements of each vehicle. All data was reviewed manually to eliminate error.