

Michelin Premiere A/S Where Technology Meets the Wet/Snowy Road with EverGrip Traction

By Automotive IT News

Sep 18 2014

By Lynn Walford

Michelin released the Michelin Premier A/S (All Season) tire with EverGrip that maintains traction on rain and snow for the life of the tire because as it wears grooves expand and new grooves emerge, as well as a special compound.

Research data from the NHTSA (National Highway Traffic Safety) showed that water/wet adhesion is a key component for driving safety, says Russel Shepard, Michelin tire designer.

In order to design a tire that worked well in wet conditions for the life of the tire, the Michelin team made up of designers, physicists, chemists, engineers, and statisticians broke the problem into so smaller pieces. They looked at the tire design with three dimensional modeling in very small sections including the actual design of the "sipe" (groove).

"Computers and 3D modeling were essential in the development of of the the Premier A/S tire because of the ability to zoom in and zoom out," said Shepard.

The designers and engineers developed the Michelin Premier A/S tire that combines hidden grooves that emerge as the tire wears down, and expanding rain grooves that widen over time to continue to evacuate water. As the tire wears 150 more grooves are added.

Michelin chemists developed a unique rubber compound with a higher concentration of silica for increased wet grip. Sunflower oil maintains the tire's grip on wet roads at cold temperatures.

Computers were used to calculate material properties to ensure rigidity in wet and dry conditions. The Michelin team created a channel that gets wider to optimize water flow, thus preventing skids and ultimately accidents in the rain.

A skid occurs when the the tire loses grip. In hydro-static conditions there can be as much as an 80% loss in traction. Therefore in climates where it rains and snows often Premiere A/S is viable option.

Computer analysis plays a part not only in the design but the actual sizing and models manufactured, said Shepard. The Michelin marketing department informs the team what car models to make the tires for. The Michelin Premier A/S is currently available for 50-60% of cars and next year when the the XI is introduced, it will be available to 80% cars on the market. The designers use computers with data from car makers and industry standards to calculate the exact specifications of each tire size for manufacture.

The Michelin A/S Premier Tires are made in factories in the United States and Canada and tailored to weather in these markets.

Its not just the technology behind the tires, but that drivers understand the technology, Michelin sponsored Mitch Butler from The Fast Draw to show how it all works.

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“The reception has been great, from marketing such as the video from Mitch Butler shows that drivers understand how important tires are. Tires are the only thing on vehicles that communicate with the road and the right tire changes everything,” said Shepard.

Michelin claims that when worn, the Michelin Premier A/S tire still stops shorter on wet roads than leading competitors’ brand-new tires.

Tests from Consumer Reports found the that “the Premier A/S maintained its wet stopping performance between full tread and 5/32.”

TireRack tested the Premier A/S using multiple methods, reported Woody Rogers, TireRack product specialist.

TireRack uses human testers who drive in many conditions and rate the tires. For more scientific results TireRack uses a special more exact GPS than found in Navigation systems, a device from RaceLogic the VBOX PerformanceBox. It is a GPS based performance meter that measures G-forces, speed, lap/ split times, 0-60, 0-100, braking distance. The device accurately measures the calculates the stopping distance, which Rogers then enters into TireRack spreadsheets for comparison.

TireRack also used a special cutting wheel like a wood-makers lathe, a specialized tire shaver to cut the Premiere A/S tires down to 5/32 to see how they performed when worn.

TireRack found that “The Premier A/S Ever Grip to be very impressive wears as promised and performs well in wet and snow,” said Roger.

They also received good scores from the humans when all scores were calculated (by a computer) TireRack rated them 7.47, .04 points higher than its closer competitor. TireRack also found only 4.7 ft stopping distance between new tread depth at 99.8 ft and with 5/32” tire depth remain at 103.5 ft

Rogers advises consumers that although premier tires seem more expensive at first they last longer and are very cost effective.

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As the tire wears, rain grooves widen, maintaining their ability to remove water and deliver wet traction.
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- 4. MICHELIN Total Performance™**
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I have them on my car they are awesome tires in all weather conditions

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Scary idea, driving tires when they're worn. I'm sure they have wear indicators that hum when they've reached the end of their life, maybe the driver too?

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