Ninety Years of Winter Tire Development at Continental

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Winter tires provide grip and significantly reduce braking distances in the cold season

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- Martin Welzhofer, Head of Global Tire Testing at Continental Tires:

> Softer rubber compounds improve adhesion, while sipes provide grip on snow and ice. And wider grooves displace water particularly effectively

Hanover, Germany, December 12, 2024. Continental has been developing and producing winter tires for 90 years. Named the "Gelände," its first product specifically for the cold season was introduced in 1934. Decades of experience in this field have since paid off: the tread patterns and rubber compounds of today’s winter tires from Continental are perfectly suited to these conditions. Ensuring more grip and shorter braking distances on snow, ice and in the rain. This is evident even at low driving speeds on a full layer of snow. At 40 km/h, a car with winter tires comes to a stop around six vehicle lengths earlier than a car with summer tires. To ensure that each new generation of winter tires meets the highest safety standards, Continental tests its products extensively on test tracks around the world. The result: regular top ratings in independent tire tests. In its latest winter tire test, for example, the German automobile association ADAC named the WinterContact TS 870 its test winner, praising its precise and safe driving properties on dry, wet and winter roads.

> For 90 years, our winter tires have been synonymous with safety in winter weather conditions. Softer rubber compounds improve adhesion, while sipes provide grip on snow and ice. And wider grooves displace water particularly effectively,

explains Martin Welzhofer, Head of Global Tire Testing at Continental Tires.

> We put our winter tires through their paces during testing on snow and ice, in Germany and Sweden.

Winter tires – a perfect combination of tread and rubber compound

The tread pattern and the rubber compound used for winter tires are perfectly designed for driving in wintry road conditions. A winter tire tread enhances traction, grip and braking performance – especially in snow, ice and rain. In combination with the tire construction, a specially developed tread design significantly improves handling. Winter tires are also made using a rubber compound that is softer and more flexible than for summer tires. This gives the tire significantly better adhesion at low temperatures. Optimized tread block cuts and sipes engage with the snow. Thanks to the sipes, which look like numerous small incisions in the tread, winter tires run safely on snow and ice, preventing slippage on wintry surfaces. Wider and deeper grooves absorb a lot of water and effectively displace it. This ensures greater contact with the road surface.

The UK trade magazine "Tyre Review" recently compared summer and winter tires when braking on ice and snow. On snow, the WinterContact TS 870 P from Continental came to a stop after 18.25 meters when braking hard from 40 km/h, while the reference summer tire did so after 44.18 meters. At an average vehicle length of around 4.40 meters, this represents a difference of almost six car lengths. The figures are similar when braking on ice, where the WinterContact tire tested came to a stop after 11.13 meters during emergency braking from 25 km/h and the summer tire after 32.19 meters. Here, the braking distance of summer tires is almost three times as long, or around 4.5 car lengths longer.

Continental extensively tests its winter tires in Sweden and at the Contidrom

Safety is the highest priority, which is why every new tire from Continental is tested in depth. A new winter tire model undergoes the equivalent of up to 500,000 test kilometers in more than 20 test disciplines before it is ready for the market. During this testing, the tires are put through their paces according to strict criteria, such as traction, directional control and braking characteristics on dry, wet and

snow-covered roads. This ensures the shortest possible braking distance, exact steering precision and high cornering stability. In addition, tire wear, fuel consumption, noise generation and general driving comfort also play an important role.

Part of the testing is carried out near the Arctic Circle at Continental's test site in Arvidsjaur, Sweden. Here, the conditions are ideal for putting winter tires to the test with regard to starting off, cornering stability, handling, and braking on ice and snow. Continental takes more than 60,000 individual measurements each winter. Further driving maneuvers are also carried out to check directional stability, with new tire models being driven on around 18,000 bends on snow and ice.

The Contidrom test site near Hanover also has an indoor ice track that can be used all year round, regardless of the weather conditions. Here, experts test how new tire rubber compounds behave in the cold. For this purpose, a driver takes a vehicle onto the icy surface and brakes. The measured data is then evaluated as required. The ice temperatures can be set to different levels of coldness. In addition, experts use the in-house tire brake test facility to check how the tires behave when braking on wet and dry roads – also on vehicles, but fully automatically, i.e., without a driver.

Utmost safety for more than 90 years

The first winter tire from Continental was named the "Gelände" and was one of the first of its kind worldwide in 1934. The tire featured a new type of tread specially designed for snow, ice and slush. In 1953, the company tested how well Continental's winter tires actually performed. Equipped with the Continental M+S tire, vehicles safely crossed the snow-covered Gotthard Pass, a mountain pass in the Alps that connects Switzerland with Italy. Today, Continental pushes its tires, such as the current WinterContact TS 870, to their limits on the test track in Sweden or in the Contidrom's ice hall. The company is also continually researching new profiles, materials and technologies. Winter tires from Continental ensure maximum safety on winter roads – and have been doing so for 90 years.

Communications Manager Technology, Innovation & Original Equipment Tires

Head of External Communications

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