POINT OF CONTACT — TOURBILLON TIRE DEVELOPMENT



For any car, four small patches of rubber are all that stand between the engine and the road. For the Tourbillon[1] and its 1,800 PS hybrid powertrain, the stakes of getting that connection right are in a different league entirely. In the latest episode of Bugatti's 'A New Era' docuseries, the Tourbillon's development team travels to Michelin's Ladoux test facility in France — where, in the summer of 2025, they set out to validate one of the most critical components of Bugatti's latest hypercar: a tire developed specifically for the Tourbillon itself.

The visit to Ladoux forms part of a broader validation program that has already taken the Tourbillon from the frozen proving grounds of Sweden to the high-speed circuit at Nardò. As

the final stages of testing are completed ahead of series production, every stage contributes vital data to refining the car's character.

At the center of this process is Chief Test and Development Driver Miroslav Zrnčević, one of the many specialists whose combined expertise shapes the final driving experience.

> "If it was a kitchen, I would be the taster. I'm working with different engineering teams to develop the character of the car — controls, vehicle dynamics, everything else."
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> MIROSLAV ZRNČEVIĆ
> CHIEF TEST AND DEVELOPMENT DRIVER

The mission at Ladoux was clear: identify the optimum specification from a range of tires created specifically for the Tourbillon. Developed through a close collaboration between Bugatti and Michelin, each tire has been engineered to meet the unique demands of Bugatti's new hypercar, with simulations and virtual development helping narrow the field long before physical tests begin.

What started as multiple bespoke front and rear tire concepts was gradually refined through evaluation and crossmatching until the ideal combination was identified. By the time the team arrived at Ladoux, months of simulation work and joint development had reduced the field to just three specially developed tire sets. The facility's specialized tracks then allowed Bugatti to evaluate each option across a wide range of scenarios, including high-speed cornering and handling assessments.

To build a complete picture of each tire's performance, the team combines objective measurements with subjective driver feedback. Quantifiable data highlights differences in grip and handling characteristics, while the drivers assess how those characteristics translate into the Tourbillon's overall feel and personality.

The project represents the latest chapter in a partnership with Michelin that stretches back to the Veyron. Working alongside the French tire brand since the earliest days of the Veyron program, Bugatti has collaborated with Michelin continuously to evolve its tire technology to meet the increasing demands of each successive generation of hypercar.

The challenge presented by the Tourbillon is greater than ever. Compared with its predecessor, every key performance metric has increased, from power and acceleration to maximum speed, demanding an entirely new tire solution. Rather than adapting an existing product, Bugatti and Michelin have worked together to develop tires specifically for the Tourbillon, capable of delivering the stability and performance required across an exceptionally broad operating envelope.

The development process relies on close cooperation between Bugatti's engineers and Michelin's tire designers, translating subjective impressions from behind the wheel into measurable engineering targets that can be refined throughout the program.

For Zrnčević, the importance of the tire within the wider development process cannot be overstated. Despite the sophistication of the Tourbillon's powertrain, chassis and electronic systems, everything ultimately depends on the four contact patches connecting the car to the road. "The tire is the most important part," he says. "You only have four small contact patches connecting the car to the ground. What happens there defines everything else."

One of the greatest challenges the team faced was timing. Tire development had to progress in parallel with the evolution of the vehicle itself. Decisions had to be made before every system had reached full maturity, allowing sufficient time for production, validation and integration as the wider program continued to advance.

> "You always develop things in parallel, and this is the most challenging part. The car and its systems are at a certain maturity level — not necessarily at the optimal one to choose the tire, but you need to do it because it takes time to produce and validate the tire."
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> CHIEF TEST AND DEVELOPMENT DRIVER

Testing at this level also requires a careful balance between ambition and caution. Every prototype represents years of engineering effort, making risk management just as important as outright performance. While the team must continue pushing the Tourbillon toward its limits, protecting the program itself remains paramount throughout every phase of development.

Alongside the physical testing program, the Tourbillon's development has relied heavily on simulation, with engineers working in virtual environments for more than three years before arriving at the final validation stage.

The objective measurements gathered at Ladoux are compared against driver feedback accumulated over weeks of testing, helping the team verify that the real-world behaviour of the car aligns with the targets established at the beginning of the project.

Yet for all the advances in simulation technology, Tomislav Šimunić, Head of Vehicle Dynamics, believes there is no substitute for human input. "In the end, we are developing cars for people," he comments. "We cannot develop everything just with computer technology. We need the drivers and this emotional, subjective factor in the whole story."

By the end of the test program, the team had achieved its primary objective. With the preferred tire specification identified, development could move into its next phase, focusing on the calibration of steering, dampers and control systems around the selected tire package.

The result marked an important milestone in the Tourbillon's journey. The tire selected at Ladoux is a bespoke element of the vehicle developed alongside the vehicle itself. As testing continued and the program progressed toward its most demanding evaluations, the lessons learned from these purpose-built tires helped define how Bugatti's new era performs not only at the limit, but in every moment behind the wheel.

Watch the full episode, ‘A New Era: Point of Contact’, on the official Bugatti YouTube channel.

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[1] Tourbillon: This model is currently not subject to directive 1999/94/EC, as type approval has not yet been granted.