A Perfected Strom

AERO 111 Tire

When Swiss Side's aero expertise, Continental's tire know-how, and DT Swiss's wheel competence collide, the result is the AERO 111 tire: a perfected storm.

Specially designed aero cavities in the patented tread pattern function as vortex generators, creating turbulent airflow on the surface that enables the air to stick to the rim shape of the front wheel. The result is a maximization of the sailing effect by delaying the flow separation from the rim, resulting in the ultimate aero wheel tire system. No matter if chasing personal bests, your friends or competing professionally, the lower drag and even further improved handling will push you to storm ahead.

Aero Wheel Tire System

The aero performance of our wheels no longer needs to be established as our aero rims, spokes, and hubs are always fine-tuned to the smallest detail. In order to take the optimization of the entire wheel tire system (WTS) to the next level, it was clear that an aerodynamic tire would have to be included in the development. We simply found no tire that met our expectations including aspects of low aero drag while maintaining manageable riding characteristics and thus, decided to start development of our own tire from scratch. The long and successful cooperation between Swiss Side and DT Swiss made the search for the most acknowledged aero expert in the cycling industry very easy. While form and function were determined at an early stage, the project needed more help from an expert in rubber. It became clear that Continental was the best partner who not only understood the WTS concept, but was also able to implement the most advanced features of existing bicycle tire products into this patented aero tire concept. As a result, we are now able to offer the ultimate aero wheel tire system (WTS) in the AERO 111 front wheel tire. Storming ahead with this new collaboration, it will be impossible to ever consider the two components separately again.

Two Tire Widths

Ideal for our Aero and Endurance wheelsets in various rim heights, the AERO 111 front tire is available in widths of 26 mm and 29 mm. If you like to save every watt to reach new top speeds, you will enjoy the low drag of the Aero WTS combined with the 26 mm wide tire. For those who like to rack up kilometers, the aero-optimized Endurance WTS with the 29 mm wide tire will help you save precious energy and keep on riding longer than ever.

Tire Features

Vortex Generators

The tire certainly looks different: 48 little cavities are regularly distributed over its surface. We call them vortex generators as they are the very features that manage to control the turbulence in the airflow on the surface of the front wheel. Ultimately, this results in a perfected storm that allows for the reduction of drag of the entire wheel tire system.

Tire Technologies

The AERO 111 tire could not have been created without the right technology partner. This tire was produced in very close collaboration with renowned tire manufacturer, Continental. Aside from the proven aerodynamic effects, the tire contains Continental´s finest state-of-the-art technologies.

Tubeless ready: The AERO 111 tire can be ideally set up in our tubeless ready rim beds, allowing the rider to run the tire at a lower pressure, improving both comfort and puncture resistance.

BlackChili: Rubber tire performance is influenced by grip, rolling resistance, and longevity. Enhancing one can compromise the others. Continental’s BlackChili compound addresses this by blending synthetic and natural rubbers with optimized soot particles.

Vectran™: This breaker adds Continental´s well-known puncture resistance without negatively impacting the rolling resistance.

The combination of all these features means on top of the low aerodynamic drag, the AERO 111 offers low rolling resistance, good puncture resistance and exceptional grip in both wet and dry conditions.

Lean more about the tire technologies: Link Continental website

Wind Tunnel Data

Aerodynamic Drag

Low speed (30 km/h)

Currently other so-called aero tires available on the market are limited to specific usage, speeds and certain rim profiles and their heights. Moreover, some simply provide no aerodynamic improvement. As a result, these tires serve a very small group of riders and their positive effects are difficult to replicate. While the sailing effect can be more easily generated at high speeds, the beauty of the AERO 111 tire is that it allows the WTS to “sail” at lower speeds as well. This means that the average rider who rides at 30 km/h will benefit the most from the aero optimization of their WTS combined with all our aero-optimized wheels. We call this the “democratization of wheel aero performance”.

High speed (45 km/h)

While our ARC 1100 DICUT 62 wheels already have a strong aerodynamic performance, it is at yaw angles greater than +10° and smaller than -10° that the WTS with the AERO 111 will shine. The yaw angle can be explained as the relative direction of the wind that the rider will encounter when riding. Find out more about our AERO+ conept. We can see from the red curve that the sailing effect (drag reduction) increases as the yaw angle goes beyond +/-10°. The curves indicate the aero drag in watts (W) of the moving front wheel, which is the aerodynamic power the rider has to overcome in riding direction. For the riders, frontal cross wind conditions do not slow them down – in fact the decreasing aero drag of the front wheel tire system translates into propulsion of the complete rider/bike system, so called ‘Negative Drag’. This turns into an overall faster WTS.

Aero Performance with Shallower Rim Heights

It is not necessary to only ride higher profile wheels in order to benefit from the aero tire. In fact, when paired with lower profile rims, the improvement in aero performance from a normal tire is more significant than when comparing on a high profile rim. The graph shows that the WTS combined with a ARC 1100 DICUT 38 front wheel outperforms the higher rim profile of the ARC 1100 DICUT 62 wheel, measured with a standard non-aero tire.

Steering Moment

As both graphs show, the aero-optimized WTS provides a slightly higher linear steering moment at both low (30 km/h) and high (45 km/h) speed. This means the torque felt by the rider in their steering increases evenly in cross-wind conditions, avoiding any jolts. This translates into more predictable and comfortable handling for the rider, ultimately increasing the confidence to stay as aero as possible at all times.

AERO 111 vs Other Tire Brands

As our test showed, the AERO 111 front tire outperforms any other tire brands tested in the WTS. This ensures that when riders combine our wheels with the new AERO 111 tire, they will have the fastest WTS currently available. Now there is no excuse for not reaching new top speeds and personal best times.

29 MM tire - on ERC 45 with AERO 111 tire compared to a standard tire

As seen in this graph, the aero performance of the 29 mm wide tire is equally benefical to the Endurance wheels as the 26 mm wide tire is to the Aero wheels. The identical improvements in aerodynamic and also riding characteristics are achieved.