ventus S1 evo

Luxury Premium Summer UHP Tire
The key to a world of freedom beyond limits.

Contents


OZ

What does a car mean to you?

Is it a simple means of transportation or an index of your value?
No! A car is both you and an opportunity to escape from your confines!
The moment you get into a car, you can be free of your daily routines and restrictions at unimaginable speeds.
*The **VENTUS S1 evo** is the key to this unbound freedom.*

Improved durability preventing tire distortion at high speed under high temperature

Solid design for high-speed operation

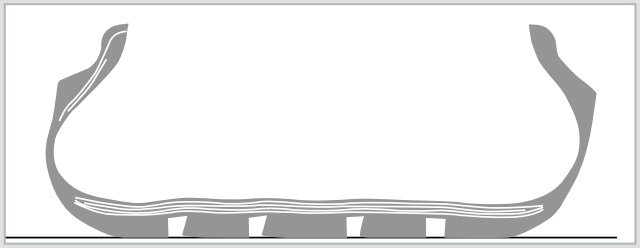
- High-density zero-degree nylon belts prevent pressure from bein concentrated on one side by distributing pressure equally when running at high speed.
- A new-concept structure minimizes elongation of tread contact at high speed.

Stabilized aspects for high-speed operation

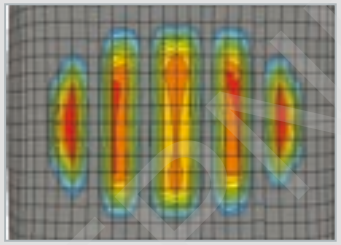
- A new multiple-tread radius ensures balanced surface contact pressure and prevents distortion at high speed.

High-speed Predictive Models

Profile and structure design ensures optimum surface contact pressure and surface contact shape



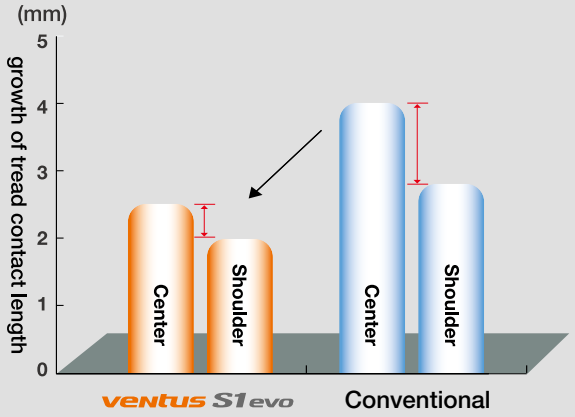
Tire section and profile simulation



Footprint pressure
distribution and shape
(0~250km/h at 430kg_2.3bar)

Minimize distortion at high speed

Improve durability by reducing tread contact elongation at high speed (220km/h) while minimizing the difference in tread contact elongation in the center and on the shoulders.

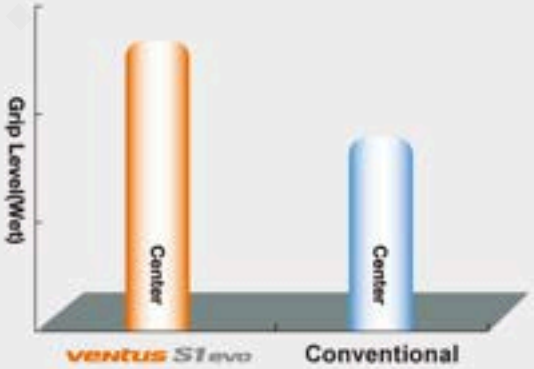


Greatest ground contact capability on both dry and wet roads

Compound

• A highly dispersible silica compound ensures optimum performance on wet roads.

- Compound experimental data can be used to measure grip performance on wet roads.
- The graph on the left compares the surface contact capability on wet roads of the K107 pattern with conventional patterns.



Tread pattern

• Groove with flexible angles

- Outer wave-form straight grooves and variable side angles contributes to innovative design, while uniform circumferential block stiffness improve surface contact capability.

Featuring outstanding performance on both dry and wet roads

Tread pattern

- Asymmetrical design
- Ribbed blocks maximize stiffness.

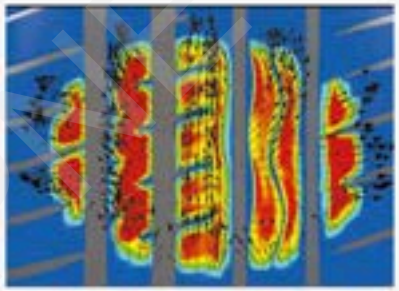
Profile

- A high-grip footprint minimizes deformation during cornering.

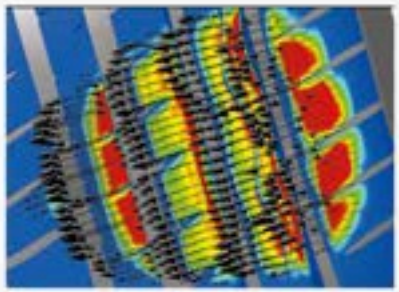
Structure

- High-density reinforced nylon belts and steel belts maintain optimum footprint during cornering.

Exceptional handling performance through asymmetrical design and optimum pattern design



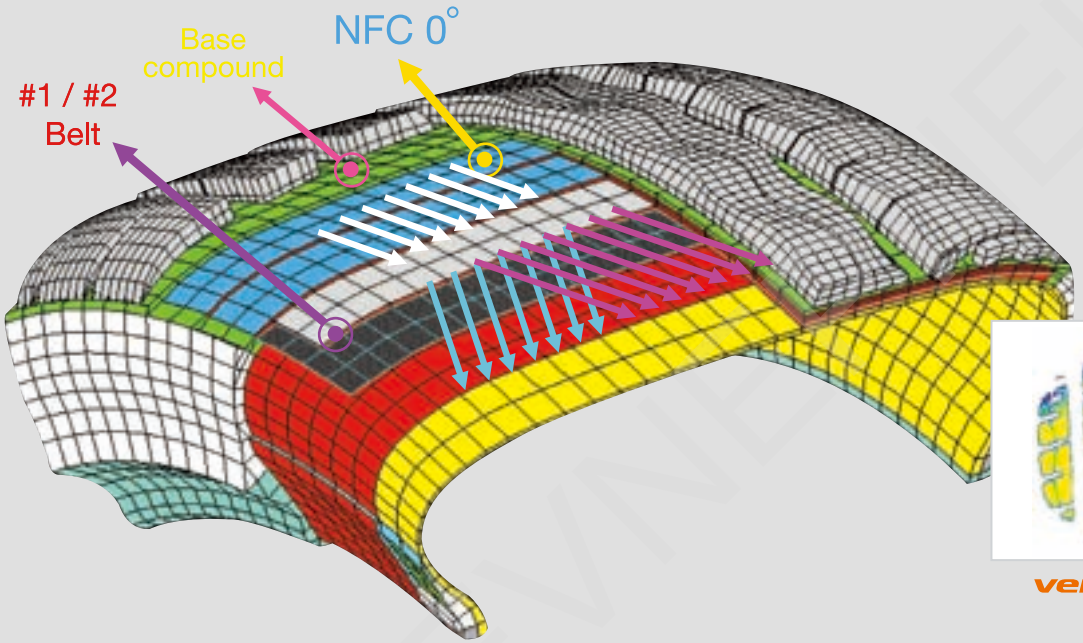
Traction force during acceleration



Lateral force at slip angle 12°

- An asymmetrical design combined with high-stiffness rib pattern maximizes handling performance on dry roads
- Optimum pattern design maximizes traction and lateral force during cornering

Equalized footprint pressure distribution during cornering is measured by optimally combining high-density Nylon Reinforced Belt and Steel Belt



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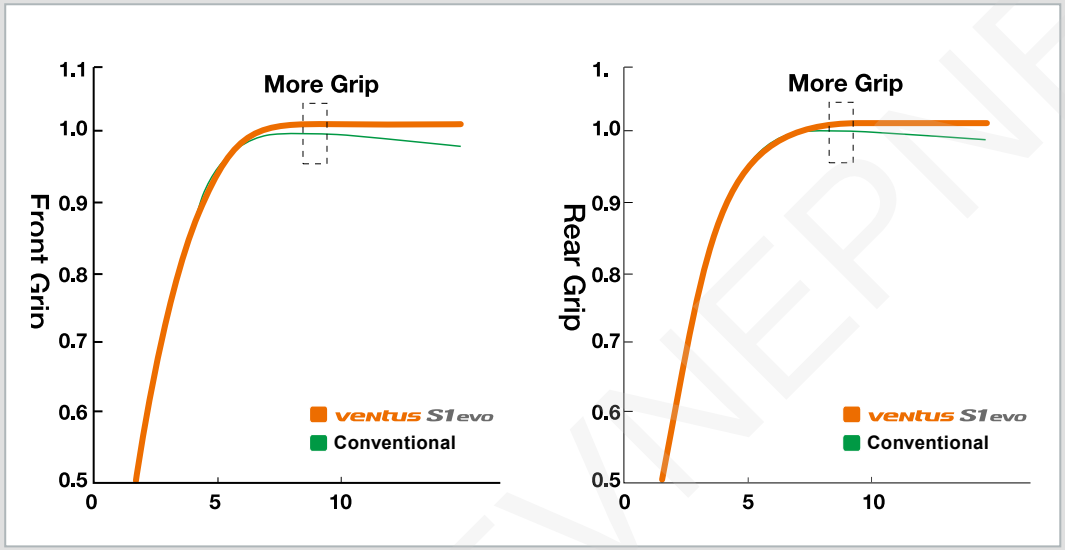
Conventional

• A comparison of the outer shoulder of the K107 pattern with a conventional pattern shows uniform surface contact distribution of the K107 during cornering. (vehicle weight: 1,600kg, slip angle : 4°)

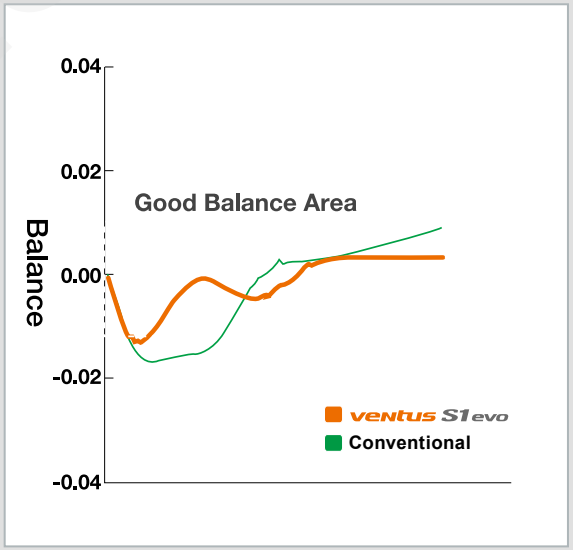
Measuring front / rear wheel cornering grip

GRIP



- Safe cornering is ensured by the front/rear grip of the K107 pattern, which is higher than that of a conventional tread at a high slip angle

BALANCE



- The front/rear balance of the K107 is better than that of a conventional tread, enhancing safety at high speed

Minimize stopping distance on both dry and wet roads

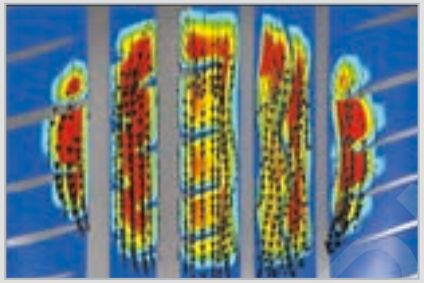
Tread pattern
• A ribbed block maximizes longitudinal stiffness

Side / Structure
• Computer simulations are used to design a tread that maintains the optimum footprint

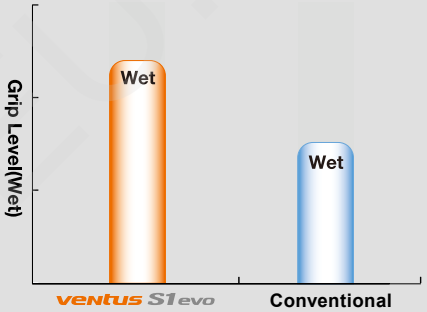
Compound
• A newly developed highly dispersible silica compound is applied

Improve brake force by appropriately combining the longitudinal stiffness of the pattern block with that of the footprint

Continuous rib patterns improve longitudinal stiffness.

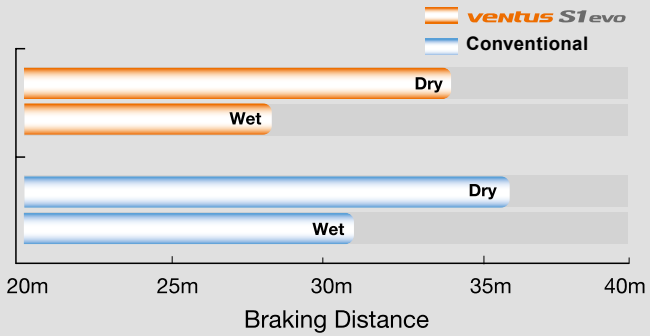


Simulation results are applied to achieve the optimum pattern and structure design (430kg, 2.3bar, 100km/h).



Highly dispersible silica compound improves grip.

Braking performance of the K107 is as good as that for a conventional pattern on wet surfaces, while the K107 outperforms its rivals on dry roads (dry: 100km/h, wet: 80km/h)



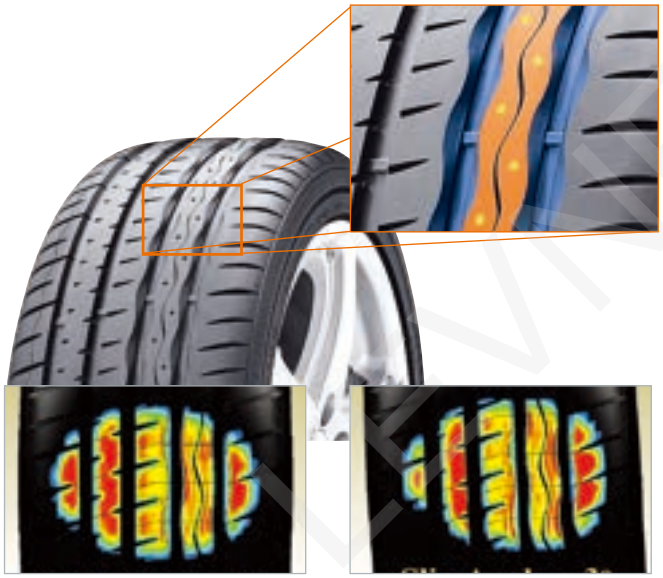
Minimize the threat of hydroplaning on straight roads and during cornering

Tread pattern
- A wide longitudinal groove is applied on the outer part of the tread.

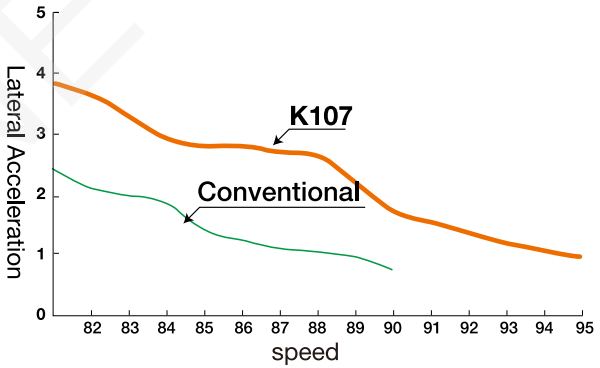
Footprint
- Footprint shape remains optimized when going straight ahead and during cornering.

3D wave & straight groove

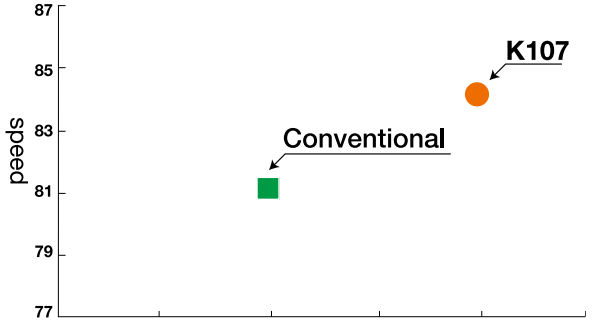
The K107 outperforms the conventional by applying a wide straight groove on the outer edge and by maintaining the optimal footprint shape



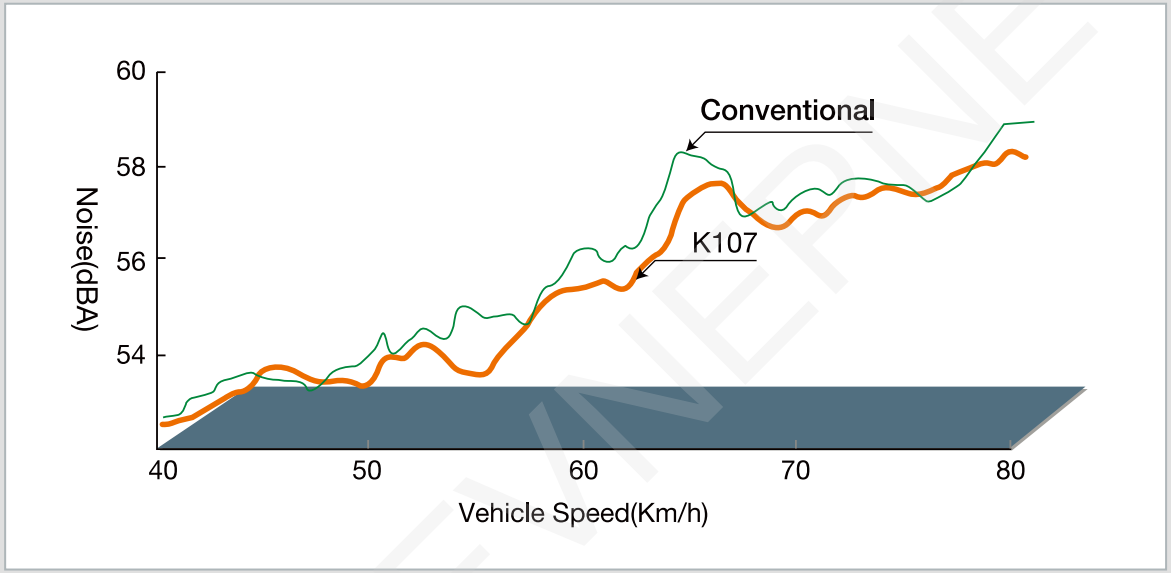
Hydroplaning Test in Curve



Hydroplaning Generation Speed in Straight



Ensure running stability



Tread pattern

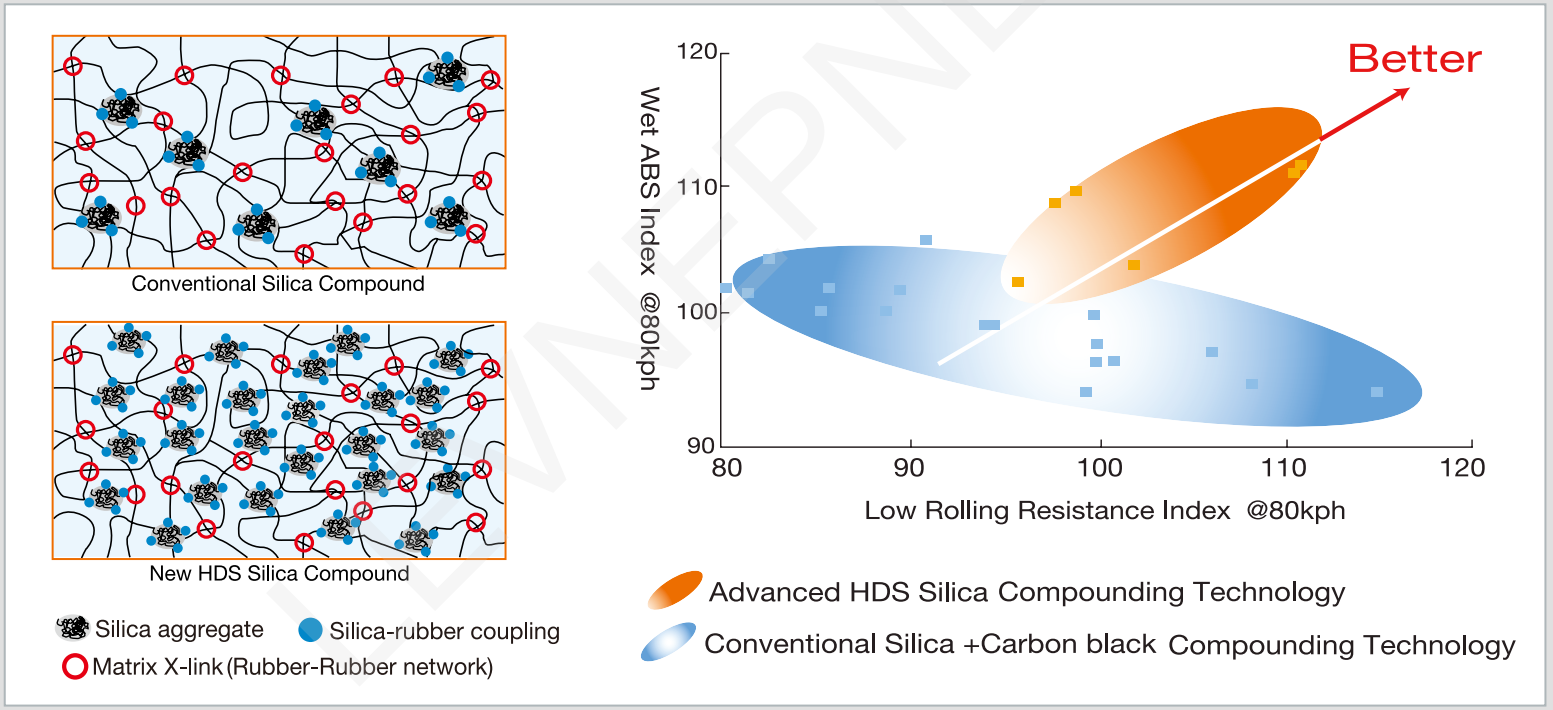
- Optimized pitch sequence
- Optimized sub-groove angle

Internal measurements show that the noise is generally lower in the K107 than in conventional tread patterns (test car: BMW)

Highly dispersible silica (HDS) compounding and a new mixing process are applied

HDS improves compound hysteresis feature

Much better filler dispersion enhances traction performance.
More rubber to filler (higher reinforcement) raises fuel efficiency



Performance