



ventus S1 noble 2

The ideal balance of all-season and ultra-high performance



Design Concept

The Ideal Balance of Ultra-High Performance All-Season

- Product Name : VENTUS S1 noble²
- Speed Symbol : W
- Series : 40~55 Series
- Inch : 16~18
- UTQG : 500, AA, A



ventus S1 noble²

HANKOOK
driving emotion

Pattern Design



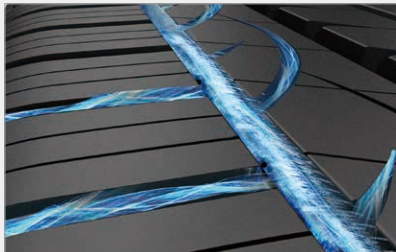
Position Map



Advanced Asymmetric Pattern Concept

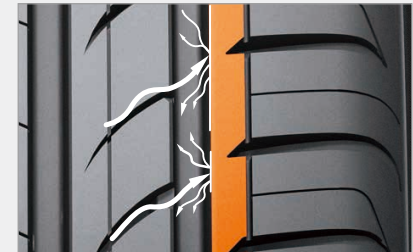
Positive Aqua Hydro Block

An advanced Aqua Hydro Block design was developed through 3D Hydroplaning simulation to provide highly efficient wet braking



Cornering & Noise Reduction Rib

A straight Rib Block applied to the outside of the tyre helps to prevent road noise and increase cornering grip.

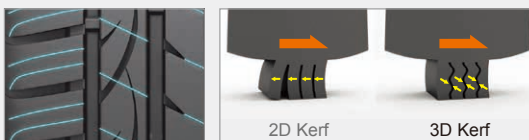


Refined Dynamic Shape Tread Pattern

4 Channel Rib Type Design

3D Kerf

Advanced 3D kerfs have been applied to the tyre to reinforce traction and prevent wear without hampering wet and dry handling performance.



Application of Tie-Bar Technologies

Ensures optimal Block Stiffness



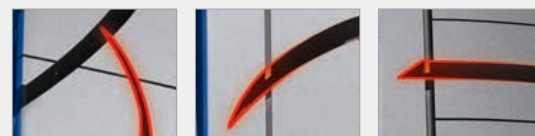
Capillary Kerf

Maximises wet grip by evacuating water through slanted kerf linked to the tyre's main grooves.



Carving Edge

The sharp edges of the lateral grooves maximise performance.



Structure Design Technology

New Compound

New Silica Tread Compound for improved Wet Grip and lower Rolling Resistance

2 Layer Jointless Nylon Full Cover

Enhanced durability and tread stiffness

Wide 2 Steel Belt

Ensures optimal tread stiffness for improved handling performance

Equilibrium Carcass Line Design

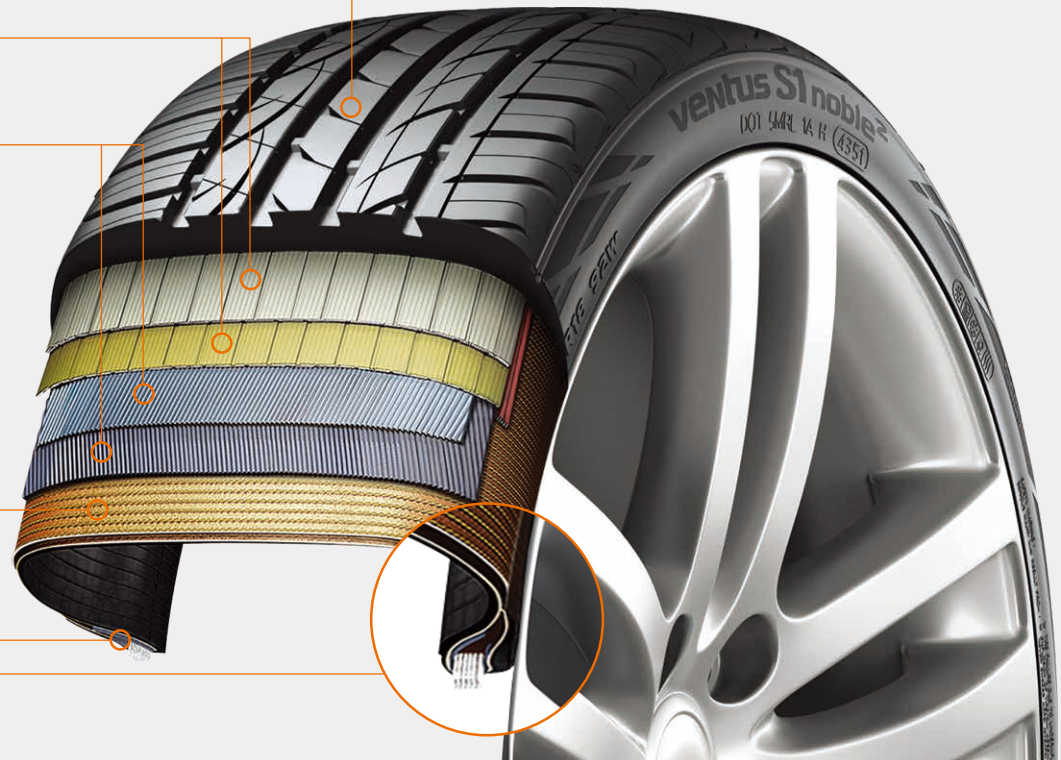
Minimises tyre deformation and allows greater sidewall stiffness

Adoption of High-Hardness Bead Filler

Improved handling and steering response

Strong Single Strand Bead Wire

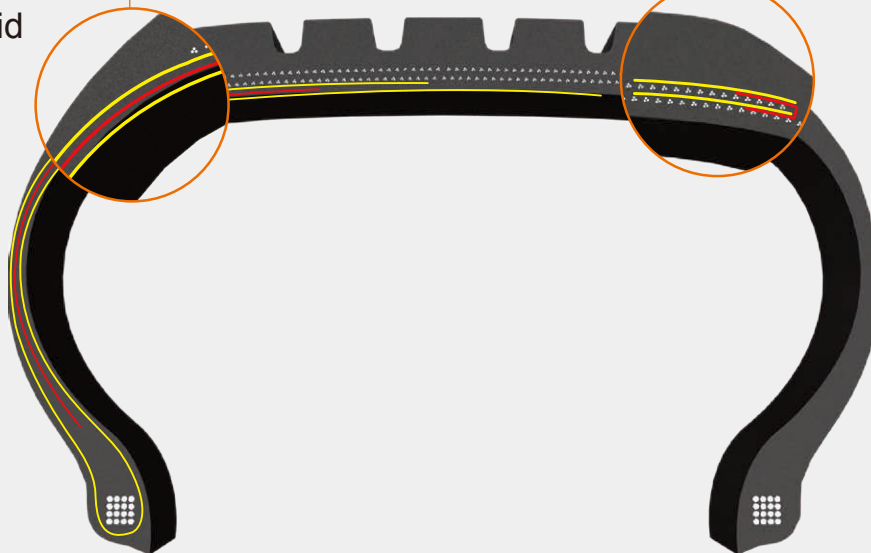
Improved bead uniformity and durability



New Structure Technology

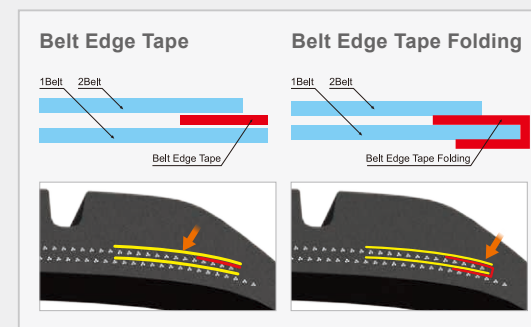
SFT (Side Filling Tape)

Side Filling Tape has been used in the design of the Ventus S1 Noble² to aid durability.



Belt Edge Tape

A rubber sheet, incorporated between 1st and 2nd belts help to prevent separation in the tyre's belt edge and increase durability.



Profile



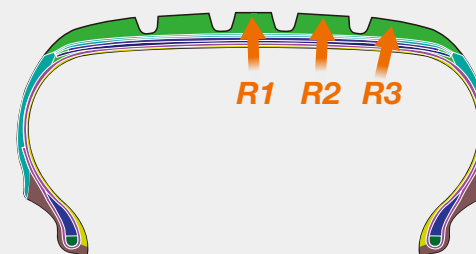
Profile Technology

3R System (Multi Tread Radius Technology)

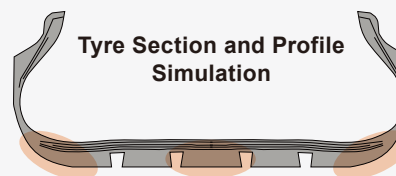
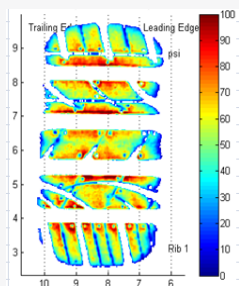
The Ventus S1 Noble² features a triple-radius profile that maintains maximum grip under Ultra-High Performance driving conditions.

SCCT Layout

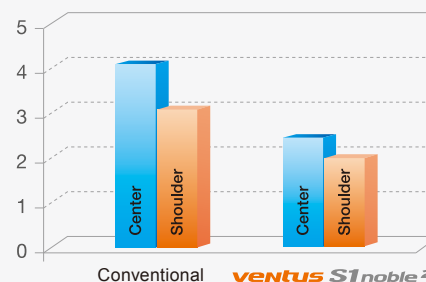
Stiffness Control Contour Theory helps to prevent belt and bead deformation for improved durability and deformation resistance.



Triple Tread Radius



Tyre Section and Profile Simulation



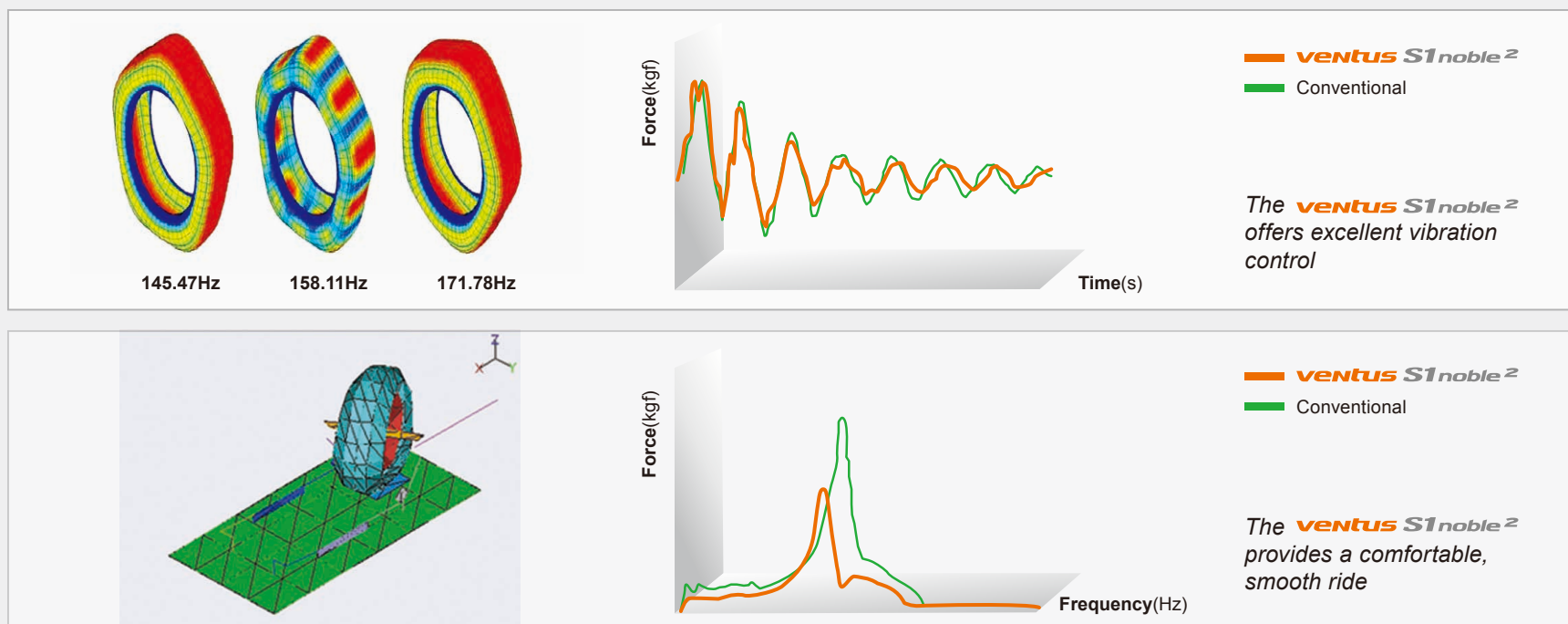
► Maintenance of tyre shape and ground pressure distribution

► Minimisation of tread deformation at high speeds

3D Vibration Analysis technology

3D Vibration Analysis technology

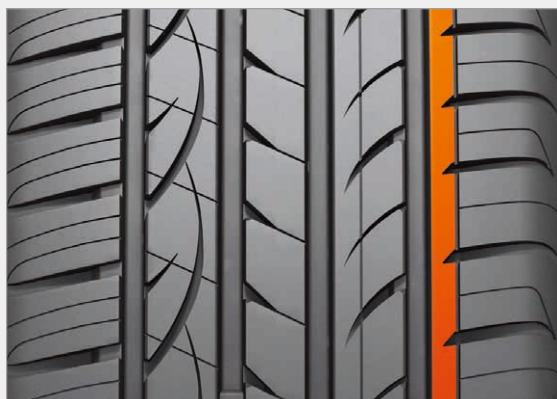
The advanced mold profile designed for the Ventus S1 Noble² delivers uniform contact pressure on the centre and shoulder blocks for secure braking performance, while straight rib blocks applied to the outside of the tyre reduce road noise.



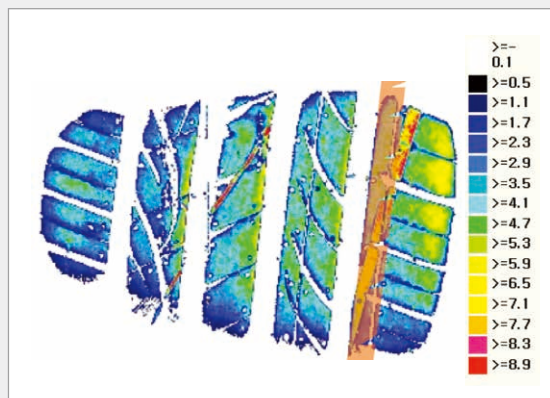
Semi-Rib Design

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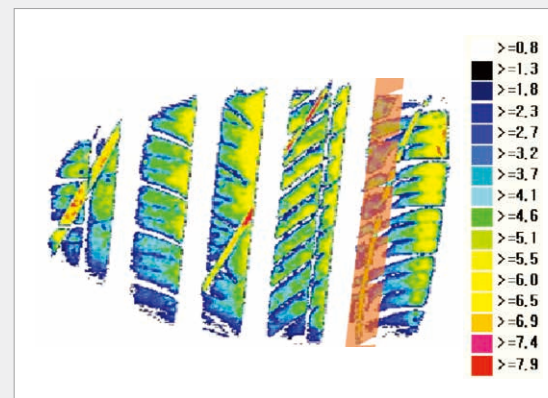
The outer block Semi-Rib design used by the Ventus S1 Noble² provides greater stability and handling performance.



ventus S1 noble²



Conventional

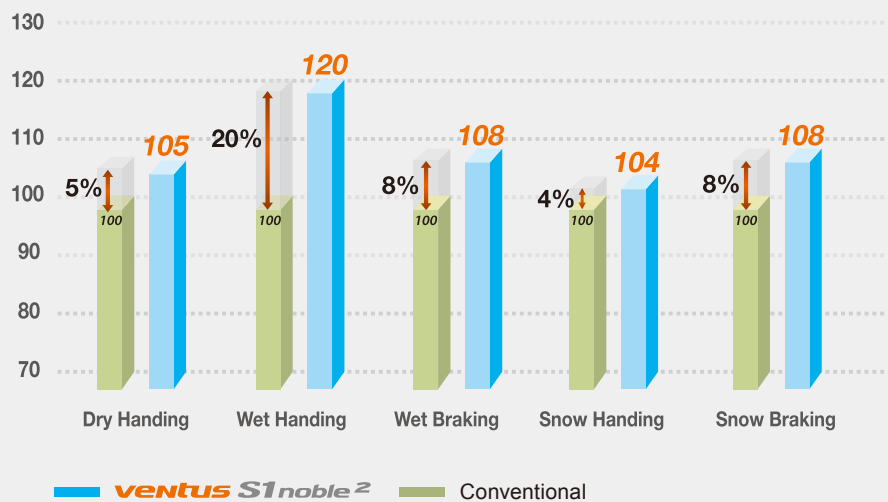
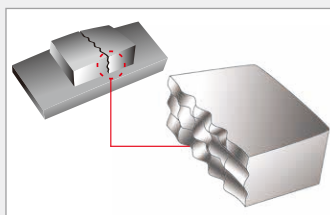
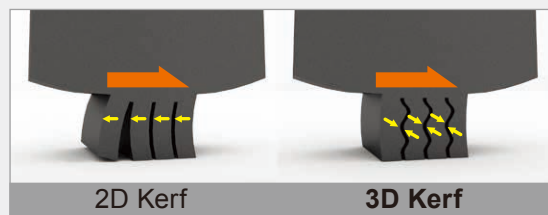


Large Contact Patch → Greater Stability

3D kerf

Application of 3D Kerf

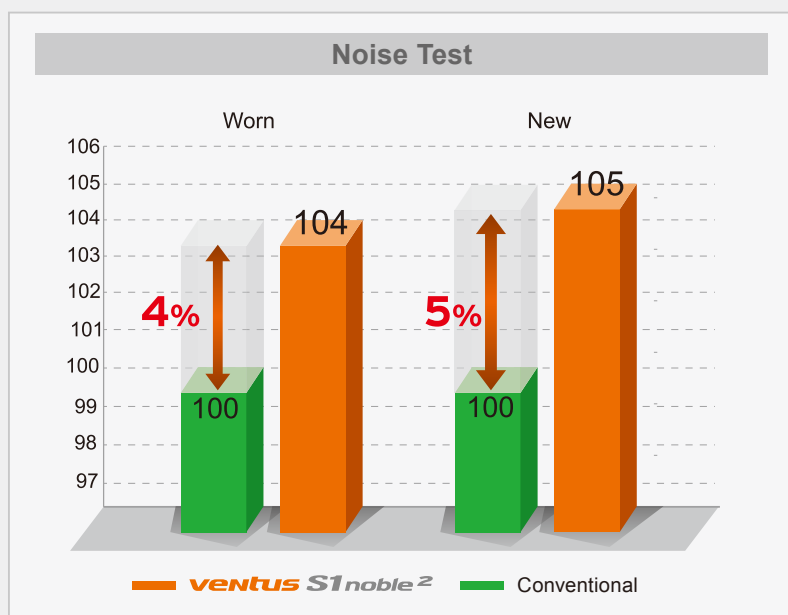
Handling performance is improved through the use of 3D Kerf which maintain a stable shape during acceleration, braking and cornering.



Noise

Pitch Design Technology

The use of a 5-Pitch tread block design offers optimal noise dispersion for a quiet, comfortable ride.

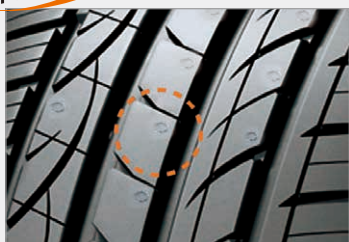


MSV (Micro Spring Vent) Technology

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A ventless mold technology is used to produce the Ventus S1 Noble² resulting in a more attractive finished product with fewer imperfections.

Patent
application



ventus S1 noble² (MSV Type)



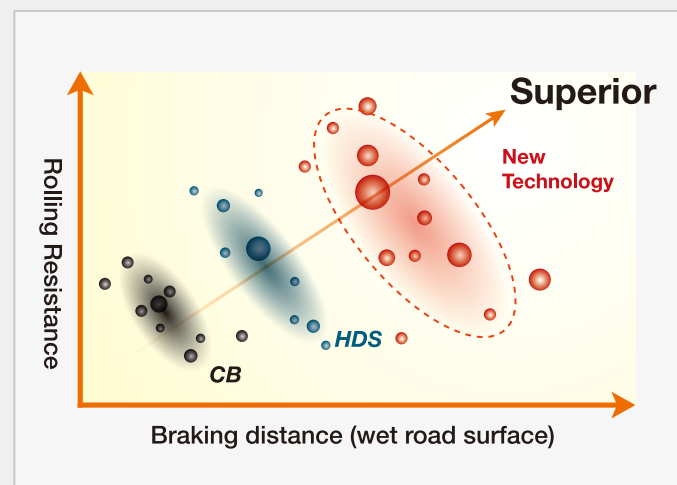
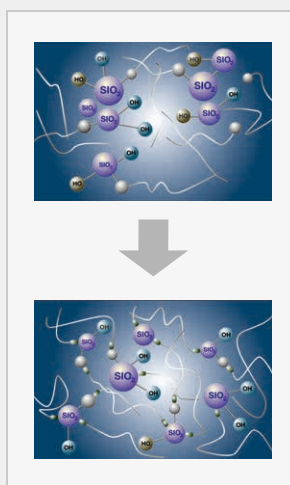
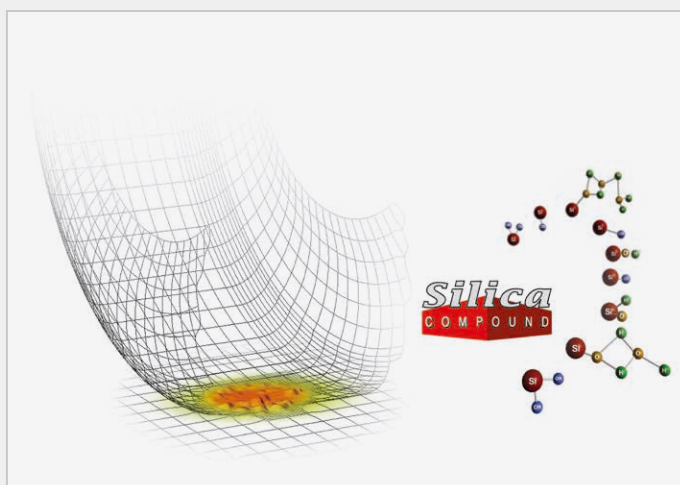
Conventional



Compound

The Ventus S1 Noble² provides enhanced wet condition braking and handling compared to existing products through the use of hybrid compound technology silica.

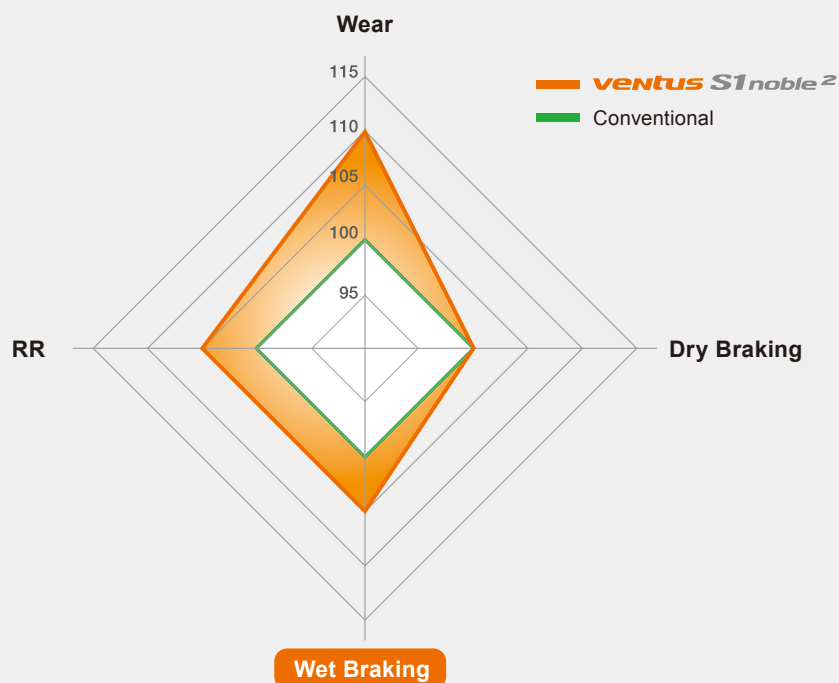
- Maximised bond strength between silica and rubber through the adoption of hybrid polymer technology.
- An advanced “Fuzzy Mixing” process disperses silica into the tread rubber in nano-sized particles offering uniform compound characteristics.



Compound Technology

Compound Technology

By applying high styrene polymer featuring high hysteresis, wet braking performance is improved.



High Styrene (Bulky)

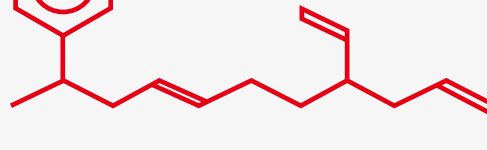
High Hysteresis

High Wet Braking Performance

Styrene



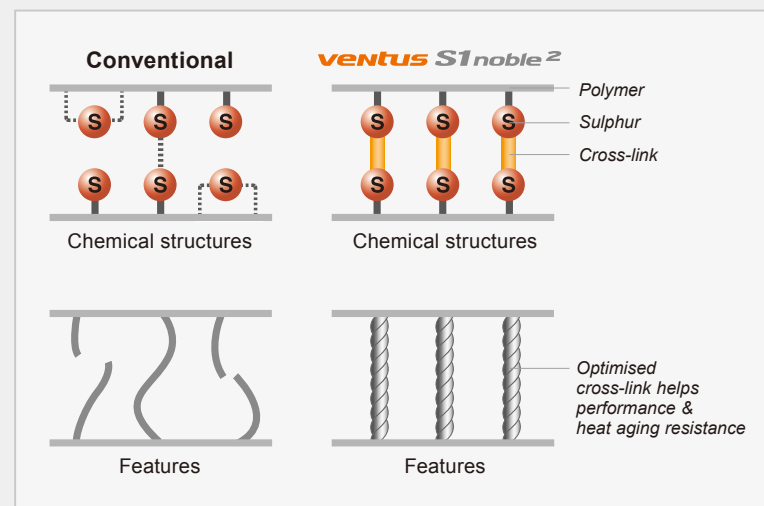
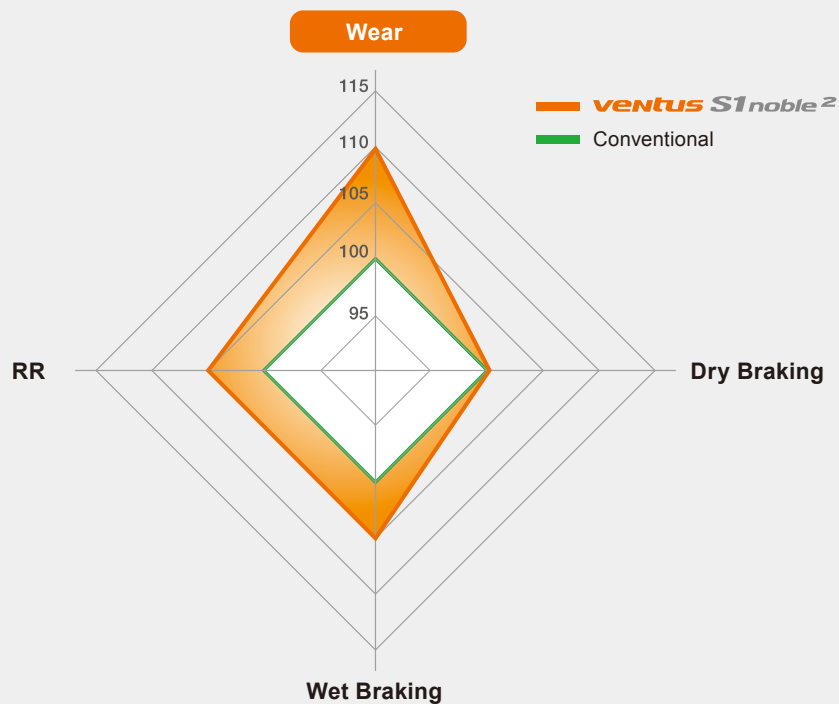
butadiene



Compound Technology

Compound Technology

By applying an optimised cross-linking system, durability of abrasion performance is improved.



Application of Technologies for Improvement of All-Season Performance

