

SMART^{LINE}AL50

SMART^{LINE}DL50

Excellent fuel efficiency with optimised grip
performance for long haul use



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Features and Performance Information

Smart^{LINE}AL50

Smartec
HANKOOK TBR Technology

Hankook Premium Technologies

Innovative technologies to give maximum tyre life, maximum grip and minimum fuel consumption



Technical Profile

Tread width

295-385

Series

50-80

Inch

22.5



Applied Technology & Tire Performance



Innovation
Mixing System



Compound



Hidden groove



3D-Sipe



Zigzag traction
groove



Stiffness Control
Contour Theory



Fuel efficiency



Mileage



Traction



Wet braking



Endurance

Features and Performance Information

SMART^{LINE} DL50

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Technical Profile

Tread width

295-315

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60-80

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Applied Technology & Tire Performance



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Mixing System



Compound



Hidden groove



3D-Sipe



Tie bar



Stiffness Control
Contour Theory



Zigzag traction
groove



Fuel efficiency



Mileage



Traction



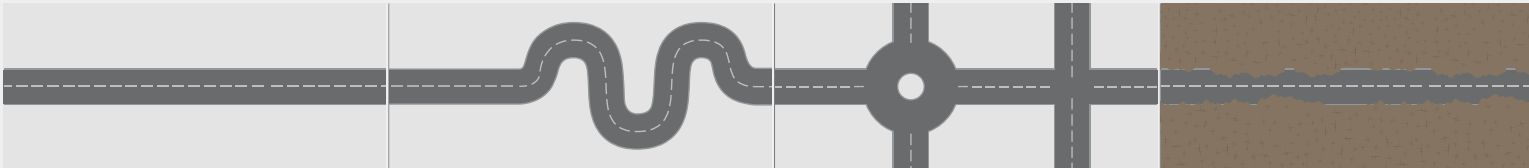












Wet braking



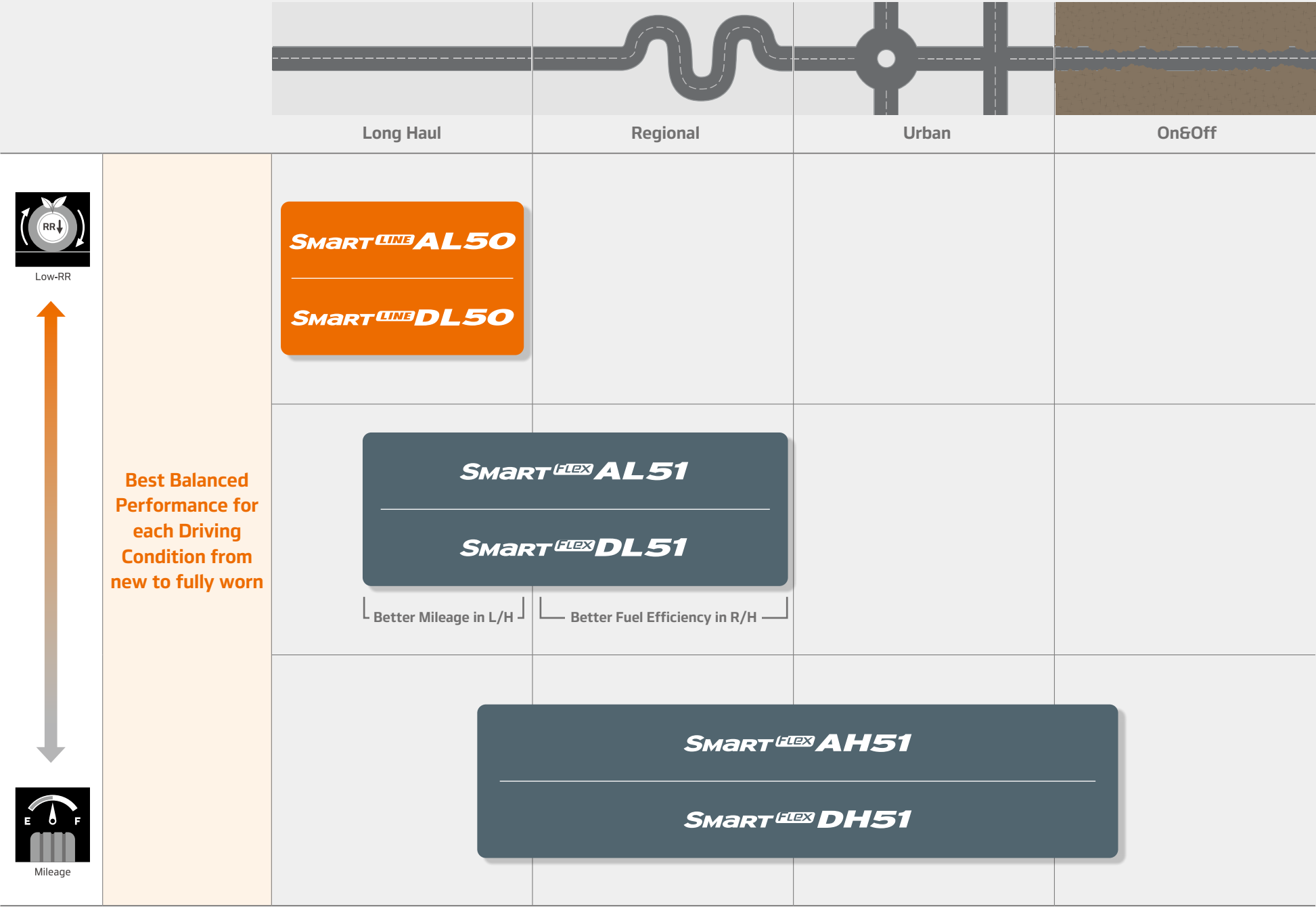
Endurance

Product Recommendation

Excellent fuel efficiency with optimised grip performance for long haul use

| | |  | | | |
|----------------------------|--|--|---|---|--------|
| | | Long Haul | Regional | Urban | On&Off |
| General Commercial Vehicle |  |  | | | |
| |  | |  | | |
| |  | | |  | |
| |  | | |  | |
| Special Purpose | Coach  |  | | | |
| | Winter  |  | | | |

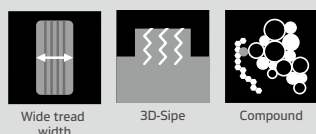
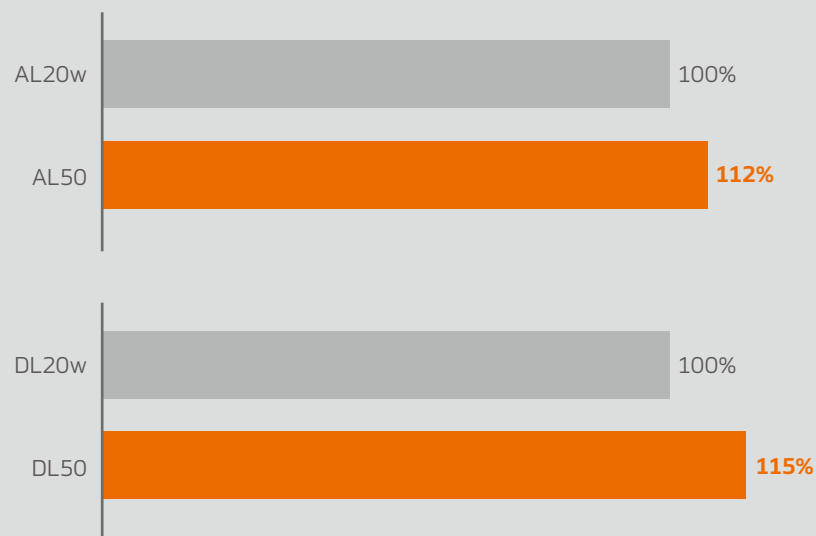
- SmartLine: Optimised for fuel efficiency and high speed at long distance driving
- SmartFlex: Optimised for long tread life and durability at all types of driving in all-weather
- SmartWork: Optimised for toughness, traction with high load at aggressive road surface
- SmartCity: Optimised for even wear and smooth traction at frequent stop & go driving
- SmartTouring: Optimised for comfortable people transportation
- SmartControl: Optimised for traction and safety at winter driving



Reduced fuel consumption

- Fuel savings of up to -1.0ℓ/100km and reduced CO² emissions up to 2.6kg/100km compared to AL20W
- Savings of up to €2,509 per year in fuel, based on diesel costs of €1.996 a litre, 130,000km driving/year compared to AL20W

Rolling Resistance performance

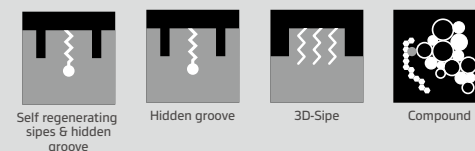


- Avg. Fuel Consumption 25.1ℓ/100km (4km/ℓ) → 20% improved RRc : Avg. 24.2ℓ/100km
- Based on 4X2 tractor-trailer

Securing your safety

Short braking distances on all road and weather conditions

Wet Braking performance



M + S

No matter the weather and road conditions, you will arrive safely at your destination.

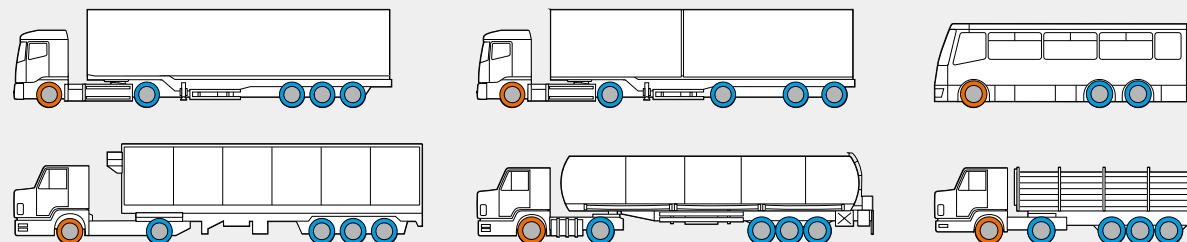
SMART LINE AL50

Available sizes

| Size | LI/SS | Measuring Rim | Max. Air (PSI) | | | | Max. Load | | | | Overall Diameter | | Section Width | | Tread Width | | Tread Depth | Static Loaded Radius | Labeling | | | | |
|--------------|---------------------|---------------|----------------|-----|-----|-----|-----------|------|------|------|------------------|------|---------------|------|-------------|------|-------------|----------------------|----------|-----|----------|-----|-------|
| | | | PSI | | BAR | | KGS | | LBS | | | | | | | | | | RR | Wet | PBN | M+S | 3PMSF |
| | | | S | D | S | D | S | D | S | D | mm | inch | mm | inch | mm | inch | | | | | | | |
| 295/60R22.5 | 150/147L | 9.00 | 130 | 130 | 9 | 9 | 3350 | 3075 | 7390 | 6780 | 919 | 36.2 | 288 | 11.3 | 244 | 9.6 | 11 | 425 | B | B | A (70dB) | M+S | 3PMSF |
| 315/60R22.5 | 154/148L | 9.75 | 131 | 131 | 9 | 9 | 3750 | 3150 | 8270 | 6940 | 944 | 37.2 | 318 | 12.5 | 280 | 11.0 | 10.5 | 436 | B | B | A (70dB) | M+S | 3PMSF |
| 315/70R22.5 | 156/150L | 9.00 | 131 | 131 | 9 | 9 | 4000 | 3350 | 8820 | 7390 | 1005 | 39.6 | 314 | 12.4 | 270 | 10.6 | 11.6 | 463 | A | B | A (71dB) | M+S | 3PMSF |
| 315/80R22.5 | 156/150L (154/150M) | 9.00 | 123 | 123 | 8.5 | 8.5 | 4000 | 3350 | 8820 | 7390 | 1072 | 42.2 | 320 | 12.6 | 260 | 10.2 | 13 | 497 | B | B | A (70dB) | M+S | 3PMSF |
| 355/50R22.5* | | | | | | | | | | | | | | | | | | | | | | | |
| 385/55R22.5 | 160K (158L) | 12.25 | 131 | - | 9 | - | 4500 | - | 9920 | - | 996 | 39.2 | 379 | 15 | 324 | 12.8 | 11.6 | 458 | A | B | A (70dB) | M+S | 3PMSF |

* 355/50R22.5 AL50 coming in end of 2022

Recommended / available vehicles and positions



Recommended position
 Available position

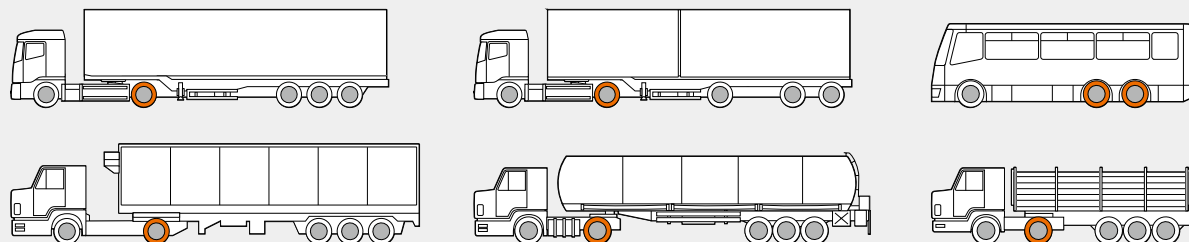
SMART LINE DL50

Available sizes

| Size | LI/SS | Measuring Rim | Max. Air (PSI) | | | | Max. Load | | | | Overall Diameter | | Section Width | | Tread Width | | Tread Depth | Static Loaded Radius | Labeling | | | | | |
|--------------|---------------------|---------------|----------------|-----|-----|-----|-----------|------|------|------|------------------|------|---------------|------|-------------|------|-------------|----------------------|----------|-----|----------|-----|-------|--|
| | | | PSI | | BAR | | KGS | | LBS | | | | | | | | | | RR | Wet | PBN | M+S | 3PMSF | |
| | | | S | D | S | D | S | D | S | D | mm | inch | mm | inch | mm | inch | | | | | | | | |
| 295/60R22.5 | 150/147L | 9.00 | 131 | 131 | 9 | 9 | 3350 | 3075 | 7390 | 6780 | 920 | 36.2 | 288 | 11.3 | 268 | 10.6 | 13 | 425 | B | C | A (72dB) | M+S | 🚧 | |
| 315/60R22.5 | 152/148L | 9.75 | 131 | 131 | 9 | 9 | 3550 | 3150 | 7830 | 6940 | 951 | 37.4 | 318 | 12.5 | 290 | 11.4 | 13.4 | 442 | B | C | A (72dB) | M+S | 🚧 | |
| 315/70R22.5* | | | | | | | | | | | | | | | | | | | | | | | | |
| 315/80R22.5 | 156/150L (154/150M) | 9.00 | 123 | 123 | 8.5 | 8.5 | 4000 | 3350 | 8820 | 7390 | 1079 | 42.5 | 318 | 12.5 | 280 | 11.0 | 15 | 500 | B | C | A (72dB) | M+S | 🚧 | |

* 315/70R22.5 DL50 coming in end of 2022

Recommended / available vehicles and positions



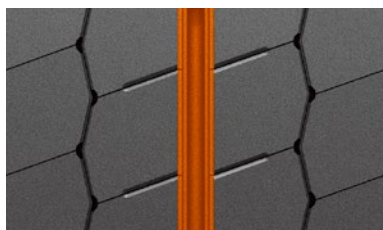
 Recommended position

SMART^{LINE} AL50



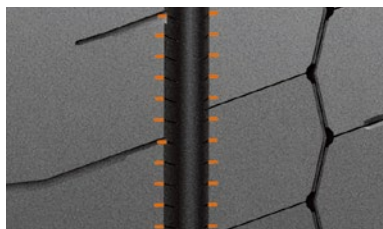
A Stepped groove

Groove wall step features prevent block deformation and gives reinforcement between tread blocks.



B Irregular wear prevention sipe

Multiple sipes prevent irregular wear by dispersing stress applied to the groove edge.



C Optimised block size

The wide tread block enhances the rigidity and improves grip, mileage and reduces the tyre's rolling resistance.

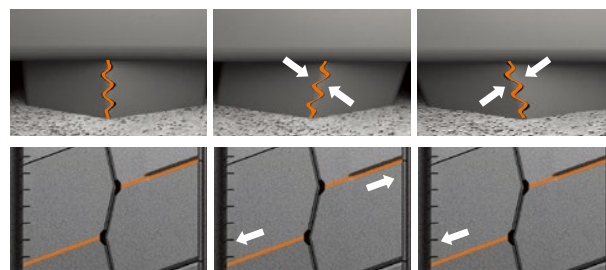
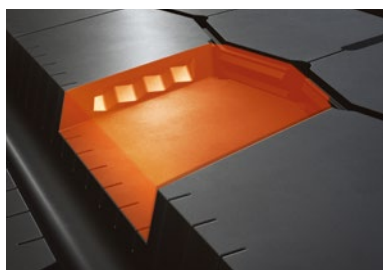


SMART LINE AL50



D 3-dimensional sipe

Keeps excellent mileage and traction during whole tyre life by reinforcing interlocking between tread blocks.



3D Sipe

Interlocking Sipes in vertical and horizontal directions.

Zigzag sipe

Applying full depth sipes helps to maintain a binding force between blocks.

Controlled tearing and wearing

→ Reduce irregular wear.

Full depth sipe applied

→ Improving tractions and grip during whole tyre life.



SMART LINE AL50



E Hidden groove

At 70% wear, hidden grooves appear. These grooves improve wet grip and traction when the tyre wears.



Hidden Groove

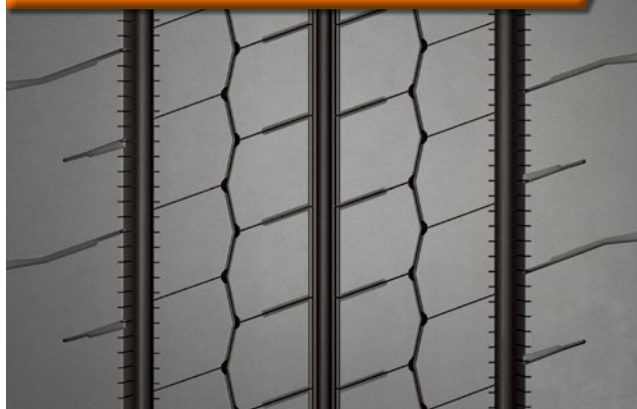
As Hankook premium tyres wear, the hidden groove technology delivers new channels and gripping surfaces to maintain wet grip and traction performance.



SMART^{LINE} AL50

New Tyre

Hankook premium technologies deliver improved grip, mileage and fuel efficiency.



40% Wear

3D Sipes maintain tread block stiffness to deliver grip and low rolling resistance when 40% worn.



70% Wear

Hidden grooves appear when the tyre is 70% worn delivering improved wet grip and traction performance.



Tyre Structure *SMART*^{LINE} *AL50*



Belt structure

The use of high rigidity belt cord minimises the deformation of the belt to maintain a flat tread/road contact. Delivers better grip and regular tread wear.

High durability new cord

Enhanced durability by applying new steel cord.

Carcass structure

Enhanced casing endurance by using premium carcass cord with improved fatigue resistance.



Advanced compound

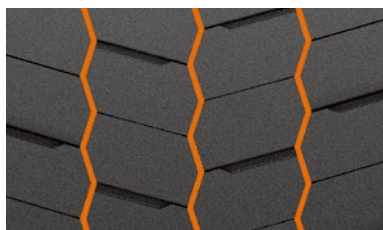
- Fuel efficiency is improved by applying an innovative tread & sub tread compound that reduces the tyre rolling resistance.
- Enhanced casing endurance by applying new sidewall compound with improved fatigue resistance and anti-crack performance.

SMART **LINE** DL50



A Centre zigzag groove

The centre zigzag grooves create a binding effect on each tread block contributing to better rolling resistance and traction.



B Optimised block size

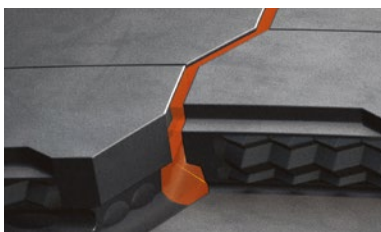
The wider tread block than the previous product enhances the rigidity and reduces tyre rolling resistance.



SMART LINE DL50



C Hidden groove



At 70% wear, hidden grooves appear. These grooves improve wet grip and traction when the tyre wears.

D Self-regeneration Sipe



As the tyre wears, sipes and grooves are revealed to give improved traction and grip performance.



Self-Regenerating Sipes & Hidden Grooves

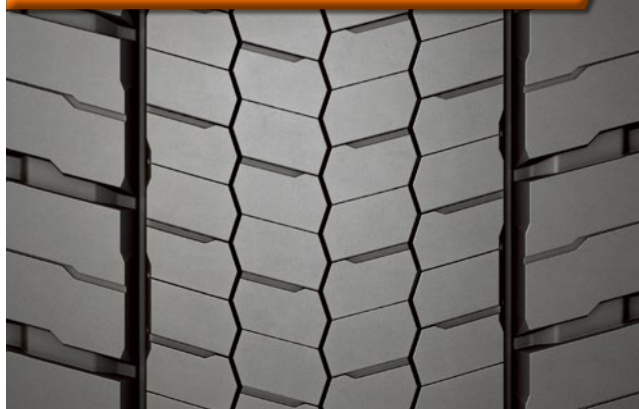


During whole tyre's life cycle, Hidden Groove & Self-Regeneration Sipe technologies maintain the wet grip & traction performance.

SMART LINE DL50

New Tyre

Hankook premium technologies deliver improved tread block stiffness, high mileage and fuel efficiency.



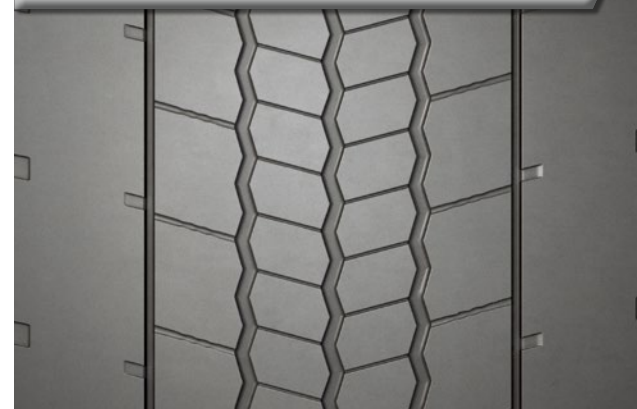
40% Wear

Regenerating tread features are revealed as the tyre wears. These features improve wet grip and traction even when the tyre is 40% worn.



70% Wear

When 70% worn, hidden grooves are revealed. These deliver improved wet grip and traction.

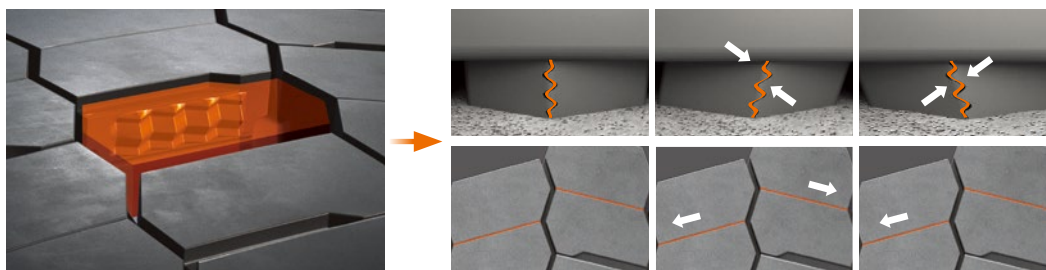


SMART LINE DL50



E 3-dimensional sipe

Full Depth 3D sipes maintain excellent mileage and traction during the whole tyre life by reinforcing and interlocking the tread blocks.



3D Sipe

Interlocking Sipes in vertical and horizontal directions.

Zigzag sipes

Applying full depth sipes help to maintain a binding force between blocks.

Controlled tearing and wearing

→ Reduce irregular wear.

Full depth sipes applied

→ Improving tractions and grip during whole tyre life.



Tyre Structure *SMaRT* **LINE** *DL50*



Belt structure

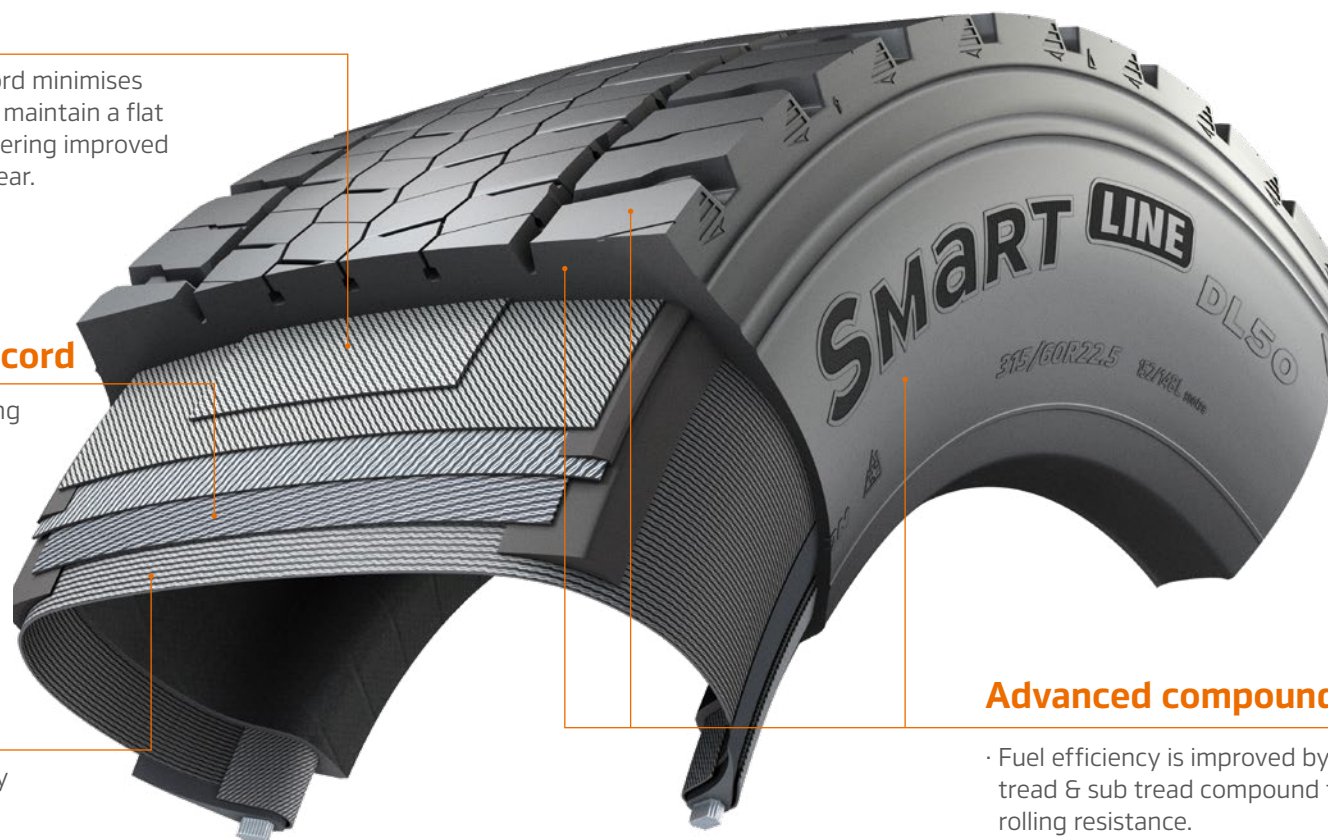
The use of high rigidity belt cord minimises the deformation of the belt to maintain a flat tread profile on the road, delivering improved grip and more regular tread wear.

High durability new cord

Enhanced durability by applying new steel cord.

Carcass structure

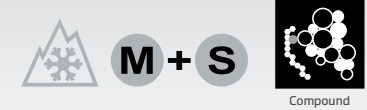
Enhanced casing endurance by using new carcass cord with improved fatigue resistance.



Advanced compound

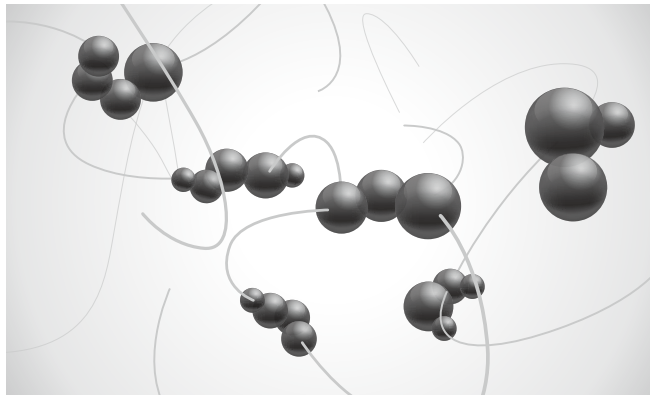
- Fuel efficiency is improved by applying an innovative tread & sub tread compound that reduces the tyre rolling resistance.
- Enhanced casing endurance by applying new sidewall compound with improved fatigue resistance and anti-crack performance.

Advanced Compounding Technology

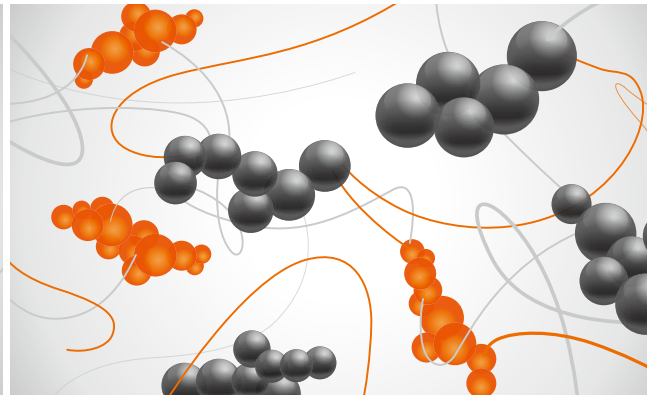


Improved compound performances by introducing carbon-silica dual filler system. This system improves the homogeneity of the rubber compound mixing. The benefit is fuel efficiency is increased by using this new polymer and silica filler. Fuel efficiency increased by using a new polymer and silica filler.

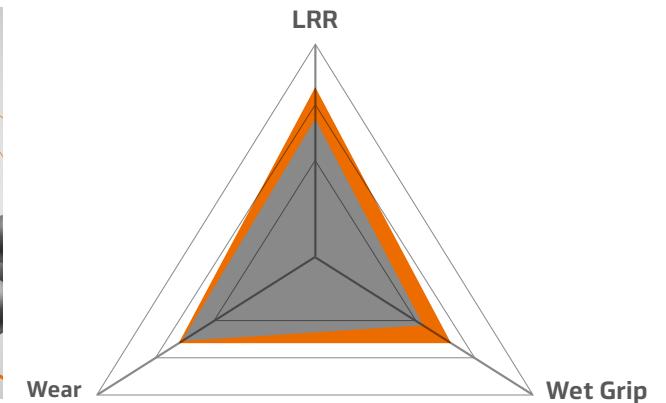
● Silica ● Carbon — New polymer



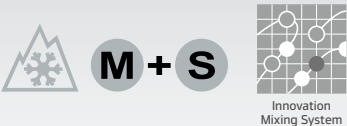
Rubber matrix with conventional system



Rubber matrix with dual filler system



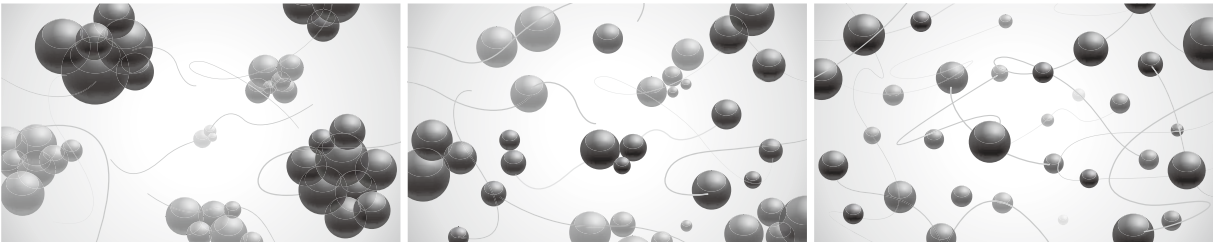
Innovative Mixing System



The Innovative Mixing System (IMS) minimises the disconnection of the polymer chain and oxidation. The carbon black reinforcement also has higher dispersion levels. These effects of IMS help strengthen the bonding force between carbon black and rubber for better strength of compound and lower heat generation.

The benefits of IMS are higher mileage and fuel efficiency.

— Connected polymer



1 Step

Larger molecular weight by minimising breakdown of polymer chain.

2 Step

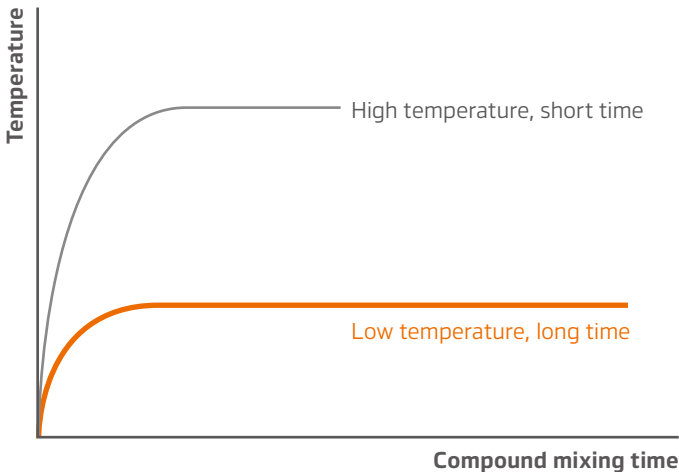
Increased strength and decreased heat generation.

Mixing

Higher mileage and improved fuel efficiency.

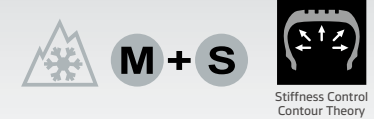
Distributed technology

Plasticisation technology



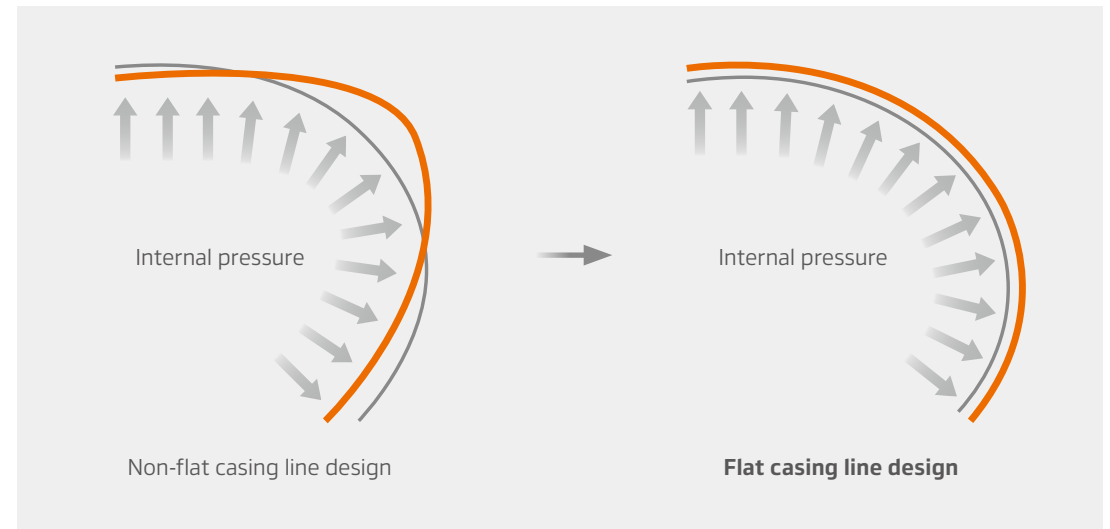
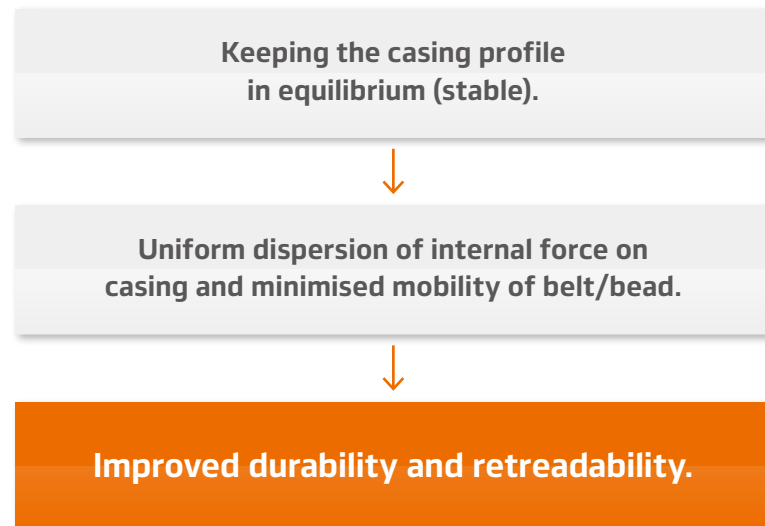
— Conventional system — IMS

Stiffness Control Contour Technology (SCCT)



SCCT is designed for constant profile deformation. If the casing profile cannot be kept constant, the internal force on the casing will be concentrated on a specific point (belt edge or turned up casing edge). In contrast, SCCT controls the dispersion of internal forces for better durability.

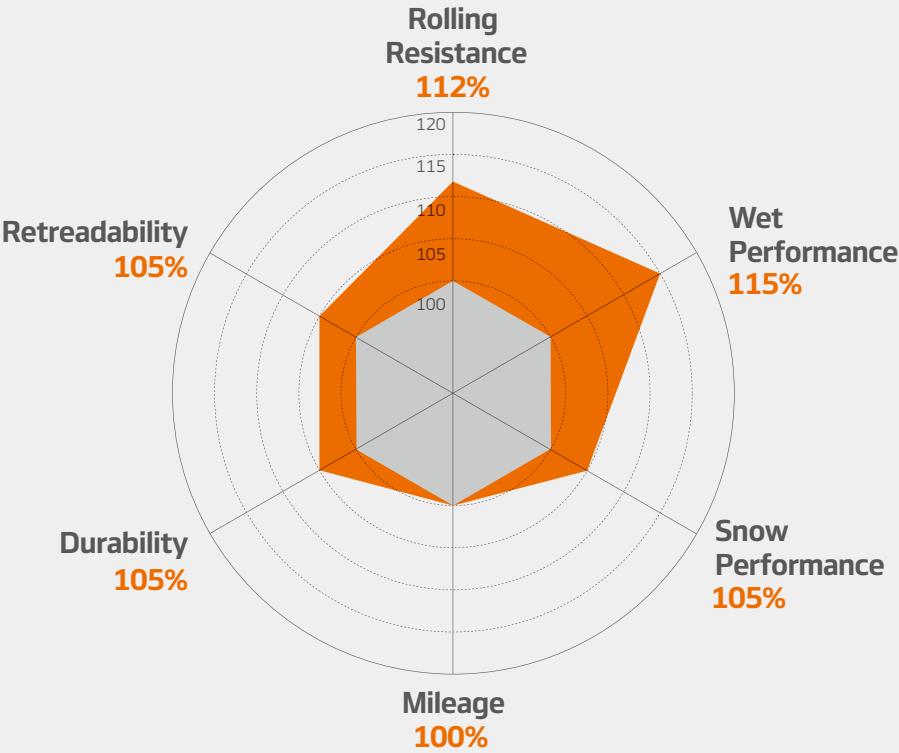
SCCT allows Hankook Tire to develop tyres by balancing optimum stiffness with contact shape. The benefits of this technology are improves performance, safety, cornering, braking and durability.



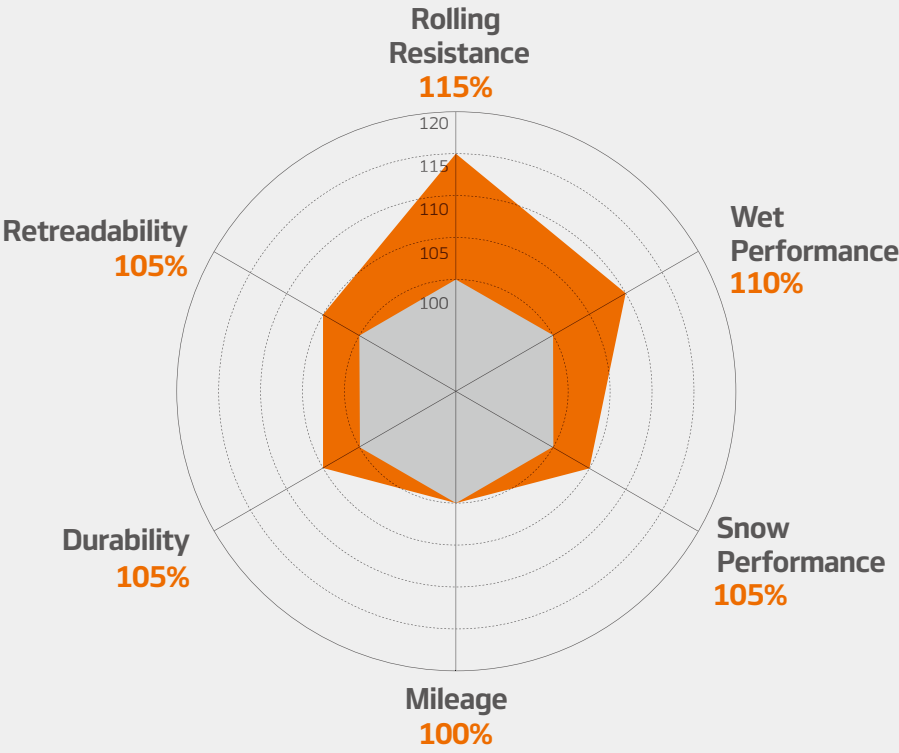
■ Before the deformation ■ After the deformation



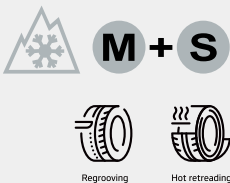
Conventional
SMART^{LINE}AL50



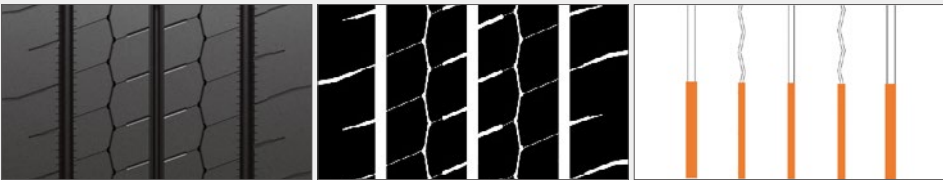
Conventional
SMART^{LINE}DL50



Hankook premium tyres are manufactured with robust carcass design and additional regroove tread rubber to deliver a second regrooved tyre life and a third retread life.



Regrooving patterns: *SMART LINE AL50*



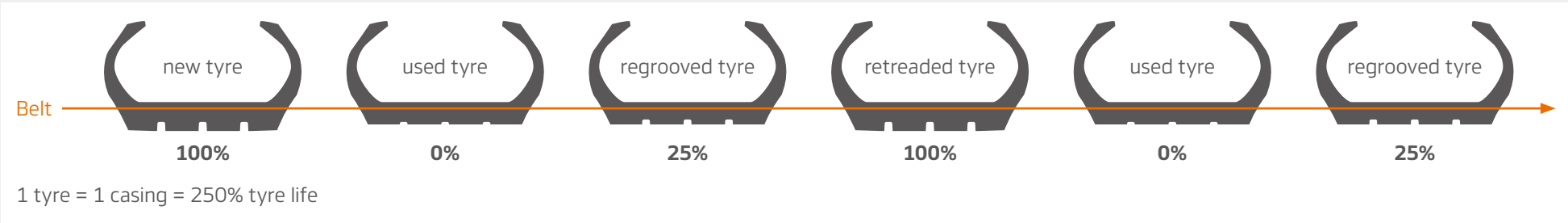
| Pattern | Size | Regrooving depth | Regrooving width |
|---------|-------------|------------------|------------------|
| AL50 | 295/60R22.5 | 3 | 6~8 |
| | 315/60R22.5 | 3 | 6~8 |
| | 315/70R22.5 | 3 | 7~9 |
| | 315/80R22.5 | 3 | 7~9 |
| | 355/50R22.5 | 3 | 7~9 |
| | 385/55R22.5 | 3 | 6~9 |

Regrooving patterns: *SMART LINE DL50*



| Pattern | Size | Regrooving depth | Regrooving width |
|---------|-------------|------------------|------------------|
| DL50 | 295/60R22.5 | 3 | 6~8 |
| | 315/60R22.5 | 3 | 6~8 |
| | 315/70R22.5 | 3 | 5~7 |
| | 315/80R22.5 | 3 | 5~7 |

Hankook SmartLife Solutions Premium tyres and casings that deliver up to 250% tyre life





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