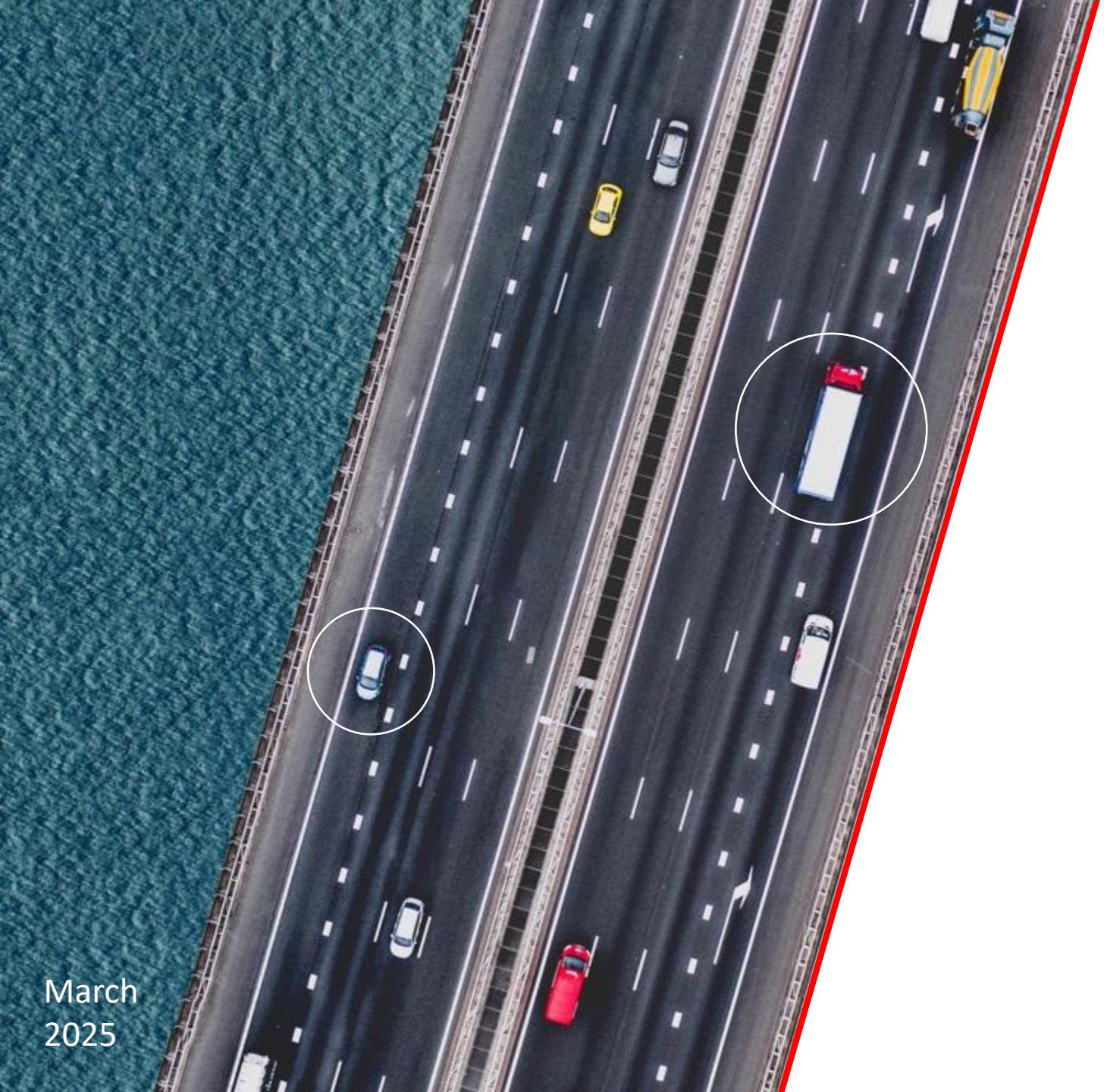


PASSENGER CAR TRAINING

BRIDGESTONE TECHNICAL DEPARTMENT

BRIDGESTONE

Solutions for your journey

March
2025

INTRODUCTION

BRIDGESTONE TECHNICAL DEPARTMENT

HOUSEKEEPING

- Fire exits
- Help or assistance
- Telephones
- Smoking
- Let’s go!

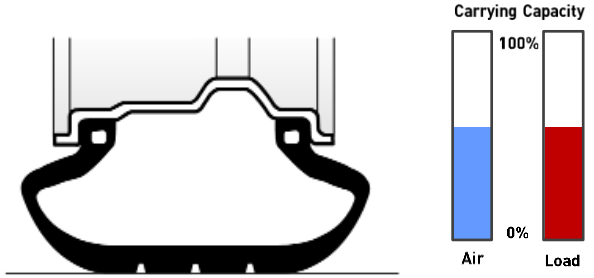
TODAY‘S AGENDA

- Introduction
- Tyre Basics
- Bridgestone Products
- Tyre Technology
- OE Markings and Correct Tyre Specifications

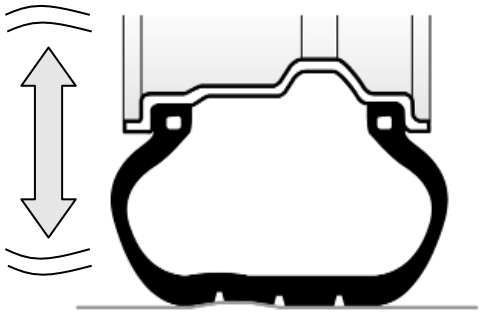
BRIDGESTONE
Solutions for your journey

TYRE BASICS

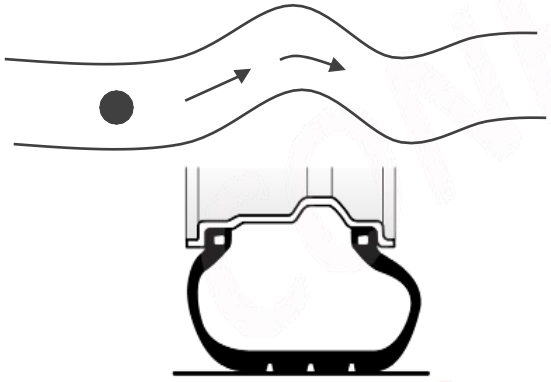
MAIN FUNCTION OF A TYRE



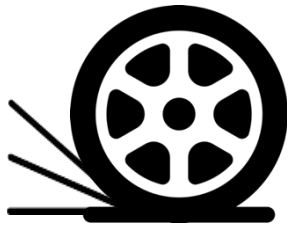
✓ To contain a volume of pressurised air to support the vehicle load



✓ To supplement the vehicles suspension absorbing shocks from the road surface



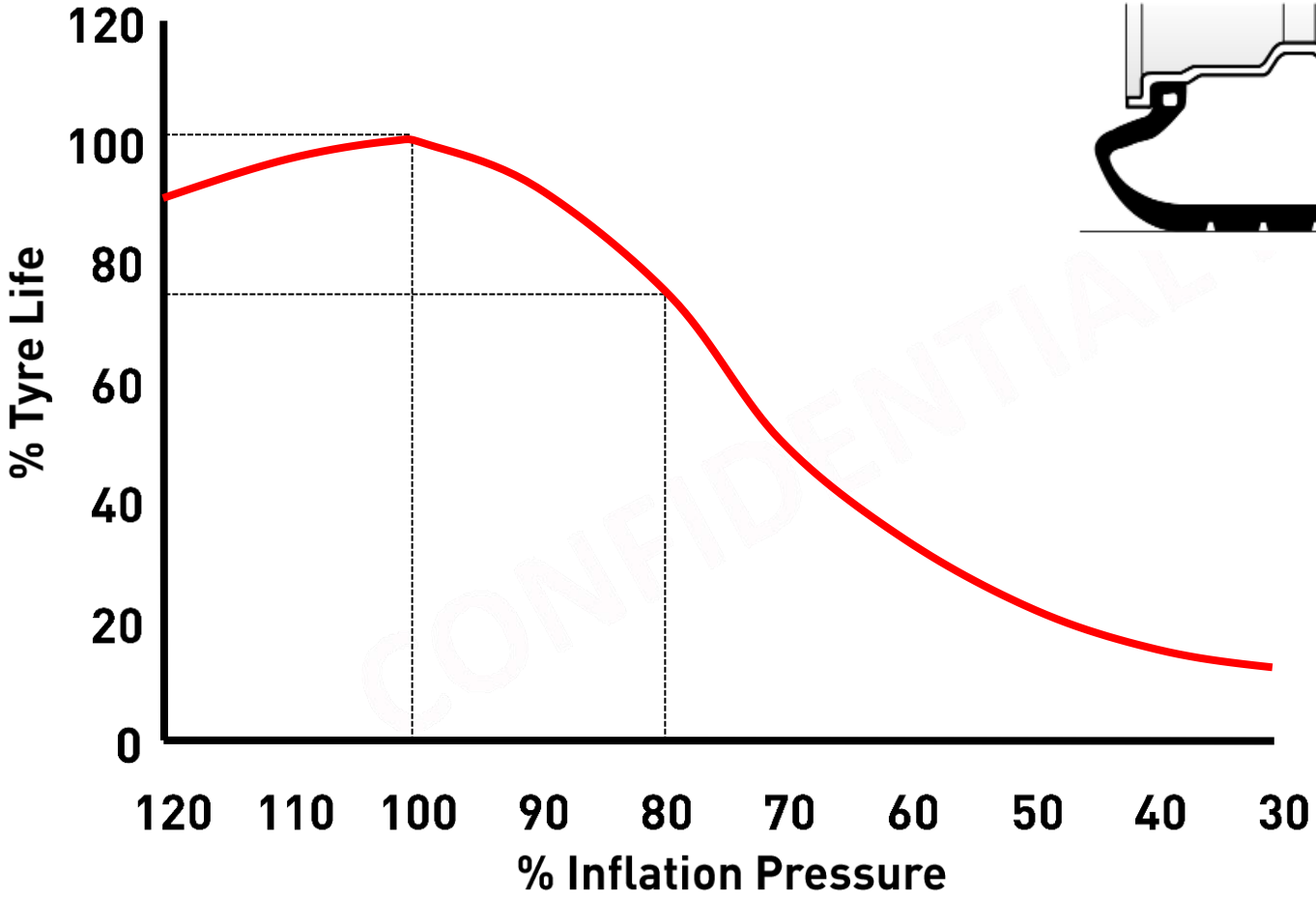
✓ To provide directional stability while changing or maintaining the direction of travel

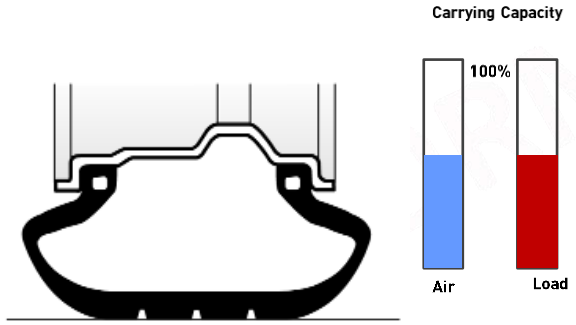


✓ To transmit traction and braking forces to the road surface

INFLATION PRESSURE vs TYRE LIFE

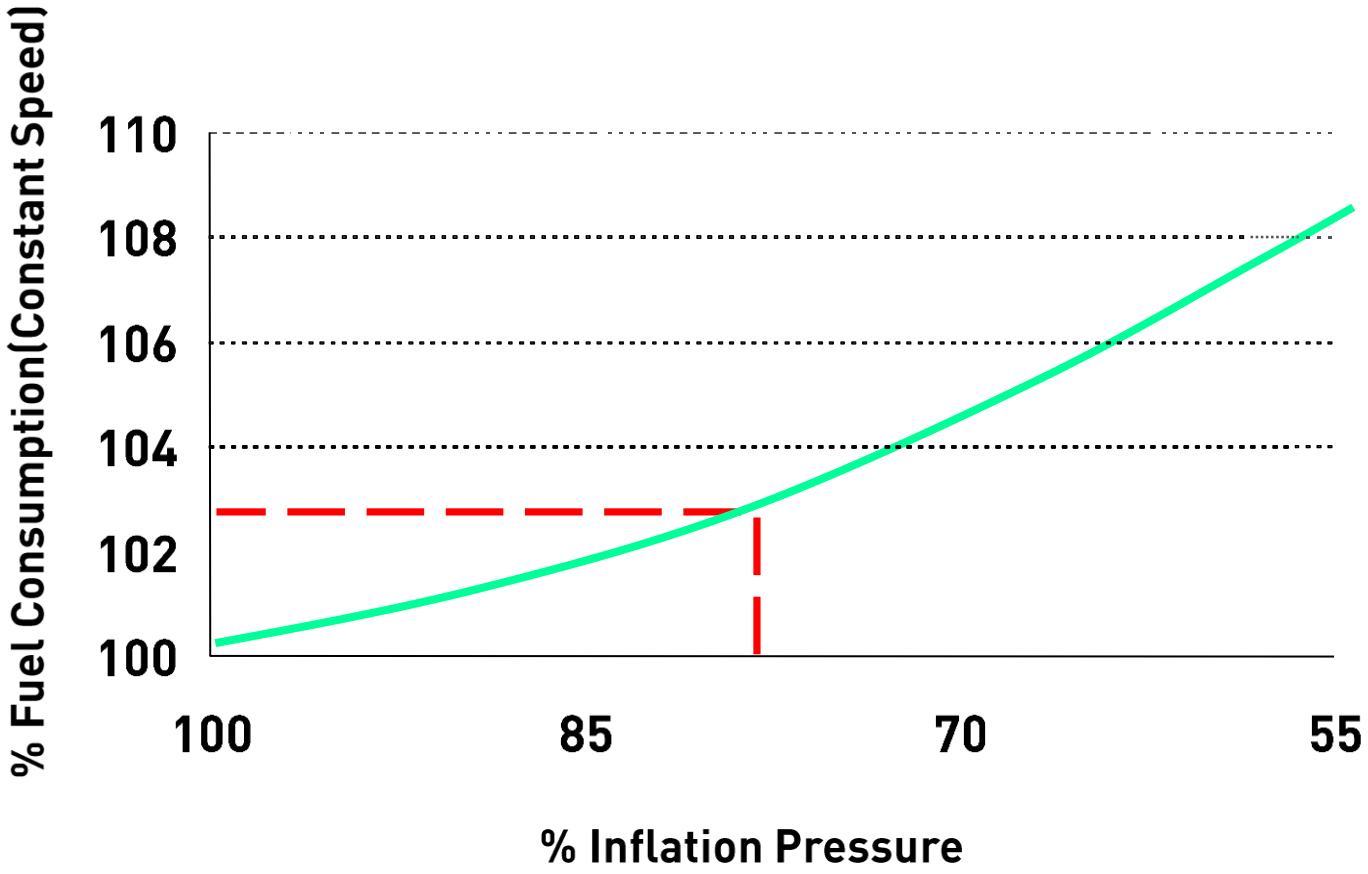
20% reduction in IP can impact tyre life negatively by 25%~30%





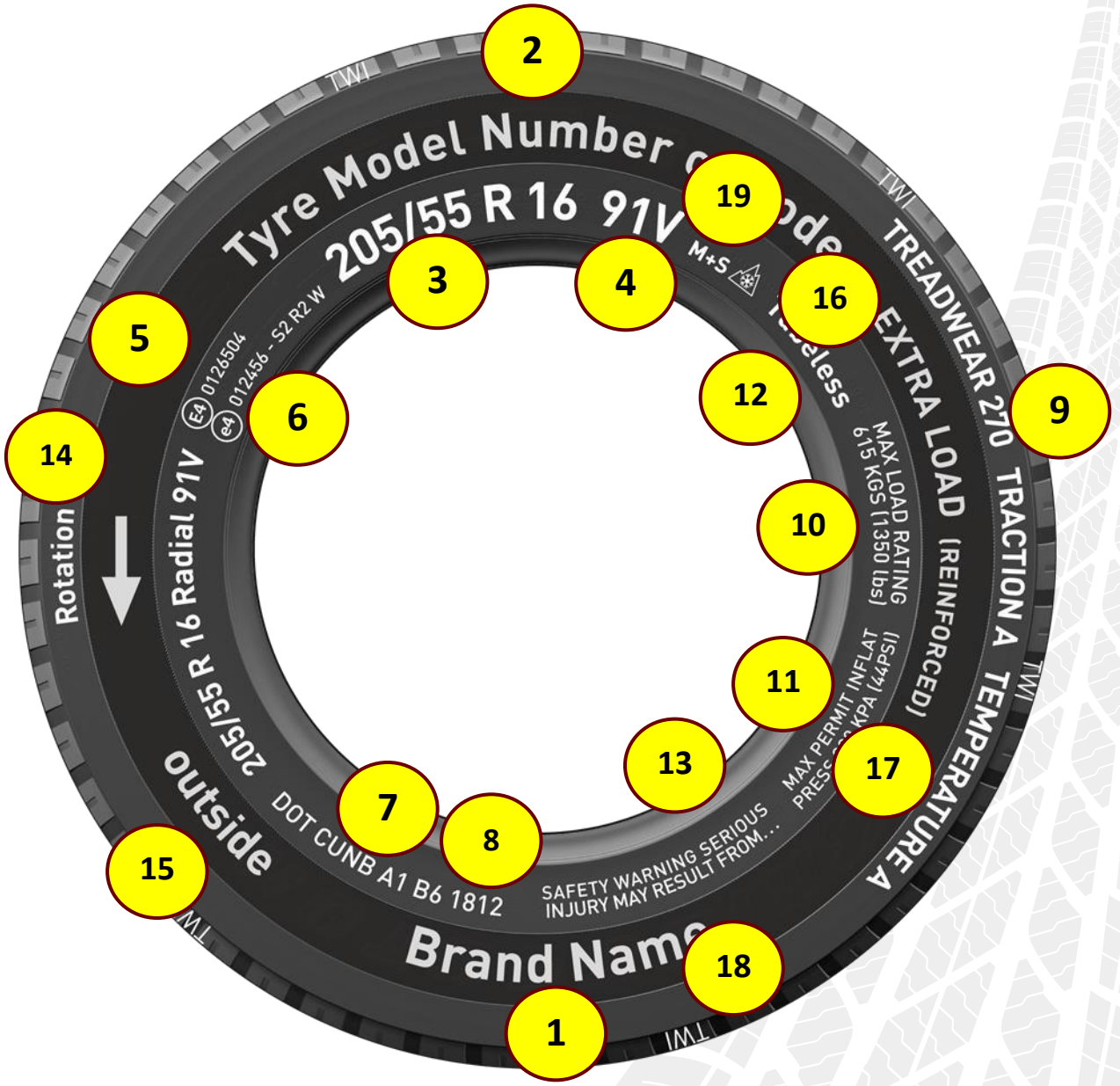
INFLATION PRESSURE vs FUEL CONSUMPTION

20% reduction in IP can impact fuel consumption negatively by 3%



SIDEWALLS MARKINGS - CAR

1. Manufacturer’s name or brand name
2. Model or pattern code
3. Tyre size, nominal section width (mm), height-to-width aspect ratio, rim diameter code
4. Service description (load index + speed symbol)
5. ECE R30 approval number
6. EEC R117-02 approval number
7. USA Dept of Transport (DOT) manufacturer’s code
8. Date of manufacture
9. USA UTQG grades
10. USA maximum tyre loading
11. USA maximum tyre inflation pressure
12. Denotes tubeless construction
13. USA safety warning
14. Direction of rotation (directional tyres only)
15. Outer (inner) sidewall (asymmetric tyres only)
16. Extra load: denotes higher load capacity than standard tyre
17. “Reinforced” is an alternative marking to “extra load”
18. TWI – Tread wear indicators
19. M+S/3PMSF or ICE symbol



WINTER MARKINGS

M+S, 3PMSF, Ice Grip

M + S

Mud and Snow

Based on the manufacturer's own statement, the M+S marking refers to the tyre's tread pattern, tread compound, or structure, which provides better grip and braking performance in mud and fresh or melting snow.

3PMSF Three Peak Mountain Snowflake

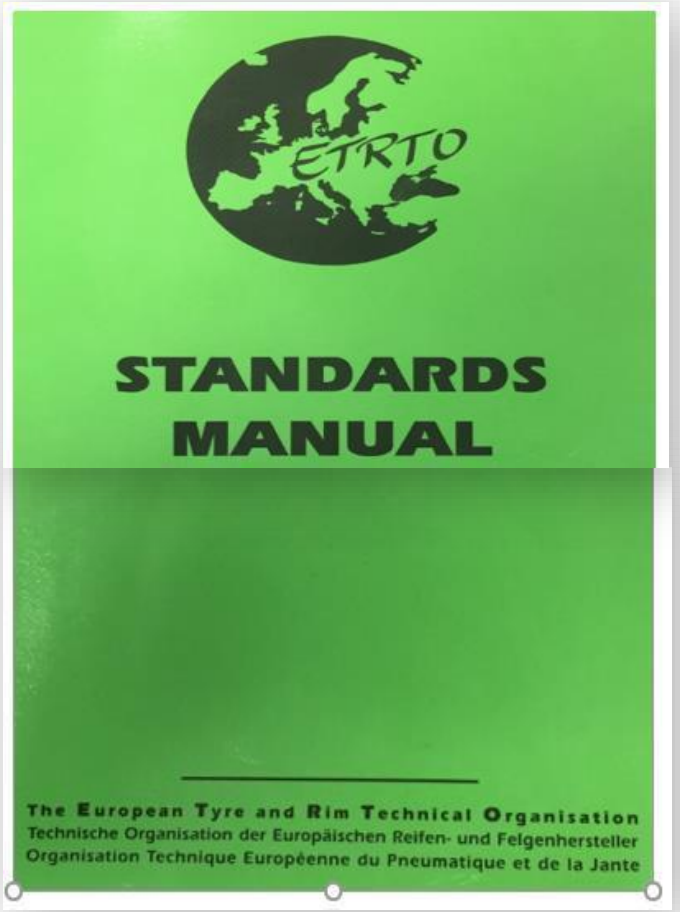
All our tyres carrying the Alpine marking have passed a snow acceleration test in winter conditions, as defined in the UNECE Regulation 117.02 which makes them suitable for winter use on snowy or icy roads.

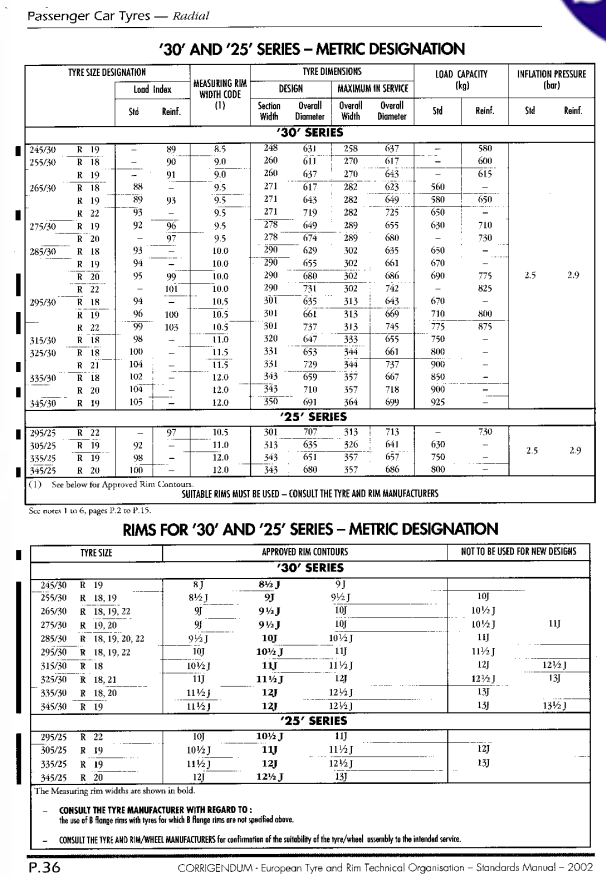
NEW 2021: ICE GRIP

The new ice grip symbol indicates whether a C1 tyre (passenger car tyre) meets the minimum values for the Ice Grip Index as specified in ISO Standard 19447.

ETRTO

European Tyre & Rim Technical Organisation





Passenger Car Tyres — *Radial*

'30' AND '25' SERIES – METRIC DESIGNATION

TYRE SIZE DESIGNATION		Load Index Std	Load Index Reinf.	MEASURING RIM WIDTH CODE (1)	TYRE DIMENSIONS DESIGN Section Width	DESIGN Overall Diameter	MAXIMUM IN SERVICE Overall Width	MAXIMUM IN SERVICE Overall Diameter	LOAD CAPACITY (kg) Std	LOAD CAPACITY (kg) Reinf.	INFLATION PRESSURE (bar) Std	INFLATION PRESSURE (bar) Reinf.
'30' SERIES												
245/30	R 19	–	89	8.5	248	631	258	637	–	580		
255/30	R 18	–	90	9.0	260	611	270	617	–	600		
	R 19	–	91	9.0	260	637	270	643	–	615		
265/30	R 18	88	–	9.5	271	617	282	623	560	–		
	R 19	89	93	9.5	271	643	282	649	580	650		
	R 22	93	–	9.5	271	719	282	725	650	–		
275/30	R 19	92	96	9.5	278	649	289	655	650	710		
	R 20	–	97	9.5	278	674	289	680	–	730		
285/30	R 18	93	–	10.0	290	629	302	635	650	–		
	R 19	94	–	10.0	290	655	302	661	670	–		
	R 20	95	99	10.0	290	680	302	686	690	775	2.5	2.9
	R 22	–	101	10.0	290	731	302	742	–	825		
295/30	R 18	94	–	10.5	301	635	313	643	670	–		
	R 19	96	100	10.5	301	661	313	669	710	800		
	R 22	99	103	10.5	301	737	313	745	775	875		
315/30	R 18	98	–	11.0	320	647	333	655	750	–		
325/30	R 18	100	–	11.5	331	653	344	661	800	–		
	R 21	104	–	11.5	331	729	344	737	900	–		
335/30	R 18	102	–	12.0	343	659	357	667	850	–		
	R 20	104	–	12.0	343	710	357	718	900	–		
345/30	R 19	105	–	12.0	350	691	364	699	925	–		
'25' SERIES												
295/25	R 22	–	97	10.5	301	707	313	713	–	750		
305/25	R 19	92	–	11.0	313	635	326	641	630	–	2.5	2.9
335/25	R 19	98	–	12.0	343	651	357	657	750	–		
345/25	R 20	100	–	12.0	343	680	357	686	800	–		

(1) See below for Approved Rim Contours.

SUITABLE RIMS MUST BE USED – CONSULT THE TYRE AND RIM MANUFACTURERS

See notes 1 to 6, pages P.2 to P.15.

RIMS FOR '30' AND '25' SERIES – METRIC DESIGNATION

TYRE SIZE	APPROVED RIM CONTOURS			NOT TO BE USED FOR NEW DESIGNS	
'30' SERIES					
245/30 R 19	8 J	**8½ J**	9 J		
255/30 R 18, 19	8½ J	**9J**	9½ J	10J	
265/30 R 18, 19, 22	9J	**9½ J**	10J	10½ J	
275/30 R 19, 20	9J	**9½ J**	10J	10½ J	11J
285/30 R 18, 19, 20, 22	9½ J	**10J**	10½ J	11J	
295/30 R 18, 19, 22	10J	**10½ J**	11J	11½ J	
315/30 R 18	10½ J	**11J**	11½ J	12J	12½ J
325/30 R 18, 21	11J	**11½ J**	12J	12½ J	13J
335/30 R 18, 20	11½ J	**12J**	12½ J	13J	
345/30 R 19	11½ J	**12J**	12½ J	13J	13½ J
'25' SERIES					
295/25 R 22	10J	**10½ J**	11J		
305/25 R 19	10½ J	**11J**	11½ J	12J	
335/25 R 19	11½ J	**12J**	12½ J	13J	
345/25 R 20	12J	**12½ J**	13J		

The Measuring rim widths are shown in bold.

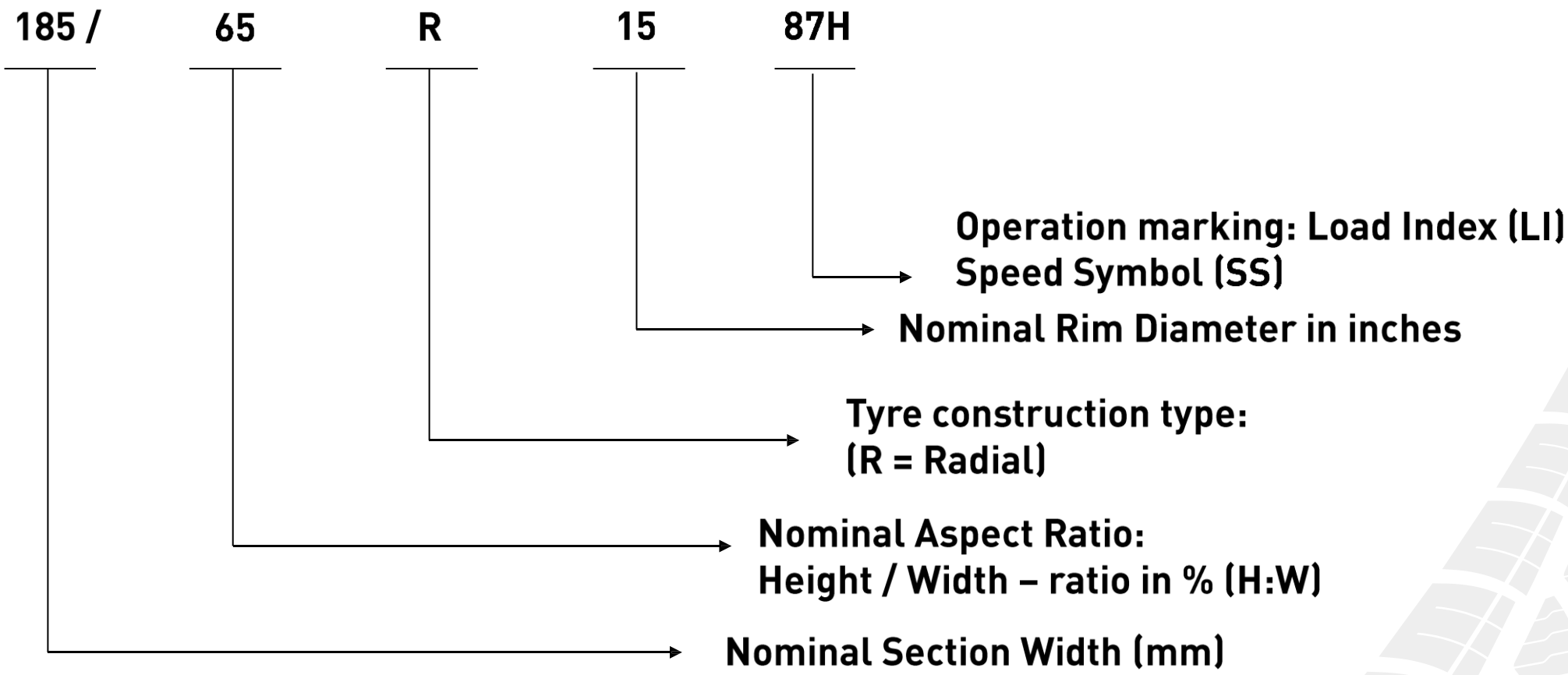
– **CONSULT THE TYRE MANUFACTURER WITH REGARD TO :**
The use of 5° flange rims with tyres for which 5° flange rims are not specified above.

– CONSULT THE TYRE AND RIM/WHEEL MANUFACTURERS for confirmation of the suitability of the tyre/wheel assembly to the intended service.

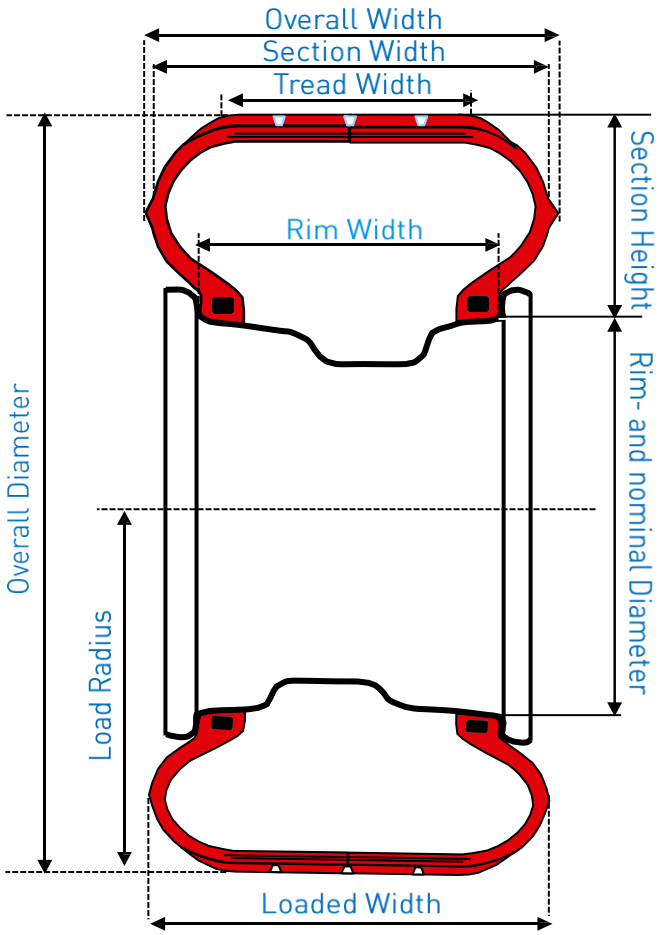
Other Non European Standards - JATMA / TRA

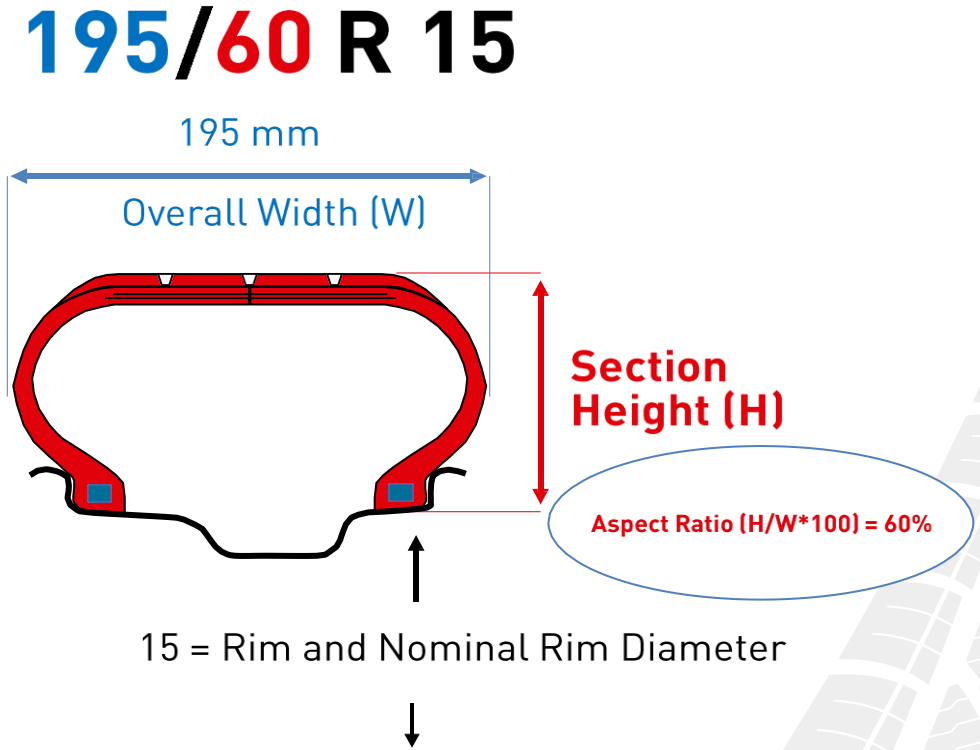
SIZE DESIGNATION

Tyre labelling as per ECE R 30



CAR TYRE DIMENSIONS





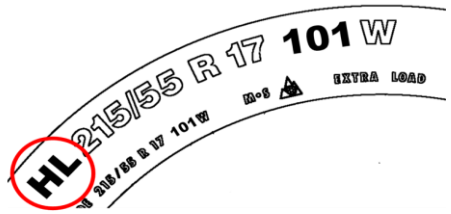
TYRE SIDEWALL LOAD INDEX (LI)

What does the Load Index mean?

LI	Kg	LI	Kg	LI	Kg	LI	Kg	LI	Kg
50	190	65	290	80	450	95	690	110	1060
51	195	66	300	81	462	96	710	111	1090
52	200	67	307	82	475	97	730	112	1120
53	206	68	315	83	487	98	750	113	1150
54	212	69	325	84	500	99	775	114	1180
55	218	70	335	85	515	100	800	115	1215
56	224	71	345	86	530	101	825	116	1250
57	230	72	355	87	545	102	850	117	1285
58	236	73	365	88	560	103	875	118	1320
59	243	74	375	89	580	104	900	119	1360
60	250	75	387	90	600	105	925	120	1400
61	257	76	400	91	615	106	950	121	1450
62	265	77	412	92	630	107	975	122	1500
63	272	78	425	93	650	108	1000	123	1550
64	280	79	437	94	670	109	1030	124	1600

LABELLING (“HIGH LOAD”)

ETRTO Standard for load capacity 2021



What is behind the ETRTO Standard?

High-Load tyres provide a higher load capacity, by keeping an equal reference pressure. The High-Load short form, HL, must be engraved laterally on to the tyre.

When did this standard start?

1st January 2021

Which dimensions are affected?

Currently, it is 34 dimensions which carry the HL labelling. These have been appearing in ETRTO since 2021.

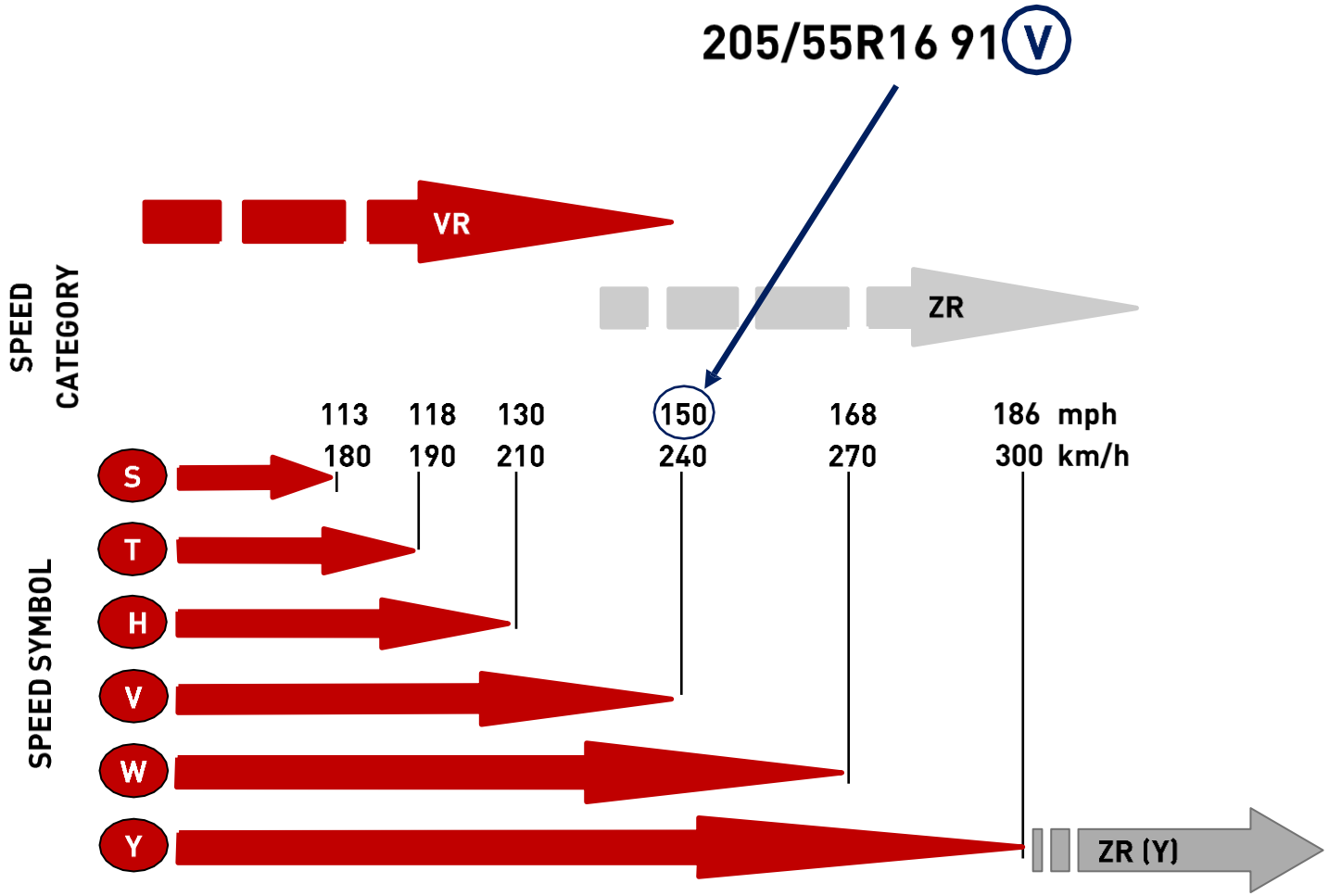
Which vehicles are suitable for HL tyres?

- EV vehicles
- Hybrids and e-cars
- ICE cars
- OEM’s when demanded

Will the XL and XXL tyres remain?

The XL+ tyres were the set standards in a test period from 2017, but from this point onwards the new HL standard will persist as the only defined standard.

TYRE SIDEWALL – SPEED SYMBOL (SS)



DOT NUMBER

Department of Transportation

All tyres must carry a DOT number to comply with North American (as well as those in some other markets) regulations. In practice, this means that **ALL Bridgestone tyres are DOT-marked**.

OLD DOT:

NEW DOT:

DOT	P	P	P	M	M	M	M	M	M	D	D	D	D

The optional code is a randomized number generated based on the protocol code within TCE

plant code	size code	optional code	manufacturing date

DATE OF MANUFACTURE BEFORE 2000

Date of Manufacture

Until 1990 – 1999:

3-digit number

Week 2-digit/ Year 1-digit

Ex.: 517

From 2000:

4-digit number

Week 2-digit/ Year 2-digit

Ex.: 5107

DATE OF MANUFACTURE -

Tyre Age

For passenger car tyres there is no legal age limit. Also tyres age at different rates dependent upon past storage and usage conditions. However, general RECOMMENDATION is as follows:

Ultra High Performance (UHP)

– **5 YEARS** from date of manufacture (DOM)

High Performance / Normal Performance
– **10 YEARS** from DOM

From 1st February 2021 Construction & Use Regulations do not allow tyres aged over 10 years old to be used on the front steered axles of HGV's, buses, coaches or all single wheels fitted to a minibus.

The change in the law only affects the front steer axle on all vehicles above 3500kgs and the rear axle of minibuses that are of a single wheel configuration.

TREAD PATTERN DESIGN

Main Pattern Types

Non Directional

Application:
City Car

Profile:
e.g. Ecopia EP150

Non Directional Recommendation:
No recommendation!

Directional

Application:
Medium Car / High Perf. (HP)

Profile:
e.g. A005

Directional recommendation:
Rotational Arrow

Asymmetrical

Application:
HP + Ultra HP

Profile:
e.g. Potenza S001

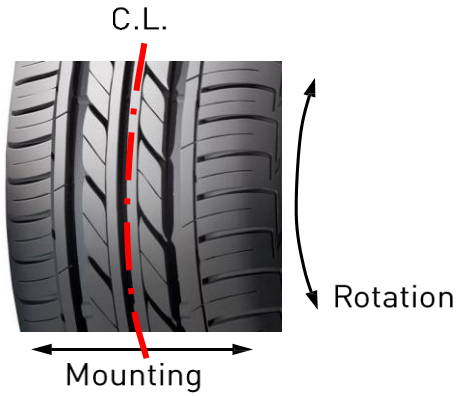
Asymmetrical recommendation:
INSIDE / OUTSIDE labelling

TREAD PATTERN DESIGN – NON-DIRECTIONAL

Strong Points:
- Versatile pattern
- Good overall performances
- Used in most applications from GU to UHP, PXR and 4x4

Advantage for the user:
- No rotating direction,
- No mounting position to be followed

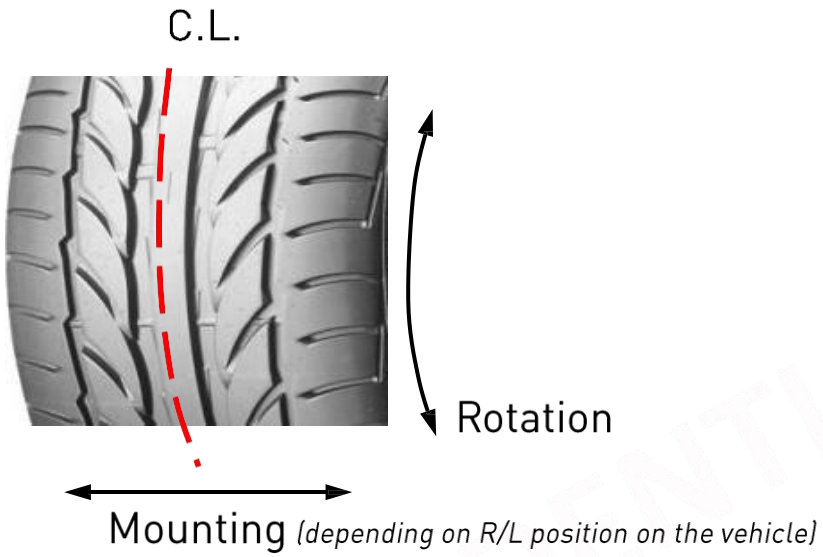
Weak Points:
- Not easy to make it attractive



Left half and right half are identical with respect to centre line (C.L.)

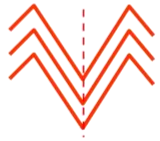
Pattern scheme:

TREAD PATTERN DESIGN – DIRECTIONAL



Left half and right half are symmetrical with respect to center line (C.L.)

Pattern scheme:



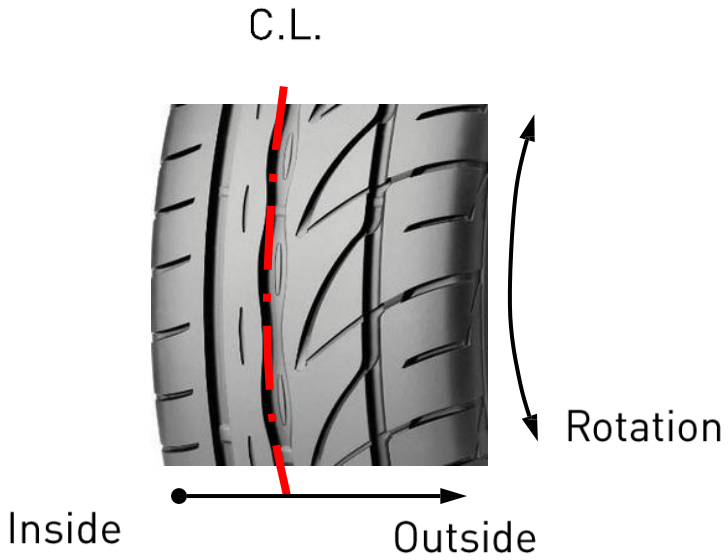
Strong Points:

- Aggressive looking pattern
- Best choice for hydroplaning performance

Weak Points:

- Reversing its rotation must be avoided – using the spare may result in wrong direction rotation
- Attention must be taken when mounting on the rim, depending on R/L position of the car
- Super slant lug patterns suffer from high noise and high heel-and-toe wear

TREAD PATTERN DESIGN – ASYMMETRICAL



Left half and right half are completely different, but with a non directional orientation of pattern

Pattern scheme:

Strong Points:

- Good overall performances
- Good-looking hi-tech tyre

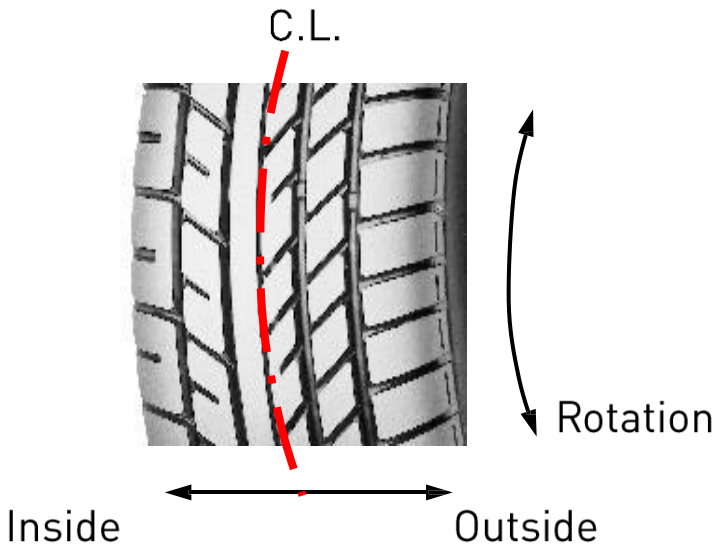
Advantage for the user:

- Non-Directional

Weak Points:

- Hydroplaning depends on rotation: it is slightly better in one direction than in the other.
- Attention must be taken when fitting the side marked “outside” must always face the outside of the vehicle

TREAD PATTERN DESIGN – COMPOSITE



Left side and right side are completely different, plus with a directional pattern

Pattern scheme:

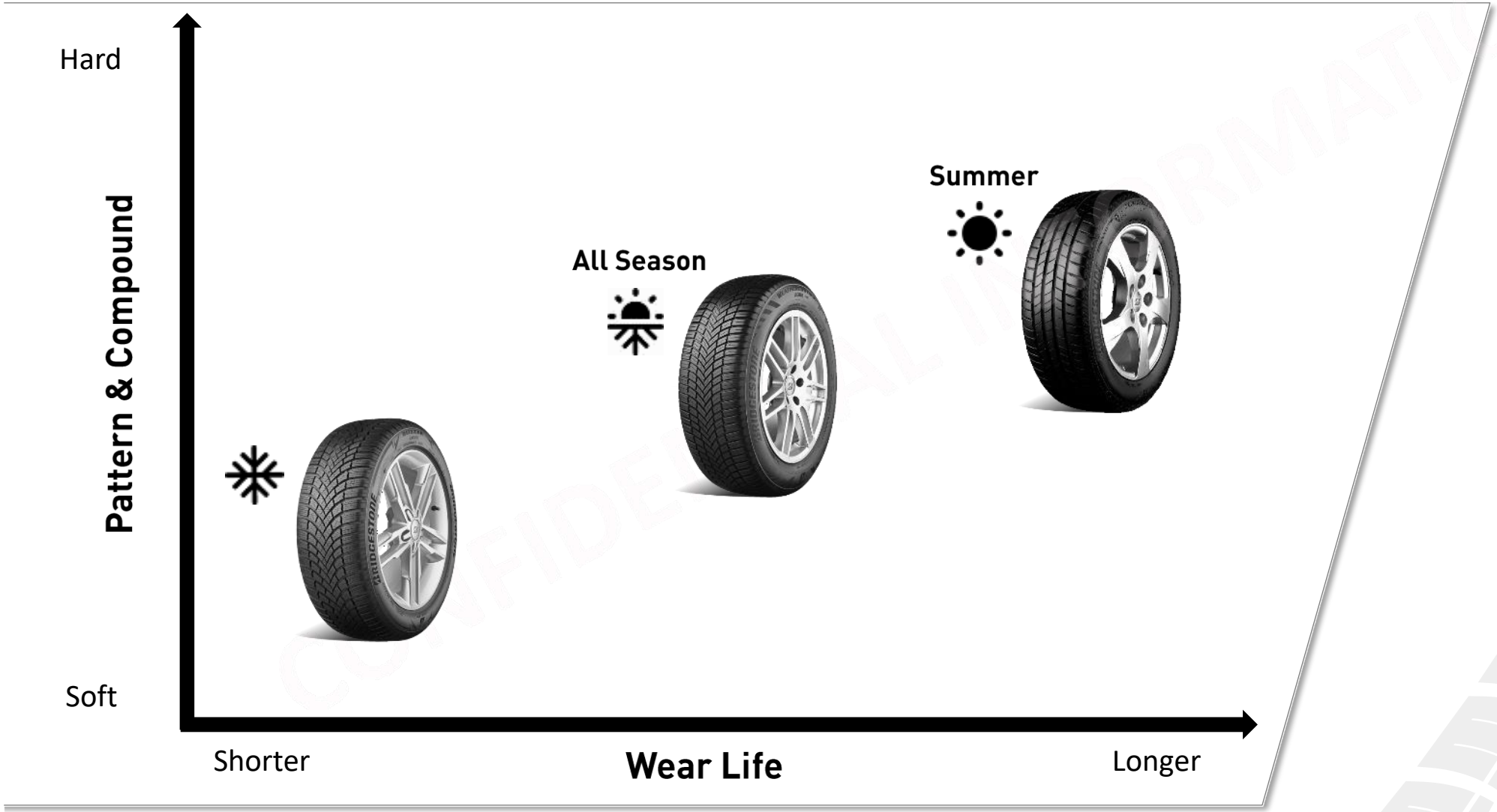
Strong Points:

- Best of both worlds, good-looking (hi-tech + sporty image)
- Reserved for top-class sports cars

Weak Points:

- Need to have “right” and “left” tyres (production, logistics etc.)
- Attention must be taken when left to right

TYRE WEAR PROFILE



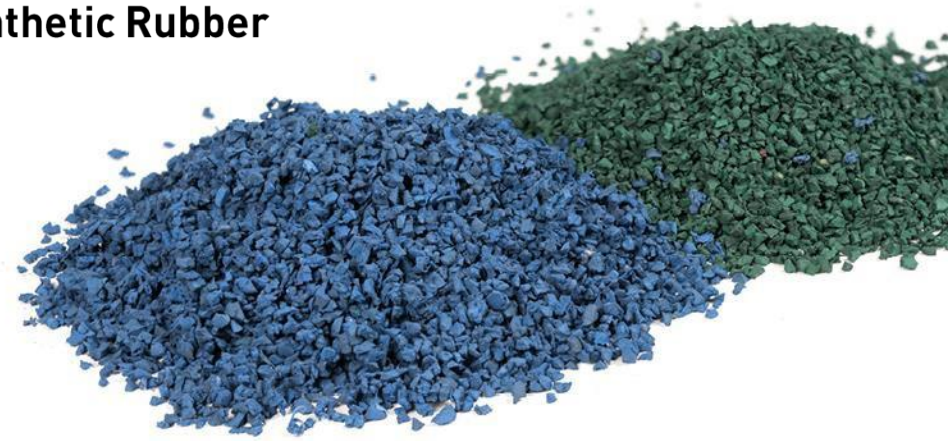
TYRE RUBBER COMPOUNDS

- The world production level of natural rubber is approximately **9 million metric tonnes per year**

- While the level of synthetic rubber produced worldwide is around **12 million metric tonnes per year**

NANO PRO-TECH

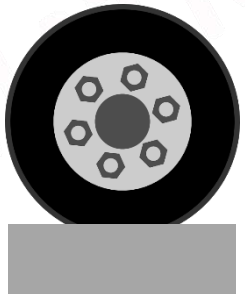
Synthetic Rubber



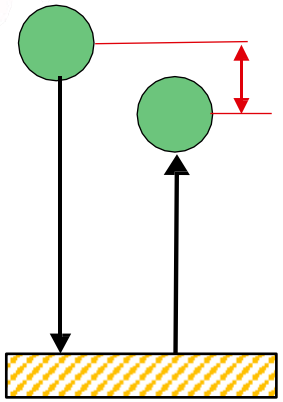
WHY SILICA IN TREAD COMPOUNDS

Carbon Black

Organic material

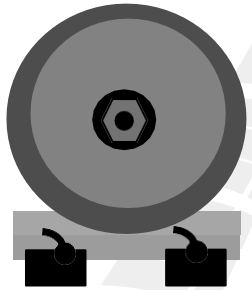


Higher compliance



Silica

Rock Quartz



Lower compliance

THE DESIGN CONSIDERATIONS

The tyre is a component

- Subjected to larger deformations than almost any known engineering component (many million times more)
- Must withstand wear and tear
- Should operate as quietly as possible
- Should be produced from environment-friendly materials
- Should be capable of being recycled
- Must operate in almost uncontrolled and uncontrollable conditions
- Requires a high manufacturing accuracy
- Contains both safety and styling elements

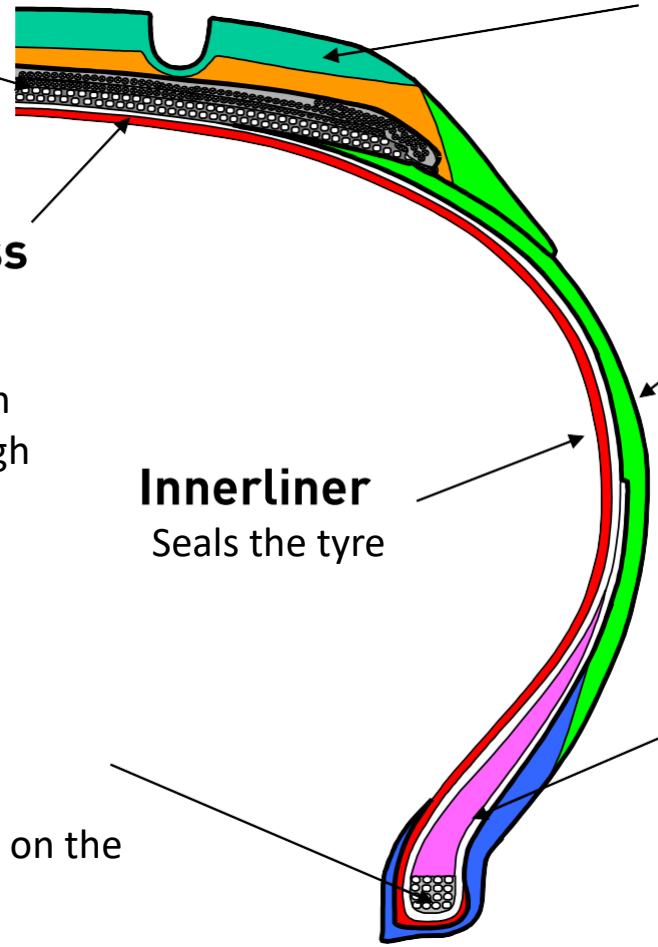
TYRE CONSTRUCTION CAR

Steel Cord –Belt layers

Optimise stability and rolling resistance

Textile Cord Carcass layers

Maintains the actual form of the tyre, even under high pressure



Tread

Provides good grip in wet and dry conditions

Sidewall

Protects the tyre from damage from the side

Innerliner

Seals the tyre

Bead Filler

Favours steering behaviour, stability and comfort

Bead Coil

Ensures a tight hold on the rim

NEW EU TYRE LABEL – MAY 2021

What is new?

Why

- Help consumers make informed decisions
- Boost innovation and further improve product quality

Lower CO_2 emissions & fuel saving

Increased safety

Less pass-by noise

Which tyres

When

All tyres produced as of MAY 1 **2021**

Tyres produced before

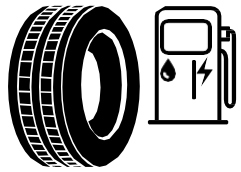
- Can carry new or the old label
- Remain compliant, no re-labelling
- Are uploaded in EPREL database

Source: https://www.europarl.europa.eu/news/en/headlines/society/20200423STO77731/tyre-pollution-lowering-car-emissions-with-new-eu-tyre-labels

TYRE LABEL

What do the label grades mean?

- Low rolling resistance tyres that are properly inflated can have as much as a **10% savings impact**.

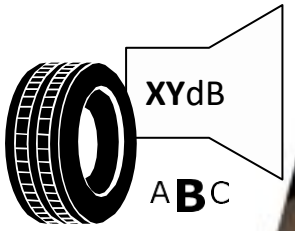


- The higher the energy class, the lower the rolling resistance.

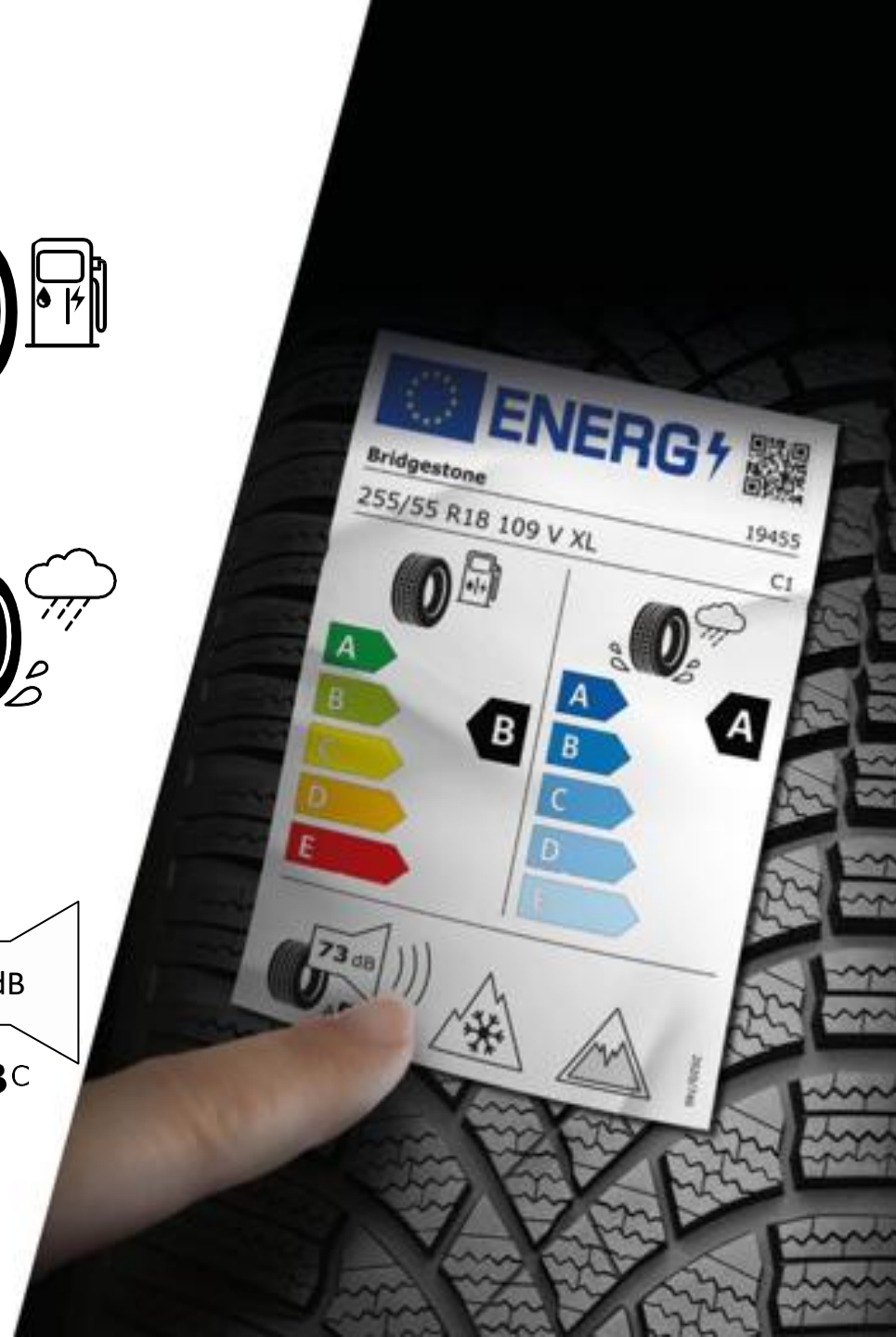
- The wet grip class is a critical safety feature, relating to how a tyre can **brake** on wet roads. rated from A (the shortest braking distance) to E (the longest braking distance).

- The difference in each category can mean an extra **3-6** metres in stopping distance.

- The external car noise refers to the noise produced by the tyre when a car passes by and is measured in dB (decibels).



- Noise classes range from A (less noise outside the vehicle) to C (more noise).



NEW EU TYRE LABEL

What will Bridgestone do to support you?

- We will upload all our tyres to the EPREL database
- Labels for all our tyres will be visible and can be downloaded from EPREL
- You will find a list of our products with URLs to the EPREL database on:
  - Tyrelink
  - Bridgestone website
- Help inform your customers:
  - Consumer-oriented video
  - Dedicated page in Bridgestone range materials
  - Bridgestone website

Bridgestone Products

WIDE RANGE OF PREMIUM PRODUCTS

EV-READY TYRES – SIMPLICTY IN A COMPLEX WORLD

Consumer expectations for tyres are unchanged, no matter what powers the vehicle

CONSUMER EXPECTATIONS

GRIP, WET BRAKING and **WEAR LIFE**

Same priorities, no matter the drive train

TECHNICAL REQUIREMENTS

Unique to EVs

IMPROVED ENERGY EFFICIENCY

Maximizing battery range

ENHANCED SAFETY

Accommodating the increased weight and torque of EVs

ENHANCED WEAR LIFE

REDUCED NOISE

Ensuring comfort alongside non-existent engine noise

We are engineering tyres that meet customer expectations **and** the unique technical requirements of EVs.

/ **Thanks to the ENLITEN tyre technology platform, Bridgestone is able to cover all the requirements of both EV and ICE mobility in one product.**

FOCUS AREA – ONE FOR ALL – EV-READY TYRES

Whether your customer is driving EV for an ICE Vehicle

Our product strategy with ENLITEN technology

ENLITEN package delivers

- Improved sustainability characteristics
- EV-readiness

No compromise on

- Safety
- Outstanding tyre performance

1 ENLITEN TECHNOLOGY FOR ALL

/ SAFETY

Safety will always be our number one priority on which we will not compromise. That is why we develop tyres in a way to ensure the highest levels of safety in dry & wet conditions.

/ PERFORMANCE

Our tyres offer outstanding performance in the focus area of each product, delivering on the criteria that matter most to the consumer.

/ SUSTAINABILITY

ENLITEN enables a lower environmental impact through CO2 emissions reduction, resource efficiency and material circularity.

RECOGNISE OUR EV-READY TYRES THROUGH THE ENLITEN MARKING ON THE SIDEWALL

TURANZA 6

ENLITEN

PRODUCT PROFILING - Bridgestone's Touring Tyre For **ALL** Drive-Trains

BEST-IN-CLASS WET PERFORMANCE

Best in wet cornering manoeuvres & outstanding straight-line performance in wet [1)]

SUPERIOR MILEAGE

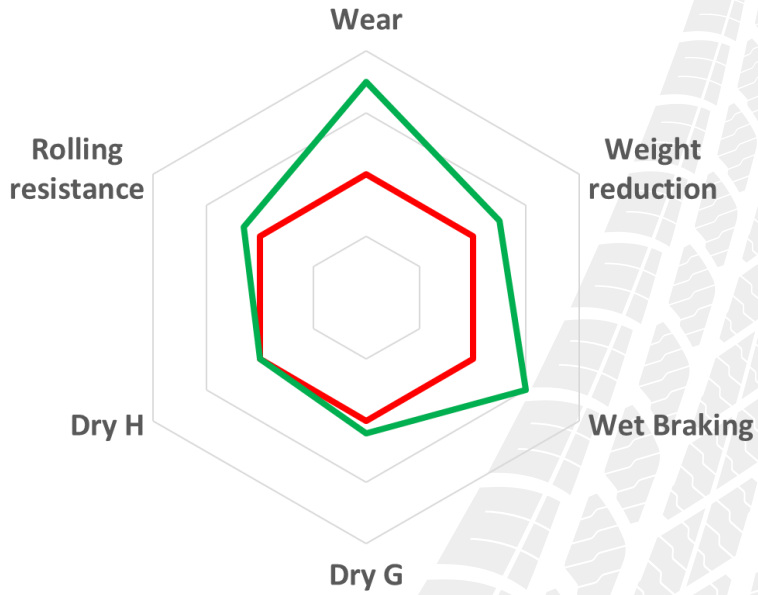
22%+ improvement vs. test winning predecessor [2)]

IMPROVED FUEL / ENERGY EFFICIENCY

-4% rolling resistance vs. predecessor [2)]

ELECTRIC VEHICLE READY

360° performance improvement



1) Tests carried out by TÜV SÜD on the request of Bridgestone in June 2022 at the facilities ATP Papenburg (Germany) & Bridgestone EUPG (Italy) for wet tests with BMW 520i & BMW 530d, on tyre size 245/45 R18 100Y XL. Turanza 6 compared to the performances of main competitors in the same segment: CONTINENTAL Premium Contact 6, MICHELIN Primacy 4+, PIRELLI Cinturato P7 (P7C2) Report No. [713263409]. AQUAPLANING LATERAL, rating: BRIDGESTONE Turanza 6 (100%) CONTINENTAL Premium Contact 6 (92%), MICHELIN Primacy 4+ (90.2%), PIRELLI Cinturato P7 (P7C2) (96.9%). AQUAPLANING STRAIGHT-LINE, rating: CONTINENTAL Premium Contact 6 (100.2%), BRIDGESTONE Turanza 6 (100%), PIRELLI Cinturato P7 (P7C2) (98.9%), MICHELIN Primacy 4+ (98.5%),. LATERAL WET GRIP, rating: BRIDGESTONE TURANZA 6 (100%) CONTINENTAL Premium Contact 6 (97%), MICHELIN Primacy 4+ (95.1%), PIRELLI Cinturato P7 (P7C2) (93.3%). WET BRAKING (Ø CALC. Stopping Distance [m] 80-20 km/h) rating: CONTINENTAL Premium Contact 6 (33), BRIDGESTONE Turanza 6 (33,7), PIRELLI Cinturato P7 (P7C2) (34.4), MICHELIN Primacy 4+ (36).

2) Based on internal benchmark Turanza 6 vs Turanza T005 (ref. size 205/55 R16)

INTRODUCING TURANZA ALL SEASON 6 ENLITEN

WITH DRIVEGUARD RUN-FLAT TECHNOLOGY

RFT

Safe, versatile and convenient throughout the seasons for everyday driving.

BRIDGESTONE
Solutions for your journey

TURANZA ALL SEASON 6

ENLITEN

TURANZA ALL SEASON 6 ENLITEN
with Driveguard Run-Flat Technology

- Premium year-round tyre + extended mobility
- 20 top selling sizes: 16 to 19"
- EV-ready thanks to ENLITEN Technology Technology

A PREMIUM YEAR-ROUND TYRE TYRE THAT OFFERS SAFETY AND AND CONVENIENCE FOR UNINTERRUPTED JOURNEYS JOURNEYS

PRODUCT STRENGTHS STRENGTHS

OUTSTANDING BRAKING PERFORMANCE ACROSS THE SEASONS[1]	Best-in-class wet braking and top 2 position for dry and snow.
EXCEPTIONAL SNOW PERFORMANCE[2]	Strong capability in snow traction, braking, cornering and handling.
SUPERIOR MILEAGE[3]	20% better than previous generation
WITH DRIVEGUARD TECHNOLOGY	Continue for up to 80km at a speed of speed of 80km/h after a puncture

TÜV SÜD

Tests carried out by TÜV SÜD on the request of Bridgestone in February 2023 at the facilities Bridgestone EUPG (Italy), Bridgestone SPG (Sweden) and ATP Papenburg (Germany) for tests with Volkswagen Golf VIII, on tyre size 205/55 R16 94V XL Turanza All Season 6 compared to the performances of main competitors in the same segment: Michelin CrossClimate 2, Continental AllSeasonContact and Goodyear Vector 4Season Gen3. TÜV SÜD Report No. 713281374.
1) Braking wet (80 km/h to 20 km/h, distance in metres): Bridgestone (27,2), Continental (28,3), Goodyear (28,9), Michelin (31,4). Braking dry (100 km/h to 0 km/h, distance in metres): Michelin (37,8), Bridgestone (38.6), Continental (41,3), Goodyear (42,3). Braking snow (40 km/h to 5 km/h, distance in metres), Michelin (17,1), Bridgestone (17,3), Goodyear (17,5), Continental (18,0).
2) Ranked second for snow performance (acceleration, braking, lateral grip, handling), average rating in %: Michelin (101,5%), Bridgestone (100%), Goodyear (96,4%), Continental (95,8%).
3) Based on the internal tests carried out on Bridgestone Turanza All Season 6 vs. Bridgestone Weather Control A005 EVO, ref. 205/55 R16.

BRIDGESTONE
Solutions for your journey

POTENZA SPORT

Product Profiling UHP Tyre

BEST CORNERING & STRAIGHT-LINE STABILITY [1]

BEST DRY BRAKING [2]

OUTSTANDING WET PERFORMANCE [3]

Maserati MC20

Lamborghini Huracan

Ferrari Roma

WIDTH	SERIES	RIM	SIZES / **≥ 17”**
205-315	30-55	17-22”	96 / **96**

17”	18”	19”	20”	21”	22”
6	22	27	26	11	4

WIDTH	SERIES	RIM	SIZES / **≥ 17”**
205-315	30-50	17-23”	44 / **44**

17”	18”	19”	20”	21”	22”
6	22	27	26	11	4

Chosen by OEMs

1) Maintain vehicle stability when travelling both in a straight line and through a curve. • 2) Shortest braking distance on a dry surface. • 3) Awarded EU Label Grade A for Wet Grip Index. • 4) Rank 1 of 9

*Tests carried out by TÜV SÜD on the request of Bridgestone in July-September 2020 at the facilities Bridgestone EUPG (Italy) for dry and wet tests with Audi S4 3.0 TFSI, on tyre size 245/40 R18. Potenza Sport compared to the performances of main competitors in the same segment: Continental PremiumContact 6, Michelin Pilot Sport 4, Goodyear Eagle F1 Asymmetric 5, Pirelli P Zero PZ4. Annex Report No. [713190691-PS]. **Straight stability**, rating: Bridgestone Potenza Sport (9.33), Continental Premium Contact 6 (9.00), Michelin Pilot Sport 4 (8.67), Goodyear Eagle F1 Asymmetric 5 (8.67), Pirelli P Zero PZ4 (8.56). **Cornering stability**, rating: Bridgestone Potenza Sport (9.21), Continental Premium Contact 6 (8.13), Michelin Pilot Sport 4 (8.67), Goodyear Eagle F1 Asymmetric 5 (8.33), Pirelli P Zero PZ4 (8.58). **Dry braking distance** (100 km/h to 0 km/h), metres : Bridgestone Potenza Sport (33.4), Continental Premium Contact 6 (35.4), Michelin Pilot Sport 4 (34.5), Goodyear Eagle F1 Asymmetric 5 (35.9), Pirelli P Zero PZ4 (34.8).

POTENZA RACE

Product Profiling – UUHP Tyre

BEST LAP TIME [1]

BEST DRY BRAKING [2]

OUTSTANDING TRACK LONGEVITY [3]

Maserati MC20 | Mercedes AMG A45s | Golf GTI | Cupra Leon | Lamborghini Huracan

WIDTH	SERIES	RIM	SIZES / ≥ 17”
225-305	30-45	17-20”	13 / **13**

17”	18”	19”	20”
1	5	4	3

WIDTH	SERIES	RIM	SIZES
235-305	30-35	19-20”	5 / 5

19”	20”
2	3

Chosen by OEMs

Tests carried out by TÜV SÜD on the request of Bridgestone in November 2021 and March 2022 at the facilities Bridgestone EUPG (Italy) and Nardo (Italy) for tests with Mercedes AMG A45s, on tyre size 245/35 R19 Potenza Race compared to the performances of main competitors in the same segment: Goodyear Eagle F1 Supersport R, Michelin Pilot Sport Cup 2 Connect, Pirelli P Zero Trofeo R. TÜV SÜD Report No. 713231330.

1) Lap time at Nardo circuit (6115 meter), average time over three laps in seconds: Bridgestone (2:35,39), Pirelli (2:37,62), Michelin (2:37,87), Goodyear (2:37,89)

2) Dry braking distance (100 km/h to 0 km/h) at Bridgestone EUPG, distance in metres: Bridgestone (32.3), Michelin (32.8), Pirelli (33.2), Goodyear (34.6)

3) Ranked second for track longevity at Nardo circuit, rating in %: Goodyear (120%), Bridgestone (100%), Pirelli (80%), Michelin (60%)

DUELER ALL TERRAIN

Product Profiling – Newer, more aggressive A/T tyre

AGGRESSIVE TYRE DESIGN

Better adaptation & reaction over different types of terrains

EXCELLENT WET AND DRY GRIP

High control in both straight & cornering maneuvers

IMPROVED MILEAGE [1)]

Up to 40% improvement vs. predecessors

WIDTH	SERIES	RIM	SIZES / ≥ 17”
195-295	55-80	15–19”	43

15”	16”	17”	18”	19”
9	13	11	9	1

WIDTH	SERIES	RIM	SIZES
235-285	40	19”	2 / **2**

Lamborghini Huracán Sterrato

19”
2

Chosen by OEMs

1) Based on internal benchmark Dueler All Terrain AT002 Dueler A/T001 (ref. size 265/65R17)

DURAVIS VAN

ENLITEN

BEST-IN-CLASS MILEAGE

Highest rated tyre for mileage vs. premium summer van tyres [1]

BEST-IN-CLASS DRY & WET BRAKING PERFORMANCES

Shortest braking distance on wet & dry roads vs. premium summer van tyres [2]

INCREASED FUEL/ENERGY EFFICIENCY

-21% rolling resistance vs. predecessor [3]

ELECTRIC VEHICLE READY: TYRE DESIGNED TO MEET THE SPECIFIC REQUIREMENTS OF EVS

WIDTH	SERIES	RIM	SIZES / ≥ 17”
185-235	55 - 75	15-17”	26 / **3**

15”	16”	17”
6	17	3

10PR
6

1)Tests carried out by TÜV SÜD on the request of Bridgestone in July – August 2022 with VW Caravelle 2.0 TDI, on tyre size 205/65 R16C Duravis Van compared to the performances of main competitors in the same segment: Michelin Agilis 3, Continental VanContact Ultra, Goodyear Ultragrip Cargo2. TÜV SÜD Report No. [713262236]. MILEAGE rating: BRIDGESTONE Duravis Van (100%), MICHELIN Agilis 3 (96.7%), CONTINENTAL VanContact Ultra (93.3%), GOODYEAR EfficientGrip Cargo2 (64.4%).
2)Tests carried out by TÜV SÜD on the request of Bridgestone in July - September 2022 at the facility of ATP Papenburg (D) for tests with VW Caravelle & Mercedes-Benz Sprinter, on tyre size 205/65 R16C Duravis Van compared to the performances of main competitors in the same segment: Continental VanContact Ultra, Goodyear Ultragrip Cargo2, Michelin Agilis 3, Pirelli Carrier. TÜV SÜD Report No. [713262224]. WET BRAKING [Stopping distance [m] from 80 to 20 km/h] rating: BRIDGESTONE Duravis Van (100%), GOODYEAR EfficientGrip Cargo2 (99.9%), PIRELLI Carrier (98.5%), CONTINENTAL VanContact Ultra (97%), MICHELIN Agilis 3 (95.3%). DRY BRAKING [Stopping distance [m] from 100 to 0 km/h] rating: BRIDGESTONE Duravis Van (100%), GOODYEAR EfficientGrip Cargo2 (98.7%), CONTINENTAL VanContact Ultra (98.1%), PIRELLI Carrier (97.4%) MICHELIN Agilis 3 (96.3%), 3)Based on internal benchmark Duravis Van vs Duravis R660 (ref. size 205/65 R16C)

DURAVIS ALL SEASON

Master your business' journey, whatever the season

BEST-IN-CLASS WET GRIP INDEX [1]

**WINTER READY,
FOR ALL YEAR USAGE [2]**

SIDEWALL PROTECTOR RIB [3]

WIDTH	SERIES	RIM	SIZES / *≥ 17"*	10PR KG
185 – 235	40 – 65	15" – 17"	26 / **3**	10

1) EU label grade "A". 2) Certified 3 Peak Mountain Snow Flake (3PMSF) and Mud + Snow markings to ensure usage in all weather conditions 3) To reduce down-time periods. 4) Calculated on Summer Best Segment Market

New, EV-ready A/S van product to launch in Q1 2025

BRIDGESTONE PREMIUM TYRE RANGE

Concise range with clear categories

	TOURING	PERFORMANCE		VAN
				
	TURANZA 6	POTENZA SPORT	POTENZA RACE	DURAVIS VAN
Inch	16 – 22″	17 – 22″	17 – 20″	15 – 17″
Replacement Sizes (≥ 17″)	136 (110)	96 (96)	13 (13)	26 (3)
Warranty Sizes (≥ 17″)	2 (2)	32 (32)	3 (3)	

	TOURING	4X4	VAN
			
	TURANZA ALL SEASON 6	DUELER A/T 002	DURAVIS ALL SEASON
Inch	16 – 21″	15 – 19″	15 – 17″
Replacement Sizes (≥ 17″)	85 (65)	43 (21)	26 (3)
Warranty Sizes (≥ 17″)	2 (1)	2 (2)	4

TYRE TECHNOLOGY

INNOVATIVE SOLUTIONS

BRIDGESTONE
Solutions for your journey

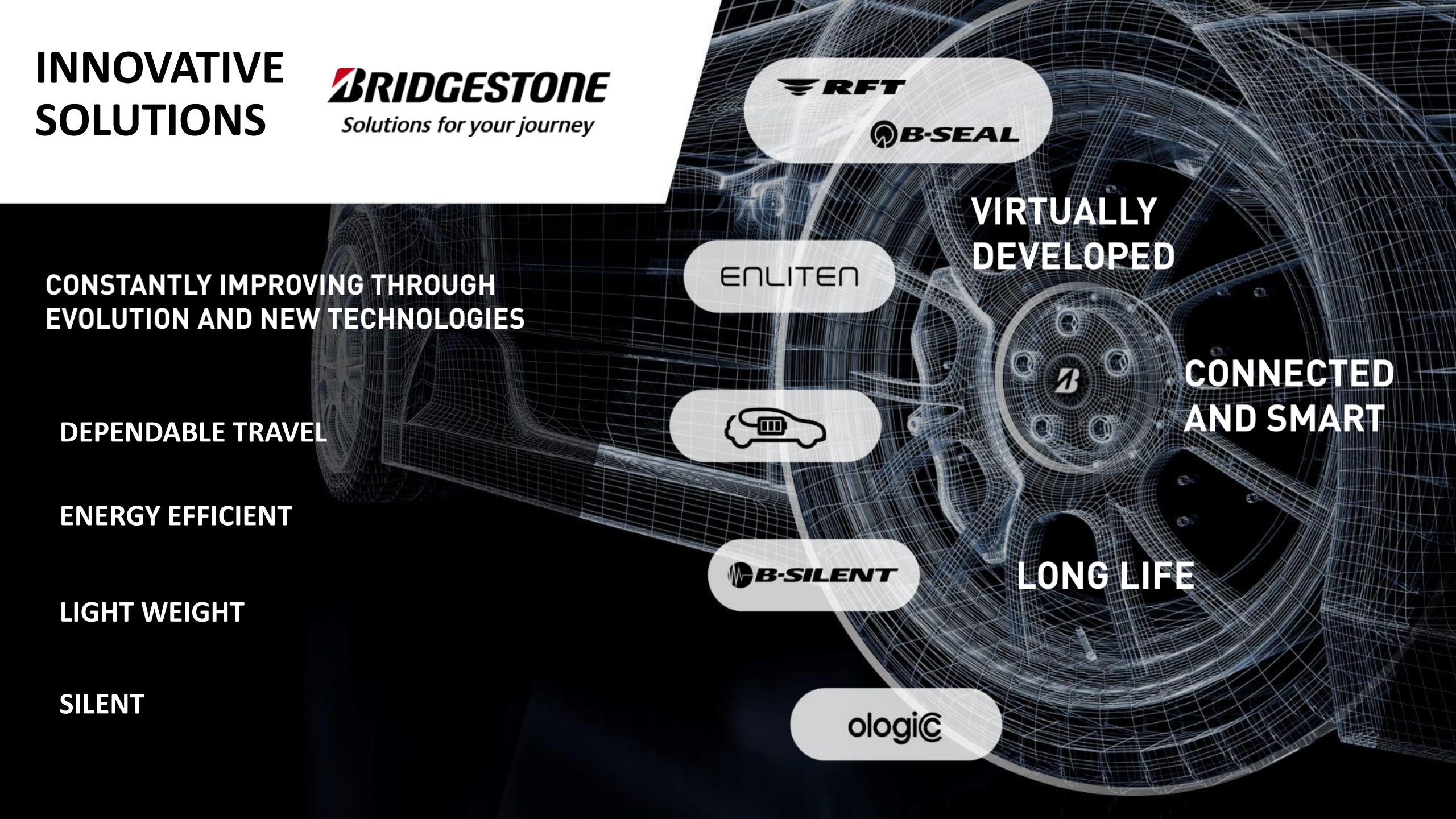
CONSTANTLY IMPROVING THROUGH EVOLUTION AND NEW TECHNOLOGIES

DEPENDABLE TRAVEL

ENERGY EFFICIENT

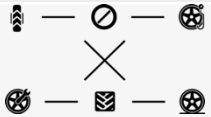
LIGHT WEIGHT

SILENT



PIONEER WORK FOR FUTURE TYRES

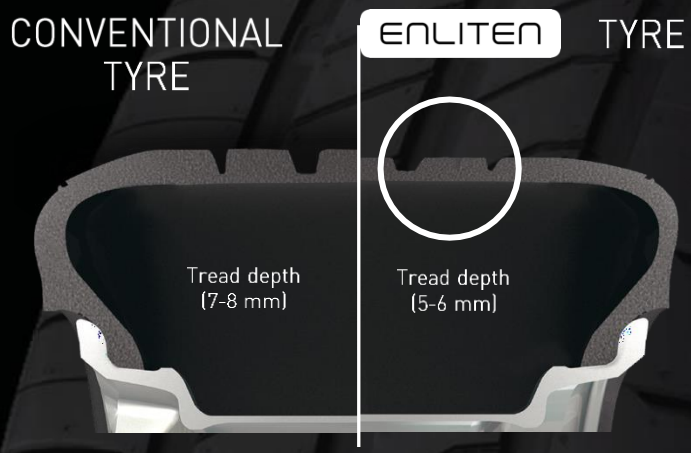
Which advantages do the technologies provide?

Advantages	Bridgestone Tyres					
	DRIVEGUARD	RFT	B-SEAL	ENLITEN	ologic	B-SILENT
						
Range				Lower rolling resistance	Lower rolling resistance, lower air resistance	
Reducing Vehicle Load	No need for spare tyre	No need for spare tyre	No need for Spare Tyre	Lower vehicle load		
Space Saving	No need for spare tyre	No need for spare tyre	No need for spare tyre			
Ongoing Mobility	Up to 50 miles at max. 50 mph	Up to 50 miles at max. 50 mph	Continuous driving possible			
Noise Reduction						Reduction of cavity resonance noise
Original Equipment Tyres		OEM	OEM	OEM	OEM	OEM

Turanza 6 Enlighten does not always deploy light weight technology in all tyre specification (e.g. case by case)

ENLITEN-Technology

Lightweight Tyre Technology



ENLITEN

The advanced, environmentally friendly ENLIGHTEN lightweight tyre technology provides significantly lower rolling resistance and improved wear performance through reduced weight and a newly developed tread design.

In addition to saving resources, CO2 emissions and fuel, it offers an excellent driving experience without compromising on safety or mileage.

FUEL EFFICIENCY [1) 3)]

Reduced rolling resistance of up to 30% compared to conventional Bridgestone summer tyres.

WEAR LIFE [1) 4)]

Mileage comparable to a conventional Bridgestone summer tyre despite reduced tread depth.

COMPETITIVE LABEL GRADES [1) 5)]

ENLITEN tyres are awarded class “A” in wet grip and rolling resistance.

1) Based on Bridgestone internal data comparing Bridgestone premium summer tyres with and without ENLIGHTEN Technology in the same tyre size [225/40R1892YXL]. 2) The weight reduction equates to up to 2 kg fewer raw material resources required to produce every tyre. 3) Reduced rolling resistance of up to 30% versus conventional Bridgestone summer tyres. 4) Tyres with ENLIGHTEN Technology are able to achieve the same mileage as conventional Bridgestone summer tyres. Tyre life depends on driving style, tyre inflation pressure, tyre and vehicle maintenance, weather condition etc. 5) ENLIGHTEN tyres awarded A grade for wet grip or rolling resistance. Full ENLIGHTEN tyres awarded A grade for wet grip B for rolling resistance or B for wet grip, A for rolling resistance.

BRIDGESTONE PREMIUM TYRES WITH ENLITEN TECHNOLOGY

ENLITEN
1st Generation – Original Equipment (OE)

CONVENTIONAL TYRE | ENLITEN TYRE

1st Generation - Original Equipment (OE)

ENLITEN lightweight tyre technology provides significantly lower rolling resistance and improved wear performance through reduced weight and a newly developed tread design. OTD <6.0mm: Recommended RTD 1.6~1.8mm. Note: Technology can be found in some of the products listed below.


TURANZA T001 ECO


TURANZA ECO


POTENZA S005


POTENZA SPORT

ENLITEN

2nd Generation – Original Equipment and Replacement

2nd Generation – OE & Replacement

BEST-IN-CLASS WET PERFORMANCE
Best in wet cornering manoeuvres & outstanding straight-line performance in wet

SUPERIOR MILEAGE
22%+ improvement vs. T005

IMPROVED FUEL / ENERGY EFFICIENCY
-4% rolling resistance vs. T005

Looking forward to the future, then next generation ENLITEN technology package & process enhances Bridgestone products towards an even more sustainable future. Enliten for the 21st Century has developed further, enhancing mileage and reducing further C02 emissions. OTD >6.0mm: Recommended RTD 3.0mm

BRIDGESTONE
TURANZA 6

NEW ENLITEN – THE FUTURE

Newly designed pattern and Cavity shape
- Improved Wear/Braking/Handing

RRC WEAR WET WEIGHT

LRR Skim

RRC

New Tread Ply Reinforcement
- Light and Stiffer
- Newly introduced Layout

RRC WEIGHT

New Tread Ply
- Thinner gauge / Lighter weight

RRC WEIGHT

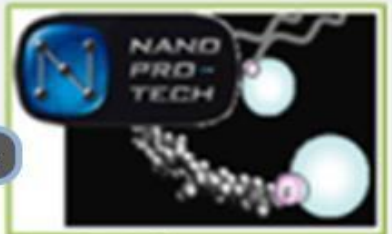
New Liner
- High Air Impermeability

RRC WEIGHT

New 3D Sipe

WEAR

New Compound
- Improved Wear/Wet improved



RRC WEAR WET

New Carcass Ply
- Lighter weight / High tensile

RRC WEIGHT

New sidewall gauge distribution

RRC WEIGHT

New Bead Reinforcement

RRC WEIGHT

New Bead Bundle construction

WEIGHT

RFT – RUN-FLAT TECHNOLOGY TYRES

Bridgestone offer 3 types of Run-Flat Technology Tyres

RFT

★ Marked (BMW)

All Run-Flat tyres for BMW will also have RSC (Run-Flat System Components) marked clearly on the sidewall.

MO Extended (Mercedes Benz)

Mercedes Benz Extended Mobility tyres will be marked 'MOE' – (Mercedes Only Extended Mobility).

Our EXTENDED MOBILITY TYRE (EMT) Tyre...

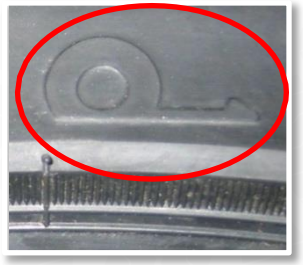
DRIVEGUARD™

Launched as a product brand.

Today as a technology option in our main profiles.

...and the True Run-Flat Tyre

with RF in the size description (245/55RF18) + Snail markings



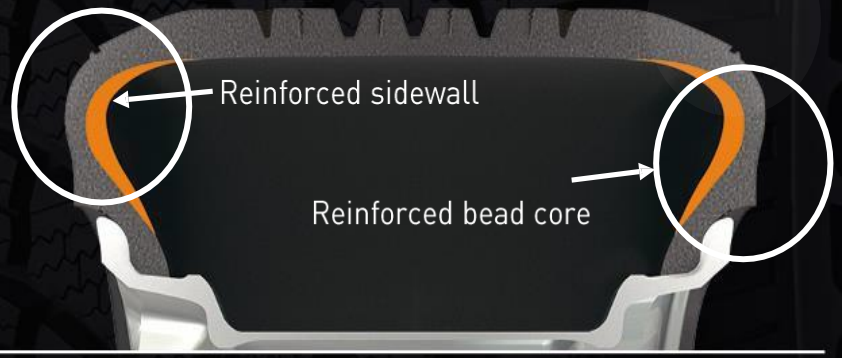
RFT – RUN-FLAT TECHNOLOGY TYRE

Which advantages do the technologies provide?

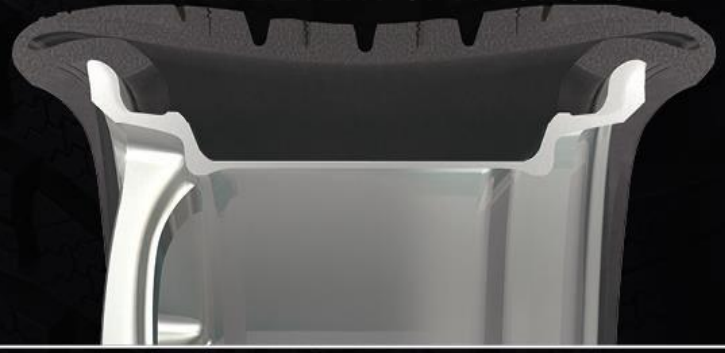
RFT

Run-Flat Technology provides control over the vehicle even in the event of a sudden drop in tyre pressure, and allowing the vehicle to continue driving safely

Run-Flat tyres are individually developed with the vehicle manufacturers and adapted to the vehicle's requirements



CONVENTIONAL TYRE
IN THE EVENT OF A PUNCTURE



- **Increased safety and control in the event of a puncture**
- **No immediate tyre change required in the event of a puncture**
- **Latest generation of RFT offers comparable ride comfort to conventional tyres**

TRUE RUN-FLAT TYRE

Run-Flat Tyres: RF – Marking with snail symbol

According to Directive ECE No. 30 / Annex 14 (as of 18 January 2006), tyre manufacturers are given the option of adding the following markings to the sidewall labelling of their run-flat tyres:

A "snail" symbol according to ISO 16992.

Additional addition of the size designation with an "F" after the design code
e.g. 225/45RF17, or 245/35ZRF20

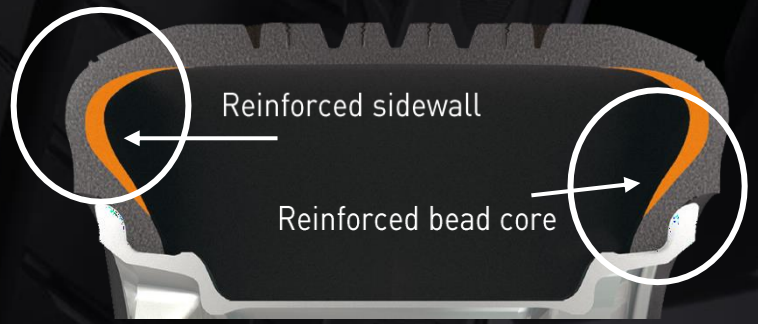
RF

These non-separable additional markings indicate that the tyre has passed ISO test 16992, and thus meets the minimum emergency running characteristics of 80 km at 80 km/h ("80/80") under the prescribed operating conditions or 50 miles @ 50mph.

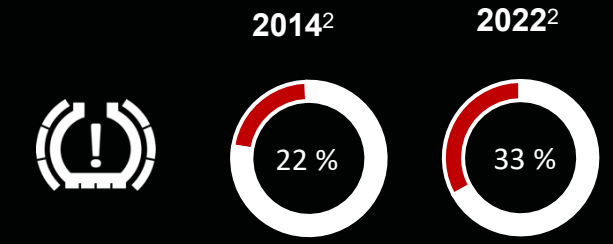
EXTENDED MOBILITY TYRE: DRIVEGUARD TECHNOLOGY

In the event of a puncture, continue driving up to 50 miles at max 50mph

DRIVEGUARD



Developed for the replacement market, the revolutionary DriveGuard Run-Flat Technology[1] provides increased safety and control in the event of a puncture, while offering the same comfort as a conventional tyre.



TPMS is included in every new vehicle produced since 2014

TPMS share in Europe

- Reduction of the vehicle weight
- Space-saving due to no need for spare tyres
- Continuous mobility

INSTALLED IN OUR CURRENT TYRE SERIES:

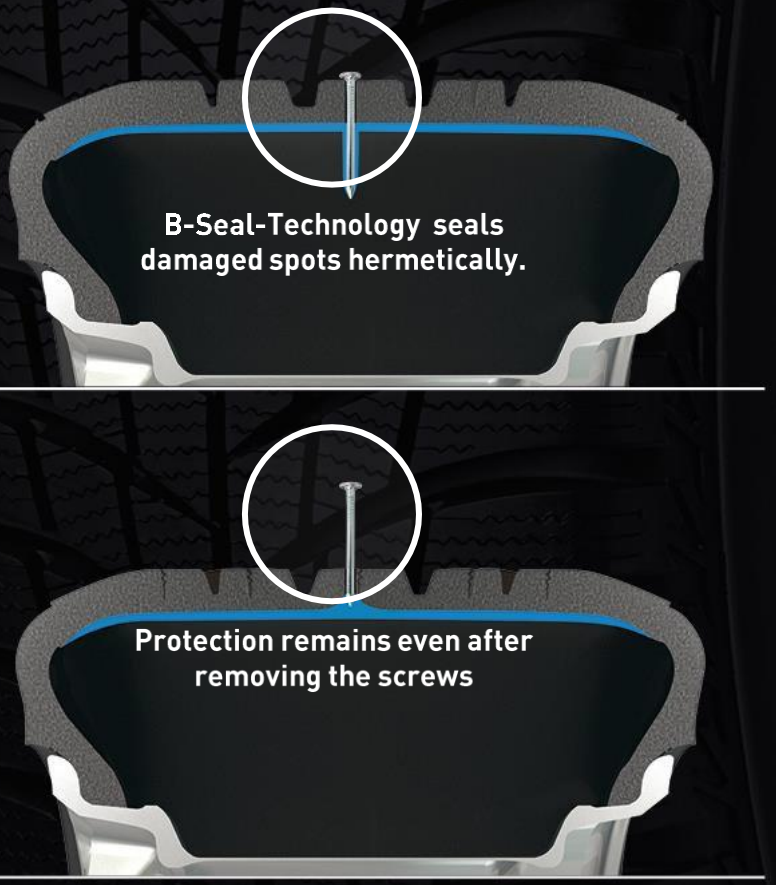
TURANZA T005 | WEATHER CONTROL A005 EVO | BLIZZAK LM005

No special rim required!

1 In accordance with ISO 16992:2018 Extended Mobility Tyre.
2 TPMS=Tire Pressure Monitoring System; Source: IHS (consolidation of the 6 largest European markets: Germany, Spain, UK, Poland, Italy, France).

B-SEAL TECHNOLOGY

Protection in case of tread damage



Known as Air-Stop-Program at VW.
1 For more information about it contact the Bridgestone field service.

B-SEAL

Tyre treads equipped with B-SEAL-Technology, damaged by nails, screws, rocks etc, are sealed up to a diameter of 5mm.

B-SEAL isolates damages caused by objects using a rubber layer.

Constant tyre performance without comfort loss.

Damages up to a certain size can be repaired by a specialist using set instructions.

OLOGIC TECHNOLOGY

Improving fuel efficiency reducing CO2 emissions

Slim tyre — High diameter — High tyre pressure

Innovative tyre design — Optimised tread design — Improved rubber compound

ologic

The unique ologic technology is based on reducing the tyre width and increasing the diameter to significantly increase fuel efficiency by improving rolling and aerodynamic drag.

Reduction of fuel consumption through lower rolling resistance and improved aerodynamics

Improved dry and wet performance through innovative tyre construction and tread design

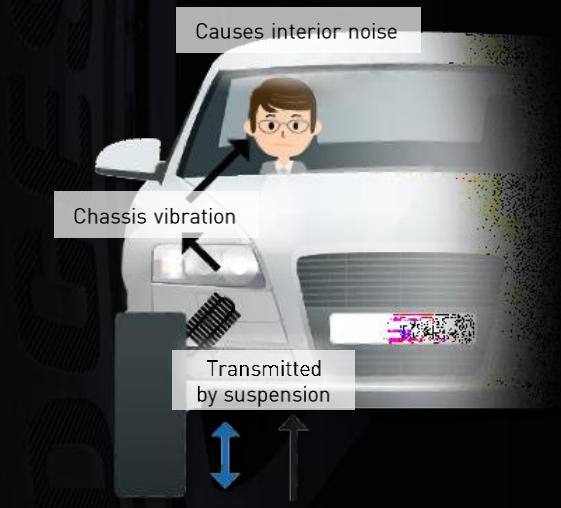
B-SILENT TECHNOLOGY

More safety, less noise

Currently for selected Audi, Mercedes and Vauxhall models,

B-SILENT

A sponge-like absorber inside the tyre equipped with B-SILENT-Technology reduces all noise produced by the driving process inside the vehicle.



Wheel axle vibration generated by internal air resonance (force: 10~30 N)

Noise reduction inside the vehicle on all road surfaces.

Constant comfort and constant characteristics as an usual tyre.

OE MARKINGS

Advantages for the trade

- Unique selling proposition vis-à-vis competitors
- Extension of the competence /
- service level
- Marketing of the tyre as an original
- spare part

Advantages for the end customer

- Tailor-made tyre - developed together with the vehicle manufacturers
- Higher performance, e.g. through better grip or cornering stability
- Maintains DNA of vehicle

Car Manufacturer	Marking	Additional Information
Specifications / profile add-on identifier (Mold version)	IZ, GZ, 5Z, Z etc	Slight differences in rubber compound
Aston Martin	AMR, AM2 AM8, AM9, AQA, A4A, A5A, A5B	Rubber compound, construction and tread are adapted to the requirements of Aston Martin
Audi	AO, AO1, RO1, RO2, AO+	Rubber compound, construction and tread are adapted to Audi's comfort orientated requirements
	AOE	Run-Flat tyre (AOE) with reinforced sidewall
BMW	★	Rubber compound, construction and tread are adapted to BMW's sporting requirements
	RSC	Run-Flat tyre (RFT) with reinforced sidewall
Hyundai	GOE	Hyundai Genesis GV70 gets its own marking GOE
Lamborghini	L	Rubber compound, construction and tread are adapted to Lamborghini's requirements
Maserati	MGT	Maserati Levante gets its own MGT marking
Mercedes	MO, MO1	Rubber compound, construction and tread adapted to the comfort orientated Mercedes
	MOEXtended	Run-Flat tyre (MOE) with reinforced sidewall
	MO-S, MOE-S	Tyres with B-silent technology
	MO-V	Tyres for vans
Porche	N-0, N-1, N-3, N-4	These tyres are specially designed for Porsche. The N designation is in the vehicle registration document
Renault	RS	Renault Megane RS Trophy gets its own marking, RS
Alfa Romeo	AR	The rubber compound, construction and tread are adapted to Alfa Romeo requirements
Volkswagen	+ AO	The rubber compound, construction and tread are adapted to VW requirements

OE SIDEWALL MARKINGS

Many Bridgestone products have sidewall markings that provide additional information about the tyre

Porsche 'N'-ratings

Tyres with N - Markings have been approved for fitment to Porsche vehicles.

The N - number identifies the revision of the design. For a new Porsche fitment, the first approved version of it will be N-0. When the design is changed, (compound for example) it will be marked as an N-1 (N2, N3, N4 etc).

Note – N–rated tyres should not be fitted to anything other than a Porsche, unless specified by the vehicle manufacturer. It is NOT recommended by Porsche or BS to mix different N- rated tyres on the same vehicle (including axle pairs). However, absolute minimum is across axle.

'AM' Markings

All tyres marked 'AM' or 'A' are approved for fitment by Aston Martin.

Note - We would recommend that Aston Martin vehicles are fitted with tyres marked 'AM' or 'A' or equivalent.

OE SIDEWALL MARKINGS

Many of our products have sidewall markings that provide additional information about the tyre

BMW 'Star' Marking

Tyres with 'Star' marking have been approved for fitment to BMW vehicles.

Note- Tyres with this marking should only be used on BMW vehicles.

All Run-Flat tyres for BMW will have RSC (Run-Flat System Components) marked clearly on the sidewall.

Mercedes MO Marking

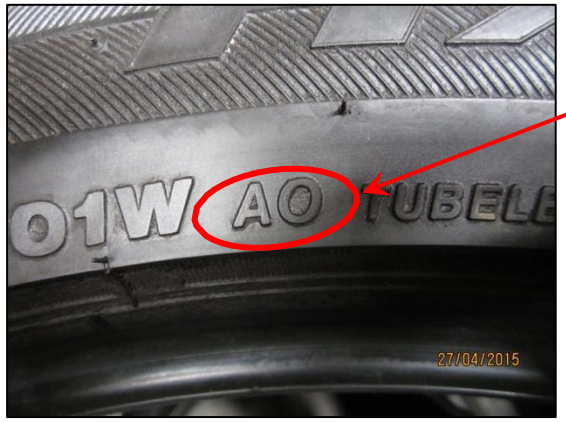
Tyres with the marking MO (Mercedes Original) have been approved for fitment to Mercedes Benz vehicles.

Mercedes Benz Extended Mobility tyres will be marked 'MO Extended' – (Mercedes Only Extended Mobility).

Note- Tyres with MO Extended marking should only be used on Mercedes Benz vehicles.

OE SIDEWALL MARKINGS

Many of our products have sidewall markings that provide additional information about the tyre



AO Markings

Tyres marked 'AO' (Audi Original) have been homologated for use on specific Audi vehicles. For optimum performance, we would recommend such vehicles are fitted with the appropriate AO marked tyre.

Note: Tyres with the marking AO have been approved for fitment to Audi vehicles.

Additional Audi Markings

R02 Audi RS4

AOE AUDI – A3 / A3 PHEV
(Bridgestone Exclusive)

OE SIDEWALL MARKINGS

Many of our products have sidewall markings that provide additional information about the tyre

SIDEWALL MARKING	OE MANUFACTURER
+	VW ID3 (B-SEAL / ENLITEN)
GTI /TBC	VW Golf GTI - 2021

IT'S BECOMING MORE COMPLICATED

TYRE IDENTIFICATION

225/45R17 S001

Tread Colour Lines

White / Yellow / White

Blue / Yellow /Brown / White

Construction Codes

DOT EJA TRT**DCK** 0219

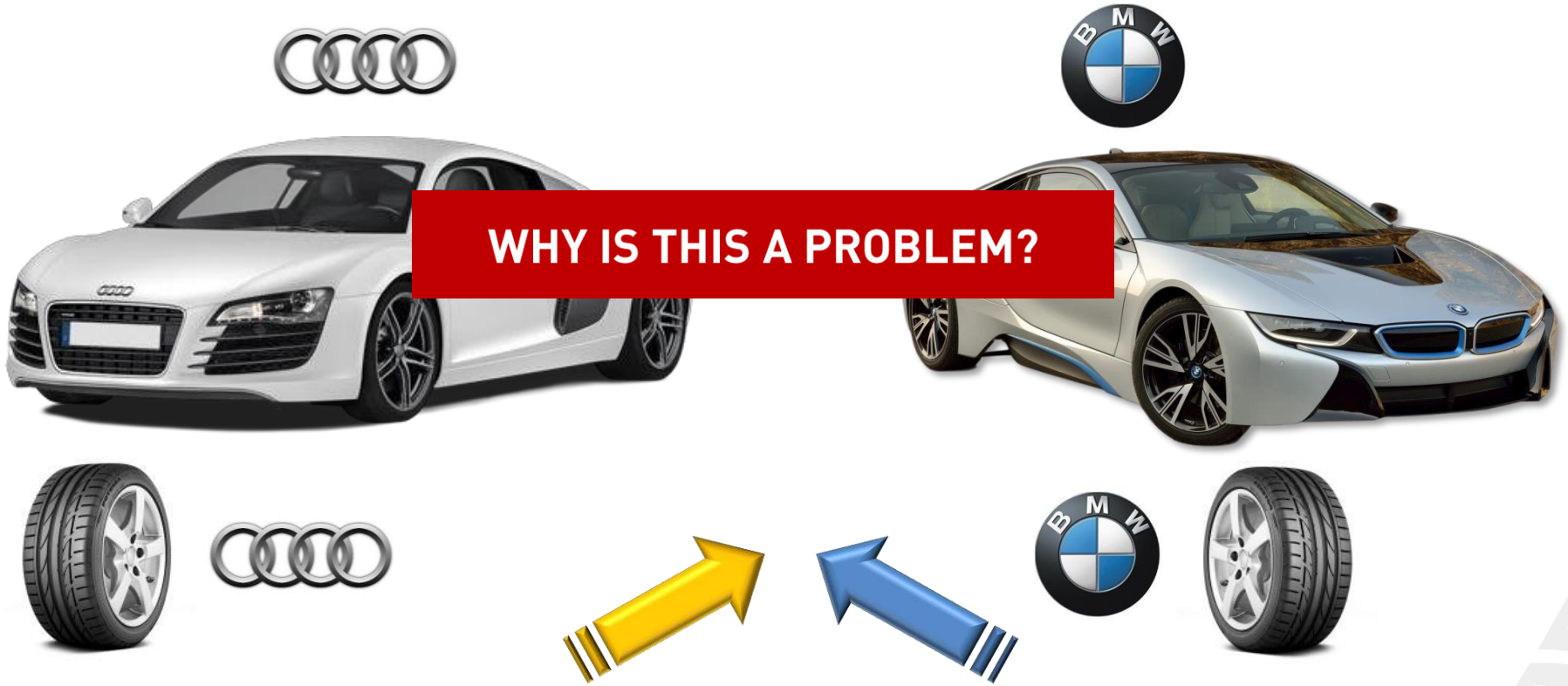
DOT EJA TRT**CFE** 0219

Pattern Codes

E0S001BZ

E0S001BZ

INCORRECT TYRE IDENTIFICATION



IPC 5521 – 235/35R19 S001
IPC 5721 – 295/30R19 S001

IPC 5539 – 235/35R19 S001
IPC 77436 – 295/30R19 S001

VEHICLE PERFORMANCE

Oversteer and Understeer

New tyres fitted to the front axle:

The rear wheels are losing grip and, as a result are carving a larger arc than the front wheels, creating oversteer.

New tyres fitted to the rear axle:

The front wheels are losing grip and, as a result are carving a larger arc than the rear wheels, creating understeer.

BRIDGESTONE RECOMMENDATIONS

Fitting tyres in axle pairs

Fit in Axle Pairs for Performance and Safety:

- If the remaining tyre on the axle has 3mm of tread or less, it is best to replace both tyres to ensure braking and handling are optimised.

Key reasons why we recommend replacing both tyres on the same axle in this situation are as follows:

- Tyres of different tread depths on the same axle can cause an imbalance of performance.
- Tyre construction can vary significantly, even between patterns by the same manufacturer.
- Fitting different brands and patterns across a single axle can lead to under or over steering when cornering.
- All tyres on a vehicle should always be the same seasonal type, be it summer, winter and all season.

BRIDGESTONE RECOMMENDATIONS

Fitting new tyres to the rear axle

Why should new tyres be fitted on the rear axle?

- Better handling, wet grip, and water clearance and reduce possible oversteer and aquaplaning on wet surfaces.
- New tyres to the rear will also ensure the vehicle handles in a similar fashion to before the tyre change.
- New to the rear applies for all tyres regardless of their seasonal use – so for Summer, Winter or All Season.

There are exceptions:

- Where front and rear tyre sizes are designed to be different or have different size specifications

….end of today’s training

Thank You

BRIDGESTONE

Solutions for your journey