



RACE TIRE CATALOG AND USER GUIDE



By sponsoring a wide range of motorsports competitions and teams at home and abroad, Hankook Tire is inspiring drivers worldwide to overcome the challenges posed by speed and to take on new possibilities. Through Hankook Tire's innovative technology, drivers around the world can enjoy achieving new goals and setting new records. Hankook Tire is raising the bar of motorsports for a passionate driving culture for those who are thrilled about the world of motorsports competition. Hankook Tire provides cutting-edge performance on the circuit. As the official partner of DTM, the 24H Series, Supercar Challenge, FARA USA, and TCR, Hankook Tires performance is proven in the most demanding of racing circuits around the world.

BEFORE YOU BEGIN—IMPORTANT SAFETY INFO

Tire Use

Hankook racing tires are specially designed and compounded solely for the purpose of motorsport competition. The use of Hankook racing tires on public roads may result in loss of traction, unexpected loss of vehicle control, or a sudden loss of tire pressure, resulting in possibly serious injury or death. No warranty is given to Hankook racing tires due to the limited conditions under which they operate and Hankook shall not be liable for damage arising from their use.

Tire Care

The tires should be stored in a controlled environment with cool temperatures and in darkness. High temperatures, direct sunlight, proximity to high voltage electric motors or welders should be avoided. The use of chemical treatments such as tire “soaking” or tread “softener” to alter the tire carcass or tread compound of any Hankook racing tire could result in premature or catastrophic tire failure and serious injury or death.

Tire Fitting

The fitting of Hankook racing tires should always be carried out with special care to avoid damage to the bead area, which is of critical importance to tubeless tires. To ensure this you should always have the tires fitted by a certified dealership that understands the handling of competition tires. The use of a tire fitting machine is strongly recommended to avoid damage to the wheel or tire. Tires should not be inflated over 40psi (2.7bar). The use of Hankook racing tires on wheels that do not meet industry standards can cause the tire and the wheel assembly to fail and explode with force sufficient to cause serious injury or death.

Tire Pressure

The correct pressure varies according to driver, car and circuit conditions – it is often a matter of personal preference. But sufficient pressure must always be used to avoid structural damage to the tire.

Safety Considerations

- Never race on an underinflated tire.
- We strongly discourage soaking of tires. It can be hazardous to the person soaking the tires, the environment and the tire itself. The additional complexity and components in radial tires puts the product at risk when solvents are used in an attempt to “soften” the tread area of the tire.
- We strongly discourage pressure bleeders. A bleeder is another item that can fail. With a proper pressure management program you can obtain repeatable and correct hot pressures without the risk of additional components.
- Always inspect each tire thoroughly, prior to and immediately following each use.
- Get familiar with your new tires before you use them.

Tire storage tips

In order to preserve the characteristics and properties of tires, there are some important rules to be observed during storage. The following should be avoided:

- Direct and prolonged exposure to sunlight, sources of high heat and humidity, long term storage in stacks.
- Exposure to low temperatures (50 °F / 10 °C).
- The presence of solvents, lubricants, fuel and other chemical products.
- Equipment causing ozone emission (transformers, welding units, electric motors, etc.).
- The storage space must be dry, well-ventilated, without direct light and reserved for tires. Racks suitable for storing tires vertically should be used to avoid exercising pressure on the carcasses.

Tire aging

- Tires age even when not used or if they are only used occasionally; excessive aging of tires may lead to loss of grip.
- Remove from usage tires presenting clear signs of aging or fatigue (cracking of the rubber of the outer tread, of the shoulder, of the bead, deformation, etc.). When in doubt, contact a tire professional

HOW TO READ THE TIRES


Competition Tire Size Marking

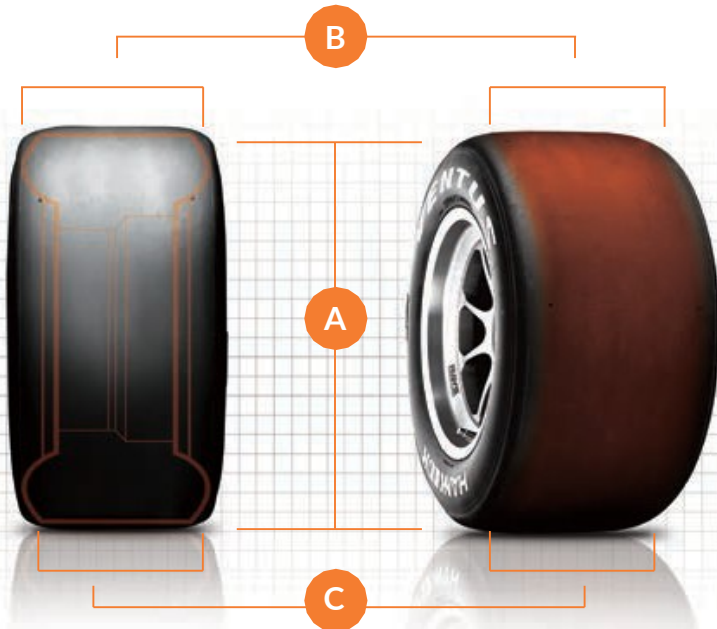
200 / 625 R 17

200: Tread Arc Width (mm), **C**
625: Overall Diameter (mm), **A**
R: Radial
17: Rim Diameter (inch)

195 / 65 R 15

195: Section Width (mm), **B**
65: Aspect Ratio

Tire Size	Ø mm		RMA DIA. inch
200/625R17	625	200	17"



Compound Marking

C30

Version

Compound 3 : Hard / 5 : Medium / 7 : Soft / 9 : Super Soft

Tire Category C : Circuit / G : Gravel Rally / T : Tarmac rally

W : Wet (intermediate)

Proper Compound Selection

If the conditions are outside of the indicated limits, it may be necessary to change the tire size or compound type.

Category	Compound	Recommended Use
CIRCUIT	C3	Dry hot weather, abrasive surface
	C5	Dry weather surface
	C7	Dry cool weather, smooth surface Dry hot weather surface (Formula)
	C9	Dry weather surface (Formula)
GRAVEL RALLY	G3	Clear hard & rough gravel
	G5	Medium hard gravel
	G7	Soft & loose gravel
TARMAC RALLY	T3	Dry hot weather asphalt
	T5	Dry weather asphalt
	T7	Dry cool weather, damp asphalt
	T9	Dry cool weather, damp asphalt (only for the very short distance)
WET & INTERMEDIATE	W5	Wet or damp asphalt

These are only guidelines. All conditions of the vehicle, race track, weather, etc. should be considered.

Normally the optimum temperature is within a spread of about 20°C between the inner and outer part of the tread. For example, inner 90°C, middle 80°C, outer 70°C.

IMPORTANT TIRE CARE INFORMATION

Mounting

Hankook tires should be mounted and installed on the car according to the directional arrows on the sidewall. After one or two heat cycles, the tires can be rotated on the car.

Worn tires can be dismounted and flipped on the wheel to extend tread life.

Scuffing

The longevity and consistency of the grip level can be increased by properly scuffing a new set of race tires. It's very important not to run hard for an entire session on new tires. Think of it like breaking in a new engine, or bedding in new brake pads. To scuff a set of tires, start by taking one or two moderately paced laps to gradually bring the tires up to operating temperature, and then run one hard lap followed by a cool down lap.

The ideal situation would be to stop and remove the tires from the car and allow them to cool down to ambient temperature before running them again. When running an entire session on a new set of tires without stopping, one should still follow the scuffing procedure at the beginning of the session before turning laps at a fast pace. It's also very important to run a slower lap at some point in the middle of the session to allow the tires to cool off before running hard laps again.

Pressure

Moisture inside of a tire can cause excessive pressure build-up and handling problems. After purchasing a new set of mounted tires, the valve cores should be removed to purge out any moisture, and the tire should be inflated with dry air or nitrogen. When switching from another brand of tires to Hankook tires, it isn't necessary to change cold or hot inflation pressures. Start with the same settings and then make adjustments to achieve the desired handling characteristics. An approximate hot pressure target for DOT approved R-compound road racing tires is 40 psi. It could be a few pounds less for lighter cars, and a few pounds more for heavier cars. FWD cars may require higher inflation pressure in the front tires. Slicks for formula cars and sports racers should initially target for 22 psi hot. Changing hot inflation pressures to alter the handling characteristics of the car is a fine tuning adjustment. Improving the overall grip should be done with spring rates, dampers, sway bars, ride heights, alignment settings, etc.

Wear

In addition to utilising tread temperature data to evaluate how the car and tires are performing; the inside and outside tread wear indicator pins should be measured with a depth gauge to determine if camber or pressure changes need to be made. If the inside of the tire is worn more, camber may need to be reduced. If the outside is worn more, it can mean camber will need to be increased, or inflation pressure will need to be increased to prevent the tire from rolling over on the outside shoulder.

Heat Cycles

The number of useful heat cycles that a set of race tires can run is dependent upon whether or not they were properly scuffed, ambient and track temperature, track surface, length of each track session, and most importantly - driving style. Aggressive driving, such as throwing the car into the corner entry and sliding through the middle and exit, can excessively increase tire wear and reduce the consistency in grip level. A smooth driving style will result in faster lap times and better tire performance.

Temperature (°C)

Tread temperature will vary depending on ambient and track temperature, the type of circuit, and the type of car. The temperature should be within a range of 70 to 105 degrees when measured in pit lane. Optimum grip level is at 80 to 95 degrees. A probe type pyrometer is recommended for temperature measurements and a consistent technique must be used. Check the tires in the same location (inside, middle, outside) and in the same order (LF, RF, RR, LR) each time the car comes to pit lane. The data should be recorded as follows to make it easier to interpret:

out LF	in	out RF	in	out LR	in	in RR	out				
80	88	95	95	88	80	80	88	95	95	88	80

Depending on the width of the tire, the inside tread temperature should be 10 to 20 degrees hotter than the outside. If the inside is too hot, camber may need to be reduced. If the outside is too hot, camber will need to be increased or inflation pressure will need to be increased to prevent the tire from rolling over on the outside shoulder. If the front tires are hotter than the rear tires, it may show an understeer condition. Alternatively, if the rear tires are hotter than the front tires, it can represent an oversteer condition. However, this isn't the case for all types of vehicles. The front tires on FWD cars are usually always hotter and the rear tires on high-horsepower RWD cars may be hotter due to wheel spin. The tires should be relatively new when using tread temperature data to interpret car setup issues. Tires with a worn shoulder may give a misleading temperature spread across the tire because the thin area doesn't hold as much heat as thicker areas.

Storage

As seen in the picture to the right, tires stored below freezing temperatures (32°F or 0°C) will lose rubber compound flexibility and may experience cracking when operated under such conditions.



Caution

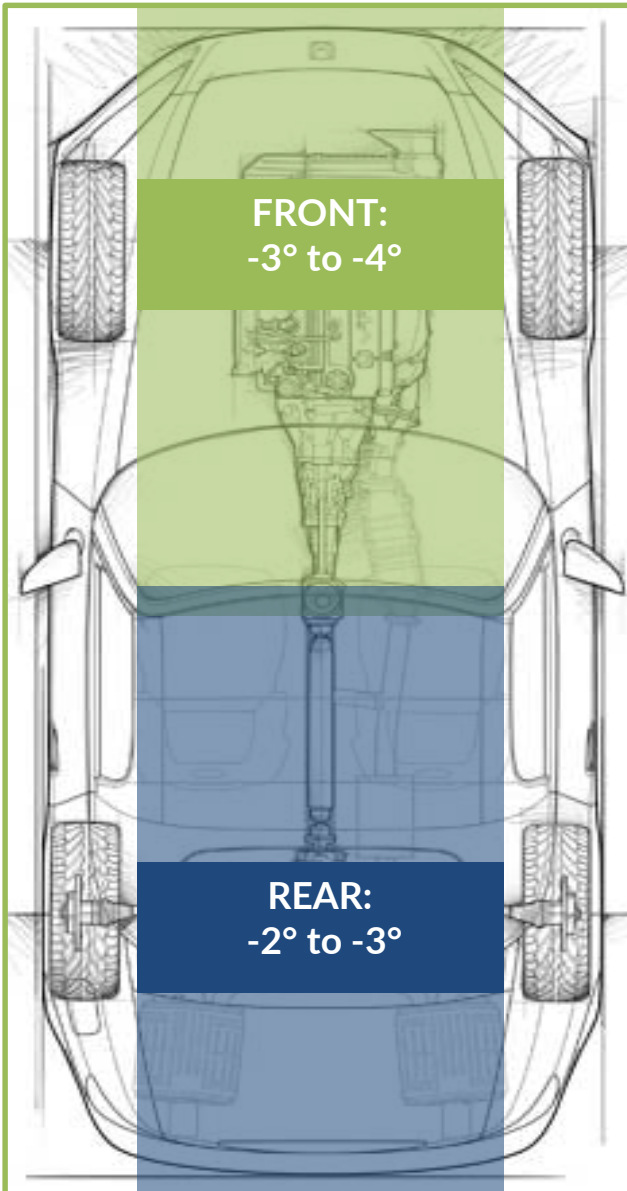
Consumers and installers are advised to follow these instructions during sub-freezing conditions:

1. Do not operate the car with these tires, as the tires may suddenly fail.
2. Always store these tires indoors at temperatures above 32°F or 0°C.
3. Before mounting or dismounting, store these tires for at least 24 hours in a temperature-controlled environment of 68°F/20°C or warmer.
4. Remove these tires from the vehicle and deflate to half the normal air pressure during prolonged periods of non-use or storage.
5. Do not move a car that is in storage with these tires, as the tires may crack.
6. If storing outdoors, please avoid direct sunlight.

CAMBER/SETUP RECOMMENDATIONS

Traditional Camber Setup

The only way to determine the best setup is to run the car, then measure tire temperatures and pressures. As a guideline, most cars on most road courses should start with the camber settings below and then adjust accordingly:



When determining optimal camber settings, a number of variables must be taken into account including track layout, suspension geometry, aerodynamic downforce and maximum speed on the track. When it comes to setting the camber, you cannot determine in advance exactly what the ideal setup will be – the only way to decide this is to run the car, then measure tire temperatures and pressures.

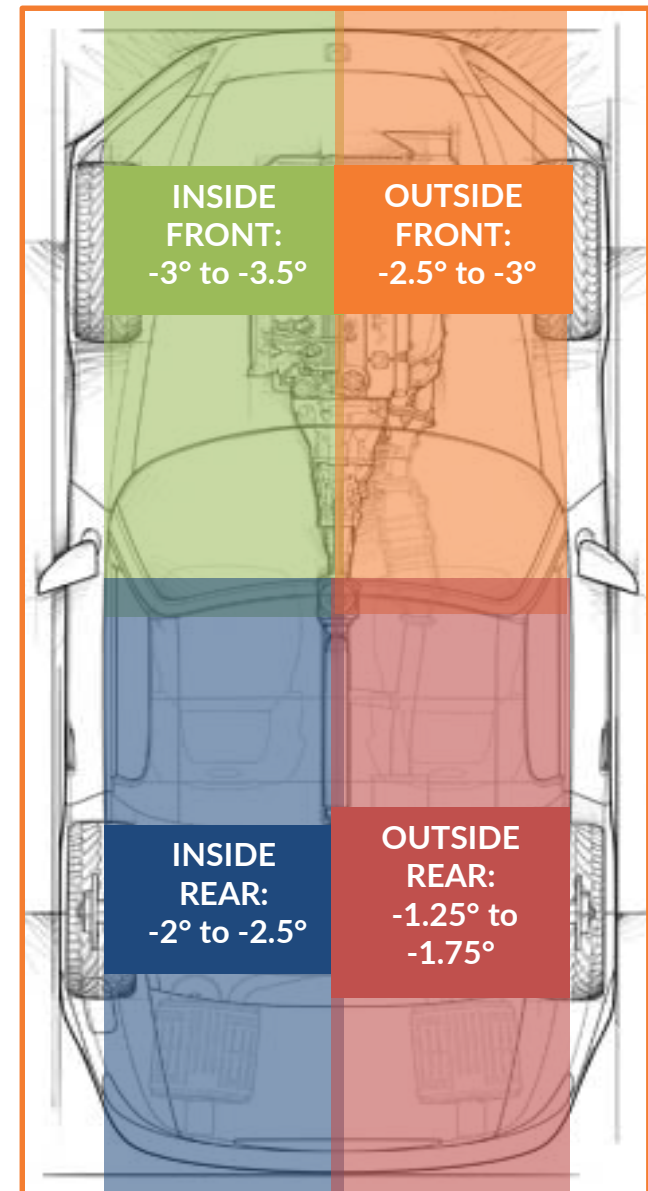
Most cars on most road courses should run camber settings as stated in the chart to the left as a baseline and then adjust accordingly.

Cars using the wider 300/680R18 and 320/710R18 tires will perform better with camber settings closer to -3.0° in the front and -2.0° in the rear. When competing on tracks with the majority of turns in only one direction (examples: Lime Rock, Road Atlanta) it may be beneficial to run less negative camber on the inside wheels. Also, when driving on a track that requires more hard braking, your car may benefit from less negative camber. This should improve straight-line braking but will also typically cause a slight loss of grip in the middle of the corners.

For tracks with sections of high-banking, or “rovals”, the camber settings must be significantly reduced because the track’s banking dramatically increases the load on the tires. As a starting guideline, cambers should be set as shown on the image to the right.

Banking “Roval” Setup

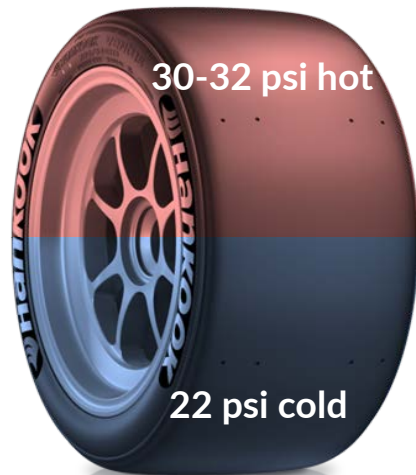
For tracks with sections of high-banking, or “rovals”, the camber settings must be significantly reduced because the track’s banking dramatically increases the load on the tires. In this case, cambers should be set as follows:



TEMPERATURE AND PRESSURE

Tire Pressure

Hankook slicks are designed to operate at pressures ranging from 30 psi to 32 psi hot. A cold pressure of around 22 psi should be a good starting point, which can then be fine-tuned to your car's setup and your driving style. You should never go below 19 psi cold, to avoid any risk of bead unseating. Temperature readings should be taken with a probe-type device. Non-contact infrared devices are not recommended as they only take surface temperatures which cool at a much quicker rate and are not reliable. Both pyrometers and pressure gauges should be periodically calibrated or verified against calibrated equipment. On most road courses a minimum of six hot laps should be run before considering any changes based on temperature and pressure readings. Taking readings before the tires have reached stable operating conditions is not recommended and may lead you to an incorrect setup. After a hot lap session, temperatures should be taken at three points across the tire: first the inside shoulder of the tire, then the center, and finally the outer shoulder. Readings on the outboard sections of the tire should be taken about 1 1/2" from the shoulder. Taking temperatures too close to the "corner" of the shoulder will give an inaccurate reading. Due to heat dissipation, time plays a critical role in collecting the most accurate data. It is recommended that you begin with the outside rear tire and be sure to focus on the tread temperatures first.



SAMPLE TIRE READING CHART					
LEFT FRONT			RIGHT FRONT		
12	11	10	1	2	3
187	192	199	200	192	188
Average Temp. 192			Average Temp. 193		
pr. Cold	pr. Hot	pr. Gain	pr. Cold	pr. Hot	pr. Gain
23	30	7	22	30	8
Front Average: 30					
Driver: John Hankook					
Date: Jan 12, 2017 Session #: 3					
LEFT REAR			RIGHT REAR		
9	8	7	4	5	6
188	191	199	201	193	190
Average Temp. 192			Average Temp. 194		
pr. Cold	pr. Hot	pr. Gain	pr. Cold	pr. Hot	pr. Gain
23	30	7	22	31	9
Rear Average: 30.5					

CIRCUIT TIRE CATALOG

VENTUS F200 (F200) Circuit / Slick

Top-notch performance slick tire with consistency and high mileage on dry surface.

VENTUS F200 SLICK TIRE SPECIFICATIONS

SIZE	RIM WIDTH		OVERALL DIAMETER		SECTION WIDTH		TREAD WIDTH		REVS PER KM/M	
	RECOMMEND	OPTIMUM	MM	IN	MM	IN	MM	IN	KM	MILE
180/550R13	8.0-9.0	8.5	550	21.7	238	9.4	200	7.9	600	957
240/570R13	10.0-11.0	10.5	574	22.6	290	11.4	250	9.8	575	919
190/570R15	6.5-8.0	7	570	22.4	205	8.1	190	7.5	579	927
200/580R15	7.0-8.5	7.5	581	22.9	220	8.7	205	8.1	568	907
215/580R15	7.5-8.5	8	584	23	238	9.4	215	8.5	565	903
260/610R16	9.0-10.5	10	607	23.9	276	10.9	260	10.2	544	869
215/615R17	7.5-9.0	8	618	24.3	230	9.1	215	8.5	534	855
235/620R17	8.0-9.5	9	618	24.3	247	9.7	234	9.2	534	855
240/640R18	8.0-9.5	9	644	25.4	245	9.6	225	8.9	513	818
250/640R18	8.5-10	9.5	637	25.1	262	10.3	250	9.8	515	828
260/660R18	9.0-10.5	10	661	26	282	11.1	254	10	500	798
280/650R18	10.0-11.5	11	656	25.8	295	11.6	280	11	503	804
280/660R18	10.0-11.5	11	661	26	304	12	274	10.8	500	798
300/660R18	11.5-12.5	12	656	25.8	325	12.8	300	11.18	478	769
300/680R18	11.5-13.0	12	675	26.6	331	13	300	11.8	489	782
320/710R18	12.0-13.5	13	706	27.8	350	13.8	318	12.5	468	747
250/650R19	8.5-10.0	9.5	647	25.5	264	10.4	250	9.8	507	816
300/680R19	11.0-12.5	11.5	677	26.7	320	12.6	300	11.8	484	779
320/710R19	12.0-13.5	13	705	27.8	345	13.6	318	12.5	465	748



CIRCUIT TIRE CATALOG

VENTUS Z206/Z207 Circuit / Wet
Extremely reliable circuit tire for exclusive use on wet surfaces.

VENTUS Z207 RAIN TIRE SPECIFICATIONS

SIZE	RIM WIDTH		OVERALL DIAMETER		SECTION WIDTH		TREAD WIDTH		TREAD DEPTH		REVS PER KM/M	
	RECOMMEND	OPTIMUM	MM	IN	MM	IN	MM	IN	MM	IN/32"	KM	MILE
180/550R13	8.0-9.0	8.50	550.00	21.70	238.00	9.40	200.00	7.90	5.00	6.10	600.00	957.00
240/570R13	10.0-11.0	10.5	574	22.6	290	11.4	250	9.8	6.1	7.7	575	919
190/580R15	6.5-8.0	7.00	580.00	22.80	210.00	8.30	190.00	7.50	5.10	6.40	569.00	911.00
200/580R15	7.0-8.5	7.50	581.00	22.90	220.00	8.70	205.00	8.10	5.10	6.40	568.00	907.00
260/610R16	9.0-10.5	10.00	607.00	23.90	276.00	10.90	260.00	10.20	5.10	6.40	544.00	869.00
200/620R17	7.0-8.5	8.00	623.00	24.50	213.00	8.40	200.00	7.90	5.10	6.40	530.00	848.00
235/620R17	8.0-9.5	9.00	618.00	24.30	247.00	9.70	234.00	9.20	5.10	6.40	534.00	855.00
240/640R18	8.0-9.5	9.00	644.00	25.40	245.00	9.60	225.00	8.90	6.10	7.70	513.00	818.00
270/680R18	10.0-11.5	11.00	685.00	27.00	298.00	11.70	270.00	10.60	6.10	7.70	482.00	769.00
280/660R18	10.0-11.5	11.00	660.00	26.00	300.00	11.80	274.00	10.80	6.00	7.60	500.00	799.00
300/660R18	11.5-12.5	12.00	656.00	25.80	325.00	12.80	300.00	11.18	6.00	7.60	478.00	769.00
300/680R18	11.5-13.0	12.00	677.00	26.70	330.00	13.00	300.00	11.80	6.80	8.60	488.00	779.00
320/710R18	12.0-13.5	13.00	707.00	27.80	350.00	13.80	318.00	12.50	6.80	8.60	467.00	746.00
320/710R19	12.0-13.5	13.00	705.00	27.80	345.00	13.60	318.00	12.50	7.00	8.80	465.00	748.00



CIRCUIT TIRE CATALOG

VENTUS Z214 Semi-Slick

With longitudinal tread grooves for outstanding performance on the circuit in dry or damp conditions. Symmetrically designed semi-slick tire with two longitudinal tread grooves for outstanding performance on the circuit in dry or damp condition. (DOT Approved)

VENTUS Z214 DOT TIRE SPECIFICATIONS

SIZE	RIM WIDTH		OVERALL DIAMETER		SECTION WIDTH		TREAD WIDTH		TREAD DEPTH		REVS PER KM/M	
	RECOMMEND	OPTIMUM	MM	IN	MM	IN	MM	IN	MM	IN	KM	MILE
225/45ZR13	7.0-8.5	7.5	529	20.8	224	8.8	214	8.4	3.5	4.4	624	997
205/55ZR14	5.5-7.5	6.5	579	22.8	213	8.4	195	7.7	3.5	4.4	570	911
225/50ZR14	6.0-8.0	7	579	22.8	232	9.1	214	8.4	3.5	4.4	570	911
225/45ZR15	7.0-8.5	7.5	580	22.8	224	8.8	214	8.4	3.5	4.4	569	910
205/50ZR15	6.5-8.0	7	584	23	213	8.4	194	7.6	3.5	4.4	565	904
205/50ZR16	6.5-8.0	7	608	23.9	212	8.3	195	7.7	3.5	4.4	543	868
225/50ZR16	6.0-8.0	7.5	630	24.8	228	9	212	8.3	3.5	4.4	524	838
245/45ZR16	7.0-8.5	8	623	24.5	242	9.5	232	9.1	3.5	4.4	530	847
255/50ZR16	7.0-9.0	8	657	25.9	256	10.1	240	9.4	3.5	4.4	503	803
225/45ZR17	7.0-8.5	7.5	632	24.9	228	9	212	8.3	3.5	4.4	522	835
245/40ZR17	8.0-9.5	8.5	625	24.6	247	9.7	232	9.1	3.5	4.4	528	844
275/40ZR17	9.0-10.5	9.5	648	25.5	276	10.9	260	10.2	3.5	4.4	510	814
245/35ZR18	8.0-9.5	8.5	627	24.7	247	9.7	232	9.1	3.5	4.4	527	842
225/40ZR18	8.0-9.5	8	635	25	229	9	214	8.4	3.5	4.4	520	831
245/40ZR18	8.0-9.5	8.5	649	25.6	246	9.7	232	9.1	3.5	4.4	509	813



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Disclaimer

This brochure has been developed to assist you in getting the most out of your tires during a given race or track session. This information is general in nature and numerous variables such as track conditions, car setup and driver preference will play an important role in determining the optimum race configuration for your car. Setup information contained in this brochure is for your consideration only and is provided as a convenience to assist you with your new tire purchase. It is up to you to determine the best setup for your application. It is illegal and dangerous to sell and or use race tires on public streets that have not passed FMVSS109 or ECE36 safety standards. Hankook DOT-approved race tires meet the department of transportation performance requirements, but are not intended for highway use. DOT-labelled Hankook racing tires are designed for racing use only. The prohibited use of Hankook racing tires on public roadways may result in loss of traction, unexpected loss of vehicle control, or sudden loss of tire pressure, resulting in possible serious injury or death. The use of chemical treatments such as tire "soaking" or tread "softener" to alter the tire carcass or tread compound of any Hankook racing tire could result in premature or catastrophic tire failure and serious injury or death. The use of Hankook racing tires on wheels that do not meet tire & rim association standards can cause the tire and wheel assembly to fail and explode with force sufficient to cause serious injury or death. TIRES SOLD BY RACE TIRE US, LLC ARE CONSIDERED SPECIAL USE - RACE TIRE US LLC AND HANKOOK MAKE NO WARRANTIES WHATSOEVER, EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE FOR ITS RACING OR COMPETITION TIRES. Race Tire US LLC and Hankook expressly disclaim all such warranties. In no event shall Race Tire US LLC or Hankook be liable for any kind of general, special, indirect or consequential damages arising from the use of racing or competition tires sold by Race Tire US, LLC.