

RALLY TYRES





21 WORLD RALLY CHAMPIONSHIP TITLES

*Find the complete list
of victories on the web site
www.pirellityre.com*



The Pirelli logo is displayed in a bold, red, sans-serif font. It features a stylized horizontal bar above the letters 'I' and 'R', which is thicker and extends further to the right, ending in a rounded tip. The entire logo is set against a bright yellow rectangular background.

By clicking on Motorsport on the web site www.pirellityre.com, you will be catapulted into the exceptional world of racing where Pirelli is a leading player. Each section of the web site offers dynamic sports such as rallying, track racing and desert rally-raids. In addition to technical information, press releases and photos of the various races in which teams, cars and racing drivers using Pirelli tyres have taken part, it is also possible to read results and comments from the FIA WRC World Rally Championship, the Grand Am Series (two championships for which the Milan company is the official tyre supplier) and other international championships, all fields in which Pirelli plays a leading role, in real time.

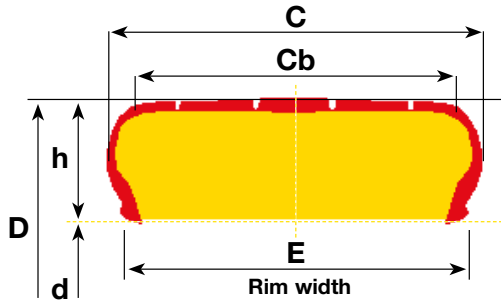


Visit us on the web site www.pirellityre.com

TECHNICAL INFORMATION **RALLY TYRES**

Tyre identification

The markings that appear on the side of the tyres also tell us the basic size of the tyre, the rim diameter and the width of the rim. We will illustrate how to read two different types of marking that may appear on the side of the rally tyres.



C	D	d
Nominal section width expressed in mm	Nominal external diameter expressed in mm	Nominal rim diameter, expressed in inches
↓	↓	↓
225	600	16

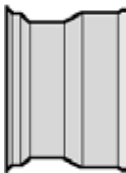
C	h/C		d
Nominal section width expressed in mm	Technical series. This expresses the ratio between the section height (in mm) and the nominal section width (in mm)	Radial construction	Nominal rim diameter, expressed in inches
↓	↓	↓	↓
205	65	R	15

Marking

The treads of the various versions of rally tyres are described by one or two letters followed by a number. The letters identify the type of tread. The number after the letter indicates the type of use, for example: RS 7

Rims

The size of the rims indicated in this manual must be respected. If you have any doubts, please contact Pirelli staff.



Fitment

Make sure that tyres are fitted by experts, with specialised dedicated machinery and equipment, who follow safety procedures.

Before mounting the tyres clean the surface of the beads and the area of the rim that comes into contact with the tyre.

Use ONLY special tyre lubricants for mounting tyres. Do NOT use silicone or petroleum lubricants.

Check the state of the valves to prevent air loss: check the seals and the tightness for metal ones and check also for any tears or cracks in rubber seals. If necessary, replace them. When the tyre is being used, always use the valve cover top.

Follow the indications provided on the sidewall of the tyre referring to the rolling direction and the correct positioning of the internal and external sidewalls, if specified.

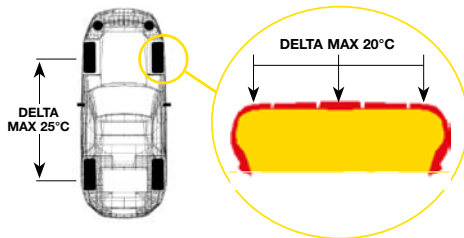
Use the safety cage when inflating tyres.

Before unseating the tyre from the rim during disassembly, make sure that the tyre has been fully deflated, removing the inner valve mechanism.

TECHNICAL INFORMATION **RALLY TYRES**

Tread temperatures

Temperatures measured on the tread are an excellent indicator for deciding the best choice of final compound and for optimising corner adjustments of the vehicle, such as camber and toe. We recommend measuring the temperature at three different points: inner (innermost side of the vehicle), centre, outer tread. In particular, average temperatures must be the ones shown in the table, the difference between the values measured internally, in the centre and externally must be maximum 20°, while the difference between the front and rear axles must be no more than 25°. If these values are exceeded, we recommend a different final compound should be used or the vehicle's geometry should be adjusted.



Pressure

Working pressure values depend on the size of the tyre in relation to the load that it is subjected to. In other words, it will vary according to the type of car, the weight and conditions of use. In particular, as the weight of the vehicle, speeds and accelerations that the tyre is subjected to increase, the working pressure must be increased. In any case, tyres should not be used at pressures below 1.6 bar.

Using excessively low pressures would bring about the breaking of the tyre due to excess force on the sidewall or unseating from the rim. "Hot" working pressures are usually in the range of 2.2 – 2.5 bar.

Initial inflation pressures vary in order to obtain these values, depending on whether the tyres are preheated or used "cold". Indeed, preheated tyres can be inflated to slightly lower values than cold tyres. The difference will depend on the type of heater, the time it remains and the environmental conditions.

ASPHALT	COMPOUND			SURFACE		
	HARDNESS		WORKING TEMPERATURE	SMOOTH	MEDIUM	ABRASIVE
	Soft	RX/RS 9	20° - 60°			
	Medium	RX/RS 7	50° - 90°			
	Hard	RX/RS 5	80° - 120°			
	Medium	RE 7/N3				

CONDITION			TEMPERATURE								
WET	DAMP	DRY	-5	0	5	10	15	20	25	30	30+

GRAVEL	COMPOUND			SURFACE			
	HARDNESS		WORKING TEMPERATURE	MUD	SOFT/SANDY	PACKED	HARD/ROCKY
	Soft	KM6	30° - 60°				
	Medium	KM4	50° - 80°				
	Hard	KM2	70° - 120°				
	Soft	K6	30° - 60°				
	Medium	K4	50° - 80°				
	Hard	K2	70° - 120°				
	Soft	XR7	30° - 60°				
	Medium	XR5	50° - 80°				
	Hard	XR3	70° - 120°				
	Soft	T6	20° - 70°				
	Medium	T4	50° - 100°				

CONDITION			TEMPERATURE								
WET	DAMP	DRY	-5	0	5	10	15	20	25	30	30+



RALLY TYRES **GRAVEL**

T

This tyre is suitable for use on inconsistent or gravelly non-asphalted surfaces, usually with low grip.

Not recommended for heavy use on highly abrasive surfaces.

The tyre's tread profile is flat with sharp edges, aiding directionality and lateral grip. Tyre for gravel surfaces with flat and sharp edge tread. This aids directionality and side grip. The radial blocks guarantee top traction, especially on soft ground. It has special lateral reinforcement that protect the tyre from any damage caused by impacts.



K

Gravel tyre for universal application, suited to dry or wet/damp surfaces.

The internal part of its asymmetric design ensures excellent performance during acceleration and braking, at the same time maintaining an excellent level of wear. The external part, thanks to the arrangement of shoulder blocks, favours high lateral grip.

The Reinforced version is specially protected against any accidental impact thanks to its specifically designed interior structure and special strengthening of the sidewall.



KM

Asymmetric tyre based on the "K" version, designed for use on soft, wet, loose or rocky gravel. It ensures an excellent balance between performance and stability on these types of surfaces.



XR

Tyre for heavy use on gravel roads. It is also suitable for use on mixed gravel/asphalt routes, hard, compact and rough surfaces.

It is especially protected against any accidental impact thanks to its specifically designed internal structure and special strengthening of the sidewall.



TYRE SIZE	VERSION	ø mm D	SECTION WDT mm C	TREAD WDT mm Cb	Rolling circumference	RIMS E
165/70R14 TL	T4 - T6	591	178	150	1769	5,5
165/70R15 TL	K4 Reinforced - K6 Reinforced	615	176	150	1844	5,5
175/70R15 TL	K4 Reinforced - K6 Reinforced	625	185	169	1876	6
185/70R15 TL	K4 - K6	638	198	165	1916	6
195/65R15 TL	K4 - K6	638	198	165	1916	6
195/70R15 TL	KM2 - KM4 - KM6	650	203	170	1954	6
195/70R15 TL	K2 - K4 - K6	650	202	180	1954	6
195/65R15 TL	T4 - T6	622	192	160	1866	6
195/65R15 TL	K4 - K6	638	198	165	1916	6
205/65R15 TL	KM2 - KM4 - KM6	649	226	170	1951	7
205/65R15 TL	K2 - K4 - K6 - Reinf K2/K4	649	228	180	1951	7
225/55R15 TL	XR3 - XR5 - XR7	648	222	210	1948	7



RALLY TYRES **ASPHALT**

B



For all conditions of use, from dry to thoroughly wet surfaces. It can be further hand-cut for increased water drainage in pouring rain conditions.

RS



A Rally tyre for use on dry or damp asphalt with the minimum percentage of grooves permitted by international regulations, in order to guarantee maximum duration and efficiency, even in the most severe conditions.

RX



An evolution of the RS tread which increases rigidity and duration even further in the same conditions of use.

RE



Rally tyre for use on damp or wet surfaces. Even though this tyre has the minimum percentage of grooves permitted by international regulations, it can be used on wet surfaces thanks to its longitudinal grooves. It can be cut further for hard rain conditions.

N



Rally tyre for wet surfaces, with a high percentage of grooves and sipes. It guarantees excellent grip even in extreme rain conditions and at low temperatures. It can be considered as a further option in addition to the RE in races with no limitations on the number of treads available.

TYRE SIZE	VERSION	ø mm D	SECTION WDT mm C	TREAD WDT mm Cb	Rolling circumference	RIMS E
160/560-14 TL	B7 - RS5 - RS7	562	175	155	1731	5,5
190/580-15 TL	N3 - RS5 - RS7 - RS9	578	203	190	1781	7
200/600-16 TL	RE7 - RS5 - RS7 - RS9	601	203	195	1854	7
200/625-17 TL	RX5 - RX7 - RX9 - RE7	625	203	205	1929	7
225/625-17 TL	N3 - RE7 - RS5 - RS7 -RS9	625	220	205	1929	8
225/650-17 TL	RE7 - RS5 - RS7 -RS9	645	227	205	1992	8
225/650-18 TL	N3 - RE7 - RX5 - RX7 - RX9	646	227	215	1995	8

TECHNICAL INFORMATION **RALLY TYRES**

Tread hand-cutting

The tread on some types of tyres can be hand cut to increase the size of the existing grooves. Hand-cutting is useful for improving grip in certain intermediate situations, between dry and thoroughly wet surfaces, or on mixed gravel/rock and sandy surfaces.

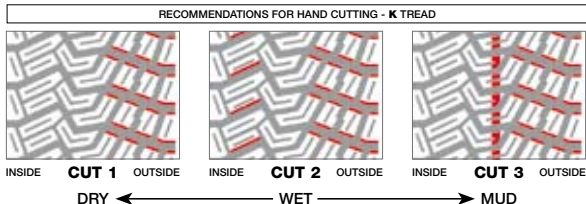
The tread efficiency in the conditions for which it was originally designed will no longer be the same. Hand-cutting must be carried out by experts using specialised equipment, suitable for use while observing safety regulations.

THE COLOUR RED IS USED TO HIGHLIGHT WHERE GROOVES CAN BE HAND-CUT

GRAVEL GROOVES



INSIDE **BASIS** OUTSIDE



ASPHALT GROOVES

RX



INSIDE **BASIS** OUTSIDE

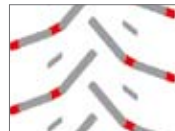
RECOMMENDATIONS FOR HAND CUTTING - RX TREAD



INSIDE **CUT 1** OUTSIDE



INSIDE **CUT 2** OUTSIDE



INSIDE **CUT 3** OUTSIDE

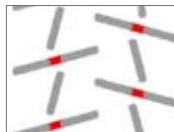
DRY ← WET → MUD

RS

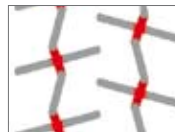


INSIDE **BASIS** OUTSIDE

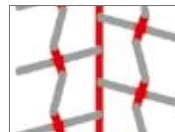
RECOMMENDATIONS FOR HAND CUTTING - RS TREAD



INSIDE **CUT 1** OUTSIDE



INSIDE **CUT 2** OUTSIDE



INSIDE **CUT 3** OUTSIDE

DRY ← WET → MUD

RE



INSIDE **BASIS** OUTSIDE

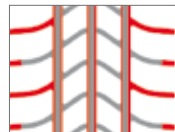
RECOMMENDATIONS FOR HAND CUTTING - RE TREAD



INSIDE **CUT 1** OUTSIDE



INSIDE **CUT 2** OUTSIDE



INSIDE **CUT 3** OUTSIDE

DRY ← WET → MUD



RALLY TYRES **SNOW**

W

Studded "Svezia" tyre, with directional traction design which is ideal for deep snow conditions. The studs are fitted using a patented Pirelli technology that guarantees exceptional stability and resistance of the studding system.



Available with "Svezia" type studding only.

J

Studded "Svezia" tyre, with directional asymmetric design which is ideal for snow-covered and icy surfaces. The special direction of the blocks, together with the patented Pirelli studding, guarantees maximum stability and grip of the studs, even in the most extreme surface conditions.



Available with "Svezia" type studding only.

SA

This is the specialist tyre for harsh winter terrain. It has a highly shouldered design and a high stud-retaining capacity. For use on Super 1.6 cars.



Only "Montecarlo" studs.

S

This is the specialist tyre for harsh winter terrain. It has a highly shouldered design and a high stud-retaining capacity. For use on Super N and WRC cars.



Only "Montecarlo" studs.

WX

Tyre for mixed terrain conditions, up to 30/40% of snow/ice and asphalt. Can be hand-cut in the event of heavier snow and ice. For use on Super N and WRC cars.



STUDDING
100% (inner and outer tread area)
- 50% (only inner area) – not studded

TYRE SIZE	VERSION	ø mm D	SECTION WDT mm C	TREAD WDT mm Cb	Rolling circumference	RIMS E
135/85R15 TL	SA1	627*	146	95	1882	5
135/90R16 TL	S1	648*	140	100	1948	4
145/85R16 ASW4-1	Studded	648*	159	110	1948	5,25
145/85R16 WR5	W	648*	147	100	1948	5,25
225/55R18	WX	646*	225	192	1951	8

(*) not studded



RALLY TYRES *RAID*

**Scorpion
RALLY**



**Scorpion
ENDURANCE**



**Scorpion
MUD**



TYRE SIZE	VERSION	ø mm D	SECTION WDT mm C	TREAD WDT mm Cb	Rolling circumference	RIMS E
235/85-16TL	Scorpion RALLY	801	243	232	2428	6.5
235/85-16TL	Scorpion ENDURANCE	801	243	232	2428	6.5
235/85-16TL	Scorpion MUD	800	254	243	2440	6.5





WRC

THE OFFICIAL TYRE SUPPLIER TO THE FIA WORLD RALLY CHAMPIONSHIP



For Pirelli, competitions are the first development platform for the evolution of their products. For both standard tyres and racing tyres, competitions have always generated an essential evolution impulse which, together with the expertise of the technicians at the Milan-based company, has ensured countless victories on racetracks and roads worldwide in the past one hundred and two years.

When creating tyres for rallies, Pirelli has made full use of their thirty-six years' experience in the World Rally Championship.

The FIA WRC World Rally Championship is a sport in which Pirelli is the official tyre supplier for all the registered teams in the period 2008-2010 – together with the competitors in the FIA Production Car World Rally Championship and the FIA Junior World Rally Championship.

Of course, Pirelli's work in the rally world is not just limited to the World Championship. Indeed, the development work carried out by Italian technicians on tyres for sports clients throughout the world is continuing, with operational platforms such as national championships and various top international series such as the FIA Asia-Pacific Championship.

This work is a reason to be proud for the company founded in 1872 by Giovanbattista Pirelli, and is also an extra guarantee for its customers, who can count on competitive, state-of-the-art products.



PIRELLI STAR DRIVER

Pirelli has always been involved in promoting young drivers in all forms of motorsport and in 2008 launched a new programme with the support of FIA to promote young talents in rallying.

The Pirelli Star Driver scheme is a global programme allowing 5 drivers aged less than 27 on January 1 of the year of selection - two coming from Europe and one each from Asia-Pacific, Africa and the Middle East - to compete in 6 WRC events at the wheels of a fully prepared Group N car.

Your Pirelli Tyre Dealer