

TOYO TIRE TALK

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Technical Service Department Japan.
Technical tips and information that may allow you to better serve your customers.



We would appreciate your input, please contact us.
Phone : 0081-727-759009 , Fax : 0081-727-759029

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Subject : Inflation Pressure Part 6 - Reinforced Tires

In Toyo Tire Talks we have frequently stated that "Inflation Pressure" is one of most important items of tire maintenance. In this issue we would like to discuss the need to be cautious when installing "Reinforced Tires" on vehicles.

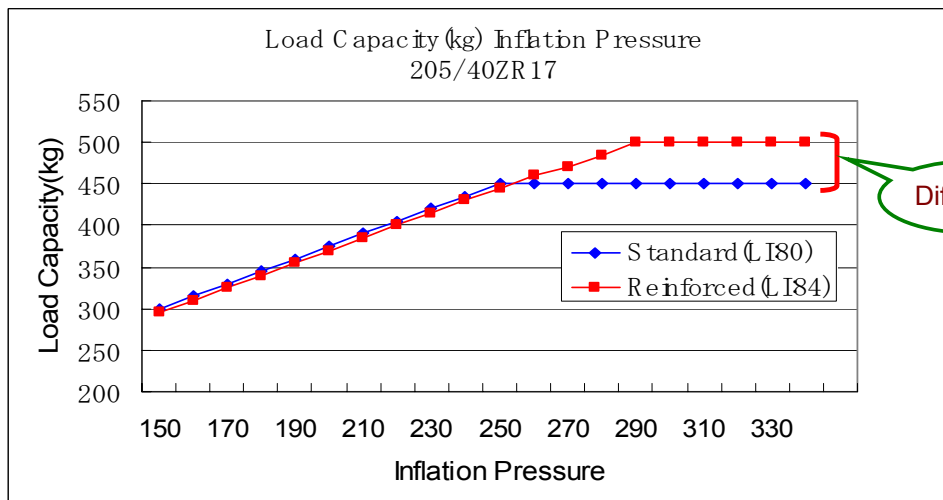
Do you know about Reinforced tires?



Reinforced tires are standardized in the ETRTO Standards Manual (European Tyre and Rim Technical Organization).

Recently the installation of Reinforced tires has been increasing, not only as replacement tires but also for O.E. fitment tires.

The following graph shows Inflation Pressure Vs. Load Capacity of a Standard Load tire and a Reinforced tire in the same size (205/40ZR17).



As you can see, the Load Capacity of the Reinforced tire is higher than the Standard Load tire. At the same time, the Inflation Pressure is also different between the Reinforced tire and the Standard Load tire.

Therefore, care of Inflation Pressure is required when replacing Standard Load tires with Reinforced tires, even if both tires are the same size.

Please refer the "Load Capacity - Inflation Pressure" table from the ETRTO manual. According to this table, the Load Capacity of a Reinforced tire is lower than a standard Load tire at 230kPa.

205/40ZR17 (Standard) L.I. 80 = 420kg at 230kPa
 205/40ZR17 (Reinforced) L.I. 84 = 415kg at 230kPa

To support 420kg, an inflation pressure of 240kPa is required for this Reinforced tire.

Standard Load Tire

Load Index	Tyre Load Carrying Capacity (kg) at Various Inflation Pressures (kPa) (1) Capacité de charge (kg) en fonction de la pression de gonflage (kPa) (1) Tragfähigkeit (kg) bei Luftdruck (kPa) (1)										
	150	160	170	180	190	200	210	220	230	240	250
76	265	280	295	310	320	335	350	360	375	385	400
77	275	290	305	315	330	345	360	370	385	400	412
78	280	295	310	325	340	355	370	385	400	410	425
79	290	305	320	335	350	365	380	395	410	425	437
80	300	315	330	345	360	375	390	405	420	435	450
81	305	325	340	355	370	385	400	415	430	445	462
82	315	330	350	365	380	395	415	430	445	460	475
83	325	340	360	375	390	405	425	440	455	470	487
84	330	350	365	385	400	420	435	450	470	485	500
85	340	360	380	395	415	430	450	465	480	500	515

Reinforced Tire

Load Index	Load Capacity (kg) Inflation Pressure chart for Extra Load or Reinforced Tyres (kPa) (1) Capacité de charge (kg) en fonction de la pression de gonflage (kPa) (1) Tragfähigkeit (kg) bei Luftdruck (kPa) (1)														
	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290
80	265	280	295	305	320	335	350	360	375	385	400	410	425	440	450
81	275	285	300	315	330	345	355	370	385	395	410	425	435	450	482
82	280	295	310	325	340	355	365	380	395	410	420	435	450	460	475
83	285	305	320	335	345	360	375	390	405	420	430	445	460	475	487
84	295	310	325	340	355	370	385	400	415	430	445	460	470	485	500
85	305	320	335	350	365	385	400	415	430	445	455	470	485	500	515
86	315	330	345	360	380	400	415	430	445	455	470	485	500	515	530
87	320	340	355	370	390	410	425	440	455	470	485	500	515	530	545
88	330	350	365	380	400	420	435	450	465	480	495	510	525	540	560
89	340	360	380	395	415	435	450	465	480	495	510	525	540	555	580
90	355	375	390	410	430	445	465	480	500	515	535	550	565	585	600

(The table above is from the 2004 ETRTO Standards Manual).
 Note : This refers to a speed of 160km/h and camber angles up to 2° .

Needless to say, please be aware of this when conducting plus sizing.

Additionally tyre inflation pressure decreases naturally, about 5-10% (10-20kPa).
 We recommend checking the inflation pressure of tires at least monthly.