Tire Identification

Reading the Tire Sidewall

JEGS Performance Products

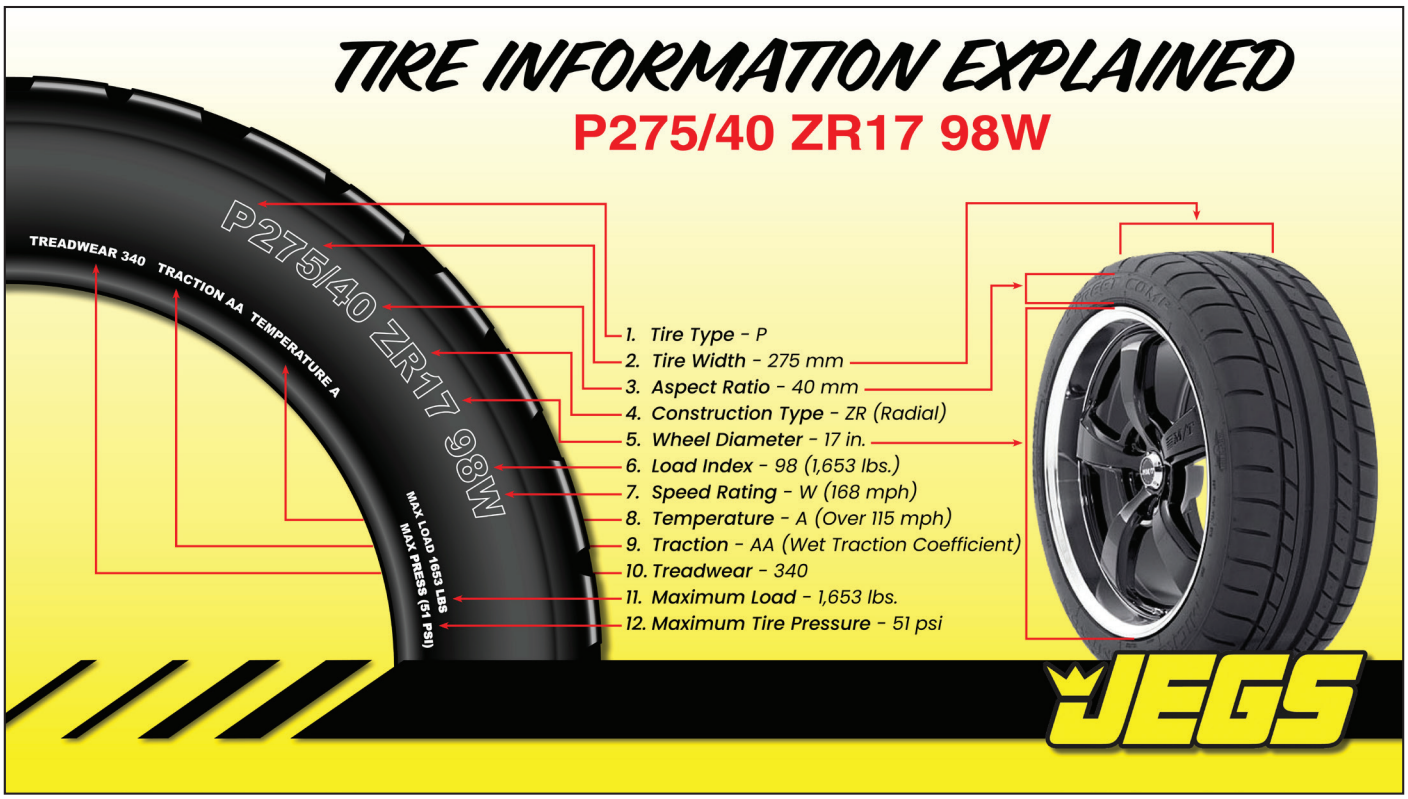
1-800-345-4545 jegs.com

Introduction

Determining the right tire size for your vehicle can be confusing. Decoding the tire's sidewall will help you in choosing the correct size for your car, truck, trailer, off-road vehicle or race car. Choices can vary depending on usage and driving habits. Follow along while we explain the sidewall numbers and letters.

In most Original Equipment Manufacturer (OEM) vehicle applications your owner's manual will provide the tire size that was used on your vehicle from the factory. This is the recommended size from the vehicle manufacturer. When it comes time for replacements, always choose tires with the same or higher load index rating than the OEM tires.

If you are looking to upgrade to a different look or for a performance need, start by identifying the codes on your existing tires sidewall. We recommend having a professional help you determine the appropriate tire that fits your vehicle and driving goals. To speak to one of our JEGS technical salesmen please call 1-800-345-4545.



Sidewall Number and Letter Meanings

1) TIRE TYPE: The first letter in the code tells you the tire class. *(**P**275/40 ZR17 98W)*

- **P** - Passenger vehicle tire. Includes cars, SUVs, crossovers, minivans and smaller pickup trucks.
- **LT** - Light truck tire. Designed for vehicles towing trailers or have a ¾ or 1-ton load capacity.
- **ST** - Special trailer tire. These tire sizes are meant for trailers, including boat, car hauling, fifth-wheel, travel, and utility trailers.
- When there is no letter before the first number, you have a metric size tire most commonly referred to as a European size. These tires are also measured in millimeters but may have different load capacity than a P or LT type tire.

2) TIRE WIDTH: The three-digit number following the letter is the tire's width in millimeters (mm). This measurement is taken from the outer sidewall to the inner sidewall and is also called the section width. *(P**275**/40 ZR17 98W)*

3) ASPECT RATIO: The forward slash separates the tire width number from the two-digit aspect ratio. The larger the aspect ratio number, the higher/taller the tire's sidewall or "profile" in relation to the tire width. *(P275/**40** ZR17 98W)*

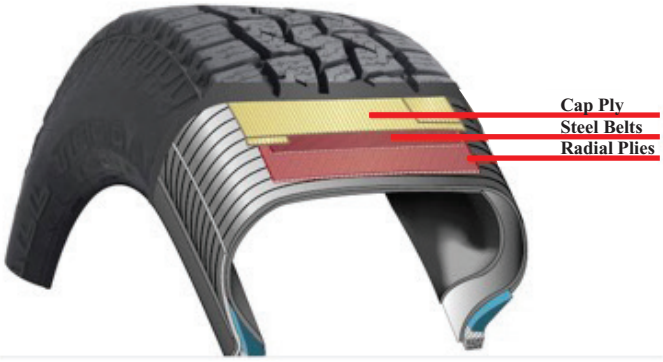
- The aspect ratio is a percentage of sidewall height divided by tire width. It's the height of the sidewall measured from the wheel rim to top of the tire tread.
- In this example, the aspect ratio is 40, meaning the sidewall is 40 percent as high as the tire is wide. To get the sidewall height, take the tire width of 275 mm and convert it to inches (10.8268). Then multiply this by .40 and you get 4.33 inches, the sidewall height in inches.

4) CONSTRUCTION TYPE: This single letter tells you about the internal construction of the tire. *(P275/40 Z**R**17 98W)*

- **R** - Radial tires: This is the industry standard for most automotive tires today. They provide better road grip, lower rolling resistance for better fuel economy. Ride comfort and durability are also much improved over previous generations of tires. In a radial tire, the plies are laid perpendicular to the direction of travel in layers of strong cords made of a blend of polyester, steel and fabric coated with rubber.
- **D** - Bias Ply Tires: These tires are constructed with diagonal (crisscrossed) plies. They are also called conventional, x-ply, or cross-ply tires. Some motorcycle and trailer tires still use this internal construction today.

Bias Tire Construction

Radial Tire Construction



5) WHEEL DIAMETER: This two-digit number specifies the wheel diameter in inches and is the distance between the two bead seat areas.

- See illustration below. *(P275/40 ZR**17** 98W)*

6) LOAD INDEX: The two-digit or three-digit number that follows the gap specifies tire load index. The load index symbol indicates how much weight a tire can support, based on the following standard chart. In our example, the load index is 98, which indicates the tire has a load capacity of 1,653 pounds. *(P275/40 ZR17 **98**W)*

7) SPEED RATING: The last letter on the sidewall is the speed rating, which identifies the maximum speed a tire can sustain structural stability over prolonged use. The maximum operating speed of a vehicle is no more than the lowest speed rating of all tires mounted on the vehicle. *(P275/40 ZR17 98**W**)*

- Speed rating is usually, but not always, a single letter.

LOAD INDEX

Load Index	Load (lbs.)	Load Index	Load (lbs.)	Load Index	Load (lbs.)
65	639	94	1477	123	3417
66	661	95	1521	124	3527
67	671	96	1565	125	3638
68	694	97	1609	126	3748
69	716	98	1653	127	3858
70	739	99	1709	128	3968
71	761	100	1764	129	4079
72	783	101	1819	130	4189
73	805	102	1874	131	4299
74	827	103	1929	132	4409
75	853	104	1984	133	4541
76	882	105	2039	134	4674
77	907	106	2094	135	4806
78	937	107	2149	136	4938
79	963	108	2205	137	5071
80	991	109	2271	138	5203
81	1019	110	2337	139	5357
82	1047	111	2403	140	5512
83	1074	112	2469	141	5677
84	1102	113	2535	142	5842
85	1135	114	2601	143	6008
86	1168	115	2679	144	6173
87	1201	116	2756	145	6393
88	1235	117	2833	146	6614
89	1279	118	2910	147	6779
90	1323	119	2998	148	6944
91	1356	120	3086	149	7165
92	1389	121	3197	150	7385
93	1433	122	3307		

SPEED RATING

Speed Symbol	Speed (mph)
A1	3
A2	6
A3	9
A4	12
A5	16
A6	19
A7	22
A8	25
B	31
C	37
D	40
E	43
F	50
G	56
J	62
K	68
L	75
M	81
N	87
P	93
Q	99
R	106
S	112
T	118
U	124
H	130
V	149
W	168
(ZR*) (Y)	186

* Tires having a maximum speed capability above 149 mph, a ZR may appear in the size designation. Speeds above 186 mph, a ZR must appear in the size designation, including a Y speed symbol in brackets. (Y)

8) Temperature: The Temperature grade indicates the heat resistance and the ratings range from A to C with A being the most heat resistant. *(Treadwear 340, Traction AA, Temperature **A**)*

- **A-Rated** heat resistant tires dissipate heat effectively to a speed over 115 mph.
- **B-Rated** heat resistant tires dissipate heat effectively to between 100 and 115 mph.
- **C-Rated** heat resistant tires dissipate heat effectively between 85 and 100 mph.
    - C-Rated tires cannot be sold in the United States.

9) Traction: Traction grades are AA, A, B and C (with AA being the highest grade). They represent the tire's ability to stop straight in a straight line on wet pavement. Any tire rated under C is considered unacceptable for road travel.
*(Treadwear 340, Traction **AA**, Temperature A)*

10) Tread Wear: Tread wear is a comparative figure that attempts to project the longevity of the tire in the form of a three-digit number. This is the wear rate of the tire, comparable only to other tires within a tire manufacturer's line. It is based on a control tire that is tested under controlled conditions at a specified government test track. The control tire is rated 100. Therefore a tire with 200 would theoretically wear twice as long on the government's course compared to a tire with 100. Likewise, a tire rated 60 would be projected to wear about 60% as well as the control tire rated 100. Since application, driving style, and tire maintenance are not taken into account, the tread wear rating cannot project the actual tread mileage of a tire nor can it be accurately used to compare the projected tread life of one brand against another. *(Treadwear **340**, Traction AA, Temperature A)*

11) Maximum Load Rating: This is the maximum weight capacity that each tire is designed to carry. For total weight capacity you must multiply the load rating by the number of tires supporting the vehicle. The GVW or gross vehicle weight is the empty weight of a vehicle with no driver or cargo inside and usually listed on a door tag, trunk tag or in the vehicle's ownerv manual. Maximum loads are rated using the maximum tire pressure assigned by industry standards. *(Max Load **1653 lbs**, Max Press (51psi))*

12) Maximum Tire Pressure: A tire's maximum inflation pressure is the highest "cold" inflation pressure that the tire is designed to contain. It is also important to remember that the vehicles recommended tire inflation pressure is always to be measured and set when the tire is cold. *(Max Load 1653 lbs, Max Press **(51psi)**)*

- **Passenger Tires:**

  - **Most P-metric passenger tires** are manufactured in the standard load range. They will have nothing branded on their sidewalls or may be branded standard load and identified by an SL in their descriptions, as in P235/75R-15 SL.

  - **Extra load P-metric tires** will be branded extra load, and identified by an XL in their descriptions, as in P235/75R-15 XL.

  - **Light load P-metric tires** will be branded light load, and identified by an LL in their descriptions, as in P285/35R-19 LL.

  - Note: Only P-metric sized tires with 45-series aspect ratios or lower may be manufactured in a light load configuration. Light load tires are designed to carry less weight than standard load tires and have been developed for specific applications “typically when relatively large tire sizes are used as Original Equipment (O.E.) on relatively small cars or for Track & Competition DOT tires used for racing applications”.

  - Each tires load range has an assigned air pressure identified in pounds per square inch (psi) at which the tire’s maximum load is rated. Listed below are the air pressures at which maximum load is rated for popular P-metric and LT tires.

P-Metric Passenger Vehicle Tires		
Load Ranges	**Abbreviated**	**Max Load Pressure**
Light Load	(LL)	35 psi (240 kPa)*
Standard Load	(SL)	35 psi (240 kPa)*
Extra Load	(XL)	41 psi (280 kPa)*

*In an effort to internationally harmonize load ratings and ranges, recently introduced and future LL, SL, and XL P-Metric sizes will use ISO/Euro-Metric maximum load pressure of 36 or 42 psi. kPa refers to Kilopascal.

Euro-Metric Passenger Vehicle Tires		
Load Ranges	**Abbreviated**	**Max Load Pressure**
Standard Load	(SL)	36 psi (250 kPa)*
Extra Load	(RF) or (XL)	42 psi (290 kPa)*

**Reinforced and Extra Load nomenclature may be used interchangeably to designate heavy-duty tires.

- **Light Truck Tires:**

  - **LT-metric, LT-flotation and LT-numeric** tires are branded with their load range (load range E or LRE) or their ply rating (10 ply rated) on their sidewalls and list their appropriate load range letter in their descriptions as LT245/75R-16 E, 7.50R-15 D or 31x10.50R-15 C. LT-sized tires featuring section widths of 305mm/12.50" or wider have their maximum loads and cold tire pressures rated at reduced maximum load pressures.

LT-Metric and Flotation Light Truck Tires			
Load Range	**Abbreviated**	**Max Load Pressure < 295mm/11.5" Wide**	**Max Load Pressure > 295mm/11.5" Wide**
Load Range B	(LRB)	35 psi (240 kPa)*	
Load Range C	(LRC)	50 psi (350 kPa)*	35 psi (240 kPa)*
Load Range D	(LRD)	65 psi (450 kPa)*	50 psi (350 kPa)*
Load Range E	(LRE)	80 psi (550 kPa)*	65 psi (450 kPa)*
Load Range F	(LRF)	95 psi (650 kPa)*	80 psi (550 kPa)*

*Select LT sizes are designed with modified maximum load pressures.
Never exceed the tire's maximum pressure or load as indicated on the sidewall.

- **DOT Serial Number:** The "DOT" symbol certifies the tire manufacturer's compliance with the U.S. Department of Transportation (DOT) tire safety standards. Tires made in the United States have the DOT serial number located on the inside sidewall near the rim.

  Starting with the year 2000, four numbers are used for the Date of Manufacture, the first two numbers identify the week and the last two numbers identify the year of manufacture. This identifies how old a tire is.

  Prior to year 2000 three numbers are used for the date of manufacture, first two numbers identify the week and the last number identifies the year of manufacture. To identify tires manufactured in the 90s, a decade symbol (a triangle on its side) is located at the end of the DOT serial number.

  It is recommended that tires 10 years of age or older are not used. This is their maximum lifespan. Beyond this point, the rubber hardens resulting in loss of traction and increased risk of a blow out.