

TYRE INFORMATION

Heavy Vehicle Registration Assessment Scheme (HVRAS)

Safe tyre loads need to be established and tyres fitted to a vehicle must meet Australian Design Rules (ADRs) and Vehicle Standards as described below.

The *Heavy Vehicle (Vehicle Standards) National Regulation* states the wheels and tyres fitted to an axle of a heavy vehicle must be of sufficient size and capacity to carry the part of the vehicle's gross mass transmitted to the ground through the axle.

The Tyre and Rim Association of Australia (TRAA) Standards Manual contains load indices and speed rating tables. It also contains safe tyre limits for tyres with alternate marking. For example, ply ratings.

Tyre specification can be located in the ADRs as follows.

Vehicles manufactured up to 1 July 1988

The sum of the safe tyre loads must equal the vehicle's on road permitted gross vehicle mass (GVM). That is the mass limit permitted for the particular vehicle on Queensland roads. This may be equal to or less than the manufacturer's GVM.

Vehicles manufactured on and from 1 July 1988 to 1 July 1990

Australian Design Rule 24/00, third edition states that the sum of the safe tyre loads must equal the manufacturer's GVM.

Vehicles manufactured on and from 1 July 1990

Australian Design Rule 24/01, third edition states that the manufacturer must fit a tyre placard to the vehicle stating minimum tyre standards for the vehicle.

For vehicles with a GVM or gross trailer mass (GTM) of 4.5 tonnes or more the placard must also state individual axle loads.

Vehicles manufactured on and from December 2003

Australian Design Rule 24/01 was repealed in 2003 and information that was contained in this rule is now incorporated in ADR 42/04 and ADR 23/02 in relation to wheels, tyres and rims.

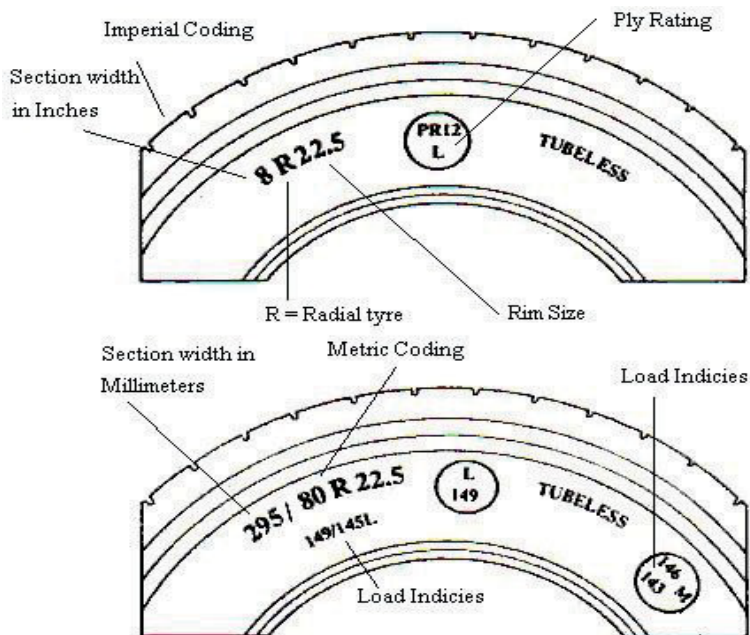
Tyres are marked with one of two coding systems:

- Imperial; or
- Metric.

The below information will provide a better understanding of the various terms and markings associated with tyres.

Tyre Definitions	
Aspect Ratio	A measured term for the relationship between the height of the sidewall and the width of the tread area or cross section width of the tyre.
Cord	This is the twisted fibre or filament of polyester rayon, nylon or steel which gives the tyre carcass and belts its strength.
KPa	KiloPascal is a measurement of pressure.
Load Index	Relates to the maximum weight permitted for each tyre at a set inflation pressure when driven at maximum speed. Load indices are available at https://www.legislation.gov.au under <i>Vehicle Standard (Australian Design Rule 23/02 - Passenger Car Tyres) 2007</i> .
Ply	This is a layer of rubber-coated cords which run on an angle of 40 degrees across the tyre carcass.
Ply Rating	Is the amount of plies manufactured into the tyre i.e. six ply or eight ply.
PSI	Pounds per square inch in relation to tyre pressure.
Radial Ply	This is a tyre with cords running radially from the bead at 90 degrees to the centre of the tyre.
Section Width	The measured width of the tyre at its widest part when inflated to the manufacturer's recommendation.
Speed Rating	This is the maximum speed that the tyre can sustain for a ten minute endurance without destroying itself and the vehicle. Approved Speed Ratings are available at https://www.legislation.gov.au under <i>Vehicle Standard (Australian Design Rule 23/02 – Passenger Car Tyres) 2007</i> .

The diagram below explains the codes found on approved tyres



To convert the section widths of an imperial coded tyre to a metric measurement, multiply the section width by 25.4mm.

Using the examples above, the imperial tyre has a section width of eight inches. To convert inches to millimetres, multiply by 25.4 (8 inches X 25.4 = 203mm).

The load indices are used to establish the manufacturer's safe tyre load for tyres that show load indices. Load indices are shown like this 149/146. The first number is the safe limit for the tyre when the tyre is fitted as a single tyre. The second number is the safe tyre limit when the tyre is fitted as part of a dual set.

Tyre Sizes

Manufacturers may specify different masses, indicated by different load indices, for a given tyre size.

For example, the manufacturer may have a heavy duty tyre for regional use that may carry a heavier load than another tyre of the same size designed for highway use only and having a lower load capacity.

It is recommended that the mass limit for each tyre size is confirmed by contacting the manufacturer, referencing the TRAA Standards Manual or by locating a tyre size chart on the internet that is specific to the tyres on the vehicle being inspected.

Imperial Conversions

To convert from imperial mass to metric mass the following equation needs to be done. To convert pounds to tonnes, the weight in pounds is multiplied x .000454.

This converted weight is then recorded as the GVM for the vehicle.

Example: 10,000 lbs x .000454 = 4.54 tonne

If a mass limit is shown as CWT (centum weight), multiply the CWT by 112 to convert to pounds and then use the calculation above to convert to tonnes.

Definition of CWT:

- It is a unit of mass defined in terms of pounds (i.e. lb).
- Its full name is 'hundred weight'.
- C for centum and hundred and WT for weight.
- There are twenty hundred weights to a tonne.

Contact us

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