

# TYRE PROFILE & WHEEL REFERENCE GUIDE



# TYRE COMPOSITION & MATERIAL

The tyre material and composition will depend on three main factors :

1. Soil Thickness
2. Durability
3. Soil / Rubber abrasion

The most common material is a softer more flexible compound, found in a semi-pneumatic tyre, which gives the tyre a good self cleaning capability and therefore considerably reduces the need for scrapers. This material is however, not as durable and will not handle stone, wire, wood, as well as harder compounds - It will wear out at a faster rate. The final decision is almost always a trade off as most farms have a wide cross section of soils, rock and clay that needs to be dealt with. Generally, the trend is towards the softer tyre, as mud and clay are often the factor that dominates choice. Expect an average of 10% tyre wear / replacement per year if using semi-pneumatic tyres. This will vary depending on acreage and soil abrasiveness.

Traditionally, the harder material in solid tyres were favoured. However, in recent years, this has changed considerably, with many farmers changing from hard solid tyres, to semi-pneumatic. If however durability is the predominant factor influencing choice, then hard tyres should be used. In this case, scrapers may be required.

The recent trend for 50% (or more) of seeding to be 'dry sown', and the remainder (hopefully) 'wet sown', creates a further dilemma. There are 4 possible options in this case:

1. Hard Tyre (Scrapers in heavy wet conditions)
2. Soft tyre (Wear tyres out quickly due to dry sowing)
3. Two sets of tyres - hard and soft (Ideal scenario)
4. Semi-solid tyre

The Semi- Solid tyre is a trade off, where the softer material is used and the wall thickness is more than doubled. Semi-Solid tyres will not produce the absolute best results in either hard or soft conditions. For more information please contact us.



## TYRE DIAMETER

The tyre diameter can be an important factor in areas where tyre performance is marginal. A larger tyre may give better cleaning properties, as the rubber will flex more. Some customers also like the larger rolling diameter as it may increase the mean time between failures of components such as bearings and tyres. In situations where a higher than normal pressure is required, a larger diameter may help. This is due mainly, to its increased weight and, in high trash environments the larger diameter may improve trash flow, by increasing the ground clearance of trash collecting parts such as frames and axles - the gains of this though, in the majority of cases, are not sufficient enough to warrant the higher cost of the larger diameter tyre. Unlike profile and material qualities, the size of the diameter is not normally a critical factor.

There are a range of tyre diameters, which are broken down into three generic sizes - 15", 16" and 18". The 15" and 16" tyres fit onto the standard 15" rim and are therefore interchangeable. The 16" tyres have an additional half inch of rubber all the way around, which may improve cleaning (semi-pneumatic variants) and wear (solid variants). The 18" will have a different rim size.



## SOLID



**SOLID:** Used in rugged country with excessive rocks. Gives longer life (less wear), takes greater pressure. Allows for a greater range of set up parameters. Dry sowing. Good behind disc openers in hard to close soils.

**RESTRICTIONS:** Require mud scrapers in sticky soils, less shock absorption.

## SEMI-SOLID



**SEMI-SOLID:** Used in areas of high abrasion. Gives longer tyre life (less wear). Takes greater pressure. Allows for a greater range of set up parameters. Gives better 'Cleanability' than solid. Dry sowing. Good on gangs and behind disc openers.

**RESTRICTIONS:** Require mud scrapers in very sticky soils.

## SEMI-PNEUMATIC



**SEMI-PNEUMATIC:** Used in sticky/clay soils. Good mud shedding. Better fuel economy (less drag) in heavy conditions. Faster tractor speeds (time efficiency) in heavy conditions

**RESTRICTIONS:** Expect 10%-20% per annum tyre replacement over life of tyres. Restricted set up (ie angles). Tyre wear may be greater if used for high percentages of dry sowing.



**WHY 15", 16" or 18"?:** Roll through; mud shedding; turn rate; machine set up/ clearances; depth/ pressure control; assembly type/ tyne type; ground clearance; maintenance.



**WHY DIFFERENT PROFILES?:** Different soil structure; depth control; moisture level; machine set up; single vs double row vs spread row; assembly type/ tyne type; some profiles clean better; small vs large seed (pressure over seed); crop stock rotation (paddock roughness).



The shape of the press wheel tyre will depend on a number of factors, the most common shapes and the characteristics of each are below.



**ROUNDED (3" overall width)**

- Used as a trade off (half way) between wedge and flat profiles
- Properties similar but not as pronounced as compared to the wedge and flat.
- Medium pressure tyre
- Preferred if field "roughness" is an important consideration



**NARROW WEDGE (2" overall width, 3/4" flat tip)**

- Used extensively in NSW and QLD
- Very good moisture seeking and moisture harvesting properties
- Good depth control in heavy soil structures
- Poor depth control in light soil structures
- Good seed soil contact when drilling deep with narrow tyre
- Ideal for single narrow row seeding
- Good tracking characteristics
- Average wear and durability
- Good mud shedding capability
- High pressure tyre
- Tendency to leave paddocks rough



**FLAT (4" overall width)**

- More common in areas of above average rainfall
- Very good seed soil contact
- Good depth control in medium to light and sandy soil structures
- Good scattering of loose soil above pressed seed
- Ideal for spread row or split seeding
- Good mud shedding capability
- Average wear and durability
- Low pressure tyre
- Does not handle "cloddy" soils well
- Sometimes used in combination with a wedge, but across the back of the machine to help bring soil in across the top of the seed.



The shape of the press wheel tyre will depend on a number of factors, the most common shapes and the characteristics of each are below.



BROAD WEDGE (3" overall width, 1" flat tip)

- Used extensively in Southern States
- Good moisture seeking and moisture harvesting properties
- Good depth control in medium to light soil structures
- Good all purpose profile gives a good balance between seed soil contact and moisture harvest
- Ideal for single narrow row seeding
- Good tracking characteristics
- Above average wear and durability
- Average to good mud shedding capability
- High pressure tyre
- Tendency to leave paddocks rough
- Works well in light to medium soils, may shoulder out in heavy soils behind narrow points



WIDE WEDGE (4" overall width, 1.5" flat tip)

- Above average moisture harvesting properties
- Good depth control in light and sandy soil structures
- Good all purpose profile gives a good balance between seed soil contact and moisture harvest
- Good for spread and split row seeding where some moisture harvesting is required
- Good tracking characteristics
- Above average wear and durability
- Low pressure tyre
- Average to good mud shedding capability
- Does not handle "cloddy" soil well
- Will not leave paddocks as rough as the 3" wedge
- May require ticklers/ snake chain to give some soil scatter over pressed seed



## OTHER PROFILE TYPES



Round (3.5")



Narrow Dome / Vee (2")



Broad Dome / Vee (3")



Ribbed (3")



Narrow Flat / Square (2")



Extra Wide Flat (5")

