

Rubber vs Composite - Multi Piece Wheels

It is well established that composite RunFlats offer the best solution for single piece wheels. RunFlat International's Dynamic RunFlat is widely acknowledged as the easiest to fit solution, which offers long run-flat distance (50km plus) and is lightweight and robust.

For multi piece wheels the choice of RunFlats is more varied with rubber and composite systems available as well as 3 segment and 1 segment options. RunFlat International offer the **Static RunFlat** for multi piece wheels - a dual beadlock 3-segment composite solution, which can be used for both 2-piece bolt together and 3-piece demountable military wheels.



RunFlat International believe this to be the best solution available for the reasons outlined below:

Impact Strength

All our RunFlats are made from a high impact composite material, capable of withstanding 10 tonnes per square inch in compression and high impacts. The same material is used for driven piling, where the material is able to absorb the regular impact of piling without splitting or cracking.

The Static RunFlat (made from the same material) is able to absorb the impact of curb strikes and off-road conditions but unlike rubber provides better vehicle handling with a less bouncy ride when deflated.

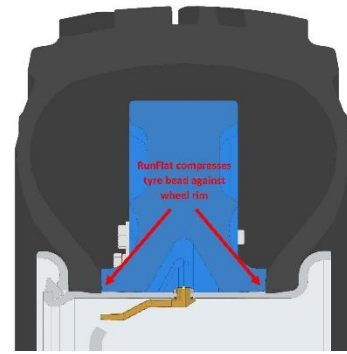
Weight

Composite materials are lighter than rubber, meaning significant weight savings. A 20% plus weight saving can be expected, which in 14.00R20 and 16.00R20 tyre sizes could equate to as much as 30 kg per wheel. This significant reduction will not only increase the vehicle payload but also reduce the unsprung mass reducing the stress on suspension and drive components.

Beadlock Function

Dual beadlock functionality is standard with Static RunFlats. By being made of a composite material the RunFlat is much stronger in compression meaning higher compressive forces can be applied to both beads enabling a better beadlock function.

Rubber runflats are designed to compress and will flex, reducing the forces against the tyre beads, leading to a weaker beadlock function.



Fitting and Maintenance

Unlike the rubber single-piece “donut style” RunFlat, which requires an expensive and difficult to transport fitting press, our Static RunFlats can be fitted in theatre without specialist tools. Being made from 3 segments enables the RunFlat to be inserted into the tyre and then bolted around the wheel rim.

For 2 piece bolt together wheels, the RunFlat can be assembled and disassembled with just a wrench, meaning in-theatre tyre and RunFlat changes are easy and quick.

Life Expectancy

Rubber naturally degrades as a material becoming hard and brittle. This problem is seen in rubber runflats, with regular changes being required even if they are not being used in run-flat mode. This means increased vehicle life costs, with new RunFlats having to be purchased regularly even if unused.

With composite runflats, the material is stable for at least 15 years. If it is not used in run-flat mode the system does not need to be changed regularly, in fact it can remain fitted for the lifetime of the vehicle without issue and can be removed and refitted during tyre changes.

This longevity means significantly reduced life costs and represents better long-term value.

Distance in runflat mode

Composite RunFlats run cooler during testing as there is no rubber-to-rubber friction as seen between a rubber runflat and the tyre.

This means that longer deflated distances can be expected with the condition of the tyre (and RunFlat) often in far better at the end of the trial than rubber equivalents.

Ballistic Resistance

Instead of trying to stop a bullet penetrating its structure, RunFlat International’s material allows the bullet to pass through without cracking. The material is self-healing leading to a smaller exit hole than entry hole and no structural damage.