

# Technical Bulletin No. 20

UK & Ireland

Date: 20/07/17

Issue No 01/18

## RainSport 3

### RainSport 3 fitted correctly on the car:

The RainSport 3 is a flow optimised **asymmetrical** pattern not a directional one!

Use sidewall marking for tyre fitting:



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### Aquaplaning - void volume

The footprint is the part of the tire being contact with the road. The size of the footprint varies in shape depending on the width of a tire. For UHP tires the shape of the footprint looks generally like this and has this size of hand:



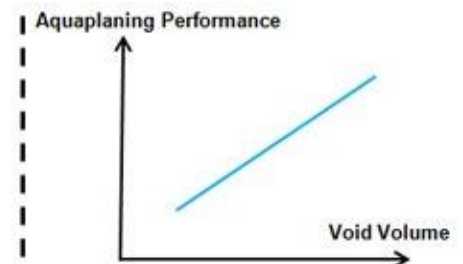
The most important point for aquaplaning performance is the void volume of the footprint which disperse the water. The void volume depends only on the size of the grooves.

The general functionality is:

The higher the void volume the more water can be dispersed and the better is the aquaplaning performance.



Schematic presentation of stereotypes – in reality the void of the grooves only vary slightly



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### Aquaplaning – Pattern Structure

Besides the pure void volume the pattern structure itself has an influence on aquaplaning performance. The basic functionality is:

The shorter the distance the water needs to travel the more water can be displaced and the better is the aquaplaning performance.

Longer and steeper grooves are more beneficial:



Rotational Direction



Since the footprint of UHP tires are wide and small and the RainSport 3 grooves are long and steep there is only a small part of the grooves within the footprint at the same time. Therefore the direction of the grooves in the footprint does not matter since they work more or less like standard circumferential grooves.

Due to several generations of four groove asymmetrical patterns, customers may expect that the handling part of the RainSport 3 is linked to the part which looks more familiar to a standard asymmetrical pattern. But this perception is wrong, the new flow optimised pattern structure enables higher lateral stiffness of the shoulder blocks for direct transfer of side forces which improves handling while the flow-optimised pattern structure enhances fast water displacement. It is this optimal combination of the benefits of asymmetrical and directional pattern that give the RainSport3 its striking appearance and effective balance between wet and dry performance.