



## THE KOREAN GRAND PRIX FROM A TYRE POINT OF VIEW

*Mokpo, October 13<sup>th</sup>, 2011* – The Yeongam circuit in Korea was new to the Formula One calendar last year and has not been used since, meaning that the drivers will be presented with a slippery surface this weekend that will challenge both them and their tyres.

Here are some of the other particular demands that the 5615-metre Yeongam circuit presents the drivers with:

### **The track**

The first braking area after the start subjects the tyres to a big deceleration that peaks at 5G. The cars then drive a flowing part of the track at around 260kph. The rapid esses produce 4.5G of sideways force, which puts a lot of energy through the tyres, similar to the last grand prix in Suzuka.

Often the drivers use the kerbs to find the quickest line through the corners. A vertical force of 800 kilograms pushes down on the tyres as they ride the kerbs, which places a heavy demand on the tyre structure, as it is being put under huge pressure from both above and below.

One of the most challenging corners of all in Korea is Turn 11. This has a wide radius and is driven at high speed. The sticky rubber of the supersoft tyre in particular helps to enhance the grip available, allowing the driver to turn in properly and maintain the ideal line throughout the corner.

The final section of track contains a sequence of corners where it is again vital to hold the perfect racing line, working the tyre tread hard and heating it up to 120 degrees centigrade.

The end of the lap in Korea contains two particularly challenging sweeping left-hand corners, which the driver has to commit to completely. The front tyres need to provide the best possible grip in order to contain understeer at the end of the corner, which leads onto the start-finish straight once more.

### **Graining**

One of the main tyre issues on a slippery track, particularly at the start of a race weekend, can be graining. This phenomenon has been an issue at Korea in the past, although Pirelli's P Zero compounds have so far shown themselves to be quite resistant to graining.

Graining happens when the rubber slides against the track while cornering, rather than obtaining grip. The sideways abrasion against the track surface creates grainy peaks on the tread pattern like waves, reducing the total grip available. The peaks are eventually

worn away, leaving a dimple-like effect on the tyre that is easily recognizable.

There can be a number of different reasons for graining. An unbalanced set-up can produce excess understeer and the consequent sliding is one common reason for graining the front tyres.

Graining can also happen when the tyres are worked hard before they are fully up to temperature. If they are not operating at the correct temperature (in the region of 90 degrees centigrade) the grip is reduced as the rubber is not as sticky. This causes the car to slide and the surface of the tread to grain.

Cool ambient temperatures are yet another common factor behind graining. The cooler the ambient temperature, the longer it takes for the tyre to warm up – which is why driving a smooth out lap is so important. Generally speaking, both the soft and supersoft compounds reach their ideal operating temperatures within one lap.

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