



460 Malaysian tigers, 8 electric scooters, 10 badminton courts and 3 floors of the Petronas Twin Towers help to explain brake use on the Malay circuit.

The Malaysian GP according to Brembo ***An in-depth look at Formula 1 brake use on the Sepang Circuit***

The Sepang Circuit will host the 16th race of the 2016 Formula 1 World Championship from 30 September to 2 October.

Located 85 km from Kuala Lumpur, the track was built inside a 260 hectare oil palm plantation. It took 14 months of work to complete the circuit, which was inaugurated on 9 March 1999. After holding 15 editions during the months of March and April, this year the Malaysian GP will once again be held in October, as it was in 1999 and 2000.

The average temperature in this period is similar to that of the springtime, ranging between 32 and 33 degrees. The greatest issues are linked to the correct dimensioning of the air intake, which must allow the operating temperatures of the braking system to be managed carefully on every section of the circuit.

According to Brembo technicians, who have classified the 21 World Championship tracks on a scale of 1 to 10, the Sepang Circuit falls into the category of tracks that present a medium level of difficulty on the brakes. The Malay track earned a 7 on the difficulty index, the same score obtained by Melbourne, Budapest, Baku, Monaco and Spielberg.

Brake Use During the GP

The 15 curves and 8 straightaways are distributed in a fairly uniform manner over the 5,543 metres of the track. The longest straightaway measures 1,029 metres, which allows the friction material to cool down. As a result, the time spent braking is equivalent to 19% of the overall duration of the race, compared to 24% in the previous GP in Singapore. The amount of energy dissipated in braking is relatively contained: 109 kWh, the same that 8 electric scooters would require to complete the 300 km of the GP race. Average for the World Championship is also the mean deceleration of 3.9 g: at Monza it was 4.3 g and in Singapore, 3.3 g. From the starting line to the chequered flag, each driver applies a total load of 50 tonnes on the pedal, the same weight as 460 Malaysian tigers.

The Most Challenging Stops

Of the 8 braking sections on the Sepang International Circuit a good 5 are classified by Brembo technicians as very challenging on the brakes and 3 are light, none are considered of medium difficulty.

The most difficult overall is the Pangkor Laur Curve (turn 1): here the single-seaters go from 329 km/h to 86 km/h in just 1.57 seconds, travelling 141 metres, which is just over the length of 10 badminton courts. This braking section also requires the greatest effort from the drivers, who undergo a deceleration of 5.4 g and apply a load of 155 kg on the brake pedal.

Curve 15 is also very challenging and asks a great deal from the drivers and brakes. The curve comes right after the Penang Straight: the drop in velocity is 240 km/h (from 326 km/h to 86 km/h) in the same amount of space (141 metres), but with a deceleration of 4.9 g.

The slowest curve on the track is Curve 2, where the drivers enter it slowly: to go from 117 km/h to 71 km/h, they need only 13 metres, which is equivalent to just 3 floors in the Petronas Twin Towers.

Brembo Victories

The single-seaters with Brembo brakes have won 12 of the 17 GP races contested in Singapore. 7 of these victories were won by Ferrari, including the first 3 and the last. The most-winning driver is Sebastian Vettel, who won three times with Red Bull and once with Ferrari.