

2019 GERMAN GRAND PRIX

25 - 28 July 2019

From	The FIA Formula One Technical Delegate	Document	55
To	The Stewards	Date	28 July 2019
		Time	19:37

Technical Delegate's Report

Before the race:

The rear wing elements attachment to the rear wing endplates was checked on car numbers 44, 16 and 07.

A fuel sample was taken from car numbers 16, 07 and 26 and analysed during the race.

An engine oil sample was taken from car numbers 11 and 07.

On the grid it was checked that all cars had fitted their tyres when the 3-Minutes signal was given.

After the race:

The following cars were weighed:

Number	Car	Driver
44	Mercedes	Lewis Hamilton
05	Ferrari	Sebastian Vettel
33	RBR Honda	Max Verstappen
08	Haas Ferrari	Romain Grosjean
20	Haas Ferrari	Kevin Magnussen
55	McLaren Renault	Carlos Sainz
18	Racing Point Mercedes	Lance Stroll
07	Alfa Romeo Ferrari	Kimi Räikkönen
99	Alfa Romeo Ferrari	Antonio Giovinazzi
26	Toro Rosso Honda	Daniil Kvyat
23	Toro Rosso Honda	Alexander Albon
88	Williams Mercedes	Robert Kubica

The steering wheel of all classified cars has been checked.

Car numbers 05, 20, 18, 99, 26 and 23 were checked for the following:

- 1) Bodywork around the front wheels
- 2) Front wing height and overhang
- 3) Rear wing height and overhang
- 4) Front and rear wing width
- 5) Rear wing configuration
- 6) Rear bodywork area
- 7) Rear winglet height
- 8) Skidblock thickness
- 9) Stepped bottom
- 10) Diffuser height
- 11) Diffuser area
- 12) Overall height
- 13) Overall width

The profile of the in Article 3.3.1 of the 2019 Formula One Technical Regulations prescribed front wing section was checked on car numbers 05, 20, 18, 99, 26 and 23.

The minimum distance between the adjacent rear wing sections at any longitudinal vertical plane was checked on car numbers 05, 20, 18, 99, 26 and 23.

It was confirmed for car numbers 05, 20, 18, 99, 26 and 23 that any vertical cross section of bodywork normal to the car centre line and situated in the volumes defined in Article 3.5.7 form one tangent continuous curve on its external surface with a radius no less than 75mm.

The concave radius of sections of the two rear wing elements which are in contact with the external air stream was checked on car numbers 05, 20, 18, 99, 26 and 23.

The front and rear brake air duct dimensions were checked on car numbers 05, 20, 18, 99, 26 and 23.

The oil consumption was checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The plenum temperature was checked on all cars.

The IVT code and calibration checksums were checked on all cars.

The IVT temperatures were checked on all cars.

The ES state of charge on-track limits were checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The lap energy release and recovery limits were checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The MGU-K power limits were checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The maximum MGU-K speed was checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The maximum MGU-K torque was checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The maximum MGU-H speed was checked on car numbers 05, 33, 08, 20, 55, 18, 07, 99, 26 and 23.

The TAG320 locked status was checked on all cars.

The session type has been confirmed for all cars.

Chassis FIA checksum was checked on all cars taking part in the qualifying sessions.

The race start data of all cars have been checked.

Single clutch paddle use for the race start has been checked on all cars.

It was checked that no classified car exceeded 80 km/h when leaving the formation grid prior to the start of the race.

It was verified on all cars that the MD5 checksum of the PCU8 (dash board display) used on the car matched the configuration lodged with the FIA prior to the qualifying session.

The tyre starting pressures of all cars during the race were checked.

The tyres used by all drivers during the race today have been checked.

Fuel flow meter calibration checksums were checked on all cars.

The instantaneous fuel mass flow of all cars was checked.

The fuel temperature of all cars was checked.

The total fuel mass consumed by car numbers 44, 05, 33, 10, 08, 20, 55, 18, 07, 99, 26, 23, 63 and 88 during the race was checked.

A fuel sample was taken from car number 33.

The fuel samples have been checked for density and analysed by gas chromatography.

The results of all the fuel analyses show that the fuels were the same as ones, which had been approved for use by the relevant competitors prior to the Event.

Further the density change of the fuel samples taken today was within the permitted limits.

An engine oil sample was taken from car number 18.

The engine oil samples have been analysed by FTIR spectroscopy and viscometry.

The results of the FTIR analyses show that the sampled oils were consistent with reference engine oil samples which had been approved for use by the relevant competitors prior to the Event.

Apart from the race start data of car numbers 07 and 99 (see document 49), all car weights and the items checked were found to be in conformity with the 2019 FIA Formula One Technical Regulations.

Jo Bauer

The FIA Formula One Technical Delegate