



2017 FIA FORMULA 2 CHAMPIONSHIP TECHNICAL REGULATIONS

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1. GENERAL PRINCIPLES

- 1.1. All cars must comply with these FIA Formula 2 Championship Technical Regulations ("Technical Regulations") in their entirety at all times during each Competition and during each official test described in the FIA Formula 2 Championship Sporting Regulations.
- 1.2. It is the duty of each competitor to satisfy the Technical Delegate and the Stewards of the Meeting that his car complies with these Technical Regulations in their entirety at all times during a Competition.
- 1.3. All cars must be built and operated in accordance with the relevant sections of the Dallara user manual, Mecachrome engine user manual, Hewland gearbox user manual, GP2 2011 system manual, Pirelli F2 Prescriptions and Pirelli F2 Technical Preview documents.
- 1.4. All modifications which are not expressly authorised in the Technical Regulations, Technical bulletins, Dallara user manual, Mecachrome engine user manual, Hewland gearbox user manual and GP2 2011 system manuals, are forbidden.
- 1.5. All measurements must be made while the car is stationary on a flat horizontal surface.
- 1.6. Should any dispute arise as to the eligibility and/or compliance of any entered car, F2 Promoter will supply any element or knowledge deemed necessary for the purpose of scrutineering in order that comparative checking may be undertaken in order to prove conformity with the original standard car.
- 1.7. In event of doubt concerning any element of the Technical Regulations, competitors are entitled to seek written clarification from the F2 Promoter Technical Director, each clarification must be countersigned by the F2 Technical Delegate and by the Chairman of the Stewards. All such correspondence circulated to all competitors. Any such clarification will be considered the official understanding of the relevant Technical Regulation and will therefore be used by scrutineers as a complement to the FIA F2 Technical Regulations.
- 1.8. All competitors must be in possession of a Technical Passport for their car which will be issued by the relevant ASN and must accompany the car at all times. No car will be permitted to take part in a Competition unless the passport is available for inspection at initial scrutineering.
- 1.9. F2 Promoter may issue Technical bulletins that temporarily modify and/or supplement the Technical Regulations to apply at a single Competition or official test, or at two (2) consecutive Competition(s) or official test(s) taking place not more than one week apart. Each such Bulletin has to be countersigned by the FIA.

2. ELIGIBLE CARS

- 2.1. The only rolling chassis permitted are those manufactured by Dallara under the specification Dallara GP2 2011 in 2017 FIA Formula 2 Championship configuration and equipped with a Hewland LSFB gearbox in 2017 FIA Formula 2 Championship configuration. Once supplied, no parts may be modified in any way whatsoever except where specifically permitted by these Technical Regulations or by a Technical Bulletin as defined in Article 1.9. Any such modifications will only be permitted if they are deemed absolutely necessary after a problem has been clearly identified.

Unless permitted under these Technical Regulations or otherwise specifically authorised no element may be added to nor removed from the car specification in its 2017 FIA Formula 2 Championship configuration. The original design and construction of the car must be preserved at all times.

Furthermore, any components supplied as part of the rolling chassis or gearbox which need to be replaced must be supplied by Dallara, Hewland or F2 Promoter and listed in one of the

relevant and up to date spares parts catalogues, unless specifically authorised elsewhere in the Technical Regulations.

- 2.2. The action of adding / applying a surface treatment (i.e. shot peening, anodization, any kind of plasma coating, superfinishing) other than painting or adhesive film to a genuine component is considered as a modification of the component itself.

3. ENGINE

- 3.1. The only engines permitted are the Mecachrome engines as type V8 108. Once supplied, the engine and ancillaries supplied with it may not be modified in any way whatsoever except [where specifically permitted by a Technical Bulletin as defined in Article 1.9.](#)
- 3.2. Any revision, repair or change to the engine can only be carried out by Mecachrome.
- 3.3. The engine will be delivered with security seals in place and it is the responsibility of each competitor to ensure that these seals remain intact until the engine is returned to Mecachrome for revision or repair.
- 3.4. In the event of an engine being required by the Stewards in order to determine compliance with these Technical Regulations during the course of a Competition, the relevant competitor must surrender the engine to the scrutineers as soon as such notification is given. Under these circumstances, F2 Promoter will be obliged to deliver another engine to the competitor concerned until the original is returned. The use of this spare engine will be at no cost to the competitor provided it is returned with its official seals intact.
- 3.5. For safety reasons, at any time, it is not permitted to run the engine without anybody on-board while car's rear wheels are laying on the ground.
- 3.6. ECU/GCU control
 - 3.6.1. ECUs will be delivered with security seals in place and it is the responsibility of each competitor to ensure these seals remain intact.
 - 3.6.2. At the beginning of each Competition or official test, in accordance with the general timetable for the Competition or official test, competitors must make their cars available to F2 Promoter in order to allow the data download and the upload of the appropriate software parameters to each ECU.
 - 3.6.3. At the end of each Competition and official test, all ECUs must be programmed 'race off' to limit the maximum engine speed to 5000 rpm.
 - 3.6.4. If a malfunction of an ECU/GCU is suspected, F2 Promoter assistance staff may work on any such unit under the supervision of the scrutineers.

4. BODYWORK AND DIMENSIONS

- 4.1. The reference plane is the plane passing through the three contact pads of the scrutineering platform when the car is lying on these three contact pads through the three corresponding holes in its underneath skid block.
- 4.2. The front and central parts of the skid block fitted under the bodywork facing the ground must have at all time a thickness of 5mm +/- 1mm. In order to establish the conformity of the skid block after use, its thickness will only be measured in a single position around the periphery of each of the seven original skid block scrutineering holes.
- 4.3. Permitted changes to the original specification :
 - 4.3.1. The front wing assembly configuration may be changed, but only from one of the configurations described in the Dallara GP2 2011 user manual.

- 4.3.2. The rear wing assembly configuration may be changed, but only from one of the configurations described in the Dallara GP2 2011 user manual.
- 4.1.3. Side pod air ducts may be partially covered with adhesive tape on the stone guards or on the forward face of the radiators for the sole purpose of optimising engine temperature.
- 4.3.4. Apart from during the Monaco Competition, the rear top biplane wing assembly angle is limited to a maximum of 17 degrees during races.
- 4.3.5. Front and rear brake ducts may be partially or fully covered with tape for the sole purpose of optimising brake temperatures.
- 4.3.6. In addition to Articles 4.3.3 and 4.3.5, tape may be applied to fasteners or any component surface. In all cases, it must be clear that the tape has no function other than securing the fixings, colouring or protecting the parts to which it is attached. Apart from securing fasteners or unless expressly authorised in these Technical Regulations, Technical bulletins, Dallara user manual, Mecachrome engine user manual, Hewland gearbox user manual, GP2 2011 system manual, it is not permitted to apply tape to cover a junction between components, holes or cavities.
- 4.3.7. Any component inside the bodywork can be covered with thermal insulation material and/or rubbing material and/or electromagnetic protection material providing this insulation and/or rubbing material and/or electromagnetic protection material has no other function than protecting components against heat and/or chafing and/or electromagnetic perturbations.
- 4.3.8. Any modification necessary to install a radio communication system is permitted provided it has been approved by the F2 Promoter Technical Director [and the FIA Technical Delegate](#).
- 4.3.9. Replacement nuts, bolts and washers (except the fixings for nose cone, side impact structure, rear impact structure, front wing and lower rear wing attachment, engine or engine ancillaries and in general all special studs designed for GP2 2011 car) can be supplied by any supplier, but they must always be to the same specification.
- 4.3.10. When a gurney is fitted on the top rear wing flap, the dome head of the gurney fixing bolts can be positioned on either the gurney side or wing side.
- 4.3.11. Providing their sole purpose is the protection of the retaining wheel cables, it is permitted to add covers to the leading edge or trailing edges of the wishbones. Such covers must be made from the Dallara part reference GP20806G028 or GP20808F012.
- 4.3.12. Glue and filler usage – see appendix 1
- 4.3.13. With regard to the height of the undertray, undertray fins, front end plates and barge boards, the reference dimensions are the followings:
- 0 mm from the reference plane to the bottom of all undertray fins.
 - 35 mm from the reference plane to the underneath surface of the undertray.
 - 67 mm from the reference plane to the bottom of front end plates.
 - 35 mm from the reference plane to the bottom of barge boards.
- The above dimensions must be considered as nominal values and respected for each side of the car at all times.
- However, with regard to the dimensions outlined above, and only these dimensions, a tolerance of 5 mm, measured on the scrutineering platform, will be considered in order to cover all potential for discrepancy such as, but not being exclusively limited to:
- component manufacturing and repair tolerances,
 - imperfection of chassis bottom flatness,

- measurement difficulties outside of the scrutineering platform.

During the above dimensions checks on the scrutineering platform, 20 kg weights must lie on each side of the car in front of the rear tyres and on top of the far most outside rear corners of the undertray.

5. WEIGHT

- 5.1. The weight of the car with the driver aboard wearing his complete racing apparel must not be less than 692 kg at all times during a Competition or official test.
- 5.2. Ballast may only be attached using the specific fixing points provided by Dallara. It must also be possible to fix seals if deemed necessary by the scrutineers.
- 5.3. With the exception of nitrogen or compressed air, no substance may be added to the car during the race. If it becomes necessary to replace any part of the car during the race, the new part must not weigh any more than the original part.

6. REPAIRS

- 6.1. Very minor repairs to non-structural components such as side pods, main bodywork, barge board may be made by the competitor provided the damage does not affect an area greater than 150mm at its maximum dimension and does not affect a fixing or fixing area. In all other cases damaged components must be replaced by new ones or submitted to the original supplier for repair.
- 6.2. Very minor repairs to brake ducts may be made by the competitor provided the damage does not affect an area greater than 75mm at its maximum dimension. In all other cases damaged brake ducts must be replaced by new ones.
- 6.3. Any repairs to the survival cell must be carried out in accordance with the manufacturer's specifications and in a repair facility approved by the manufacturer. Competitors will be obliged to show the original certificate of any repair, these must be registered in the car's passport during initial scrutineering at the Competition or official test following the repair.

7. DATA ACQUISITION

- 7.1. Telemetry systems are forbidden.
- 7.2. Apart from the GPS device that is part of the Marshalling system supplied by F2 Promoter, any other GPS system is forbidden.
- 7.3. Disconnecting or removing any sensor fitted to the car as part of the original data acquisition system and listed in the GP2 2011 system user manual is forbidden.
- 7.4. It is the responsibility of the competitor to check the permanent functionality of all the sensors fitted on board as part of the car's original data acquisition system.
- 7.5. Defective sensors connected with the original data acquisition must be replaced prior to the next session or race.
- 7.6. It is the duty of each competitor to record and retain all data from the system of each car from the first official test session of the current season in the format described in the GP2 2011 system manual. Copies of all such data must be made available to the scrutineers if deemed necessary and may be used for scrutineering purposes. Every running day the competitors must bring copies of the entire day data to F2 Promoter assistance staff no later than one hour after the end of the last session or the car's release from parc fermé.

- 7.7. Additional sensors may be fitted to the car provided the additional sensors are logged to the original ECU/data-logger device and provided the fittings preserve the original instruments and electrical system.
- 7.8. Sensors and acquisition systems may only be fitted for the sole purpose of passive data acquisition.
- 7.9. Should the installation of a sensor require a modification of a genuine part of the car, a written approval must be obtained from the F2 Promoter Technical Director [and the FIA Technical Delegate](#) prior to its installation.
- 7.10. Apart from pitot tube and pushrod end strain gauges no sensor must protrude from the structure or the bodywork of the car in the external air flow. The volume inside the side pods and the volume inside the rims are not considered as area submitted to the external air flow.
- 7.11. During official tests and during official tests only, tyre temperature sensors can be added to the car provided they are fitted in a safe position and securely mounted. [Approval of the F2 Promoter Technical Director and the FIA Technical Delegate](#) is required prior installation.
- 7.12. The data flash card can be removed from the optional remote flash disc recorder located in the cockpit, when the drivers get out of their car at the end of the qualifying session and both races.
- 7.13. During Competitions, pitot tube can only be fitted in the pitot tube position specified in the Dallara manual.

8. ELECTRICAL SYSTEM

- 8.1. Modifications to the original electrical system including the front extension, chassis, steering column, steering wheel, marshalling / ADR system, engine power, engine sensor, alternator, power supply, gearbox or rear extension wiring looms are forbidden.
- 8.2. Permitted changes to the original specification :
 - 8.2.1. Providing Article 8.1 is respected, any modifications required to fit sensors and wires relating to a data acquisition system as described in Articles 7.7 and 7.8 above.
 - 8.2.2. Any modifications required to fit a driver communication system as described in Article 8.2.3. below.
 - 8.2.3. The addition of any radio equipment for the sole purpose of transmitting voice communication between a driver and his team.

9. GEARBOX - TRANSMISSION TO THE WHEELS

- 9.1. Gearbox ratios may be changed, but only from the range available for the 2017 FIA Formula 2 Championship from F2 Promoter.
- 9.2. Internal differential plates and ramp angles may be changed but only by using the range of parts available for the 2017 FIA Formula 2 Championship from F2 Promoter.
- 9.3. All cars must have a reverse gear operable any time during Competition or official test by the driver when the engine is running.

10. SUSPENSION AND STEERING

- 10.1. Suspension settings may be changed provided the adjustment margins specified by the supplier of the components are respected.

- 10.2. Mounting points and mounting brackets may not be modified. Camber angles may be adjusted by the use of spacers in the mounting of the hub to the upper wishbone both at the front and rear of the car, but only from the range specified by Dallara.
- 10.3. Only springs and torsion bars specified by Dallara and supplied by F2 Promoter may be used. Once supplied no modification of any sort is permitted.
- 10.4. Adjustment of shock absorbers is free using the range available on the original part.
- 10.5. Damper valves may be changed but only by using the range of parts detailed in the Dallara user manual.
- 10.6. No modification of any sort to any damper sub-component is permitted.
- 10.7. Thrust bearings or spacers may be added between the springs and spring platforms.
- 10.8. Only packers, metal wool washers and bump rubbers may be fitted to damper shafts, Belleville washers or coil springs are not permitted.

11. OIL AND WATER SYSTEMS

- 11.1. With the exception of the installation of quick release couplings on the gearbox oil cooling flexible hoses, no modification of the oil and water system are permitted.

12. BRAKES

- 12.1. Only brake discs distributed by F2 Promoter for the FIA Formula 2 Championship are permitted.
- 12.2. Only brake pads distributed by F2 Promoter for the FIA Formula 2 Championship are permitted.
- 12.3. One brake pressure sensor is mandatory, if another is fitted it will be considered as data acquisition optional equipment.

13. WHEELS AND TYRES

- 13.1. The wheels are specific to FIA Formula 2 Championship and can only be purchased from F2 Promoter.
- 13.2. Wheel colour and the manufacturer's logo may not be changed.
- 13.3. Only tyres provided by the official tyre supplier may be used during Competitions or official test sessions. This applies to both wet and dry-weather tyres.
- 13.4. All tyres which are to be used during a Competition or official test will be marked with a unique identification by the official manufacturer. The use of tyres without the appropriate identification is strictly forbidden.
- 13.5. Tyres can only be inflated with air or nitrogen.
- 13.6. The use of vacuum or any other means to drain the air or gas from a tyre fitted to a rim is strictly forbidden.
- 13.7. It is team's responsibility to ensure that wheels are properly fitted and to ensure that tyre valve caps are properly fitted when cars are running.
- 13.8. Minimum tyre pressure – see appendix 2
- 13.9. Maximum camber – see appendix 3

14. COCKPIT

- 14.1. Permitted changes to the original specification :
 - 14.1.1. Pedal position, pedal pads, master cylinder pushrod length and the relative working angles may be changed for driver comfort. The original pedal arms as supplied by the car manufacturer must not be modified.
 - 14.1.2. The type and position of the driver's heel or foot rest are free.
 - 14.1.3. Equipment for supplying the driver with drink may be fitted within the cockpit.
 - 14.1.4. A screen no higher than 40mm may be added at the front of the cockpit.
 - 14.1.5. The position of the rear view mirrors may be changed provided the original parts and fixing points to bodywork are used.

15. FUEL AND LUBRICANTS

- 15.1. Fuel and lubricants must conform to the specifications laid out in the Mecachrome, Hewland, Dallara and GP2 2011 system user manuals.
- 15.2. No additives may be used unless they are specified in Mecachrome, Hewland, Dallara or GP2 2011 system user manuals.
- 15.3. Any storage of fuel on board the car at a temperature more than ten degrees centigrade below the ambient temperature is forbidden.
- 15.4. The use of any specific device, whether on board or not, to decrease the temperature of the fuel below the ambient temperature is forbidden.
- 15.5. Scrutineers may take fuel samples for analysis at any time during a Competition or an official test following the procedures set out in the Sporting Regulations.
- 15.6. Competitors must ensure that a one litre sample of fuel may be taken from the car at any time during the Competition.
- 15.7. Permitted fuel batches will be listed in the FIA F2 Team Documentation SFTP Area.

16. SAFETY EQUIPMENT AND DRIVER INSTALLATION

- 16.1. Cars must comply with the requirements of Articles 14.1, 14.2, 14.3, 14.4, 14.6, 14.8, 14.9 of the 2010 FIA F1 Technical Regulations at all times during a Competition or an official test.
- 16.2. The safety belts supplied with the car may be changed for another type.
- 16.3. The safety belt fixing system to the monocoque may not be changed or modified.
- 16.4. The seat shell positioning system must not be modified.
- 16.5. Padding and minor modifications of the seat shell are allowed for driver's comfort providing all the functionality of the seat and its safety equipment is preserved.
- 16.6. An extraction test may be requested at any time by the scrutineers. The seat must be removable without the need to cut or remove any of the seat belt.
- 16.7. When seated normally with his seat belts fastened, the driver's helmet must be at least at 70mm below a line drawn between the highest points of the front and rear roll structures.
- 16.8. The driver, seated normally with his seat belts fastened and with the steering wheel removed must be able to raise both legs together so that his knees are past the plane of the steering wheel in the rearward direction. This action must not be pre-Competitioned by any part of the car.

- 16.9. From his normal seating position, with all seat belts fastened and whilst wearing his usual driving equipment the driver must be able to remove the steering wheel and get out of the car within 5 seconds and then replace the steering wheel in a total of 10 seconds. For this test, the position of the steered wheels will be determined by the scrutineers and after the steering wheel has been replaced steering control must be maintained.
- 16.10. No less than 80% of the rear light LEDs must be in working order at the beginning of every session or race.
- 16.11. Seat shell crushable safety pad must not have a crushed surface bigger than 10% of the crushable pad surface when new.

17. ON-BOARD TELEVISION CAMERAS

- 17.1. All participants will have to carry either a camera and its electronic equipment or a dummy camera and its dummy electronic equipment at all times during Competitions and official tests.
- 17.2. The position of the camera electronic equipment and dummy camera electronic equipment can not be modified.
- 17.3. The position on the car of the on-board camera will be determined by F2 Promoter and approved by the scrutineers.

18. TIMING TRANSPONDERS

- 18.1. All cars must be fitted with a timing transponder supplied by the officially appointed timekeepers. This transponder must be fitted in strict accordance with the instructions of the timekeepers.

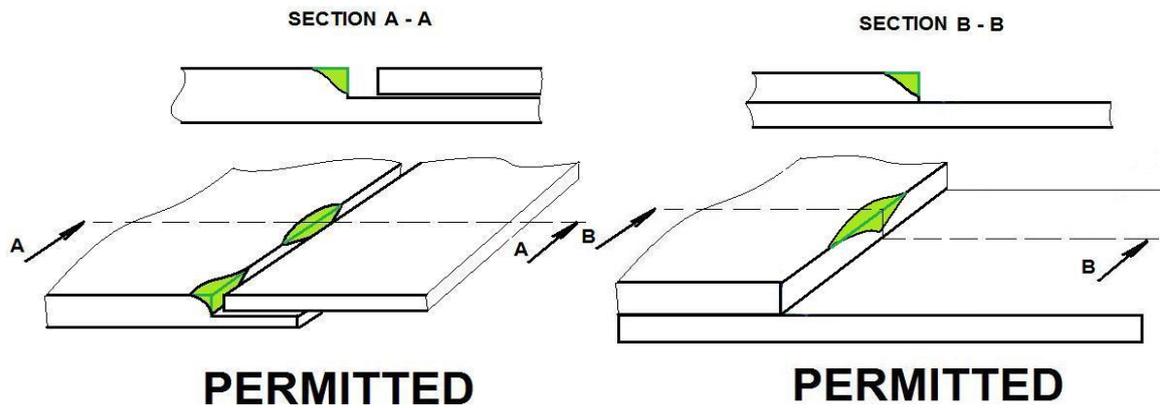
19. ONBOARD SYSTEM CONFIGURATION FILES

- 19.1. ECU configuration files that must be common to all cars during a Competition or an official test will be listed in the FIA F2 Team Documentation SFTP Area.

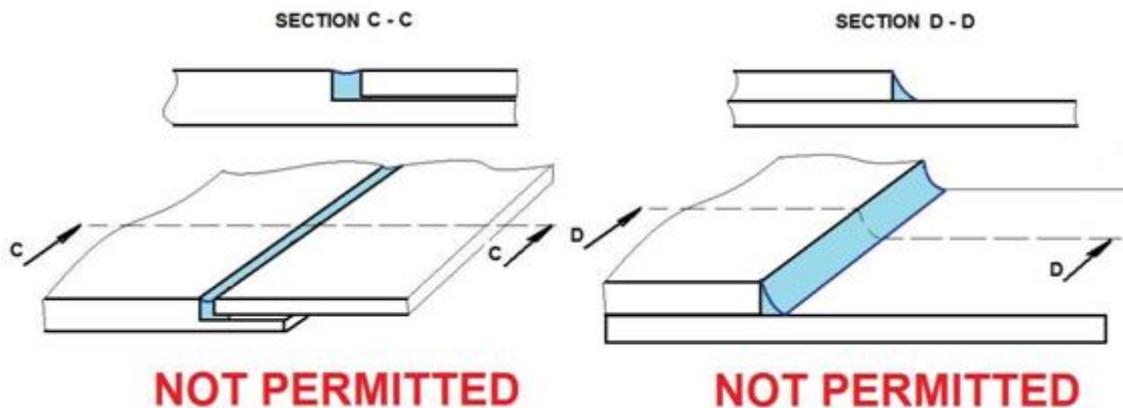
APPENDIX 1

GLUE AND FILLER USAGE

- It is permitted to use glue to fill up gurney fixing holes when gurneys are not fitted.
- It is permitted to use glue and/or filler to re-create the sharp edge on a composite part that suffered from a local manufacturing problem (i.e. lack of resin). See drawing here below.



- It is not permitted to apply any kind of glue and/or filler to improve the junction in between two components. See drawing here below.



APPENDIX 2

MINIMUM TYRE PRESSURE

Minimum tyre pressure may be made mandatory in the technical preview sent by the tyre manufacturer prior to a Competition or an official test.

Any tyre fitted on a car during an official test, a Competition Practice session, a Competition Qualifying session, after the three minutes signal of the Race Starting Procedure and during the entire duration of a Race must respect the minimum pressure made mandatory by the tyre manufacturer.

Tyre pressure check procedures are the followings:

- 1) Tyre pressure checks during an official test or a Competition Practice session or a Competition Qualifying session or a Race Starting Procedure.
 - a. Tyre pressures can be measured by scrutineers anytime and anywhere in the pit lane, during official tests or Competition Practice session(s) or Competition Qualifying session.
 - b. Tyre pressures can be measured by scrutineers on the Grid or in the Pit lane after the three minutes signal of the Race Starting Procedure.
 - c. During official tests, Competition Practice sessions, Competition Qualifying sessions or Race Starting procedures; the rim temperature will not be considered in tyre pressure measurement.
 - d. Should a tyre pressure be measured below the minimum specified by the tyre manufacturer; a second measurement will be taken immediately after the first one in presence of a team representative.
 - e. After this second tyre pressure measurement, no other tyre pressure measurement will be considered.
 - f. A 0.10 PSI tolerance will be applied to pressure measurement. This tolerance will cover discrepancies such as, but not limited to: loss of pressure during pressure measurements, accuracy of pressure measurement device....

- 2) Tyre pressure checks during Parc fermé.
 - a. Tyre pressure can be checked by scrutineers in Parc fermé.
 - b. During checks in Parc fermé, both tyre pressure ("PRES") and rim temperature ("RIM TEMP") will be measured.
 - c. For a post Qualifying Parc fermé, the "Reference Temperature" ("REF TEMP") will be the average between air and track temperatures given on page 3 of the official timing at the start of the Qualifying session.
 - d. For a post Race Parc fermé, the "Reference Temperature" ("REF TEMP") will be the average between air and track temperatures given on page 3 of the official timing 10 minutes before the start of the formation lap.

- e. A Tyre pressure will be considered below the minimum imposed by the tyre manufacturer ("MIN PRES") if :

$$\text{PRES} - 0.08625 \times (\text{RIM TEMP} - \text{REF TEMP}) < \text{MIN PRES}$$

- PRES & MIN PRES in Psi
- RIM TEMP & REF TEMP in Deg C.

- f. A 0.15 Psi tolerance will be applied to PRES value. This tolerance will cover all discrepancies such as, but not limited to: loss of pressure during pressure measurements, accuracy of pressure and temperature measurement devices....
- g. Should a tyre pressure be calculated below the minimum specified by the tyre manufacturer, a second measurement of tyre pressure and rim temperature will be taken as soon as possible after the first one in presence of a team representative.
- h. After this second tyre pressure measurement and rim temperature measurement, no other tyre pressure measurement or rim temperature measurement will be considered.

3) Tyre pressure and rim temperature measurement equipment.

- a. Tyre pressure measurements will be made by the mean of a digital pressure gauge in Psi.
- b. Rim temperature measurement will be made by the mean of a contactless optical measurement device in Deg C.
- c. Rim temperature measurements will be made on the surface of the rim in a silver area located at approximately 30 mm from the outside tyre bed.
- d. Both tyre pressure gauge and rim temperature measurement device will be made available on demand to teams during Competition or official test.

APPENDIX 3
MAXIMUM CAMBER

Maximum camber values specified by the tyre manufacturer in each Competition or official test Pirelli preview documents are mandatory and will be checked as follows:

Camber check conditions

- Official camber checks can be achieved at any time during official test, practice session, qualifying session, parc fermés and from 25 minutes to 10 minutes before the start of the formation lap of a race.
- Camber checks can be achieved on cars fitted with any tyre specification including installation tyres.
- Checks will be achieved with the car on its wheels on the FIA platform.
- No driver on board.
- Camber angle will be measured on outside flange of the rims.
- Front and rear camber zero references will be taken from respectively front and rear pair of platform scales.
- Maximum camber values have to be respected for each single wheel (no average RHS/LHS).
- No tolerance applies.
- Measuring devices will be made available to teams for their own pre-checks during a Competition.