

24H SERIES

The only worldwide endurance racing championship for real gentlemen

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Balance of Performance Publication

Date: 19.08.2020

Hankook 16H HOCKENHEIMRING 2020

To Sporting & Technical Regulations 24H SERIES powered by Hankook 2020
(version 11 July 2019 with KNAF permit nr. 0314.19.292)

Dear Teams and Drivers

In this BOP-publication you will find:

- Balance of Performance (BOP)
- SP-BOP-CAT (Theoretical best lap times).

This BOP and other figures are in force with immediate application and replaces the figures of appendix 11 of the Sporting & Technical regulations and eventually previously published BOP-publications.

Notes on boost control:

Control of Pboost strategy as per document attached (Appendix: Control of Pboost strategy is updated), for all cars of which Pboost max is specified, unless explicit otherwise specified.

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Class TC: Touring Cars

| Brand & Type | Cylinder capacity | Turbo | Minimum Weight | Max Refuelling amount | Remarks |
|----------------------|-------------------|------------|----------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BMW M240i Racing Cup | 3000 cc | Twin Turbo | 1440 kg | 120L @ Green 120L @ Code60 | According to BMW M240i Cup regulations 2020 Car height minimum 100mm Note: Fuel tank capacity is 85L. Max fuel sticker: 120/120 just for practical reasons, so max refuelling will be <ul style="list-style-type: none"> 85L @ Green 85L @ Code60 |
| BMW E46 M3 | 3200 cc | No | 1200 kg | 120 L | |

Please note: Art. 4.1 of Appendix 1 of the Sporting & Technical regulations
Your (TC) car not listed here? Please make an individual request to info@creventic.com

Class TCX: Special Touring Cars

| Brand & Type | Cylinder capacity | Turbo | Minimum Weight | Max Refuelling amount | Remarks |
|-------------------------------|-------------------|------------|----------------|-------------------------------|----------------------------------------------------------------------|
| Ligier JS2 R | 3700 cc | No | 1050 kg | 110 L | |
| Ginetta G55 | 3700 cc | No | 1100 kg | 110 L | |
| Porsche Cayman GT4 Club Sport | 3800 cc | No | 1325 kg | 110 L | |
| BMW M240i Racing Cup | 3000 cc | Twin Turbo | 1440 kg | 120L @ Green 120L @ Code60 | Technical Regulations according Class TCX Car ride height is free |
| BMW M240i Cup | 3000 cc | Twin Turbo | 1330 kg | 120 L | |
| BMW M3 F80 | 3000 cc | Turbo | 1300 kg | 120 L | |
| Opel Astra OPC Cup | 2000 cc | Turbo | 1200 kg | 120 L | |

Please note: Art. 3.5 of Appendix 4 of the Sporting & Technical regulations
Your (TCX) car not listed here? Please make an individual request to info@creventic.com

Class TCR BOP and ECU-software version

| Brand & Type | Minimum Weight | Max Refuel amount | Ride height | TCR Technical form | Power level (%) | SW Name ECU-software version | SW Identification (Checksum or ID) | Max Pboost* & Rev limiter | Correct (mbar/C) |
|--------------------------------|----------------|-------------------|-------------|--------------------|-----------------|---------------------------------|---------------------------------------|---------------------------|------------------|
| ALFA ROMEO GIULIETTA RF TCR | 1215 kg | 100 L | 70mm | 22 | | | | | |
| AUDI RS3 LMS SEQ | 1260 kg | 100 L | 70mm | 10 | | | | | |
| AUDI RS3 LMS DSG | 1240 kg | 100 L | 70mm | 9 | | | | | |
| CUPRA TCR SEQ | 1230 kg | 100 L | 70mm | 35 | | | | | |
| CUPRA TCR DSG | 1230 kg | 100 L | 70mm | 43 | | | | | |
| CUPRA Leon Competicion TCR | 1305 kg | 100 L | 80mm | | | | | | |
| HONDA CIVIC FK7 TCR SEQ (2018) | 1295 kg | 100L | 80mm | 33 | | | | | |
| HONDA CIVIC FK2 TCR SEQ (2017) | 1255 kg | 100L | 70mm | 11 | | | | | |
| HYUNDAI i30 N TCR | 1295 kg | 100 L | 90mm | 27 | | | | | |
| HYUNDAI Veloster N TCR | 1295 kg | 100L | 90mm | 97 | | | | | |
| KIA CEE'D TCR | 1235 kg | 100 L | 70mm | 24 | | | | | |
| Lynk&Co 03 TCR | 1280 kg | 100 L | 80mm | | | | | | |
| MG6 XPOWER TCR | 1260 kg | 100 L | 80mm | | | | | | |
| OPEL ASTRA TCR | 1230 kg | 100 L | 70mm | 5 | | | | | |
| PEUGEOT 308 TCR (Sprint) | 1200 kg | 100 L | 70mm | 37 | | | | | |
| PEUGEOT 308 TCR (Endurance) | 1240 kg | 100 L | 70mm | 37+VO endurance | | | | | |
| RENAULT MEGANE RS TCR | 1245 kg | 100 L | 60mm | 39 | | | | | |
| SUBARU STi TCR | 1215 kg | 100 L | 70mm | 7 | | | | | |
| VOLKSWAGEN GOLF GTI TCR SEQ | 1230 kg | 100 L | 70mm | 14 | | | | | |
| VOLKSWAGEN GOLF GTI TCR DSG | 1230 kg | 100 L | 70mm | 12 | | | | | |
| SEAT LCR TCR V3 DSG | 1230 kg | 100 L | 70mm | 15 | 102.5 | 5F6906259L | CVN | See CUPRA DSG | |

**TCR ECU-software MUST be according
TCR Technical Bulletin no. 08 / 2020-08-11**

Your (TCR) car not listed here? Please make an individual request to info@creventic.com

*Boost pressure will be monitored according to: **TCR Turbocharger Boost Pressure Monitoring Method dated: 2020-08-11**

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Class GT4: GT4 Grand Touring Cars

| Brand & Type | Cylinder capacity | Minimum Weight | Max Refuelling amount | Restrictor | Remarks * |
|------------------------------------|----------------------|----------------|-----------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| ASTON MARTIN V8 VANTAGE GT4 | 4700cc/8cyl | 1350 kg | 100 L | NA | ECU BOP 2016 |
| ASTON MARTIN VANTAGE AMR GT4 | 4000cc/8cyl Turbo | 1450 kg | 105 L | NA | Max Pboost bar/rpm 1,660/4000 1,730/4500 1,680/5000 1,680/5500 1,640/6000 1,610/6500 1,610/7000 |
| Audi R8 LMS GT4 (Evo 2019) | 5200cc/10cyl | 1470 kg | 110 L | 2x41mm | Restrictor thickness 5mm. Acc. Audi R8 GT4 restrictor drawing ECU BOP 2018 |
| Audi R8 LMS GT4 (Evo 2020) | 5200cc/10cyl | 1490 kg | 110 L | 2x41mm | Restrictor thickness 5mm. Acc. Audi R8 GT4 restrictor drawing ECU BOP 2018 |
| BMW M3 GT4 | | 1350 kg | 110 L | NA | ECU BOP 2015 |
| BMW M4 GT4 | 3000cc/6cyl Turbo | 1460 kg | 110 L | 2017 USB Powerstick "Silver" (Max Engine power: 440Hp) | |
| CHEVROLET CAMARO GT4 | | 1450 kg | 100 L | 60mm | FIA-restrictor design ECU BOP 2018 |
| GINETTA G55 GT4 Evo 2015 | 3700cc/6cyl | 1080 kg | 120 L | NA | ECU BOP 2015 |
| GINETTA G55 GT4 Evo 2017/2018 | 3700cc/6cyl | 1100 kg | 95 L | 68mm | Restrictor: G55-E0398 FIA-restrictor design |
| KTM X-BOW GT4 | 2000cc/4cyl Turbo | 1130 kg | 70 L | Max Pboost 2,0 bar Max rpm 7000 rpm (at all gears) | |
| LOTUS EVORA GT4 | | Tba | Tba | Tba | |
| MCLAREN 570S GT4 | 3800cc/8cyl Turbo | 1440 kg | 110 L | Max engine Torque 470Nm Max Pboost 1,8 bar ECU BOP 2018 | |
| MERCEDES AMG GT4 | 4000cc/8cyl Turbo | 1460 kg | 100 L | Max Pboost 1,63 bar (Power Level 3) (Max Engine power: 295kW) | |
| NISSAN 370Z GT4 | 3800cc/6cyl | 1250 kg | 100 L | Tba | ECU BOP 2016/2017 |
| PORSCHE 997 CUP GT4 | 3800cc/6cyl | 1250 kg | 95 L | NA | ECU BOP 2014 |
| PORSCHE CAYMAN GT4 CLUPSPORT MR | 3800cc/6cyl | 1272 kg | 100 L | ECU 2018 BOP | |
| PORSCHE 718 CAYMAN GT4 CS MR | 3800cc/6cyl | 1330 kg | 100 L | ECU 2019 BOP | |
| SIN R1 GT4 | 6200cc/8cyl | 1250 kg | 100 L | NA | Max 43,5% Throttle opening and 6000 rpm MAX |

Your (GT) car not listed here? Please make an individual request to info@creventic.com

* Specified Max Pboost pressure are absolute pressure at ambient of 1010mbar.

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Class 991: Porsche 991 Cup classes (Generation I and II) Including BOP- table class 991-PRO & 991-AM

| Type | BOP** | Minimum Weight | Max Refuelling amount | Remarks |
|---------------------|----------------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cup 991-I (3800cc) | BOP-AM | 1220 kg | 120L@Green 120L@Code60 | Models 2013 .. 2016 NO Restrictor-Blende *Note: Fuel tank capacity is 100L. Max fuel sticker: 120/120 just for practical reasons, so max refuelling will be <ul style="list-style-type: none"> 100L@Green 100L@Code60 |
| Cup 991-I (3800cc) | BOP-PRO | 1220 kg | 120L | Models 2013 .. 2016 NO Restrictor-Blende *Note: Fuel tank capacity is 100L. Max fuel sticker: 120L just for practical reasons, so max refuelling will be <ul style="list-style-type: none"> 100L @green 60L@Code60 |
| Cup 991-II (4000cc) | BOP-AM | 1230 kg | 100L | Models 2017 .. 2019 NO Restrictor-Blende |
| Cup 991-II (4000cc) | BOP-PRO | 1230 kg | 90L | Models 2017 .. 2019 *Restrictor-Blende: 65 mm |

* Restrictor Blende must be according "Manthey TZN" drawing, see 24H Series regulations, appendix 9

** Class and corresponding BOP is determined by Team composition (Drivers categories)

Please note: In case Class 991-AM and 991-PRO is combined to one Class 991, the BOP, 991-AM-BOP or 991-PRO-BOP is still applicable determined by Team composition (Drivers categories)

Class GT3-BOP-TABLE

BOP- table class GT3-PRO & GT3-AM

| Class* | BOP | Balance of Performance** | |
|----------------|----------------------|--------------------------|------------|
| | | Weight | Refuelling |
| GT3-PRO | BOP-Pro | + 30 kg | -/- 5 L |
| GT3-AM | BOP-Neutral | +/- 0 kg | +/- 0 L |
| | BOP-Advantage | -/- 50 kg | 120 L |

* Class and corresponding BOP is determined by Team composition (Drivers categories)

Please note: In case Class GT3-AM and GT3-PRO is combined to one Class GT3:

the BOP, GT3-AM-BOP or GT3-PRO-BOP is still applicable determined by Team composition (Drivers categories)

** BOP adjusted (+/-) ballast weight and refuelling amount, referred to initial value

specified in Appendix 11 (See BOP-publication of the specific event)

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GT cars (Mainly GT cars, also American GT's are eligible)

Class GT3-Am & Class GT3-Pro

| Brand & Type | Minimum Weight | Max Refuel amount | Restrictor | Remarks * |
|------------------------------------------|----------------|-------------------|------------|--------------------------------------------------------------------------------------------------------------------|
| ASTON MARTIN V12 VANTAGE GT3 | 1280 kg | 110 L | 2x41,5mm | FIA-restrictor design |
| AUDI R8 LMS Ultra | 1245 kg | 110 L | 2x47,2mm | up to and incl. 2014 |
| AUDI R8 LMS GT3 (GT3-038) Evo 2018 | 1260 kg | 100 L | 2x39,0mm | Or AM-advantage only: 1310kg/2x40mm FIA-restrictor design |
| AUDI R8 LMS GT3 (GT3-038) Evo 2019 | 1270 kg | 100 L | 2x40,0mm | Or AM-advantage only: 1320kg/2x42mm FIA-restrictor design |
| BENTLEY CONTINENTAL GT3 | 1295 kg | 110 L | N/A | Max Pboost ratio/rpm 1,86/4000 1,78/4500 1,68/5000 1,62/5500 1,56/6000 1,47//6500 1,39/7000 1,28/>7250 |
| BMW M6 GT3 | 1310 | 105 L | N/A | Max Pboost ratio/rpm 1,78/4000 1,86/4500 1,92/5000 1,94/5500 1,89/6000 1,73/6500 1,65/7000 |
| CHEVROLET CORVETTE C6-ZR1 | 1200 kg | 105 L | 2x32,1mm | LMGTE-2-04 |
| FERRARI 488 GT3 | 1300 kg | 97 L | N/A | Max Pboost ratio/rpm 1,47/4000 1,51/4500 1,56/5000 1,60/5500 1,63/6000 1,59//6500 1,54/7000 1,49/>7250 |
| LAMBORGHINI HURACAN GT3 Evo2018 | 1280 kg | 100 L | 2x39,0mm | FIA-restrictor design |
| LAMBORGHINI HURACAN GT3 Evo2019 | 1310 kg | 100 L | 2x39,0mm | FIA-restrictor design |
| McLaren MP4-12C GT3 | 1255 kg | 115 L | 2x36,0mm | Max Pboost ratio/rpm 1,82/4000 1,80/4500 1,78/5000 1,76/5000 1,72/6000 1,65//6500 1,59/7000 1,53/>7500 |
| MERCEDES SLS AMG GT3 | 1330 kg | 105 L | 2x38,0mm | FIA-restrictor design |
| MERCEDES AMG GT3 (2019) | 1330 kg | 105 L | 2x35,0mm | Or AM-advantage only: 1380kg/2x36mm FIA-restrictor design |
| MERCEDES AMG GT3 (EVO2020) | 1330 kg | 105 L | 2x35,0mm | Or AM-advantage only: Or 1380kg/2x36mm FIA-restrictor design |
| NISSAN GT-R Nismo GT3 2018 (GT3-048) | 1300 kg | 110 L | N/A | Max Pboost ratio/rpm 2,00/4000 2,00/4500 2,00/5000 1,95/5500 1,95/6000 1,95/6500 1,90/6900 1,70/7000 |
| PORSCHE 911 GT3 R (991 I & 991 II) | 1240 kg | 97 L | 2x41,5mm | Or AM-advantage only: Or 1290kg/2x43mm FIA-restrictor design |
| RADICAL SPORTSCARS RXC TURBO GT3 | Tba | Tba | Tba | Max Boost Tba |
| RENAULT SPORT RS01 Configuration BOP GT3 | 1200 kg | 110L | Tba | Max Pboost ratio/rpm 1,95 (at all rpm) See also appendix Renault RS01 aerodynamics |
| SCG 003C | 1280 kg | 115 L | 2x35,0mm | Max Pboost ratio/rpm 1,85 (at all rpm) (acc. Technical form SP-X 010 2018 & modified air-inlet) |

* Values are boost pressure ratio and need to be multiplied by the ambient pressure to get the Pboost limit. Competitors must adjust boost pressure relative to ambient pressure at each event. Pboost limits linear interpolation approach.

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Class GTX Special GT cars

| Brand & Type | Cylinder capacity | Minimum Weight | Max Refuelling amount | BOP | Remarks |
|----------------------------------|-------------------|----------------|--------------------------------|--------------------------------------------------|----------------------------------------|
| Lamborghini Huracán Super Trofeo | 5200 cc | 1300 kg | 110 L | 2 x 41mm | Datalogger AIM Evo 4 or Evo5 mandatory |
| Lotus Exige V6 Cup R | 3500 cc Turbo | 1000 kg | 120 L @ Green 120L @ Code60 | Pboost: TBA | Datalogger AIM Evo 4 or Evo5 mandatory |
| MARC II V8 | 5200 cc | 1150 kg | 120 L | NA | NA |
| Mercedes AMG GTX | 4000 cc Turbo | 1350 kg | 120 L | Max Pboost 2.4 bar | Datalogger AIM Evo 4 or Evo5 mandatory |
| Vortex Light V8 | 6200 cc | 950 kg | 120 L | NA | NA |
| BMW M4 Silhouette | 3400 cc | 1050 kg | 120L | NA | NA |
| KTM GTX Concept | 2500 cc Turbo | 1050 kg | 90 L | 2,0bar (independent of Pamb), max rpm 7000 | Datalogger AIM Evo 4 or Evo5 mandatory |

Please note: Art. 3.3 of Appendix 7 of the Sporting & Technical regulations

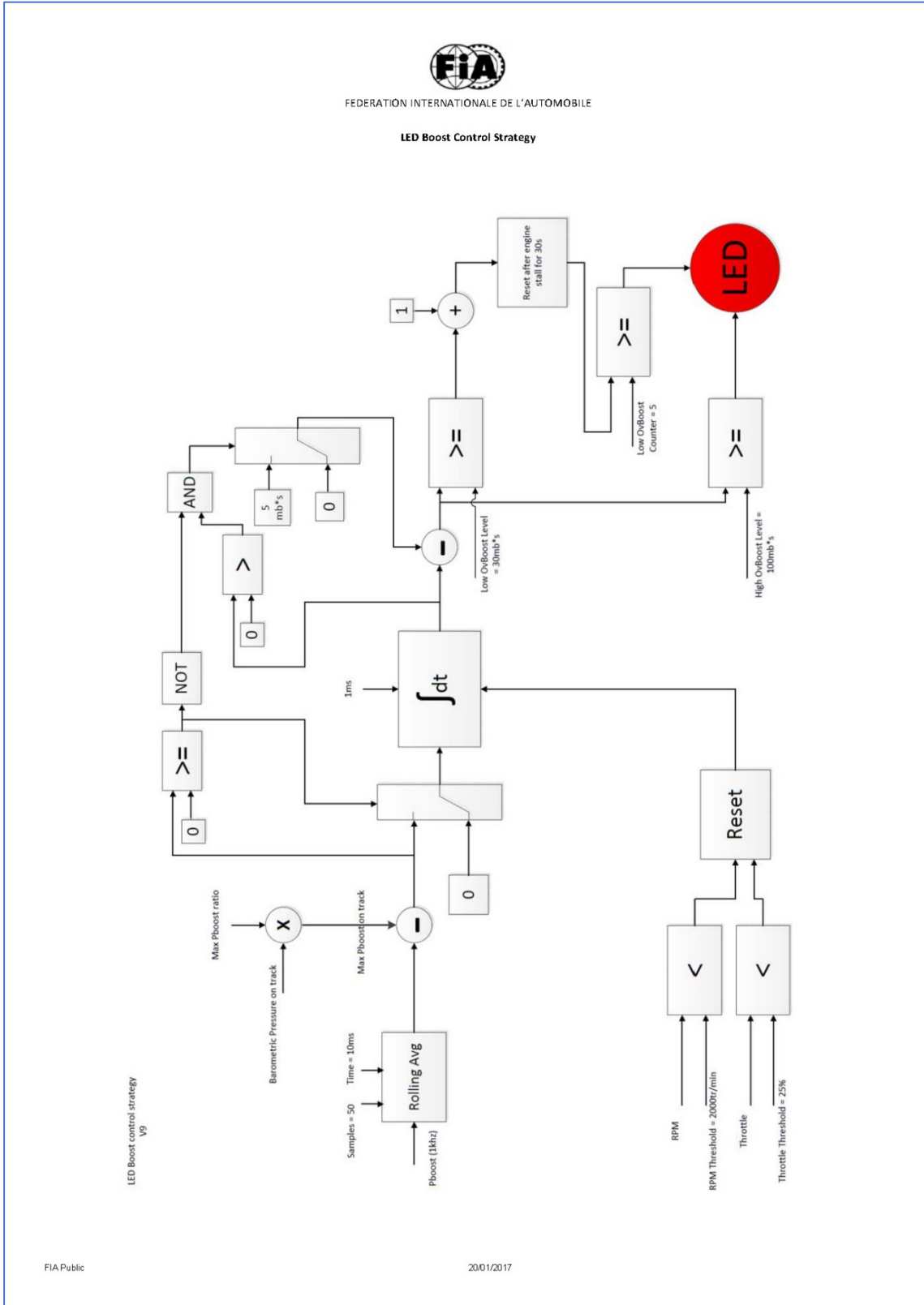
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Appendix: Control of Pboost strategy



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Appendix: Renault RS01 aerodynamics



PHOTO N° 01

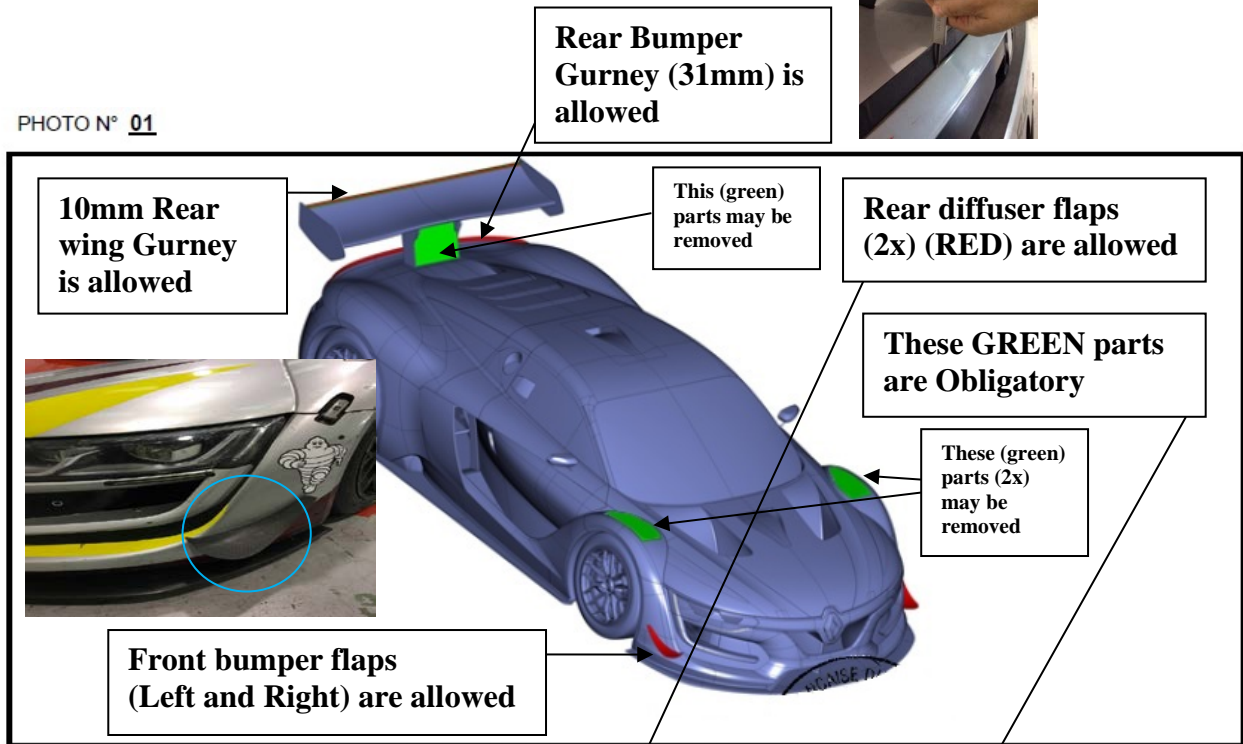


PHOTO N° 02

