

24H SERIES

POWERED BY  **HANKOOK**

Balance of Performance Publication

Revision 1

Date: 11.01.2020

HANKOOK 24H DUBAI 2021

To Sporting & Technical Regulations 24H SERIES powered by Hankook 2021
(Version 26 November 2020 with KNAF permit No.: 0314.21.002)

NOTE: This Balance of Performance Publication is valid with immediate effect and replaces the previous publication dated 07.12.2020.

With this Balance of Performance publication, the refuelling flow restrictor plate is introduced. This is a mandatory BOP-measure that must be implemented by all cars.

Each car receives a sticker indicating the restrictor plate colour to be used. This sticker will be placed by the scrutineers above the fuel inlet:



The following flow rate applies to each colour:

- BLUE: 100%
- YELLOW: 95%
- RED: 92,5%

On each refuelling nozzle, a set of restrictors is attached. The correct coloured restrictor must be inserted into the nozzle handle before refuelling.

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Dear Teams and Drivers

These Balance of Performance 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	FUEL FLOW	Remarks
BMW M240i Racing Cup	3000 cc	Twin Turbo	1440 kg	85L @ Green 85L @ Code60	BLUE	According to BMW M240i Cup regulations 2020 Car height minimum 100mm
BMW E46 M3	3200 cc	No	1200 kg	120 L	BLUE	
BMW M2 C2 (365HP)	3000 cc	Twin Turbo	1530 kg	85 L	BLUE	No power stick (365HP)

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	FUEL FLOW	Remarks
Ligier JS2 R	3700 cc	No	1050 kg	110 L	BLUE	
Ginetta G55	3700 cc	No	1100 kg	110 L	BLUE	
Porsche Cayman GT4 Club Sport (type 981)	3800 cc	No	1325 kg	110 L	BLUE	
Porsche 718 Cayman GT4 Club Sport (type 982)	3800 cc	No	1325 kg	110 L	BLUE	
BMW M240i Racing Cup	3000 cc	Twin Turbo	1440 kg	85L @ Green 85L @ Code60	BLUE	Technical Regulations according Class TCX Car ride height is free
BMW M240i	3000 cc	Twin Turbo	1330 kg	120 L	BLUE	
BMW M2 C2 (450HP)	3000 cc	Twin Turbo	1530 kg	85 L @ Green 85L @ Code60	BLUE	Black power stick (450HP)
BMW M3 E92	4000 cc	No	1300 kg	120 L	BLUE	
BMW M3 F80	3000 cc	Turbo	1300 kg	120 L	BLUE	
Opel Astra OPC Cup	2000 cc	Turbo	1200 kg	120 L	BLUE	
CUPRA DSG	2000 cc	Turbo	1240 kg	100 L	BLUE	BOP (e.g. Ride Height 70mm) and ECU-software same as CUPRA DSG TCR 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	Fuel Flow	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	1245 kg	100 L	BLUE	70mm	22					
AUDI RS3 LMS SEQ	1245 kg	100 L	BLUE	60mm	10					
AUDI RS3 LMS DSG	1250 kg	100 L	BLUE	70mm	9					
CUPRA TCR SEQ	1245 kg	100 L	BLUE	60mm	35					
CUPRA TCR DSG	1240 kg	100 L	BLUE	70mm	43					
CUPRA Leon Competicion TCR	1255 kg	100 L	BLUE	70mm	169					
HONDA CIVIC FK7 TCR SEQ (2018)	1270 kg	100L	BLUE	70mm	33					
HONDA CIVIC FK2 TCR SEQ (2017)	1250 kg	100L	BLUE	70mm	11					
HYUNDAI i30 N TCR	1270 kg	100 L	BLUE	90mm	27					
HYUNDAI Veloster N TCR	1275 kg	100L	BLUE	90mm	97					
KIA CEE'D TCR	1245 kg	100 L	BLUE	70mm	24					
Lynk&Co 03 TCR	1280 kg	100 L	BLUE	80mm	101					
MG6 XPOWER TCR	1250 kg	100 L	BLUE	80mm	139					
OPEL ASTRA TCR	1255 kg	100 L	BLUE	70mm	5					
PEUGEOT 308 TCR	1245 kg	100 L	BLUE	70mm	37					
RENAULT MEGANE RS TCR	1245 kg	100 L	BLUE	60mm	121					
SUBARU STi TCR	1245 kg	100 L	BLUE	70mm	7					
VOLKSWAGEN GOLF GTI TCR SEQ	1245 kg	100 L	BLUE	60mm	14					
VOLKSWAGEN GOLF GTI TCR DSG	1240 kg	100 L	BLUE	70mm	12					
<p>TCR ECU-software MUST be according TCR Technical Bulletin no. 15 / 2020-10-27</p>										
<p>Your (TCR) car not listed here? Please make an individual request to info@creventic.com</p>										

*Boost pressure will be monitored according to: TCR Turbocharger Boost 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	Fuel Flow	Restrictor	Remarks *
ASTON MARTIN VANTAGE AMR GT4	4000cc/8cyl Turbo	1450 kg	105 L	BLUE	NA	Max Pboost bar 1670mbar
Audi R8 LMS GT4 (Evo 2019)	5200cc/10cyl	1470 kg	110 L	BLUE	2x42mm	Restrictor thickness 5mm. Acc. Audi R8 GT4 restrictor drawing
Audi R8 LMS GT4 (Evo 2020)	5200cc/10cyl	1490 kg	110 L	BLUE	2x42mm	Restrictor thickness 5mm. Acc. Audi R8 GT4 restrictor drawing
BMW M4 GT4	3000cc/6cyl Turbo	1460 kg	110 L	BLUE	USB Powerstick "Silver" (Max Engine power: 440Hp)	
CHEVROLET CAMARO GT4		1450 kg	100 L	BLUE	62mm	FIA-restrictor design ECU BOP 2020
GINETTA G55 GT4 Evo 2015	3700cc/6cyl	1080 kg	120 L	BLUE	NA	ECU BOP 2015
GINETTA G55 GT4 Evo 2017/2018	3700cc/6cyl	1100 kg	95 L	BLUE	68mm	Restrictor: G55-E0398 FIA-restrictor design
KTM X-BOW GT4	2000cc/4cyl Turbo	1130 kg	70 L	BLUE	Max Pboost 2,0 bar Max rpm 7000 rpm (at all gears)	
LOTUS EVORA GT4		Tba	Tba	BLUE	Tba	
MCLAREN 570S GT4	3800cc/8cyl Turbo	1450 kg	110 L	BLUE	2019 MAP ECU BOP 2020	
MERCEDES AMG GT4	4000cc/8cyl Turbo	1460 kg	100 L	BLUE	Max Pboost 1,63 bar (Power Level 3 MAP 2019 ECU BOP 2020 (Max Engine power: 295kW)	
PORSCHE CAYMAN GT4 CLUPSPORT MR	3800cc/6cyl	1272 kg	100 L	BLUE	ECU 2018 BOP	
PORSCHE 718 CAYMAN GT4 CS MR	3800cc/6cyl	1315 kg	100 L	BLUE	ECU MAP BOP 2020	
SIN R1 GT4	6200cc/8cyl	1250 kg	100 L	BLUE	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	Fuel Flow	Remarks
Cup 991-I (3800cc)	BOP-AM	1220 kg	120L@Green 120L@Code60	BLUE	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	BLUE	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	BLUE	Models 2017 .. 2019 NO Restrictor-Blende
Cup 991-II (4000cc)	BOP-PRO	1230 kg	90L	BLUE	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	Fuel Flow	Restrictor	Remarks *
ASTON MARTIN V12 VANTAGE GT3	1280 kg	110 L	BLUE	2x41,5mm	FIA-restrictor design
AUDI R8 LMS GT3 (GT3-038) Evo 2018	1260 kg	100 L	YELLOW	2x39,0mm	Or AM-advantage only: 1310kg/2x40mm FIA-restrictor design
AUDI R8 LMS GT3 (GT3-038) Evo 2019	1270 kg	100 L	YELLOW	2x40,0mm	Or AM-advantage only: 1320kg/2x42mm FIA-restrictor design
BENTLEY CONTINENTAL GT3	1295 kg	110 L	BLUE	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	BLUE	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	BLUE	2x32,1mm	LMGTE-2-04
Dodge SRT Viper GT3-R	1300 kg	110 L	BLUE	2x 36,0mm	FIA-restrictor design (GT3-036 incl. Datasheet SP9-036 2019
FERRARI 488 GT3	1300 kg	97 L	RED	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	YELLOW	2x39,0mm	FIA-restrictor design
LAMBORGHINI HURACAN GT3 Evo2019	1290 kg	100 L	YELLOW	2x39,0mm	FIA-restrictor design
McLaren 720S GT3	1250 kg	100 L	BLUE	N/A	Max Pboost ratio/rpm 1,76/4000 1,73/4500 1,70/5000 1,69/5500 1,62/6000 1,56//6500 1,45/7000 1,40/7500 1,33/8000 1,10/8100
MERCEDES AMG GT3 (2019)	1330 kg	105 L	BLUE	2x35,0mm	Or AM-advantage only: 1380kg/2x36mm FIA-restrictor design
MERCEDES AMG GT3 (EVO2020)	1330 kg	105 L	BLUE	2x35,0mm	Or AM-advantage only: Or 1380kg/2x36mm FIA-restrictor design
NISSAN GT-R Nismo GT3 2018 (GT3-048)	1300 kg	110 L	BLUE	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	RED	2x41,5mm	Or AM-advantage only: Or 1290kg/2x43mm FIA-restrictor design
RADICAL SPORTSCARS RXC TURBO GT3	Tba	Tba	BLUE	Tba	Max Boost Tba
RENAULT SPORT RS01 Configuration BOP GT3	1200 kg	110L	BLUE	Tba	Max Pboost ratio/rpm 1,95 (at all rpm) See also appendix Renault RS01 aerodynamics
SCG 003C	1280 kg	115 L	BLUE	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.

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Competitors must adjust boost pressure relative to ambient pressure at each event. Pboost limits linear interpolation approach.

Class GTX Special GT cars

Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	Fuel Flow	BOP	Remarks
Lamborghini Huracán Super Trofeo	5200 cc	1300 kg	110 L	BLUE	2 x 41mm	Datalogger AIM Evo 4 or Evo5 mandatory In case car will be amalgamated to class GT3. Initial BOP will be: 1275kg / 110 L / 2x 42mm
Lotus Exige V6 Cup R	3500 cc Turbo	1000 kg	120 L @ Green 120L @ Code60	BLUE	Pboost: TBA	Datalogger AIM Evo 4 or Evo5 mandatory
MARC II V8	5200 cc	1150 kg	120 L	BLUE	NA	NA
Vortex Light V8	6200 cc	950 kg	120 L @ Green 120L @ Code60	BLUE	NA	NA
Vortex 1.0	6200 cc	950 kg	120 L @ Green 120L @ Code60	BLUE	NA	
BMW M4 Silhouette	3400 cc	1050 kg	120 L	BLUE	NA	NA
KTM GTX Concept	2500 cc Turbo	1050 kg	90 L	BLUE	2,0bar (independent of Pamb), max rpm 7000	Datalogger AIM Evo 4 or Evo5 mandatory

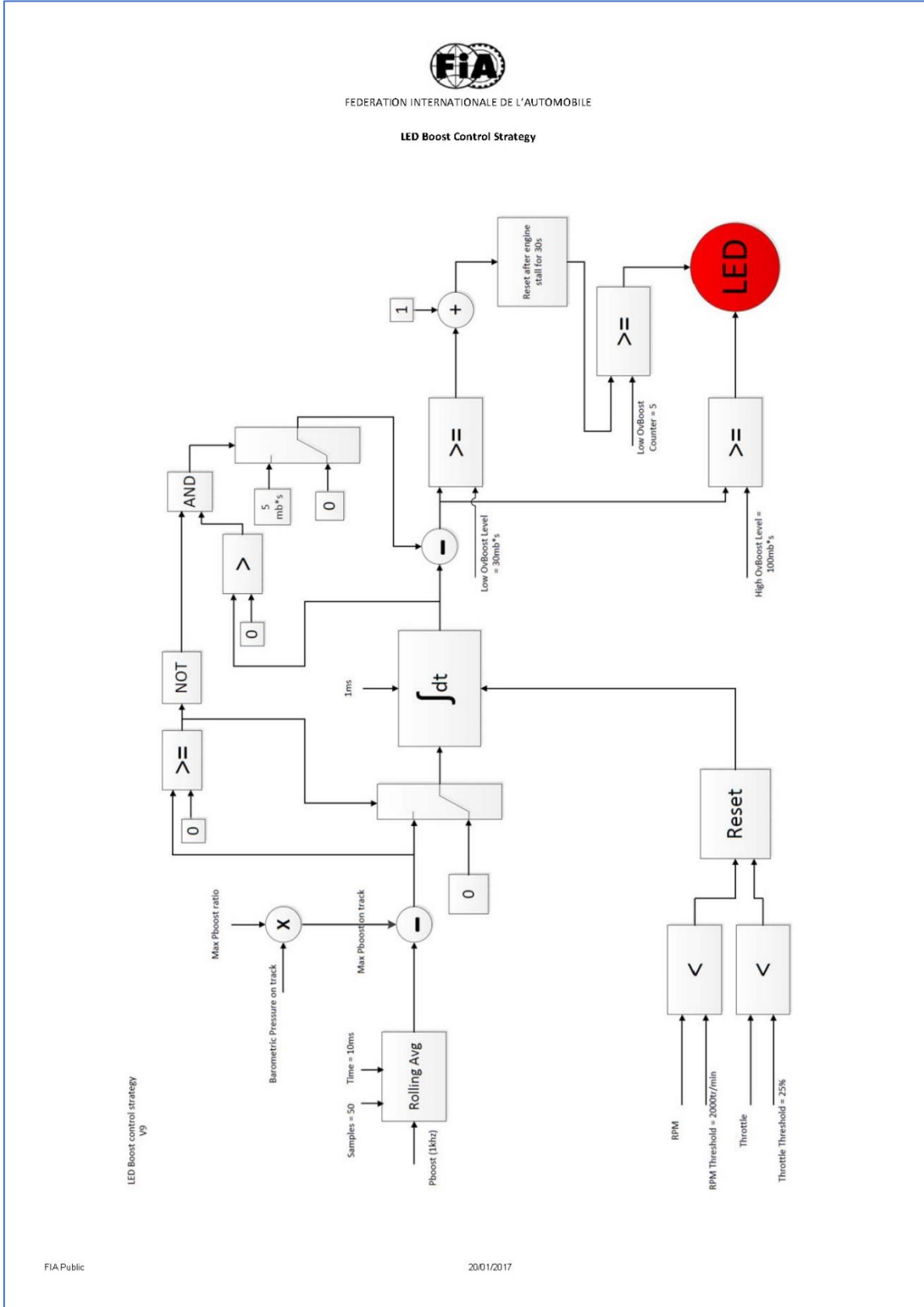
Please note: Art. 3.3 of Appendix 7 of the Sporting & Technical regulations

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

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Appendix: Control of Pboost strategy



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Appendix: Renault RS01 aerodynamics



PHOTO N° 01

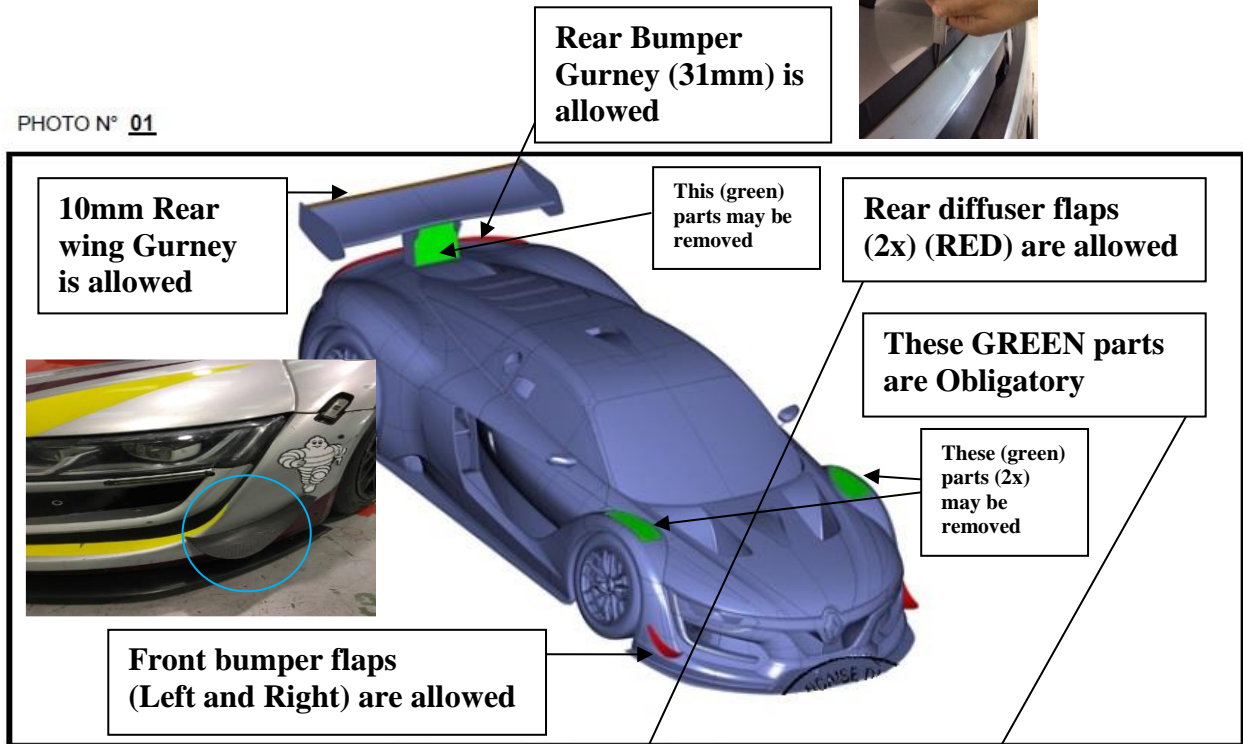


PHOTO N° 02

