

Bulletin Nr. 03/2017 dated 03.03.2017

To Sporting & Technical Regulations 24H SERIES 2017with KNAF-permit No.: 0314.16.272

Subject: BOP Hankook 12H Mugello 17-18 March 2017

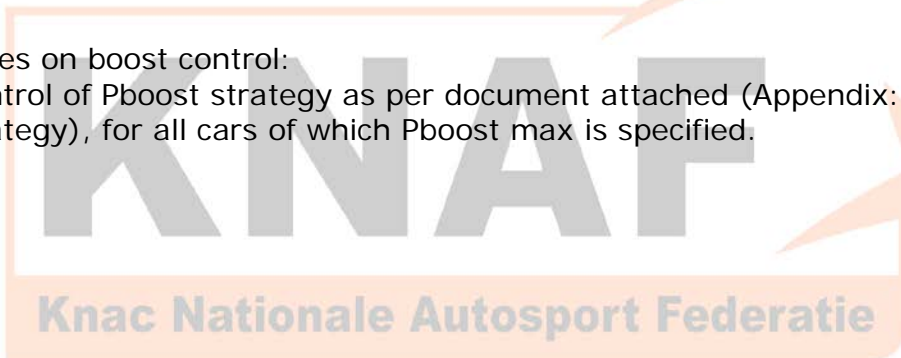
Dear Teams and Drivers

In this bulletin you will find the Balance of Performance (BOP) and applicable Minimum Reference lap times for **Hankook 12H Mugello 17-18 March 2017**.

This BOP and other figures are in force with immediate application and replaces the figures of appendix 16 of the Sporting & Technical regulations and eventually previously published BOP-figures.

Notes on boost control:

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



Bulletin KNAF approved at: 9th March 2017
Additional to KNAF-permit No: 0314.17.031

Petrol & Diesel Touring cars, up to 3500cc

Class	Cylinder capacity		Minimum Weight	Max Refuelling amount	Remarks	
D1	Diesel cars up to 2000cc		1100 kg	100L	Min ref lap time* 2min09 (Mugello) Theoretical Min Ref lap time 2min09	
			1200 kg	120L		
A2	Petrol (up to - 2.000cc)	up to 1.300cc	710 kg	80 L	Min ref lap time* 2min09 (Mugello) Theoretical Min Ref lap time 2min09	
		1.300 - 1.400cc	760 kg	80 L		
		1.400 - 1.600cc	820 kg	90 L		
		1.600 - 1.800cc	900 kg	100 L		
		1.800 - 2.000cc	980 kg	100 L		
	Petrol Supercharged engines (up to 1.650cc)	Supercharged engines up to 1.650cc	1000kg	70 L		
		Peugeot RCZ 1.600cc / Turbo	1100 kg	80 L		
A3	Petrol (2.000 - 3.500cc)	2.000 - 2.500cc	1000 kg	120 L	Min ref lap time* 2min04 (Mugello) Theoretical Min Ref time 2min04	
		2.500 - 3.000cc	1100 kg	120 L		
		3.000 - 3.500cc	1200 kg	120 L		
	Petrol Supercharged engines (1.650 - 2.000cc)	Peugeot 208 GTI 1.600cc / Turbo	1050 kg	85 L		
		1.650 – 1.800cc	900 kg	100 L		e.g. Lotus Elise 1.8 Turbo
			1000 kg	120 L		e.g. Seat Leon MK1
			1000 kg	90 L		e.g. Seat Leon MK2, Opel Astra (NO TCR cars)
		1.800 – 2.000cc	1100 kg	100 L		
	Diesel 2.000 – 3000cc	2.000 – 2.500cc	1100 kg	85 L		
		2.500 – 3.000cc	1200 kg	85 L		
	CUP 1	BMW M235i Cup	3.000cc Twin Turbo	Remarks		Remarks
TCR	Supercharged engines 2.000cc		See art. 5b	100 L	(Models 2015 and younger)	

Class TCR

Brand & Type	Minimum Weight	Max Refuelling amount	Ride height	TCR Technical form	Remarks
ALFA ROMEO GIULIETTA TCR	TBA	100 L	70 mm	Cert. No 006	
AUDI RS3 LMS	1220kg	100 L	70 mm	TBA	
FORD FOCUS TCR	TBA	100 L	70 mm	TBA	
HONDA CIVIC TCR	1200 kg	100 L	70 mm	Cert. No 001	
KIA CEE'D TCR	TBA	100 L	TBA	TBA	
OPEL ASTRA TCR	TBA	100 L	70 mm	TBA	
PEUGEOT 308 RACING CUP	1100 kg	100 L	70 mm	TBA	
SEAT LEON CUP RACER (2015,DSG)	1200 kg	100 L	60 mm	TCN2-C-001	
SEAT LEON TCR V2 DSG (2016)	1200 kg	100 L	60 mm	Cert. No 004	
SEAT LEON TCR V2 SEQ (2016)	1200 kg	100 L	70 mm	Cert. No 002	
SEAT LEON TCR V3 DSG (2017)	TBA	100 L	TBA	TBA	
SEAT LEON TCR V3 SEQ (2017)	TBA	100 L	TBA	TBA	
SUBARU WRX STI TCR	TBA	100 L	TBA	Cert. No 007	
VOLKSWAGEN GOLF GTI TCR	TBA	100 L	TBA	Cert. No 003	
Your (TCR) car not listed here? Please make an individual request to info@creventic.com					



GT cars* : Porsche 997 Cup and Porsche 991 Cup classes

Class	Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	Remarks
Class 997	Porsche 997 Cup	3.600 cc	1150 kg	120 L	Models 2007 .. 2009 Restrictor-Blende N/A
		3.800 cc	1200 kg	120 L	Models 2010 .. 2013 Restrictor-Blende 65mm
Class 991	Porsche 991 Cup	3.800 cc	1230 kg	100L	Models 2014 .. 2016 Restrictor-Blende 65mm

A6-BOP-TABLE

BOP- table class A6-Pro & A6-Am Mugello circuit

Class*	Qualifying range	Race Minimum reference lap time	Balance Of Performance***		Remarks***
			Weight	Refuelling	
A6-Am	> 1.55	1.55,0**	-/- 50kg	120 L	BOP-advantage
	1.53 .. 1.55	1.53,0**	+0kg	+0 L	BOP-neutral
A6-Pro	< 1.53	free	+30kg	-/- 5 L	BOP-handicap (No lap time restrictions)

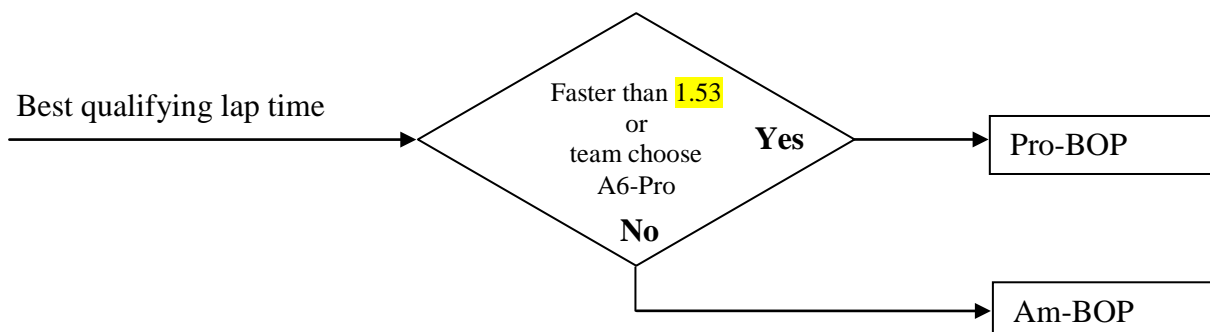
* Class (A6-Am or A6-Pro) is basically determined by the best qualifying lap.

According to the regulations: The organiser reserves the right to modify BOP for individual cars at any time of the event.

** Applicable Minimum reference lap time during the race. In case a fast driver is faster than the Minimum reference lap time, by incident, the team can use one of the "Escape Joker" (Each team in class A6-Am will receive 10 escape jokers)

*** BOP adjusted (+/-) ballast weight and refuelling amount, referred to initial value specified in Appendix 1 (Class Overview)

Criteria to be assigned with Pro-BOP or Am-BOP:



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

Class A6-Am & Class A6-Pro

Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	BOP	Remarks
ASTON MARTIN VANTAGE GT3	5900cc/12cyl	1300 kg	110 L	2x41,5mm	FIA-restrictor design
AUDI R8 LMS Ultra	5200cc/10cyl	1265 kg	110 L	2x47,2mm	up to and incl. 2014
AUDI R8 LMS (GT3-038)	5200cc/10cyl	1260 kg	100L	2x38,0mm	Or 1320kg/2x40mm FIA-restrictor design
BMW Z4 GT3	4400cc/8cyl.	1250 kg	105 L	1x70,0mm	
CHEVROLET CORVETTE C6-ZR1	5500cc/8cyl.	1270 kg	100 L	2x31,6mm	LMGTE-2-04 Chas #00002
DODGE VIPER CC SERIES 2	8400cc/10cyl	1300 kg	115 L	N/A	Chas #VCC-113
FERRARI 458 ITALIA GT3	4500cc/8cyl.	1280 kg	110L	2x50,0mm	FIA-restrictor design
FERRARI 488 GT3	3900cc/8cyl.	1300 kg	105L	N/A	Max Boost(barA/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
FERRARI F458GT (VdeV1)	4500cc/8cyl.	1250 kg	100 L	2x56,0mm	Chas #2850# Chas #2842#
LAMBORGHINI GALLARDO LP560 GT3	5200cc/10cyl	1225 kg	100 L	2x47,2mm	
LAMBORGHINI HURACAN GT3	5200cc/10cyl	1275 kg	100 L	2x38,0mm	FIA-restrictor design
LAMBORGHINI HURACAN Super Trofeo	5200cc/10cyl	1275 kg	110 L	2x41,0mm	
MASERATI GRANTURISMO MC GT3	4700cc/8cyl.	1220 kg	105 L	1x65,0mm	
McLaren MP4-12C GT3	3800cc/8cyl.	1275 kg	115 L	2x36,0mm	Max Boost(barA/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
McLaren 650S GT3	3800cc/8cyl.	Tba	Tba	Tba	Max Boost(barA/rpm) Tba
MERCEDES SLS AMG GT3	6200cc/8cyl.	1350 kg	105 L	2x38,0mm	FIA-restrictor design
MERCEDES AMG GT3	6200cc/8cyl.	1325 kg	105 L	2x34,5mm	FIA-restrictor design
NISSAN GT-R GT3	3800cc/6cyl.	1335 kg	115 L	2x40,0mm	Up to and incl. 2014 Max Pboost 2,05 barA (all rpm)
	3800cc/6cyl.	1300 kg	110 L	2x40,0mm	EVO 2015 Max Pboost 2,0 barA (all rpm)
PORSCHE 997 GT3 R	4000cc/6cyl.	1225 kg	100 L	1x72,0mm	MY2012 or older
	4000cc/6cyl.	1225 kg	100 L	1x60,0mm	MY2013
PORSCHE 991 GT3 R	4000cc/6cyl.	1265 kg	95 L	2x43,0mm	FIA-restrictor design
RADICAL SPORTSCARS RXC TURBO GT3	3500cc/6cyl.	Tba	Tba	Tba	Max Boost(barA/rpm) Tba
RENAULT SPORT RS01 Configuration BOP GT3	3800cc/6cyl.	1220 kg	105L	2x42,0mm	Max Pboost 1,95 barA (all rpm) See also appendix Renault RS01 aerodynamics
SCG 003C	3500cc/6cyl.	1280 kg	115 L	2x35,0mm	Max Pboost 1,95 barA (all rpm)
SRT VIPER GT3-R	8400cc/10cyl	Tba	Tba	Tba	

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

* FIA-restrictor design, according FIA-2013/2014/2015/2016 restrictor design

Exceptional cars, class SPX

BOP / Minimum reference laptime table for class SPX

Class SPX cars with (partly) fixed BOP

Brand & Type	Cylinder capacity	Minimum Weight	Max Refuelling amount	BOP	Remarks
LAMBORGHINI Huracan Super Trofeo	5200cc/10cyl	1275 kg	*According BOP-table below	2x41,0mm	
Porsche GT America	4000cc/6cyl	1250 kg	*According BOP-table below	N/A	
Porsche 911 GT3 Cup (991 II)	4000cc/6cyl	1200 kg	*According BOP-table below	N/A	2017 model
Vortex 1.0	6200cc/8cyl	1100 kg	*According BOP-table below	N/A	
KTM X-bow (special)	2000cc/4cyl.	1030 kg	*According BOP-table below @ column 1050 kg	Pboost max is 2,7bar (independent of ambient air pressure)	Max rpm 7000 at all gears Ride height is free

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

Class SPX (for these cars there is a "Minimum reference lap times" applicable)

Class	Minimum reference lap time / Theoretical Min. Reference lap time	Minimum Weight 1050 kg	Minimum Weight 1150 kg	Minimum Weight 1250 kg
SPX	Min ref lap time* 1min54 (Mugello) / Theoretical Min Ref lap time 1min54	80 L	90 L	100 L
	Min ref lap time* 1min55 (Mugello) / Theoretical Min Ref lap time 1min55	90 L	100 L	110 L
	Min ref lap time* 1min56 (Mugello) / Theoretical Min Ref lap time 1min56	100 L	110 L	120 L

Exceptional cars, class SP2

BOP / Minimum reference lapttime table for class SP2

Porsche 991/997/997 Cup S: Fix BOP for accepted (modified) models.

- Minimum weight: 1260kg
- Restrictor-Blende: 62mm
- Ride Height is free
- Refuel amount according SP2-BOP-Table

GC Automobile V8: Fixed BOP

- Minimum weight: 1100kg
- Refuel amount according SP2-BOP-Table

KTM X-bow: Fixed BOP:

- Minimum weight: 1030 kg
- Pboost max is: 2,3bar (independent of ambient air pressure)
- Max rpm: 7000 rpm (at all gears)
- The car must be equipped with a data logger including pressure sensor according art.4.10 of chapter II of the Sporting & Technical Regulations.
- Ride Height is free
- Refuel amount according SP2-BOP-Table

For all other SP2 cars:

Class	Minimum reference lap time / Theoretical Min. Reference lap time	Max Refuelling amount		
		Minimum Weight 750 kg	Minimum Weight 1000 kg	Minimum Weight 1250 kg
SP2*	Min ref lap time* 1min57 (Mugello) / Theoretical Min Ref lap time 1min57	80 L	90 L	100 L
	Min ref lap time* 1min58 (Mugello) / Theoretical Min Ref lap time 1min58	90 L	100 L	110 L
	Min ref lap time* 1min59 (Mugello) / Theoretical Min Ref lap time 1min59	100 L	110 L	120 L

Exceptional cars, class SP3-GT4

BOP / Minimum reference lapttime table for class SP3-GT4

Ginetta G55 2016 or older (without any of 2017 upgrade parts):

- Refuel amount according SP3-GT4-BOP-Table

Ginetta G55 with new-for-2017 upgrades:

- TBA

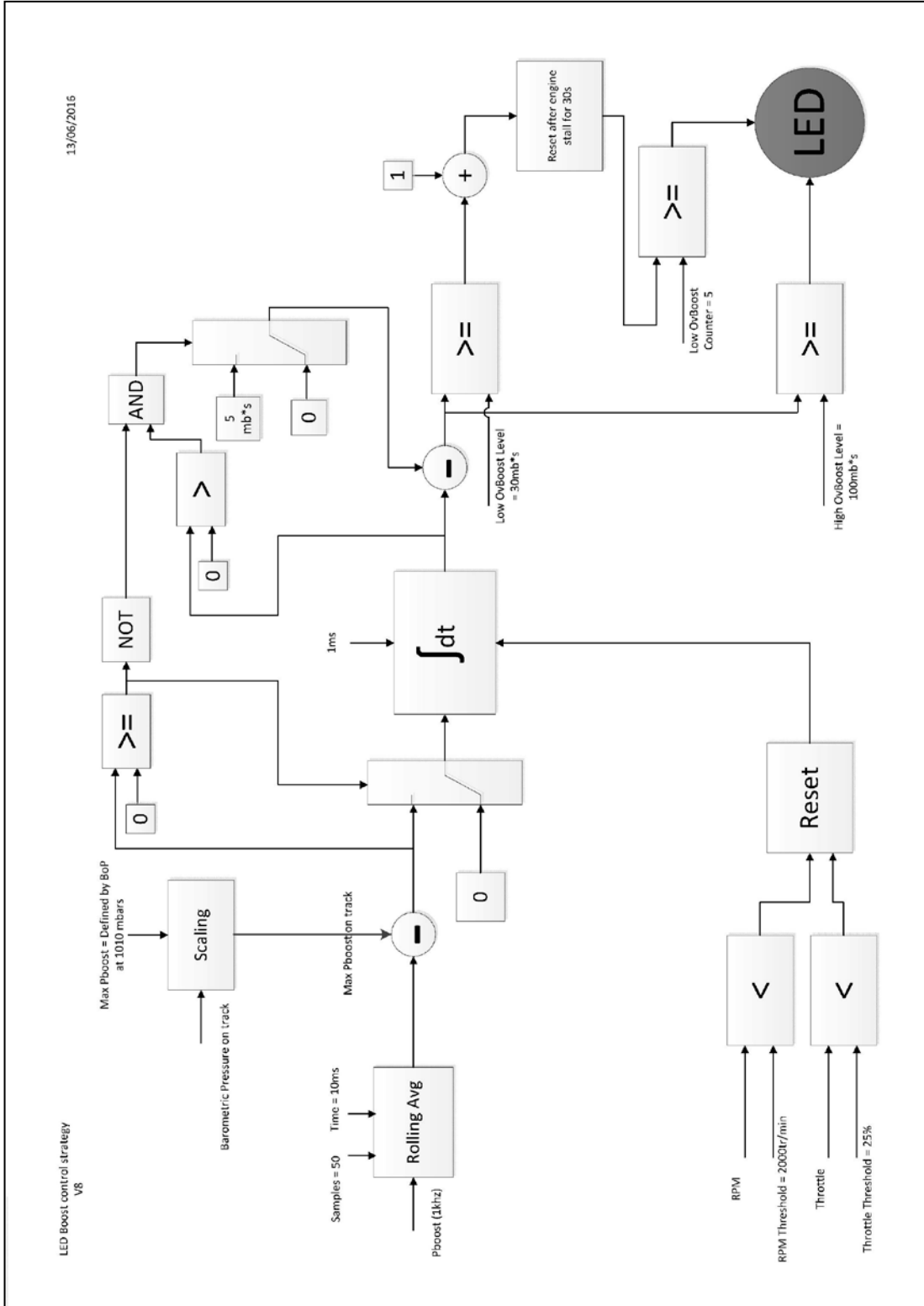
KTM X-bow GT4: Fixed BOP:

- Minimum weight: 1150 kg
- Pboost max is: 2,3bar (independent of ambient air pressure)
- Max rpm: 7000 rpm (at all gears)
- The car must be equipped with a data logger including pressure sensor according art.4.10 of chapter II of the Sporting & Technical Regulations.
- Ride Height is free
- Refuel amount according SP3-GT4-BOP-Table

For all other SP3-GT4 cars:

Class	Minimum reference time / Theoretical Min. Ref. time	Max Refuelling amount						
		Minimum Weight 750 kg	Minimum Weight 1000kg	Minimum Weight 1100kg	Minimum Weight 1150kg	Minimum Weight 1200kg	Minimum Weight 1300kg	Minimum Weight 1400kg
SP3-GT4*	Min ref time* 2min00 (Mugello) / Theoretical Min Ref time 2min00	40 L	50 L	60 L	70 L	80 L	90 L	100 L
	Min ref time* 2min01 (Mugello) / Theoretical Min Ref time 2min01	50 L	60 L	70 L	80 L	90 L	100 L	110 L
	Min ref time* 2min02 (Mugello) / Theoretical Min Ref time 2min02	60 L	70 L	80 L	90 L	100 L	110 L	120 L
	Min ref time* 2min03 (Mugello) / Theoretical Min Ref time 2min03	70 L	80 L	90 L	100 L	110 L	120 L	120 L

Appendix: Control of Pboost strategy



Appendix: Renault RS01 aerodynamics

PHOTO N° 01

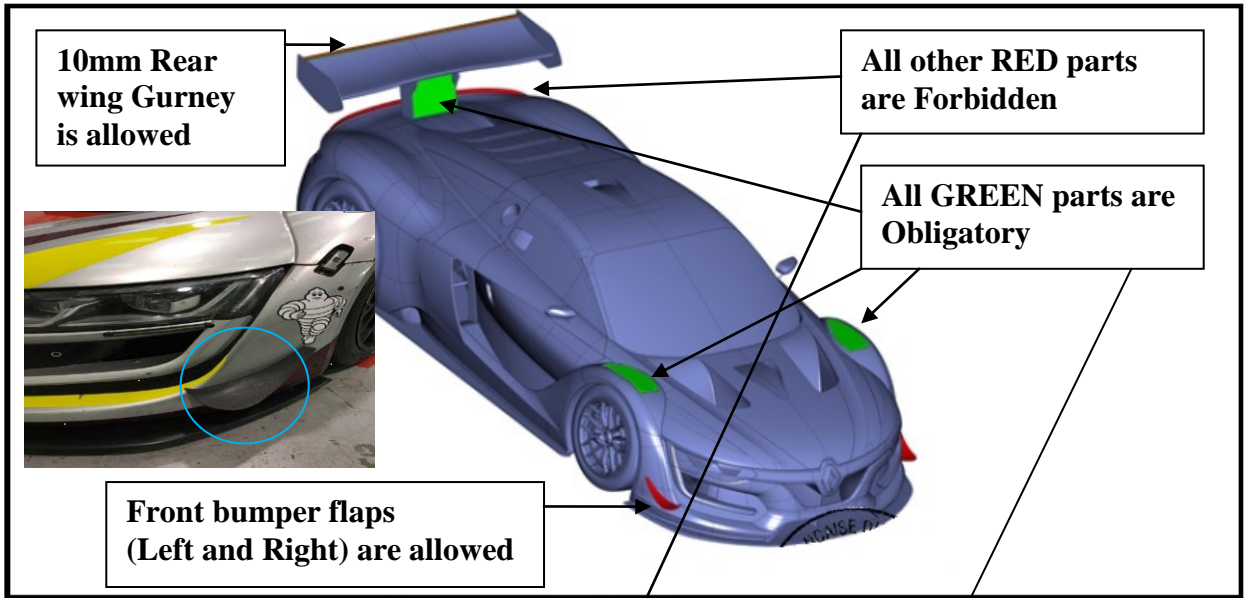


PHOTO N° 02

