

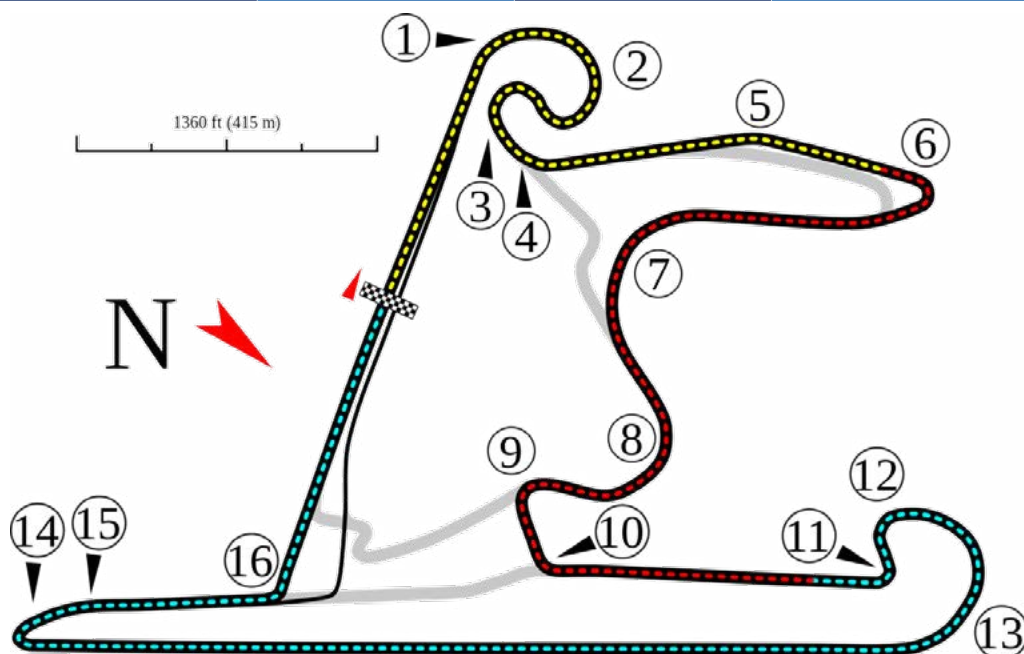
# RACECARD

2019/2020 FIA WEC



## THE CIRCUIT

<b>31</b> ENTRIES	<b>5.451</b> KM	<b>16</b> TURNS	CLOCKWISE
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4 HOURS OF SHANGHAI

**NOVEMBER 10 2019**

ROUND 3  
2019/2020  
FIA WORLD  
ENDURANCE  
CHAMPIONSHIP

SHANGHAI  
(CHINA)



### PREVIOUS 6 HOURS OF SHANGHAI WINNERS

**2012**

Wurz/Lapierre  
(Toyota TS030 Hybrid/Michelin)

**2013**

Lotterer/Tréluyer/Fässler  
(Audi R18 e-tron quattro/Michelin)

**2014**

Buemi/Davidson  
(Toyota TS040 Hybrid/Michelin)

**2015**

Bernhard/Hartley/Webber  
(Porsche 919 Hybrid/Michelin)

**2016**

Bernhard/Hartley/Webber  
(Porsche 919 Hybrid/Michelin)

**2017**

Buemi/Davidson/Nakajima  
(Toyota TS050 Hybrid/Michelin)

**2018**

Conway/Kobayashi/Lopez  
(Toyota TS050 Hybrid/Michelin)

**Lap record:**

Kamui Kobayashi  
(Toyota TS050 Hybrid/Michelin),  
1m42.526s (2017)

- » Situated in northwest Shanghai's Jiading district
- » Built on former marshland
- » Features a blend of straights and tightening turns

**THE 2018 RACE**

- » Winners: Conway/Kobayashi/Lopez (Toyota TS050 Hybrid/Michelin), 113 laps
- » Pole position: Conway/Kobayashi/Lopez (Toyota TS050 Hybrid/Michelin), 1m42.931s
- » Fastest race lap: Kazuki Nakajima (Toyota TS050 Hybrid/Michelin), 2m1.381s
- » Top speed: André Lotterer and Thomas Laurent (Rebellion R13/Michelin), 309.5kph
- » A 1-2 for Toyota/Michelin in pouring rain
- » Michelin's 50th LMGTE Pro win, thanks to Aston Martin
- » A 1-2-3 finish for Porsche/Michelin in LMGTE Am

**TIMETABLE**  
(LOCAL TIME)

FRIDAY, NOVEMBER 8		
11:00am	Free Practice 1	90 minutes
3:30pm	Free Practice 2	90 minutes
SATURDAY, NOVEMBER 9		
9:50am	Free Practice 3	60 minutes
2:00pm	LM GTE Qualifying	20 minutes
2:30pm	LMP Qualifying	20 minutes
SUNDAY, NOVEMBER 10		
12:00 noon	4 Hours of Shanghai	

Source : fiawec.com - Informations susceptibles de changer

**THE 2019 4 HOURS OF SHANGHAI**

- » Season 8's second Asian round
- » Season 8's second four-hour race
- » Support race: Porsche Carrera Cup Asia





**PIERRE ALVES**

Endurance Programme Manager, Michelin Motorsport

"Shanghai is very hard on tyres because of its abrasive surface which speeds up wear and doesn't help consistency. That said, our current range coped rather well with the challenge of Silverstone and we expect our tyres will deliver the necessary durability all the way to the finish. Our technical team will be on hand to provide our partners with the most judicious advice possible. The weather can be pretty fickle in Shanghai at this time of year, so let's hope we get a good race."

**OUR CURRENT RANGE COPED RATHER WELL WITH THE CHALLENGE OF SILVERSTONE**

# MICHELIN TYRES

28 OF THE 31 CARS ON MICHELIN TYRES

**MICHELIN PILOT SPORT ENDURANCE TYRES FOR THE 2019 4 HOURS OF SHANGHAI**



	SLICKS Medium, Hard	INTERMEDIATES	WET
<b>LM P1</b>	31/71-18	31/71-18	31/71-18

	SLICKS Medium, Hard	INTERMEDIATES	WET
<b>LM P2</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18



	SLICKS Medium, Hard	INTERMEDIATES	WET
<b>LM GTE PRO</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18

	SLICKS Medium, Hard (Ferrari: soft and medium)	INTERMEDIATES	WET
<b>LM GTE AM</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18

WIDTH (CM) / EXTERIOR DIAMETER (CM) X INTERIOR DIAMETER (INCHES).



**ALLOCATION (MICHELIN PILOT SPORT ENDURANCE SLICKS) PER CAR FOR THE 2019 4 HOURS OF SHANGHAI**

	Free Practice	Qualifying + Race
<b>LM P1</b>	12 tyres	14 tyres
<b>LM P2</b>	12 tyres	14 tyres
<b>LM GTE PRO</b>	12 tyres	14 tyres
<b>LM GTE AM</b>	16 tyres	22 tyres





## MICHELIN AND ENDURANCE RACING IN CHINA

- » Shanghai has featured on the calendar since the FIA WEC's creation in 2012
- » Michelin has won the 6 Hours of Shanghai with Toyota, Porsche and Audi
- » In 2010 and 2011, Peugeot and Michelin won the 6 Hours of Zhuhai (International Le Mans Cup)
- » In 2013, KCMG/Michelin became the first Chinese team to enter the Le Mans 24 Hours
- » In 2008, Cong Fu Cheng became the first Chinese driver to take part in the Le Mans 24 Hours in a Pescarolo/Michelin
- » Michelin is the exclusive tyre supplier to the Asian Le Mans Series
- » The opening round of the 2019/2020 ALMS will take place at Shanghai Circuit on November 22-24



## SHANGHAI TRIVIA

- » Shanghai is the world's sixth biggest city (population: 24 million).
- » More than 70 million people live in the greater Shanghai region
- » Shanghai is known as the Pearl of the Orient
- » The Yu Garden, Bund, Pudong, Nanjing Donglu are big Shanghai attractions
- » Shanghai Tower (632 metres/128 floors) is China's tallest building
- » Shanghai officially boasts 163 skyscrapers that are more than 150 metres tall, and a further 23 are being built
- » Shanghai became the world's busiest trading port in 2010



2018



## MICHELIN GREEN GUIDE

Discover the charms and attractions of the PRC with the Michelin Green Guide China Hong Kong, and treat your taste buds to one of the 130 starred restaurants listed in the 2020 Michelin Red Guide Shanghai



## MICHELIN FACT

Audi and Toyota have notched up 23 fastest race laps each, more than any other team



# ENTRY LIST

## 2019 4 HOURS OF SHANGHAI

### LM P1

- N°1 **REBELLION RACING • REBELLION R13 - GIBSON  
SENN/MENEZES/NATO** 
- N°5 **TEAM LNT • GINETTA G60-AER  
KING/ORUDHZEZ/HANLEY** 
- N°6 **TEAM LNT • GINETTA G60-AER  
ROBERTSON/SIMPSON/SMITH** 
- N°7 **TOYOTA GAZOO RACING • TOYOTA TS050 - HYBRID  
CONWAY/KOBAYASHI/LOPEZ** 
- N°8 **TOYOTA GAZOO RACING • TOYOTA TS050 - HYBRID  
BUEMI/NAKAJIMA/HARTLEY** 

### LM GTE PRO

- N°51 **AF CORSE • FERRARI 488 GTE EVO  
CALADO/PIER GUIDI** 
- N°71 **AF CORSE • FERRARI 488 GTE EVO  
RIGON/MOLINA** 
- N°91 **PORSCHE GT TEAM • PORSCHE 911 RSR-19  
BRUNI/LIETZ** 
- N°92 **PORSCHE GT TEAM • PORSCHE 911 RSR-19  
CHRISTENSEN/ESTRE** 
- N°95 **ASTON MARTIN RACING • ASTON MARTIN VANTAGE AMR  
SORENSEN/THIIM** 
- N°97 **ASTON MARTIN RACING • ASTON MARTIN VANTAGE AMR  
LYNN/MARTIN** 

### LM P2

- N°22 **UNITED AUTOSPORTS • ORECA07-GIBSON  
HANSON/ALBUQUERQUE/DI RESTA** 
- N°29 **RACING TEAM NEDERLAND • ORECA 07 - GIBSON  
VAN EERD/VAN DER GARDE/DE VRIES** 
- N°33 **HIGH CLASS RACING • ORECA07-GIBSON  
PATTERSON/YAMASHITA/FJORBACH** 
- N°36 **SIGNATECH ALPINE ELF • ALPINE A470-GIBSON  
LAURENT/NEGRAO/RAGUES** 
- N°37 **JACKIE CHAN DC RACING • ORECA07-GIBSON  
TUNG/AUBRY/STEVENS** 
- N°38 **JOTA • ORECA 07 - GIBSON  
GONZALEZ/DA COSTA/DAVIDSON** 
- N°42 **COOL RACING • ORECA 07 - GIBSON  
LAPIERRE/BORGA/COIGNY** 
- N°47 **CETILAR RACING • DALLARAP217-GIBSON  
LACORTE/BELICCHI/SERNAGIOTTO** 

### LM GTE AM

- N°54 **AF CORSE • FERRARI 488 GTE EVO  
FLOHR/CASTELLACCI/FISICHELLA** 
- N°56 **TEAM PROJECT 1 • PORSCHE 911 RSR  
PERFETTI/HEINEMEIER-HANSON/CAIROLI** 
- N°57 **TEAM PROJECT 1 • PORSCHE 911 RSR  
KEATING/TEN WOORD/BLEEKEMOLEN** 
- N°62 **RED RIVER SPORT • FERRARI 488 GTE EVO  
GRIMES/MOWLEN/HOLLINGS** 
- N°70 **MR RACING • FERRARI 488 GTE  
ISHIKAWA/BERETTA/COZZOLINO** 
- N°77 **DEMPSEY-PROTON RACING • PORSCHE 911 RSR  
RIED/CAMPBELL/PERA** 
- N°78 **PROTON COMPETITION • PORSCHE 911 RSR  
PRETTE/PRETTE/ABRIL** 
- N°83 **AF CORSE • FERRARI 488 GTE EVO  
PERRODO/COLLARD/NIELSEN** 
- N°86 **GULF RACING • PORSCHE 911 RSR  
WAINWRIGHT/WATSON/BARKER** 
- N°88 **DEMPSEY-PROTON RACING • PORSCHE 911 RSR  
PREINING/TBA/TBA** 
- N°90 **TF SPORT • ASTON MARTIN VANTAGE  
YOLUC/EASTWOOD/ADAM** 
- N°98 **ASTON MARTIN RACING • ASTON MARTIN VANTAGE  
DALLA LANA/TURNER/GUNN** 



## LMP1 CHAMPIONSHIP

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>TOYOTA GAZOO RACING</b>		26	26						52
2 <sup>nd</sup>	<b>REBELLION RACING</b>		2	15						17
3 <sup>rd</sup>	<b>TEAM LNT</b>		15	2						17

## LMP1 DRIVERS

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>JOSE MARIA LOPEZ</b>		26	18						44
1 <sup>st</sup>	<b>KAMUI KOBAYASHI</b>		26	18						44
1 <sup>st</sup>	<b>MIKE CONWAY</b>		26	18						44
2 <sup>nd</sup>	<b>BRENDON HARTLEY</b>		18	26						44
2 <sup>nd</sup>	<b>KAZUKI NAKAJIMA</b>		18	26						44
2 <sup>nd</sup>	<b>SÉBASTIEN BUEMI</b>		18	26						44
3 <sup>rd</sup>	<b>FRITS VAN EERD</b>		8	12						20
3 <sup>rd</sup>	<b>GIEDO VAN DER GARDE</b>		8	12						20
3 <sup>rd</sup>	<b>CHARLIE ROBERTSON</b>		15	2						17

## LMP2 CHAMPIONSHIP

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>RACING TEAM NEDERLAND</b>		16	25						41
2 <sup>nd</sup>	<b>COOL RACING</b>		25	10						35
3 <sup>rd</sup>	<b>JACKIE CHAN DC RACING</b>		12	19						31

## LMP2 DRIVERS

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>FRITS VAN EERD</b>		16	25						41
1 <sup>st</sup>	<b>GIEDO VAN DER GARDE</b>		16	25						41
2 <sup>nd</sup>	<b>ANTONIN BORGA</b>		25	10						35
2 <sup>nd</sup>	<b>NICOLAS LAPIERRE</b>		25	10						35
3 <sup>rd</sup>	<b>GABRIEL AUBRY</b>		12	19						31
3 <sup>rd</sup>	<b>HO-PIN TUNG</b>		12	19						31
3 <sup>rd</sup>	<b>WILL STEVENS</b>		12	19						31

## GTE CHAMPIONSHIP

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>PORSCHE</b>		43	27						70
2 <sup>nd</sup>	<b>ASTON MARTIN</b>		25	40						65
3 <sup>rd</sup>	<b>FERRARI</b>		21	22						43

## GTE DRIVERS

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>KEVIN ESTRE</b>		18	18						36
1 <sup>st</sup>	<b>MICHAEL CHRISTENSEN</b>		18	18						36
2 <sup>nd</sup>	<b>MARCO SØRENSEN</b>		10	25						35
2 <sup>nd</sup>	<b>NICKI THIIM</b>		10	25						35
3 <sup>rd</sup>	<b>GIANMARIA BRUNI</b>		25	9						34
3 <sup>rd</sup>	<b>RICHARD LIETZ</b>		25	9						34

## GTE AM CHAMPIONSHIP

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>AF CORSE</b>		25	18						43
2 <sup>nd</sup>	<b>TF SPORT</b>		7	26						33
3 <sup>rd</sup>	<b>MR RACING</b>		15	12						27

## GTE AM DRIVERS

										TOTAL
		1/09	6/10	10/11	14/12	1/02	20/03	25/04	13-14/07	
1 <sup>st</sup>	<b>EMMANUEL COLLARD</b>		25	18						43
1 <sup>st</sup>	<b>FRANÇOIS PERRODO</b>		25	18						43
1 <sup>st</sup>	<b>NICKLAS NIELSEN</b>		25	18						43
2 <sup>nd</sup>	<b>CHARLES EASTWOOD</b>		7	26						33
2 <sup>nd</sup>	<b>JONATHAN ADAM</b>		7	26						33
2 <sup>nd</sup>	<b>SALIH YOLUC</b>		7	26						33
3 <sup>rd</sup>	<b>KEI COZZOLINO</b>		15	12						27
3 <sup>rd</sup>	<b>MOTOAKI ISHIKAWA</b>		15	12						27
3 <sup>rd</sup>	<b>OLIVIER BERETTA</b>		15	12						27

# MICHELIN FIA WEC RANGE 2019-2020 SEASON

	SLICK Soft - Medium - Hard	HYBRID	WET	FULL WET
<b>LM P1</b>	31/71-18	31/71-18	31/71-18	31/71-18
	SLICK Soft - Medium - Hard	INTERMEDIATES	WET	
<b>LM P2</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	
	SLICK Soft - Medium - Hard	INTERMEDIATE	FULL WET	
<b>LM GTE PRO</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	
<b>LM GTE AM</b>	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	Front: 30/68-18 Rear: 31/71-18	

## EXTRACTS FROM THE FIA WEC SPORTING REGULATIONS

Two drivers from each crew must set at least one timed lap during qualifying. The average of the two best lap time times (the best of each driver) will serve as the reference time for establishing the grid (except Le Mans). If two or more crews set identical average times, priority is given to the one who set it first.

For the LMP2 category, one of the two timed laps used for the establishment of the grid must be completed by a Silver or Bronze driver.

For the LMGTE Am category, one of the two timed laps used for the establishment of the grid must be completed by a Bronze driver.

Races start after a formation lap.

To be classified, a car must cross the finish line must have covered at least 70% of the distance covered by the car classified in first place in the overall classification.

### POINTS-SCORING SYSTEM 4-HOUR RACES

- 1<sup>st</sup> - 25 points
- 2<sup>nd</sup> - 18 points
- 3<sup>rd</sup> - 15 points
- 4<sup>th</sup> - 12 points
- 5<sup>th</sup> - 10 points
- 6<sup>th</sup> - 8 points
- 7<sup>th</sup> - 6 points
- 8<sup>th</sup> - 4 points
- 9<sup>th</sup> - 2 points
- 10<sup>th</sup> - 1 point
- +10<sup>th</sup> - 0.5 point
- Pole position: +1 point
- Drivers and Manufacturers

For all the above classifications, an additional point will be awarded, at each Competition, to the «pole position» team in each category (best time achieved by the car in each category during qualifying with the exception of additional cars), as well as to all the drivers making up the crew of the car concerned.

## FIA WEC TYRE REGULATIONS

### 6.5 TYRES

#### 6.5.1 Definitions and general conditions

Each tyre must be identified by RFID and barcode. All references must be declared to the Technical Delegate at least 48 hours before the start of the Competition. This list of designated tyres will be notified to the Stewards at the beginning of the Competition.

All tyres must be identifiable at any time (including when tyres are fitted on the car) via direct measurement by the RFID detection system put in place by the FIA. This includes automatic and manual detection. When tyres are fitted on the car, RFID must be on the outer side of the tyre.

Only in case of malfunction of the RFID system, manual measurement will be handled via barcode identification.

The use of undeclared tyres is prohibited in all Competitions of the Championship.

To allow automatic detection, each car must be equipped with RFID stickers according to Appendix 6. These stickers must be in place at all times during the Competition.

#### 6.5.2 Dry-weather tyres: Declaration of specifications for the season

Tyre manufacturers may declare to the FIA/ACO a maximum of 3 tyre specifications per season, which will be frozen for the duration of the season. 2 of them must be declared at least 48 hours before the first Competition of the season.

Specifications break down as follows:

- LMP1 H, LMGTE Pro, LMGTE Am: 3 specifications per car model
- LMP1 NH, LMP2: 3 specifications for all models of cars entered in the category.

#### 6.5.3 Dry-weather tyres: Declaration of specifications for the Competition

At the latest 48 hours before the beginning of any given Competition, tyre manufacturers must declare to the Technical Delegate 2 (or 3 if applicable) of the tyre specifications described in Article 6.5.2) to be used by Competitors during the Competition, to the exclusion of any other.

Tyre specifications are limited to 2 for Competitions comprising a race of 12 hours or less and to 3 for Competitions comprising a race of more than 12 hours.

#### 6.5.5 Dry-weather tyres: collection and reintroduction (LMP1 H, LMP1 NH and LMGTE Pro only)

##### Collection:

30 At the latest the day before the beginning of the first Competition, the Technical Delegate will segregate tyres per specification and per car model which will have to be reintroduced in all the following Competitions of the Championship.

Segregation will proceed as follows:

For the first 2 specifications declared before the first Competition of the season:

- Segregation of 1 set\* of tyres per specification per car model and per Competition comprising a race of 6 hours (or less)
- Segregation of 2 sets\* of tyres per specification per car model and per Competition comprising a race of 6 hours or greater but less than 24 hours.
- Segregation of 3 sets\* of tyres per specification per car model and per Competition comprising a race of 24 hours.

\* A set of tyres is a set of 4 tyres made up of 2 front tyres and 2 rear tyres.



If the third specification is declared at the same time as the first two, it will be part of the segregation process described above. After segregation, the Technical Delegate will communicate to the tyre manufacturer the full list of segregated tyres for the full season.

If the third specification is declared after the first Competition, the same segregation process will be applied taking into account the number of Competitions remaining in the season.

After segregation, the Technical Delegate will communicate to the tyre manufacturer an update of the list of segregated tyres.

Tyres to be reintroduced must not be part of the references declared by tyre manufacturers to the Technical Delegates before each Competition.

#### **Réintroduction :**

From the second race Competition, at the latest 24 hours before the start of the race, the Technical Delegate will transmit to the Competitors and tyre manufacturers the list of tyres for re-allocation, mentioning the number of the car on which each tyre is to be used. This list will be notified to the Stewards.

Each Competitor is responsible for the reintroduction of tyres, and must do so in compliance with these regulations.

Each tyre must be reintroduced on the first use of new tyres of the specification concerned during the race.

#### **6.5.6 Wet-weather tyres: declaration of specifications for the season**

Tyre manufactures must declare wet-weather tyre specifications as listed below. Any specification will be frozen for the season and must be declared to the Technical Delegate at the latest 48 hours before the first Competition of the season. A drawing of the declared specifications must be sent with the declaration (digital format and on 1:1 scale tracing paper).

- LMP1 H: 1 intermediate and 2 wet specifications per car model
- LMP1 NH: 1 intermediate and 2 wet specifications for all models of cars entered in the category
- LMP2: 1 intermediate and 1 wet specification for all models of cars entered in the category
- LMGTE Pro / LMGTE Am: 1 intermediate and 1 wet specification per car model

#### **6.5.7 Wet-weather tyres: declaration of specifications for the Competitions**

The number of wet-weather tyre specifications usable during a Competition is not limited, subject to the provisions of Article 6.5.6

#### **6.5.8 Wet-weather tyres: allocation**

Unless specifically authorised in the present Regulations, wet-weather tyres may be used only after the track has been declared wet by the Clerk of the Course / Race Director.

The number of wet-weather tyres usable during a Competition is not limited.

#### **6.5.9 Tyres used to join the starting grid**

Tyres used for going from the pits to the starting grid before the race may be either wet-weather or dry weather tyres and will not be counted in the allocation of tyres.

#### **6.5.10 Change of tyre manufacturer during the season**

A change of tyre manufacturer is not allowed during the season for the LMGTE Pro and LMGTE Am categories. It is allowed only once for the LMP1 H, LMP1 NH and LMP2 categories.

#### **6.5.11 Specific sessions**

During a Competition, if a specific test session (e.g. Safari circuit) is organised by the Promoter of the Competition, conditions regarding tyre limitation and declaration will not be applied.

#### **6.5.12 Grooving and regrooving**

Grooving tyres is strictly prohibited. The regrooving of the tyres is not allowed in LMP2 and LMGTE Am. The regrooving of tyres is allowed in LMP1 H, LMP1 NH and LMGTE Pro.

#### **6.5.13 Exchange of commercial tyres (for the LMP2 category only)**

Each tyre manufacturer may be given used tyres, used during a Competition, of the other manufacturers in their category. This applies to both dry-weather and wet-weather tyre specifications.

Tyre exchange is to be done with the support and confirmation of the Technical Delegate.

#### **Exchange of new tyres (applicable for dry-weather and wet-weather tyres):**

Any tyre specification declared for the Championship must be exchanged at the first Competition during which it is introduced.

This process may be repeated only once per season, at the 24 Hours of Le Mans.

#### **Exchange of used tyres (applicable for dry-weather and wet-weather tyres):**

A full set of tyres, used during the race, may be exchanged between tyre manufacturers.

This process may be repeated at every race in the Championship (upon request from a tyre manufacturer during the Competition). The exchange is to be notified within 1 hour after the end of the race.

#### **6.5.14 Applicable Penalties**

Penalty for breaching the tyre rule: 3-minute Stop & Go per infringement.

### **PIT STOP REGULATIONS**

#### **12.5 Safety and obligations during wheel/tyre changes**

##### **12.5.1 Where wheel/tyre changes are authorised**

Wheel/tyre changes are authorised only:

- On the starting grid up to the «3 minutes» board
- In the working area in front of the car's pit, on the conditions defined by Article 12.3
- As an exception, the tyres may be changed inside the garage if and only if the car has been pushed there for the purpose of carrying out mechanical operations on it. This dispensation of the established principle will be interpreted restrictively
- On the track during the suspension of a race according to Article 14.3.

##### **12.5.2 Obligations of the mechanics**

For a wheel change, mechanics must:

- bring a maximum of two pneumatic wheel guns into the working area,
- without external assistance, take the new wheels, fit them on the car and put the replaced ones between the garage and the 2.5 m line or inside the garage,
- carry at all times the detached wheels when they are outside the garage. However, in order to facilitate the wheel changes, it is possible to lay them flat on the ground near the car just during the change of the wheel concerned,
- not throw the wheels or drop them,

- disconnect the air jacks and take the equipment back behind the 2.5 m line.

At no moment beyond the 2.5 m line may wheel(s), wheel gun(s), bodywork or any other equipment be left unattended by one of the four mechanics.

The area situated between the painted line in front of the pit shutter and the 2.5 m painted line may be used for tyres and the tools necessary for these operations. No assistance may be given by a person standing in that area.

For any wheel that the mechanics lose control of, or for any other infringement of the present article: penalty at the Stewards' discretion.

#### **12.5.3 Restrictions concerning equipment**

It is prohibited to have any equipment:

- For speeding up the removal of the wheels. Only two wheel guns or two pneumatic torque wrenches are authorised per car in the working area at any given time. A maximum of 2 different pneumatic wheel guns can be used during a wheel change to change the tyres.
- For warming the tyres and/or keeping them at constant temperature in the working area, in the garage and on the starting grid. (see Article 12.1.2) Penalty in case of infringement: at the Stewards' discretion.
- Which is operated using an external power source (electrical, pneumatic, etc.), with the exception of the two wheel guns and the air-jack coupling.