

# RACEGUIDE

2023 FIA WEC



Round 7  
2023 FIA World  
Endurance  
Championship

## BAPCO ENERGIES 8 HOURS OF BAHRAIN

SATURDAY, NOVEMBER 4



#WeRaceForChange

85<sup>th</sup> and last FIA WEC race to feature LMGTE Am cars before the class is dropped in 2024.

Bahrain debut for the Ferrari, Porsche, Cadillac and Vanwall Hypercar prototypes.

The 2023 Manufacturers' and Drivers' world titles to be decided between Toyota and Ferrari.

Half of the race takes place after sunset.

Thanks to the Green Ticket operation, a proportion of ticket-sales will be used to plant a new mangrove in Bahrain.



# SAKHIR INTERNATIONAL CIRCUIT



**LUCAS DI GRASSI**

(Audi R18/Michelin)

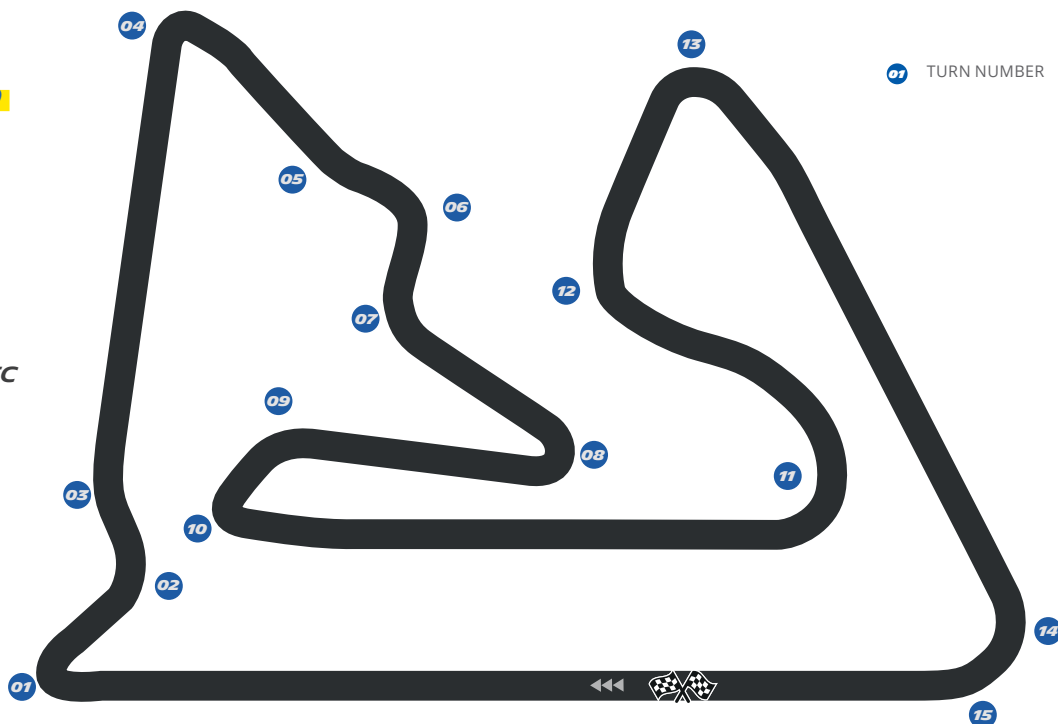
1m38.828s (2016)

» INAUGURATED IN 2004

» VISITED BY THE FIA WEC  
SINCE 2012

» DESERT LOCATION

» LINED BY 1,120 PALM  
TREES



**5.412km** // **15** **TURNS** // **CLOCKWISE**



## PREVIOUS

8 HOURS OF BAHRAIN WINNERS

- 2012** Tréluyer/Fässler/Lotterer  
(Audi R18 e-tron quattro/Michelin)
- 2013** Davidson/Buemi/Sarrazin  
(Toyota TS030 Hybrid/Michelin)
- 2014** Wurz/Sarrazin/Conway  
(Toyota TS040 Hybrid/Michelin)
- 2015** Dumas/Jani/Lieb  
(Porsche 919 Hybrid/Michelin)
- 2016** Di Grassi/Duval/Jarvis  
(Audi R18/Michelin)
- 2017** Buemi/Davidson/Nakajima  
(Toyota TS050 Hybrid/Michelin)
- 2019** Conway/Kobayashi/Lopez  
(Toyota TS050 Hybrid/Michelin)
- 2020** Conway/Kobayashi/Lopez  
(Toyota TS050 Hybrid/Michelin)
- 2021** 6 Heures :  
Conway/Kobayashi/Lopez  
(Toyota TS050 Hybrid/Michelin)  
8 Heures :  
Buemi/Nakajima/Hartley  
(Toyota TS050 Hybrid/Michelin)
- 2022** Conway/Kobayashi/Lopez  
(Toyota GR010 Hybrid/Michelin)





# EXPERT OPINION

**ALLAN McNISH**

Three-time Le Mans 24 Hours winner  
2013 FIA World Endurance Champion

## Last race of the year

### Bahrain

I always liked Bahrain, the track asks for big commitment in the braking areas but with a sensitivity and precision to bring the car to the apex.

Plus it was the last track I ever raced on when I retired after the last race of the WEC season 10 years ago.

### Sector 1

The lap starts with a long straight and big slightly bumpy braking into the slowest corner on the circuit, a full lock right hand hairpin, before flicking it left up towards Turn 4, which is another slow right hander but with a wide exit on acceleration.

This section is all about braking and traction, but also a good opportunity to overtake into T1 and T4, however, is also really tough on the rear tires as you try and put the power down on corner exit.

### Sector 2

The middle section of the track starts with a fast right left chicane before a difficult couple of hairpins. The first one is easy to lock the rears brakes on turn in, and the second one the left front tire as the track drops down to the apex, and this can open up the chance to overtake down the straight to turn 10.

### Sector 3

A change of tempo in sector 3 with a fast flat out left right before the medium speed tightening entry to T12, where you have to make sure you get to the apex with reasonable apex speed and not run wide on exit. Then onto a long straight before the very difficult entry to the last corner, where you need a car that precisely turns in to the apex, otherwise the car understeers apex to exit, and you are slow to get on the throttle and the run down to finish the lap.

**IS VERY TOUGH  
ON TIRES,  
ESPECIALLY THE  
REAR TIRE**

### It is very tough on tires

The track is quite grippy but super abrasive as the tarmac is made up of specific hard rock aggregate that was specifically imported from the UK.

This means it is very tough on tires, especially the rear tire which takes beating out of the hard acceleration traction corners in Turn 1, 2, 4, 8, 10 and the last corner at 14. Adding to that you have the long fast T11 and T12 which are easily flat out in qualifying but puts a lot of load into the left side tires.

Car and tire engineers will be balancing grip and endurance pushing the limits of rear camber and tire pressures to get maximum performance over the stints.

### What it takes to win?

You really need a good car balance but especially one with good traction, which will be a benefit for the cars with all wheel drive that more equally spread the tire load under power.

Car balance also changes a lot with the differing track temperatures and grip levels over the 8 hours race which finishes in darkness.

It is important to overtake the GT cars before the start of sector 2 otherwise you lose a lot of time.

### There are two battles, one for the Driver's Championship, and for the race win.

The #8 Toyota is leading the points battle by 15 points, but with 38 points for a win it is still all to play for between the #7 & #8.

But something tells me that there will be other players fighting for the race victory, and after the upturn in performances for all 3 Porsche teams in the last races, plus the fast Ferrari's, I think it will be a great last race of the season.



## THE 2022 RACE



- » **Winners:** Conway/Kobayashi/Lopez (Toyota GR010 Hybrid/Michelin), 245 laps
- » **Pole-position:** Brendon Hartley (Toyota GR010 Hybrid/Michelin), 1m46.800s
- » **Fastest race lap:** Jean-Eric Vergne (Peugeot 9X8/Michelin), 1m49.709s
- » **Top speed:** Brendon Hartley (Toyota GR010 Hybrid/Michelin), 298.5kph
- » Toyota/Michelin secured its 4<sup>th</sup> consecutive FIA WEC title, and its 5<sup>th</sup> in total
- » Peugeot/Michelin's strong performance was rewarded with the fastest race lap
- » Ferrari/Michelin won the LMGTE Pro title before its switch to Hypercars
- » Team Project 1's Michelin-equipped Porsches came 1<sup>st</sup> and 2<sup>nd</sup> in LMGTE Am

## 8 HOURS OF BAHRAIN



11<sup>TH</sup> RUNNING

### 36 ENTRIES

### TIMETABLE

THURSDAY, NOVEMBER 2	
12:15pm	Free Practice 1 (90 minutes)
5:30pm	Free Practice 2 (90 minutes)
FRIDAY, NOVEMBER 3	
12:00 noon	Free Practice 3 (60 minutes)
4:15pm	LMGTE Am Qualifying (10 minutes)
5:05pm	Hypercar Qualifying (10 minutes)
SATURDAY, NOVEMBER 4	
2:00pm	Start, 8 Hours of Bahrain

Local time SOURCE: fiaewc.com  
Informations susceptibles d'être modifiées



### PIERRE ALVES

Endurance Racing Manager, Michelin Motorsport

Sakhir is a benchmark for the medium- and hard-compound versions of the MICHELIN Pilot Sport. We will use Free Practice to evaluate the maximum temperature conditions for the medium option, as well as its resistance to the wear generated by the sand blown onto the track surface. Expect all the Hypercar teams to fit the hard compound for the start of the race, but it will be interesting to see when the ideal moment comes to switch to the medium without comprising either performance or consistency. Helping to identify that moment is part of the service Michelin Motorsport's engineers and technicians provide our partners. All this information will then be analyzed to help us prepare for the challenges we face in 2024 at venues like Qatar, Imola, Sao Paulo and Austin. This year's finale will also be the time to say goodbye and thank you to all the LMGTE Am competitors who have placed their trust in us over the years. The LMGTE Am class has always authorized teams to choose their tire partner. Since 2018, though, they have all chosen to work with Michelin and we have been honored by their confidence. We have worked successfully with all the manufacturers involved, providing them with tires tailored to the characteristics of their respective cars and as a function of the FIA WEC calendar. The whole adventure has been fantastic.

IT WILL BE INTERESTING  
TO SEE WHEN THE  
IDEAL MOMENT COMES  
TO SWITCH TO THE  
MEDIUM WITHOUT  
COMPRISING EITHER  
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CONSISTENCY





# NEW MICHELIN PILOT SPORT RANGE

## 8 HOURS OF BAHRAIN

### HYPERCAR

### New MICHELIN Pilot Sport range

Ahead of 2023, the work of Michelin Motorsport's engineers focused on the compounds of the French tire company's slicks in order to make them more versatile and improve their warm-up performance. Two compounds are available for the 8 Hours of Bahrain - the medium and the hard.

The availability of a single type of wet-weather tire to cover damp, wet and very wet conditions in 2023 has resulted in a new tire and new tread pattern. It incorporates more than 30 percent recycled or biosourced sustainable materials.



### SLICKS

NEW COMPOUNDS

**Medium** (yellow): medium compound / dry conditions

**Hard** (red): hard compound / dry conditions / high track temperatures / big constraints

### RAIN TIRE

NEW PATTERN

**Rain** (blue): soft compound / wet conditions / versatile

### SLICK ALLOCATIONS

Free Practice	12 tires
Qualifying, Race	26 tires

### SIZES:

**FRONT: 29/71-18 (PEUGEOT: 31/71-18)**  
**REAR: 34/71-18 (PEUGEOT: 31/71-18)**

Width (cm) / Exterior Diameter (cm) – Interior Diameter (inches)



# NEW MICHELIN PILOT SPORT RANGE

## 8 HOURS OF BAHRAIN



### LM GTE AM

All LMGTE Am entries racing  
on Michelin tires



#### SLICKS

**Medium** (yellow): medium compound



**Hard** (red): hard compound / high track temperatures / big constraints



#### RAIN TIRES

**Drying Wet** (blue): damp or drying conditions / little water



**Full Wet** (no sidewall marking): soft compound / wet conditions / deep water

#### SLICK ALLOCATIONS

Free Practice	16 tires
Qualifying, Race	34 tires

#### MICHELIN PILOT SPORT SIZES

FRONT TIRES: 30/68-18

REAR TIRES: 31/71-18












Width (cm) / Exterior Diameter (cm) – Interior Diameter (inches)



### HYPERCAR











<b>N°2</b>	CADILLAC RACING	Cadillac V-Series.R	BAMBER/LYNN/WESTBROOK	
<b>N°4</b>	FLOYD VANWALL RACING TEAM	Vanwall Vandervell 680	GUERRIERI/VAUTIER/BRISCOE	
<b>N°5</b>	PORSCHE PENSKE MOTORSPORT	Porsche 963	CAMERON/CHRISTENSEN/MAKOWIECKI	
<b>N°6</b>	PORSCHE PENSKE MOTORSPORT	Porsche 963	ESTRE/LOTTERER/VANTHOOR	
<b>N°7</b>	TOYOTA GAZOO RACING	Toyota GR010 Hybrid	CONWAY/KOBAYASHI/LOPEZ	
<b>N°8</b>	TOYOTA GAZOO RACING	Toyota GR010 Hybrid	BUEMI/HARTLEY/HIRAKAWA	
<b>N°38</b>	HERTZ TEAM JOTA	Porsche 963	DA COSTA/STEVENS/ YE	
<b>N°50</b>	FERRARI AF CORSE	Ferrari 499P	FUOCO/MOLINA/NIELSEN	
<b>N°51</b>	FERRARI AF CORSE	Ferrari 499P	PIER GUIDI/CALADO/GIOVINAZZI	
<b>N°93</b>	PEUGEOT TOTALENERGIES	Peugeot 9X8	DI RESTA/JENSEN/VERGNE	
<b>N°94</b>	PEUGEOT TOTALENERGIES	Peugeot 9X8	DUVAL/MENEZES/MULLER	
<b>N°99</b>	PROTON COMPETITION	Porsche 963	BRUNI/TINCKNELL/JANI	



### LM GTE AM

<b>N°21</b>	AF CORSE	Ferrari 488 GTE Evo	DEZOTEUX/MANN/COZZOLINO	
<b>N°25</b>	ORT BY TF	Aston Martin Vantage	AL HARTY/DINAN/EASTWOOD	
<b>N°33</b>	CORVETTE RACING	Corvette C8/R	KEATING/VARRONE/CATSBURG	
<b>N°54</b>	AF CORSE	Ferrari 488 GTE Evo	FLOHR/CASTELLACCI/RIGON	
<b>N°56</b>	PROJECT 1	Porsche 911 RSR	HYETT/JEANNETTE/CAIROLI	
<b>N°57</b>	KESSEL RACING	Ferrari 488 GTE Evo	KIMURA/HUFFAKER/SERRA	
<b>N°60</b>	IRON LYNX	Porsche 911 RSR	SCHIAVONI/CRESSONI/PICARIELLO	
<b>N°77</b>	DEMPSEY-PROTON	Porsche 911 RSR	RIED/PEDERSEN/ANDLAUER	
<b>N°83</b>	RICHARD MILLE AF CORSE	Ferrari 488 GTE Evo	PEREZ-COMPANC/WADOUX/ROVERA	
<b>N°85</b>	IRON DAMES	Porsche 911 RSR	BOVY/GATTING/FREY	
<b>N°86</b>	GR RACING	Porsche 911 RSR	WAINWRIGHT/PERA/BARKER	
<b>N°98</b>	NORTHWEST RACING	Aston Martin Vantage	JAMES/MANCINELLI/RIBERAS	
<b>N°777</b>	D'STATION RACING	Aston Martin Vantage	TALBOT/STEVENSON/FUJII	




**HYPERCAR**
**FIA WORLD ENDURANCE HYPERCAR CHAMPIONSHIP**

<b>MANUFACTURERS</b>			 17/03	 16/04	 29/04	 10-11/06	 9/07	 10/10	 4/11	TOTAL
1 <sup>er</sup>	TOYOTA		38	26	26	36	26	26		178
2 <sup>e</sup>	FERRARI		24	18	15	51	18	12		138
3 <sup>e</sup>	PORSCHE		15	15	12	12	12	15		81

<b>DRIVERS</b>			 17/03	 16/04	 29/04	 10-11/06	 9/07	 10/10	 4/11	TOTAL
1 <sup>er</sup>	BRENDON HARTLEY		27	26	18	36	8	18		133
1 <sup>er</sup>	RYO HIRAKAWA		27	26	18	36	8	18		133
1 <sup>er</sup>	SÉBASTIEN BUEMI		27	26	18	36	8	18		133
2 <sup>e</sup>	JOSE MARIA LOPEZ		38	2	26	0	26	26		118
2 <sup>e</sup>	KAMUI KOBAYASHI		38	2	26	0	26	26		118
2 <sup>e</sup>	MIKE CONWAY		38	2	26	0	26	26		118
3 <sup>e</sup>	ALESSANDRO PIER GUIDI		9	8	15	50	10	10		102
3 <sup>e</sup>	ANTONIO GIOVINAZZI		9	8	15	50	10	10		102
3 <sup>e</sup>	JAMES CALADO		9	8	15	50	10	10		102

**LM GTE AM**
**FIA ENDURANCE TROPHY - LMGTE AM**

<b>TEAMS</b>			 17/03	 16/04	 29/04	 10-11/06	 9/07	 10/10	 4/11	TOTAL
1 <sup>er</sup>	CORVETTE RACING		38	26	18	51	12	19		164
2 <sup>e</sup>	IRON DAMES		7	15	10	24	11	12		79
3 <sup>e</sup>	AF CORSE		15	12	0	20	1	25		73

<b>DRIVERS</b>			 17/03	 16/04	 29/04	 10-11/06	 9/07	 10/10	 4/11	TOTAL
1 <sup>er</sup>	BEN KEATING		38	26	18	51	12	19		164
1 <sup>er</sup>	NICKY CATSBURG		38	26	18	51	12	19		164
1 <sup>er</sup>	NICOLAS VARRONE		38	26	18	51	12	19		164
2 <sup>e</sup>	MICHELLE GATTING		7	15	10	24	11	12		79
2 <sup>e</sup>	RAHEL FREY		7	15	10	24	11	12		79
2 <sup>e</sup>	SARAH BOVY		7	15	10	24	11	12		79
3 <sup>e</sup>	DAVIDE RIGON		15	12	0	20	1	25		73
3 <sup>e</sup>	FRANCESCO CASTELLACCI		15	12	0	20	1	25		73
3 <sup>e</sup>	THOMAS FLOHR		15	12	0	20	1	25		73



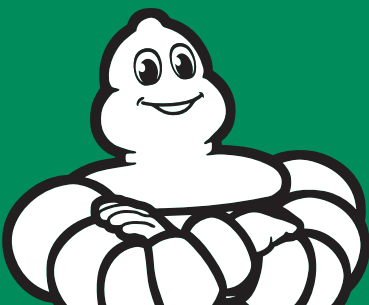


## BAHRAIN TRIVIA

- » Bahrain is a Persian Gulf archipelago made up of 33 islands
- » The main island is connected to Saudi Arabia by the King Fahd Causeway
- » Bahrain's capital Manama is situated in the north of the country
- » Sakhir is situated in a central desert region (92% of the country is desert)
- » Sakhir Palace is a huge palace near Zallaq built in 1901

## WEEK&GO GREEN GUIDE TO BAHRAIN

Find out more about major Bahrain attractions like the Pearling Path, Qalat Al Bahrain, the country's National Museum, the souk and Jeradah Island, reputed for its scuba diving



# MICHELIN AND BAHRAIN

- » In 2004, Bahrain became the first Gulf state to host a Formula 1 grand prix. Fifteen cars contested the race on Michelin tires.
- » Michelin cars locked out the 2005 F1 GP podium in Bahrain with Renault, Toyota and McLaren.
- » Michelin won the Bahrain Grand Prix in 2006 with Fernando Alonso (Renault).
- » Audi, Porsche and Toyota have all won endurance races in Bahrain with Michelin.
- » All Toyota's different FIA WEC prototypes have won in Bahrain on Michelin tires
- » A Michelin-partnered Porsche Carrera Cup Middle-East race is also on the bill in Bahrain
- » A Rookie Test will be held at Sakhir on November 5. Josh Pierson, Nicolas Varrone and Antoine Duquin are among the drivers nominated by the FIA WEC to take part.

## ENDURANCE RACING: AN ACCELERATOR OF INNOVATION FOR MICHELIN

Michelin has long seen motorsport in general, and endurance racing and Le Mans in particular, as a valuable means to speed up the development of its technological innovations. The proportion of sustainable raw materials in FIA WEC MICHELIN Pilot Sport rain tires stands at 45 percent.

In 2021, Michelin revealed a 'demonstration tire' containing 46 percent recycled and biosourced renewable materials for Mission H24's hydrogen-fueled electric prototype. The rain tires for this season's Hypercars contain 45 percent sustainable materials, and that's just a start. Michelin



and its partners are in the process of developing new, more versatile and higher-performing wet-weather tires for 2024 that contain an even higher percentage of sustainable materials. At Michelin, motorsport is showing the way forward as the Group rolls out its Everything Sustainable plan for 2050.



## MICHELIN STATISTIC

A year after the FIA WEC's last LMGTE Pro race, this year's trip to Bahrain is the LMGTE Am class's swansong appearance. The category has always permitted open competition between tire brands, but all the teams have chosen to work with Michelin since 2018. When the checkered flag comes down in Bahrain, Michelin will have won 78 of the 85 races run in total (92%). It will also have secured 75 pole-positions and clocked 82 fastest race laps. Bahrain not included, 80 different drivers (record: Pedro Lamy/13 victories) and four different carmakers (record: Aston Martin/27) have won LMGTE Am rounds to date. Christian Ried has contested 85 FIA WEC LMGTE Am races in a Michelin-equipped Porsche 911.



# 2023

## WEC CALENDAR



**MARCH 17**  
1,000 Miles of Sebring



**APRIL 16**  
2023 6 Hours  
of Portimão



**APRIL 29**  
2023 6 Hours  
of Spa-Francorchamps



**JUNE 10-11**  
Le Mans 24 Hours



**JULY 9**  
6 Hours of Monza



**SEPTEMBER 10**  
6 Hours of Fuji



**SEPTEMBER 4**  
8 Hours of Bahrain



## FIA WEC TIRE REGULATIONS

Michelin has been appointed as the exclusive tire supplier for the FIA WEC's Hypercar prototypes.

Teams competing in LMGTE Am may work with the tire manufacturer of their choice. Michelin has been nominated by all the competitors in this class.

### TIRE ALLOCATIONS

	Free Practice	Qualifying + Race	
		6-hour races	8-hour races
<b>HYPERCAR</b>	12	18	26
<b>LM GTE AM</b>	16	26	34

### SLICKS

**Hypercars:**

Three types of slick for the season for all of the cars, with two types of slick to be nominated 48 hours before the Prologue test. Two types of slick to be nominated 48 hours at the latest before the start of scrutineering (three types for Le Mans).

- Tire manufacturers must draw up identical usage indications (tire pressures, camber) for all competitors. Non-compliance with these indications will result in the competitor being reported to the Sporting Stewards.
- In the case of 29/34 tires, tires will be allocated to each competitor at meetings by a random process carried out by the Technical Delegates. These tires to count for the Qualifying + Race allocation. Procedure established by the WEC Committee.
- In the case of 31/31 tires, a procedure to collect and redistribute tires established by the WEC Committee.
- The WEC Committee may make changes to the random tire allocation and/or tire collection/redistribution procedures at any point in the season.

### LM GTE Am:

Only those tire specifications nominated for the 2022 championship may be used in 2023.

All the specifications for the season must be declared to the Technical Delegate before the start of the season.

Three types of slick for the season for all of the cars. Two types of slick for each race (three types for Le Mans).

### RAIN TIRES

Rain tires may only be used if Race Control declares the track to be wet (Free Practice, Qualifying, Race). No per-event quotas.

**LM GTE Am:** One type of rain tire and one type of intermediate tire per model entered 48 hours prior to the Prologue. The re-cutting of tread patterns is not authorized.

### Number of authorized specifications

	Slick tires			Wet-weather tires
	Le Mans 24 Hours	Other races	Total for the season	
<b>HYPERCAR</b>	3	2	3	1
<b>LM GTE AM</b>	3	2	3	2

Altering the property of a tire by either chemical or mechanical means is not permitted, except for the removal of debris picked up on the track.

The tires' (fil ou) profile may not be modified or re-cut.

Processes involving a direct or indirect test aimed at modifying the temperature of a tire (in relation to ambient temperature) are not permitted.

In the course of the season, a competitor may change tire supplier no more than once.

**Infringement of the tire allowance:** Stop & Go of 2 minutes per tire.

**Breach of tire-warming rules:** three-minute Stop&Go during the race.

**A maximum of four mechanics and two tire guns** for wheel changes during pit stops. Tire changes are not authorized while the car is being refueled.

**1 tire technician** authorized to check tire temperatures and pressures.

Tire changes are only authorized a) on the grid up to the five-minute board, b) in front of the car's garage during a pit stop or inside the garage if more extensive work on the car is required, or c) on the track if the race is suspended.

Tires are identified by RFID chips and bar codes. All tire serial numbers must be provided to the Technical Delegates 48 hours in advance.



**24h**  
LE MANS®



PARTENAIRE PREMIUM

# **MICHELIN PILOT SPORT, THE WINNING TIRE AT LE MANS SINCE 1998!**



LATARCK

**CONGRATULATIONS TO A. PIER GUIDI, J. CALADO, A. GIOVINAZZI**  
1<sup>ST</sup>, 2023 LE MANS 24 HOURS / #51 FERRARI AF CORSE



## **MICHELIN PILOT SPORT**

The winning tire range with 32 victories at Le Mans 24 Hours, including 26 consecutive since 1998!

You too can benefit from the exceptional grip and precision of MICHELIN Pilot Sport tires on the road.

**#PerformanceMadeToLast #WeRaceForChange**



**MICHELIN**

MICHELIN Pilot Sport (Winner of the Le Mans 24 Hours 2023),  
MICHELIN Pilot Sport 4S, MICHELIN Pilot Sport 5