

TOGETHER, LET'S MAKE THE WORLD FLY BETTER*!

**in an "all-sustainable" way.*

COMMERCIAL



MICHELIN AIRCRAFT

IT'S MORE THAN A TIRE

A BRAND RENOWNED FOR SAFETY AND QUALITY

For **more than a century**, Michelin Aircraft has been helping to meet the challenges of the aviation industry.

The Group has been a **pioneer** in introducing **new technologies** to answer the needs of human mobility.

For the commercial market, Michelin Aircraft develops a tire for each aircraft with its specific technical requirements.

We **respond to customers' needs** with innovative solutions that reduce costs, increase load capacity, lighter tires and foster sustainable development.



1898


Foundation of the **Aéro-Club de France**, with André Michelin

1908


First MICHELIN's **aero challenge** price to foster aero mobility

1916

Construction of the **worlds' first hard runway** in Clermont-Ferrand



Michelin, as your preferred partner, delivers the most reliable and customized support, and innovates to grow your business sustainably.



Did you know?

Almost 2000 Breguet-Michelin aircrafts were built at Michelin's first plant between 1915 and 1919.

1981

First radial tire

2001

NZG—Near Zero Growth Radial Technology

2019

First connected tire

2023

*MICHELIN AIR X SKY LIGHT:
a new generation of tires*

MICHELIN AIRCRAFT

IT'S MORE THAN A TIRE

A WORLD-RENOWNED SPECIALIST SUPPORT

*Beyond a high-performance offer,
Michelin Aircraft builds lasting
relationships based on **trust**,
safety and **quality**.*



Michelin, as your preferred partner, delivers the most reliable and customized support, and innovates to grow your business sustainably.

We deliver exceptional and **reliable support**, thanks to **dedicated teams**:



Customer Service ⁽¹⁾



Field Engineers ⁽²⁾



Sales Force ⁽²⁾

This **customized approach** contributes to **customers' satisfaction**.

We address customers' needs **worldwide**, thanks to Customer Services, Key Account Managers, and Customer Engineers Support.



(1) France, China, USA, Brazil and Thailand
(2) Australia, France, China, USA, Thailand, Japan, UAE and Brazil

Tire Performance Review

Usage conditions influence the tire performance

Manoeuvring / Braking / Ambient temperature / Load & speed / Flight routes / Touch down / Altitude / Wheel positions / Pilot practices

MICHELIN AIRCRAFT


IT'S MORE THAN A TIRE

A SUSTAINABLE INNOVATION

There is an extraordinary concentration of technologies in aircraft tires that require the **most demanding precision** in both design and manufacture. Few manufacturers are capable to meet the **extreme aircraft conditions**.

In some aircraft applications tires need to handle temperatures of **-55°C** for multiple hours in long-haul flights, and then **up to 200°C** when they go from **0 to 250 km/h and beyond**, in a fraction of a second during landing.

During airworthiness and approval tests, they must be able to demonstrate that they can withstand being **inflated to 4 times the nominal pressure without blow-out** (64 bar).



Aircraft tires combine the most severe usages

0 to 250km/h and beyond
A MICHELIN tire lands at the speed of a Formula 1

300 times its mass
A MICHELIN aircraft tire can carry the equivalent of an earth mover dump truck at landing

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MANUFACTURING
zero net CO₂
emissions in 2050

DESIGN AND RAW MATERIALS
100% bio-sourced or
recycled materials in 2050

LOGISTICS
-28% in 2030
CO₂ emissions
vs 2019

COLLECTION AND VALORIZATION
material recycling
—including a local to
local approach

USE PHASE
More than 95% of
the environmental
impact in Aviation is
during Use Phase



For the conception of our tires, MICHELIN Aircraft relies on the **Life Cycle Assessment methodology—LCA.**

Michelin has been recognized for its **Sustainable development** by major manufacturers.

MICHELIN Air X Sky Light

THE NEXT GENERATION OF TIRES

MICHELIN is supporting the transformation of aviation to make it more sustainable towards a decarbonized aviation—net zero CO₂ in 2050, by developing a new generation of radial tires with a new performance profile:

-  **10% to 20% lighter than previous generations of tires.**
Reduce fuel consumption and thus CO₂ emissions.
-  **10% to 20% Landings Per Tread (LPT) performance.**
Decreases the number of tires required for operations, maintenance needs, and cuts time on the ground.

Safety first
Ensures the same level of safety.



Savings
Light weight
= less fuel burnt.
Increased lifespan
= less tire dismantling.



Less CO₂ emissions
Every kilogram of jet fuel burnt releases over 3.16 kg of CO₂ equivalent into the atmosphere. Less fuel burnt = less CO₂ emissions.



**A BREAKTHROUGH INNOVATION
A COMBINATION OF INNOVATIVE
TECHNOLOGIES IN A SMART DESIGN**

New summit construction

Protection embedding hybrid technologies with an optimized footprint design increasing skid available to be worn out.

New bead area conception

A breakthrough bead design, leading to much lighter solution.

Sidewall optimized structure

Embedding new materials.



It is more than a tire

A foundation to accelerate the deployment of future Michelin innovations to reduce the environmental impact of the tire.



AIRBUS

ATR

BOEING

COMAC




← EMBRAER

**MICHELIN EQUIPS
ALL AIRCRAFTS
MANUFACTURERS**



MICHELIN Air X **OUR REFERENT RADIAL TIRE**

MICHELIN RADIAL TECHNOLOGY

-  Reduction in fuel burn due to **tire weight savings**.
-  Reduction of maintenance cost due to the improved **tire Landings Per Tread**.
-  Reduction of early/unscheduled removals due to the **tire resistance** to tears and cuts.

More Landings

Extra strong radial casing design. Flexible radial casing reduces tread squirm.



Labor Savings

Fewer tire changes due to more landings.



Fuel Savings

Lightweight radial design = measurable savings and increased range.



Weather Protection

Special sidewall compounds for longterm ozone and UV light protection.



Resistance to Foreign Object Damage (FOD)

Ultra-Strong Radial Technology.

MICHELIN Air

OUR MOST POPULAR BIAS TIRE

MICHELIN Air tires are designed to provide long tire life, help reduce **maintenance costs** and designed for **rough landing conditions**. MICHELIN Air tires benefit from MICHELIN **retreading expertise**: some of our tires are retreadable up to 7 times.

Long Tire Life

Highly-durable rubber compounds.



Weather Protection

Special sidewall compounds for long term ozone and UV light protection.



Wet Handling

Designed to provide excellent hydroplane resistance.



Outstanding Stability

Extra-strong sidewalls for enhanced nose landing gear safety.



Exceptional Balance

Exclusive manufacturing process results in built-in balance for smooth taxing and even tire wear.








MICHELIN AIRCRAFT

IT'S MORE THAN A TIRE

A SOLUTION FOR EVERY NEED

-  You buy the tires new or retreaded.
-  You pay a unique price for a tire, whether retreaded or new.
-  You pay according to your landings.

You will always benefit from the best technical expertise to support your operations.

CUSTOMIZED OPTIONS*

* non exhaustive

**TAILOR-MADE
INVENTORY
MANAGEMENT**

**SPECIFIC LOGISTIC
CONDITIONS**
(Including adapted Incoterms
& Express delivery)

**SPECIFIC
PACKAGING**

**ON SITE AND
E-LEARNING
TRAININGS**

**TIRE
STORAGE**

For more options **to address your specific needs, contact your sales representative.**



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