

THE MICHELIN LATITUDE X-ICE NORTH

Press Kit

February 2011



The new MICHELIN LATITUDE X-ICE NORTH in brief

- A new studded tire for 4x4s and SUVs, purpose-designed for “Nordic” winters
- Reduces braking distances on snow and ice by 6%
- Increases traction when starting in snow by 15%
- Can be fitted on 90% of 4WDs and SUVs thanks to the most extensive lineup in the market
- 5% fewer studs to protect the environment
- Sidewalls display the GREEN X marking, attesting to the tire’s energy efficiency
- Integrating the Full Active Tread and Durastud System

Media Relations: + 33 1 45 66 10 43

Contents

1. MICHELIN LATITUDE X-ICE NORTH

The winter SUV tire that enables motorists to drive with confidence

2. MICHELIN LATITUDE X-ICE NORTH

Meeting a dual challenge: studs and rubber,
for a tire that is high performance and environmentally friendly

3. MICHELIN LATITUDE X-ICE NORTH

Packed with technology

4. MICHELIN LATITUDE X-ICE NORTH

The most comprehensive tire lineup for the complex, fast-growing 4WD/SUV market

5. MICHELIN LATITUDE X-ICE NORTH

The most extensive “Nordic” tire range for today’s 4WDs and SUVs

THE MICHELIN LATITUDE X-ICE NORTH

**The winter SUV tire that enables motorists
to drive with confidence**



It reduces braking distances by 6% on ice and snow compared with its predecessor¹.

It improves traction on snow by 15%¹.

It can be fitted on more than 90% of 4WDs and SUVs in Europe, including those driven in Russia, a country that has one of the most varied, extensive 4WD lineups in the world, with tire sizes ranging from 15 to 21 inches.

It meets environmental performance regulations for studded tires, scheduled for introduction in Sweden and Finland (Decree no. 466/2009) in 2013.

It enables motorists to drive weighty, top-heavy SUVs and 4WDs with confidence in the harsh winter conditions of Northern Europe and Russia, while also consuming less fuel.

These are the benefits delivered by the new studded 4WD winter tire – the MICHELIN LATITUDE X-ICE North.

This performance combination is fully in line with the MICHELIN Group's strategic vision. MICHELIN tires require no sacrifice on the part of the user, who is provided with superior safety performance as well as cost-savings, since the tires reduce fuel consumption while also delivering greater total mileage.

The latest-generation MICHELIN LATITUDE X-ICE North sets a new standard for studded winter 4WD tires. Even more importantly, this family of MICHELIN tires is not intended for just a handful of vehicles as they can be fitted on more than 90% of models currently on the market.

¹Survey conducted by Test World, an independent company, in 2011

The new MICHELIN LATITUDE X-ICE NORTH integrates technologies that have underpinned the success of the MICHELIN X-ICE NORTH sedan tire, which since 2009 has been marketed in the Nordic countries (Finland, Sweden and Norway), the Baltic countries and Russia.

MICHELIN's objective is to provide motorists – regardless of the category of car they drive – with the same degree of confidence. That's because motorists have the same expectations, whether they're driving a sedan or an SUV.

According to a 2008 survey of 2,200 motorists in Europe and Russia conducted by TNS Sofres, drivers feel that the best way to handle slippery winter roads is to adapt their driving behavior and fit their car with winter tires.

Ice and snow – whether freshly fallen or tightly packed – are motorists chief concerns and this is even truer for 4WD drivers because of their vehicles' weight, height and powerful forward motion. What they fear most is losing control of their car and skidding.

Providing drivers with confidence and a maximum of safety is the purpose of the new MICHELIN LATITUDE X-ICE NORTH studded tire.

Compared with its predecessor, the new MICHELIN LATITUDE X-ICE NORTH delivers superior performance in several areas¹:

- Reducing braking distances on ice and snow by 6%.
- Increasing traction when starting in snow by 15%.
- Improving lateral grip in snow by 10%.
- Reducing rolling resistance by 8%, thereby generating fuel savings.
- Reducing the number of studs by 5%, thus lessening the tire's environmental impact.

To achieve this high-level performance balance, MICHELIN has leveraged its extensive expertise and developed a large number of technologies especially for winter driving. In particular, these technologies concern structural design, tread and studding technique.

With 5% fewer studs, the new MICHELIN LATITUDE X-ICE NORTH already complies with the strictest future environmental standards. Beginning in 2013, Finland and Sweden will limit the number of studs to 50 for each meter of circumference (Decree no. 466/2009).

The new tire also displays the GREEN X marking on its sidewalls, proof that it integrates technologies designed to optimize energy efficiency. That's because the tire reduces rolling resistance by 8%, resulting in greater fuel savings.

Lastly, the new MICHELIN LATITUDE X-ICE NORTH comes in 26 sizes, of which 19 are entirely new. In all, there are 46 different models in MICHELIN's 4WD and SUV studded tire family, meaning that the MICHELIN LATITUDE X-ICE NORTH can be fitted on more than 90% of those vehicles in today's market.

¹Survey conducted by Test World, an independent company, in 2011

THE MICHELIN LATITUDE X-ICE NORTH

Meeting a dual challenge: studs and rubber, for a tire that is high performance and environmentally friendly



Thanks to its expertise and experience in winter driving (as evidenced by its 20 wins in Rally Sweden), MICHELIN has identified every possible type of winter terrain and developed an appropriate technological solution for each.

Grip on snow-covered roads varies, depending on whether it is melting or compacted and even from morning to evening. Grip on icy roads is not the same at -20°C as at -5°C.

Variations in surface conditions are what mainly characterize winter roads. That's the problem faced by tire manufacturers, and which MICHELIN is committed to resolving – tires must ensure safety and mobility in all conditions of use.

Meeting the challenge requires the tire maker to refute conventional wisdom. It is widely believed that studs should be used in particular at very low temperatures when in fact the opposite is true. Studded tires are the best choice when temperatures vary between 0°C and -10°C. Tests conducted in real conditions of use show that at a temperature of -1°C, the braking distance for a car traveling at 50 km/h is 82 meters with studless tires and 33 meters with studded tires. However, at -20°C, the difference is only six meters. Thus a studded tire like the MICHELIN LATITUDE X-ICE NORTH is better suited for multi-purpose use.

**Studded tires are the best choice
when temperatures vary between 0°C and -10°C.**

In addition, as the temperature drops, tire rubber becomes stiffer and grip is reduced. The new studded MICHELIN LATITUDE X-ICE NORTH tire integrates a special rubber compound and tread design that deliver outstanding performance in the coldest conditions.

➤ **Braking distances that are 6% shorter on ice and snow**

Despite 5% fewer studs (to comply with environmental standards scheduled to take effect in Finland and Sweden in 2013), the MICHELIN LATITUDE X-ICE NORTH with its Durastud System reduces braking distances on ice and snow by 6% on average¹ thanks to a better balance of studs – both longitudinally and laterally – between the tire's shoulders and the center of the tread band.

➤ **Traction when starting in snow increased by 15%.**

The MICHELIN LATITUDE X-ICE NORTH tire's Full Active Tread features a new geometry and greater sipe density. With 6% more sipes and 64% more tread blocks than its predecessor, the tire improves traction when starting in snow by 15%¹ and lateral grip by 10%¹.

➤ **Less environmental impact**

The new MICHELIN LATITUDE X-ICE NORTH already complies with environmental standards – to be introduced in Finland and Sweden in 2013 – that limit the number of studs to 50 per meter of circumference (Decree no. 466/2009). This 5% reduction in the number of studs also reduces wear and tear on roads. But that's not all. The MICHELIN LATITUDE X-ICE NORTH also displays the GREEN X marking, attesting to its fuel efficiency. That's because the tire's rubber compound integrates silica, which helps to lower rolling resistance by 8%.



➤ **19 additional sizes to cover more than 90% of the market**

The original size tires have been optimized to provide stability and road holding, since wide tires ensure better traction and less wear. The MICHELIN LATITUDE X-ICE NORTH's new extended family has made it possible to maintain the original sizes in the winter tire range. In all, MICHELIN's lineup of studded 4WD tires comprises 46 different sizes ranging from 15 to 21 inches (see page 13).

¹Survey conducted by Test World, an independent company, in 2011

MICHELIN LATITUDE X-ICE NORTH

Packed with technology

When designing the new MICHELIN LATITUDE X-ICE NORTH, the tire maker leveraged its extensive skills and experience to provide 4WD and SUV drivers with unprecedented safety and effectiveness in the most extreme driving conditions.

- **A 15% increase in traction when starting in snow thanks to the MICHELIN Full Active Tread**

The tread is the sole point of contact between the car and the ground. As such, it must ensure road-holding, braking, handling and traction. The tread on the new MICHELIN LATITUDE X-ICE NORTH has the particularity of being “active”. The part of the tire in contact with the road is designed to meet one simple objective, which is that each square centimeter of the tire must constantly deliver the best possible grip.

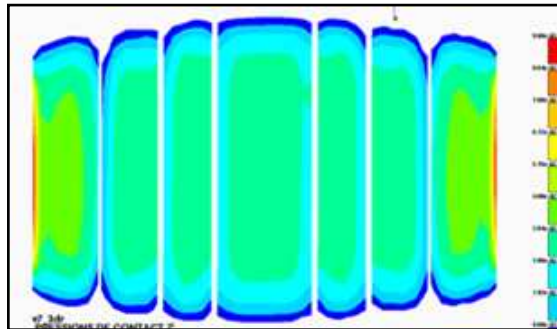
Michelin's R&D teams have also developed two treads depending on the tire size.

The MICHELIN LATITUDE X-ICE NORTH family includes a tread with five rows of blocks (for tires less than 255 millimeters wide, available in 16 sizes) or seven rows of blocks (for large-mount SUVs, available in 10 different sizes). This seven-rib tread makes it possible to maintain the original sizes for most tire models currently on the market.



The relevance of MICHELIN's technological choices comes from the fact that, even for the widest seven-rib tires, the pressure applied by the contact patch on the road is always the same. No special area is subject to heat build-up, as shown in the scanner image below.

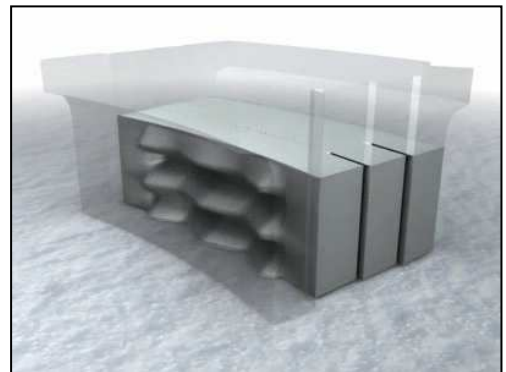
As a result, the tire wears evenly, which is the prerequisite for long total mileage.



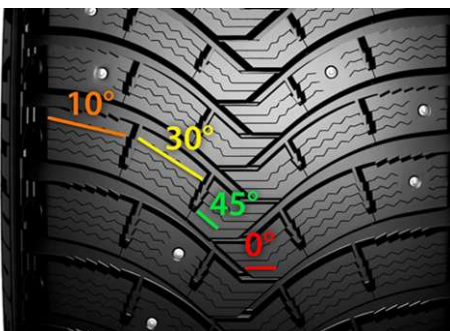
➤ **Close-up on the technical solutions delivered by the MICHELIN FULL ACTIVE TREAD**

- **Greater sipe density using Stabiligrip technology**

The tread on the MICHELIN LATITUDE X-ICE NORTH comprises **6% more sipes** than its predecessor. Thanks to their vertical and lateral grooves, the sipes grip the ice like claws. They lock into each other to make the blocks more rigid, thereby improving stability, steering control and braking on ice. Stabiligrip technology also increases tire durability and longevity. This is an important consideration in Russia, for example, where driving distances are generally very long.



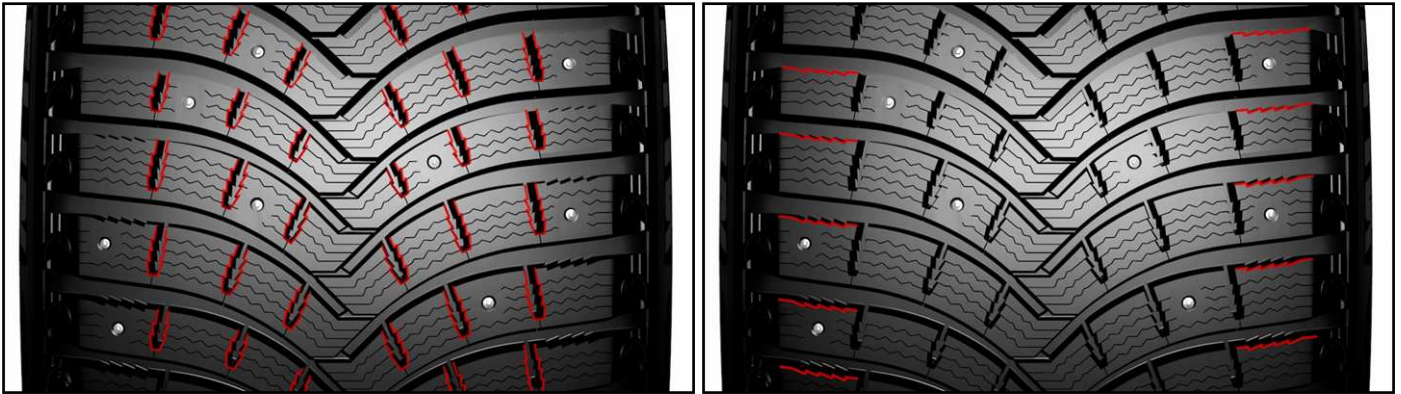
- **Variable-angle sipes**



Sipes are laid out at angles that vary from 0° to 45°. This ensures progressive grip in all situations, whether cornering or driving straight ahead, for better handling and easier steering.

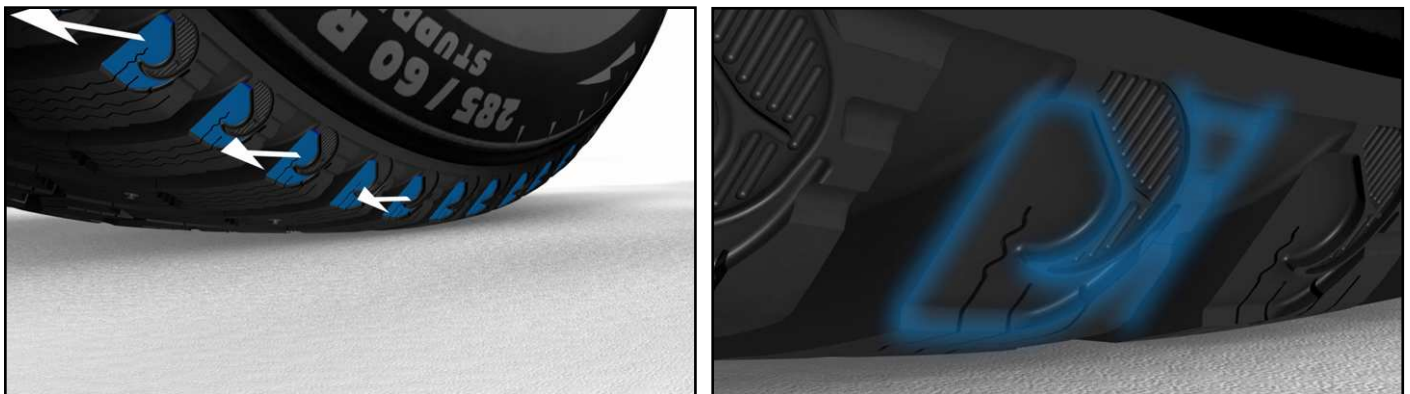
- **Sawtooth tread blocks**

The MICHELIN LATITUDE X-ICE NORTH has **64% more tread blocks** than its **predecessor**. MICHELIN has shaped the end of each tread block in a sawtooth pattern that enables the tire to more effectively grip the surface. This helps to improve braking on snow-covered roads and stability when cornering on compact snow.



- **6) Active, multi-directional , “snow-shovel” shoulders**

The shoulders of the MICHELIN LATITUDE X-ICE NORTH are shovel-shaped to plough snow away from the tire. This increases traction even in deep snow. The shoulders also feature multi-directional sipes that improve the tire's lateral performance on snow.



➤ The Durastud System: fewer studs and shorter braking distances

Within the tread, Michelin has integrated a complete studding system based on three key features.

- **A purpose-designed MICHELIN stud**

Michelin has designed its own stud featuring a head that is extra hard and a shape that enables the tread to grip it more firmly.



- **10 to 14 rows, and 5% fewer studs**

Depending on tire size, the tread of the new MICHELIN LATITUDE X-ICE NORTH has ten to fourteen rows of studs to maximize grip on icy roads. Because they are exceptionally well placed, 5% fewer studs are needed, which helps to reduce the tire's environmental impact. By reducing the number of studs on its winter tires, MICHELIN has become the first manufacturer to comply with environmental regulations scheduled to take effect in Finland and Sweden beginning in 2013. Thanks to MICHELIN's powerful innovation capabilities, braking distances have also been reduced by 6%.

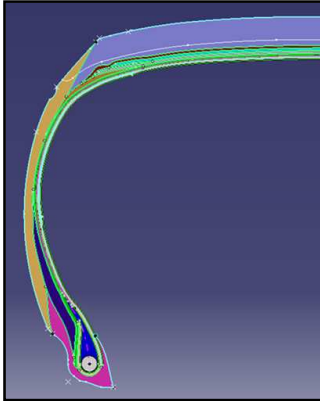
- **Michelin's studding technique**

Michelin's expert studding capabilities and use of automatic studding machines guarantee that the studs on the MICHELIN LATITUDE X-ICE NORTH are uniformly and solidly anchored.

Thanks to all of these innovations, 95% of the studs protrude by an average of 1.2 millimeters, ensuring the most equitable balance between grip and stud longevity. Longer studs would be torn out more easily, while shorter studs wouldn't grip the ice. Michelin thereby ensures the best possible tradeoff between grip and longevity, winter after winter.



➤ **A stronger casing**



The casing of the MICHELIN LATITUDE X-ICE NORTH has been reinforced to carry the high weight of 4WDs and SUVs, while also increasing sidewall impact resistance, extending tread life and improving the tire's road-holding ability.

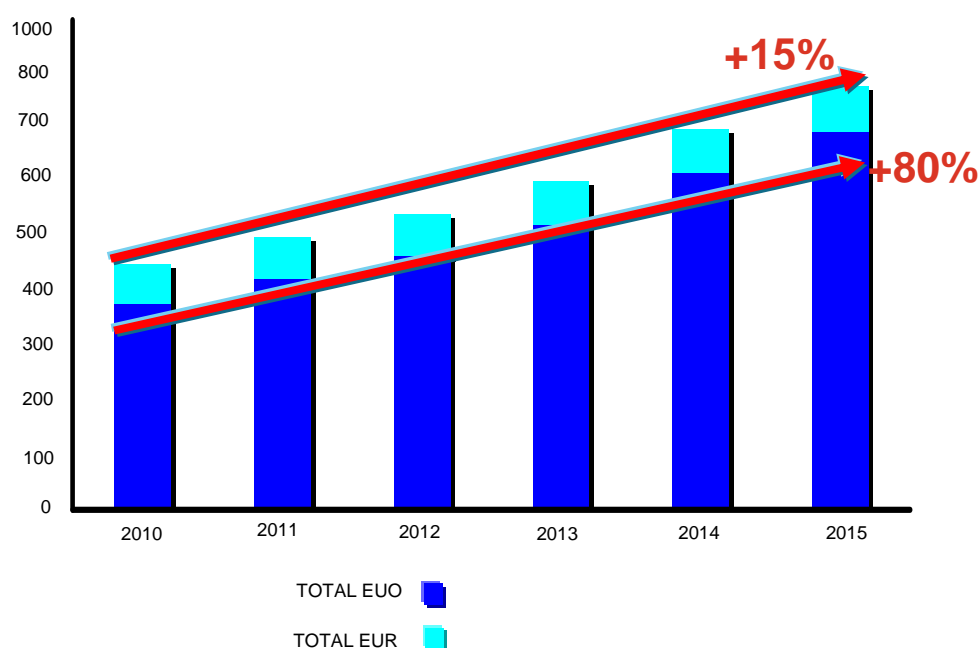
MICHELIN LATITUDE X-ICE NORTH

The most comprehensive tire lineup for the complex, fast-growing 4WD/SUV market

The Suburban, the world's first sport utility vehicle, was introduced in 1935 by Chevrolet. A niche market until the early 1990s, the 4WD/SUV segment has since enjoyed strong, steady sales growth in Europe. Today, all leading carmakers are active in this complex market, which can be broken down into three categories:

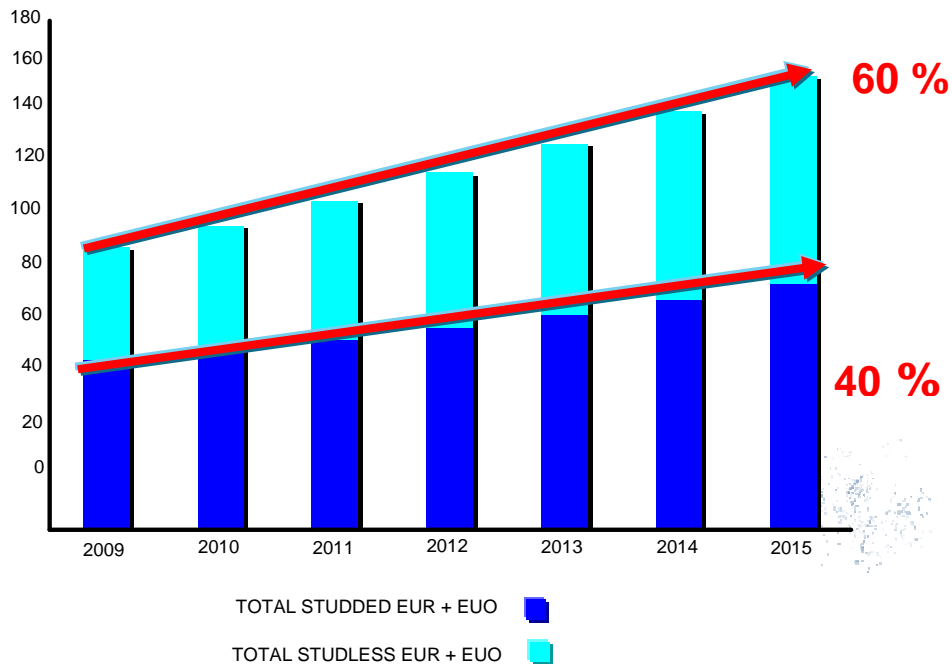
- Vehicles for family and/or city use, a segment in which comfort, spaciousness, safety and fuel consumption are important. Compact, premium and multi-purpose SUVs are included in this category.
- Vehicles for combined on-road/off-road use and both city and recreational driving, for which comfort and performance are paramount. This category includes crossovers.
- Vehicles mainly for off-road use and utility purposes, requiring both superior performance and robustness. This category includes off-roaders and pick-ups.

A survey conducted by Global Insight SUV forecasts that between 2010 and 2015, the number of 4WD registrations should increase by 60%, and by as much as 80% in the Western European Union. A steady – although more modest – increase is also apparent elsewhere in Europe. Already in 2007, Russia surpassed Germany as Europe's largest 4WD and SUV market. In 2015, it's estimated that there will be more than 850,000 SUVs registered throughout Europe.



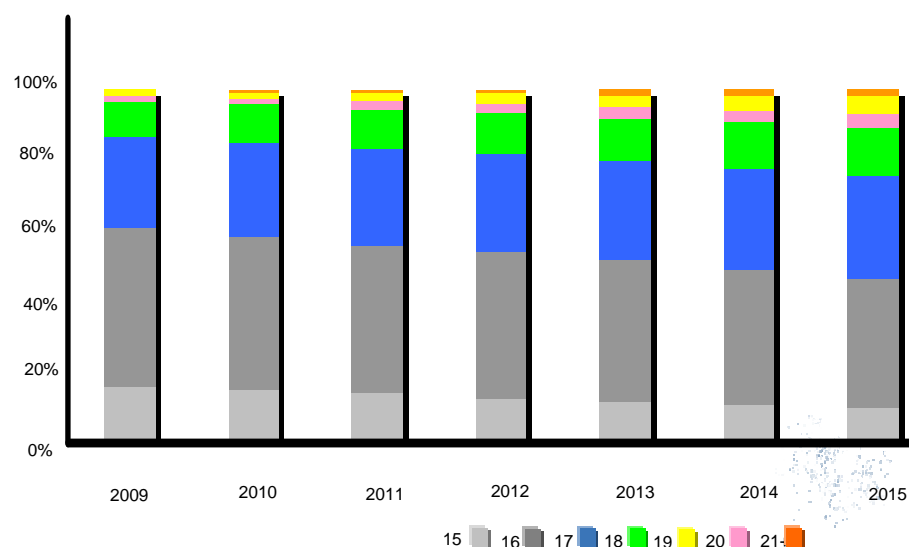
Moreover, the market for winter 4WD tires is expected to expand by 10% a year between 2010 and 2015, with 40% of the growth in studded tires and 60% in studless tires. For

MICHELIN, studded 4WD and SUV tires represent a premium segment that requires leading-edge technologies.



In addition to technology, the 4WD and SUV studded tire market is complex because of the wide range of OE tire sizes. A tire lineup must have 24 different sizes to cover 80% of the 4WD and SUV “Nordic” tire segment.

However, more than 45 sizes – nearly twice as many – are needed to cover 90% of the segment. That gives a clear indication of segment fragmentation and the large number of sizes currently on the market. The graph below shows the breakdown among various tire sizes and their growth potential over the next few years.



MICHELIN LATITUDE X-ICE NORTH

The most extensive “Nordic” tire range for today’s 4WDs and SUVs

With 46 sizes in all, the MICHELIN LATITUDE X-ICE NORTH family is one of the market’s most extensive lineups.

A total of 19 new sizes are being added to the catalogue and 7 sizes already included in the previous range are now covered by the new lineup. In addition, 20 other sizes from the former range are still available.

As a result, more than 90% of 4WDs and SUVs in Europe and Russia can now be fitted with studded tires integrating MICHELIN's state-of-the-art technology.