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Press Release

Michelin presents the X-SUPER TERRAIN + tire

The best partner for articulated dump trucks used on worksites



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Michelin presents the X-SUPER TERRAIN + tire

Delivering enhanced safety, greater versatility and improved productivity: the partner to ensure success on large-scale worksites

Key points

Articulated dump trucks operate in difficult conditions, where tires must deliver excellent performance in terms of traction, robustness and reliability.

The new MICHELIN X-SUPER TERRAIN + reuses the most outstanding feature of the MICHELIN X-SUPER: its exceptional traction. To further enhance performance, the new tire also integrates Michelin's latest technological innovations: additional reinforcements and the latest-generation C² casing.

The use of new, more wear-resistant rubber compounds has increased tire life by up to 15%.

Surface mines, quarries and cement works, as well as infrastructure projects to build motorways, railways or dams, all have something in common. These operations are increasing in number around the world and articulated dump trucks play an essential role in their success, in all cases.

Articulated dump trucks, which can carry payloads that vary from 20 to 50 tonnes, need to be extremely adaptable, versatile and able to carry materials on sometimes difficult terrain, regardless of weather conditions.

Now, both articulated and rigid-frame dump trucks can count on an important ally: the new MICHELIN X-SUPER TERRAIN + tire, which integrates the full range of technological solutions that Michelin provides to operators working in quarries and on large-scale infrastructure projects.

On these sites, as well as in surface mines, tires operate in extremely demanding conditions. Their durability, traction and maneuverability in all working conditions are crucial, as are the reliability and robustness of the machines they equip.

The new MICHELIN X-SUPER TERRAIN + offers three significant gains across the board:

- **Enhanced safety.** The new MICHELIN X-SUPER TERRAIN + delivers enhanced safety performance thanks to its reinforced sidewalls. Unlike the previous-generation tire, the tire features a lateral scuff rib.
- **Improved profitability.** The new MICHELIN X-SUPER TERRAIN + provides more profitability thanks to its improved resistance to cuts and scrapes and its more durable casing that, combined with a more resistant tread compound, increases the tire's longevity. The tread of the previous-generation tire, seen as a benchmark, was maintained in the new-generation MICHELIN X-SUPER TERRAIN +. Tire pressure has been increased by 0.5 bar to limit the impact of abrasion. The new MICHELIN X-SUPER TERRAIN + also integrates C² technology, which consists of a new-generation casing that reduces heat build-up on the shoulders when the tire is in use, thereby increasing tire life, thanks to the use of thicker, corrosion-resistant cables.
- **More respect for the environment.** The new MICHELIN X-SUPER TERRAIN + was designed to optimize the amount of material needed in its manufacture, which takes place in ISO1400-certified plants whose environmental impact has been reduced by 16% since 2005. Respecting the environment also means extending tire life. That's why Michelin designed the new MICHELIN X-SUPER TERRAIN + to be fully and easily repairable and retreadable.

The new MICHELIN X-SUPER TERRAIN + is currently available in the market's most popular size, 29.5 R25, as a direct replacement for the MICHELIN X-SUPER TERRAIN, and Michelin teams are already working to develop other tire sizes.

Michelin's Earthmover operations: Key figures

1

The cost, in million of dollars, of a curing mold in which an Earthmover tire is produced. Manufacturing one of these extremely complex machines can take up to one year.

7

The number of Michelin Group production facilities around the world that manufacture Earthmover tires.

46

The number of different tread patterns in the MICHELIN Earthmover tire lineup. A special tire has been developed for each type of use and machine in order to respond more effectively to the full range of operator needs.

95

The number of sizes in the Earthmover tire catalogue. They range from 8 inches for forklifts to 63 inches for dump trucks used in open-pit mines.

100

The percentage of MICHELIN Earthmover tires that integrate radial technology.

100

The weight, in tonnes, that a MICHELIN XDR2 tire can carry.

200

The number of components in an Earthmover tire, which in fact is a truly high-tech product.

400

The weight, in tonnes, of a curing press used to mold a MICHELIN Earthmover tire. At the opposite extreme, these tires have a number of features that can be seen only with a microscope.

3,500

The number of people worldwide involved in the Michelin Group's Earthmover operations.

5,445

The weight, in kilograms, of the heaviest MICHELIN Earthmover tires.

14,000

The weight, in kilograms, that the latest-generation MICHELIN X-SUPER TERRAIN + tire can carry.

17,000

The number of solar panels installed on the Group's Earthmover tire plant in Le Puy-en-Velay, France. This is equal to the surface area of three football fields, making it one of the largest solar energy installations on any production plant roof in France. This is just one example of Michelin's environmental stewardship strategy.

3 million

The distance, in kilometers, covered every year in tests of Earthmover tires conducted at the Michelin research center in Almeria, Spain.

Michelin's Earthmover operations: Milestones

1959: The world's first radial Earthmover tire is produced.

1977: Opening of the Michelin testing center in Almeria, Spain. It is the first – and still the only – testing center in the world fully dedicated to Earthmover tires.

1998: The first low-profile tire for dump trucks is produced. The new tire increases the load capacity of large dump trucks.

2001: Launch of the MICHELIN XDR 59/80 R 63, the world's largest tire.

2007: Introduction of the Michelin Earthmover Management System (MEMS), the first electronic data system for managing Earthmover tires.

2011: Launch of the MICHELIN XZM2+, a tire specially designed for reach stackers.

2013: Launch of the MICHELIN X STRADDLE 2, a new generation of tires intended to improve the productivity of marine terminal operations. Launch of the MICHELIN X-SUPER TERRAIN +, the new-generation tire dedicated to quarries and large-scale worksites.

Michelin Group: Milestones

For more than a century, MICHELIN has dedicated all its expertise and innovation to enhancing mobility for motorists around the world.

- 1889:** Founding of **Michelin et Cie**.
- 1891:** Michelin files its first patents for removable and repairable tires.
- 1895:** Michelin introduces Éclair, the first car to be fitted with pneumatic tires.
- 1898:** Birth of **Bibendum**, the Michelin Man.
- 1900:** First **MICHELIN guide** published.
- 1905:** Introduction of the **Michelin “sole”** tread with hobnails to improve tire grip and durability.
- 1910:** First 1/200,000 scale Michelin **road map** published.
- 1913:** Michelin invents the **removable steel wheel**.
- 1923:** First **low-pressure car tire** (2.5 bar).
- 1926:** Michelin creates its first **Green Guide for tourists**.
- 1930:** Michelin files a patent for the **integrated tube tire**.
- 1938:** Michelin launches **Metalic, the first truck tire with a steel casing**.
- 1946:** Michelin invents the **radial tire**.
- 1959:** Michelin introduces the first radial tire for earthmovers.
- 1979:** The Michelin radial tire wins the Formula 1 championship.
- 1981:** The MICHELIN Air X is the first radial aircraft tire.
- 1989:** Michelin launches the first online travel itinerary service, on France’s Minitel teletext network.
- 1992:** Launch of the fuel-efficient MICHELIN ENERGY™ tire.
- 1993:** Michelin invents the new C3M tire manufacturing process.
- 1995:** The US space shuttle lands on MICHELIN tires.
- 1996:** Michelin invents the vertically anchored PAX System tire.
- 1998:** The first Michelin Challenge Bibendum, the world’s leading clean vehicle event.
- 1998:** The Michelin Man’s 100th birthday.
- 2000:** Michelin Man voted best logo of all time by an international jury.
- 2001:** Michelin brings to market the world’s largest earthmover tire.
- 2003:** Launch of MICHELIN brand automotive accessories.
- 2004:** New corporate signature introduced: **“Michelin, a better way forward.”**
- 2004:** Launch of the MICHELIN XeoBib, the first agricultural tire that operates at constant low pressure.
- 2005:** Michelin provides tires for the new Airbus A-380 aircraft - **Launch of the MICHELIN Power Race, the first dual compound racing tire approved for road use**.
- 2006:** Michelin revolutionizes truck tires with MICHELIN Durable Technologies.
- 2007:** Launch of the new MICHELIN ENERGY™ Saver tire, which reduces fuel consumption by nearly 0.2 liters per 100 kilometers, thereby lowering carbon emissions by almost 4 grams per kilometer.
- 2008:** Introduction of the new MICHELIN® X® ENERGY™ SAVERGREEN truck tire.
- 2009:** 100th edition of the MICHELIN guide France.
- 2010:** Market launch of the MICHELIN Pilot Sport 3 and MICHELIN Pilot Super Sport tires.
- 2012:** Launch of the MICHELIN Primacy 3 tire in Europe.
- 2012:** European launch of two new high-performance winter tires, the MICHELIN Pilot Alpin and MICHELIN Latitude Alpin.

Michelin Group: Key Figures

Founded:	1889
Production base:	69 production sites in 18 countries
Number of employees:	113,400 worldwide
Technology Center:	More than 6,600 people on 25 sites three continents: North America, Europe and Asia
Annual R&D budget:	€622 million, up 5.1% over 2011
Annual output:	166 million tires produced, 10 million maps and guides sold in more than 170 countries, and 970 million itineraries calculated by ViaMichelin
2012 net sales:	€21.5 billion