Press Release

Boulogne-Billancourt – December 10, 2013

Introducing the MICHELIN X-CRANE + tire

Greater productivity for all-terrain mobile cranes

Media Relations: + 33 1 45 66 22 22

MICHELIN
A better way forward

The new MICHELIN X-CRANE + tire

Delivering enhanced safety, productivity and comfort, the tire is the partner that ensures success on large-scale worksites

Key points

Mobile cranes are indispensable for the success of large infrastructure projects, as well as building construction and industrial maintenance operations.

Because they are used both on and off road while carrying heavy loads, mobile cranes must be adaptable to different conditions of use.

To accomplish its mission, the tires must respond to particularly demanding specifications.

The new MICHELIN X-CRANE + accompanies the development of mobile cranes by guaranteeing enhanced safety, more profitability and up to 20% greater longevity as well as improved comfort and versatility.

Alongside the already available 525/80 R25 and 440/95 R25 sizes, the MICHELIN X-CRANE + lineup has added a new size tire: the 385/95 R25.

With two cabs, as many as ten drive and steer axles, the ability to lift up to 1,200 tonnes, and a maximum speed of 80 km/h on the road, all-terrain mobile cranes must be capable of driving long distances both on and off the road, maneuvering in confined spaces and carrying heavy loads. As a result, their tires are subject to the most extreme conditions of use, to which Michelin has responded with its new MICHELIN X-CRANE + tire.

The new MICHELIN X-CRANE + integrates all the benefits of the MICHELIN X-CRANE and has optimized them in the following areas:

- **Improved safety.** The new MICHELIN X-CRANE + enhances safety by improving the geometry of the tire/rim contact area[1]. As a result, mounting and dismounting tires is safer and faster, leading also to operating gains.

- **Greater productivity.** Thanks to a new rubber compound in the tread, the MICHELIN X-CRANE + lasts up to 20% longer[2]. The new MICHELIN X-CRANE + integrates

[1] In sizes 445/95 R35 and 525/80 R25.
[2] Michelin in-house test, compared with same size MICHELIN X-CRANE and MICHELIN XGC tires.

C^2 technology. This latest-generation casing reduces heat build-up in the shoulders when in use and thus extends longevity. In addition, the steel cables have been made more resistant.

- **Greater comfort.** The MICHELIN X-CRANE + generates fewer vibrations thanks to a more rigid tread compound that wears more evenly. This improvement is vitally important for drivers when the cranes are used on the road.

- **Enhanced environmental performance.** Because it is longer lasting and can be regrooved, the new MICHELIN X-CRANE + guarantees longer service life while requiring fewer raw materials in its manufacture. What's more, it is produced in ISO 14001-certified plants whose environmental impact has been reduced by more than 16% since 2005.

The new MICHELIN X-CRANE + has an F speed rating (80 km/h) and retains all the benefits of the MICHELIN X-CRANE, in particular a braking distance that sets the industry standard. Its asymmetrical tread design guarantees that it can be used on roads as well as in and around worksites, with small blocks in the center that enhance comfort and steering accuracy and large blocks on the outside that deliver traction on soft terrain.

The MICHELIN X-CRANE + is available in the following sizes:

- 385/95 R25
- 440/95 R25
- 525/80 R25

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 in order to respond more effectively to customer needs.

95

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

100

The percentage of Earthmover tires that integrate radial technology.

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 tread 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.

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 panel installations on any production plant roof in France. This is just one example of Michelin's environmental stewardship strategy.

100,000

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

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 reparable 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 **semelle Michelin** 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
Research and development:	More than 6,600 people on 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