



June 5, 2020

Honorable James C. Owens
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue S.E.
West Building
Washington, DC 20590

RE: Petition for Rulemaking to Clarify Scope of FMVSS - Docket No. NHTSA-2019-0114-0001

Dear Acting Administrator Owens:

On November 1, 2019, Michelin North America, Inc. (“Michelin”) petitioned the National Highway Traffic Safety Administration (“NHTSA”) to initiate a rulemaking to make technical amendments to Federal Motor Vehicle Safety Standard (“FMVSS”) for tires—principally FMVSS No. 110—in order to clarify that no FMVSS applies specifically to non-pneumatic (airless) tires for highway service (the “Petition”). *See* Docket No. NHTSA-2019-0114-0001. Importantly, the clarifying amendment Michelin seeks in its Petition would not change existing standards for pneumatic tires in any way. This letter provides supplemental new information that further supports the Petition. Michelin urges NHTSA to act to remove logically inapplicable regulatory barriers to this innovative technology by granting the Petition.

Michelin continues to refine and test its non-pneumatic tires, but in order to be able to manufacture and deploy those tires commercially in the United States as it plans, Michelin must have regulatory clarity that regulations that logically could only apply to pneumatic tires, do not (and could not) apply to non-pneumatic (airless) tires. To that end, we wish to provide whatever reasonable assistance we can to aid NHTSA’s expeditious consideration of the Petition. We reiterate Michelin’s offer to discuss any questions NHTSA may have about the Petition or Michelin’s non-pneumatic tires. Subject to appropriate security and confidentiality protections, Michelin would be willing to provide non-pneumatic tires to the Agency for examination and testing.

As discussed more fully in the Petition, NHTSA generally has deferred development of new FMVSS for innovative motor vehicle equipment technology until after the technology has been commercially deployed on vehicles. This regulatory approach has yielded enormous safety benefits by providing flexibility for manufacturers to develop new and innovative technologies that enhance safety, while also allowing NHTSA an opportunity to observe, study, and test new safety technologies prior to promulgating new safety standards and tests. In this instance, there is an unintended regulatory barrier to that sound approach, in the form of regulatory requirements

that were developed for and specifically targeted at pneumatic tires, but do not logically apply to non-pneumatic tires.

Because non-pneumatic tires do not rely on inflation for operation or safety, the risks associated with underinflation or over inflation are eliminated. Yet FMVSS No. 110 imposes the same inflation-related—and logically inapplicable—standards and requirements to airless tires. Further, non-pneumatic tire technology offers other important benefits, including reduced maintenance, and consistency in performance characteristics which are normally dependent upon inflation pressure such as load capacity, wear, handling and fuel economy. Simplified, Michelin’s Petition requests that the FMVSS be adjusted to account for the fact that certain pneumatic tire requirements do not logically apply to non-pneumatic tires, which were not contemplated when NHTSA promulgated those tire standards. The regulatory clarification sought by the Petition would eliminate these vestigial requirements for non-pneumatic tires and thereby remove unintended regulatory barriers to enhanced tire safety and innovation.

Michelin submits this letter to provide additional information to NHTSA that was not yet available when Michelin originally submitted its Petition. The information contained in this letter does not alter the substance of Michelin’s Petition or the nature of the relief requested. Rather, it provides supplemental information to aid NHTSA’s consideration of the Petition.

I. Tire and Rim Association Approval of Engineering Design Guide for Non-Pneumatic Tire and Wheel Assemblies Facilitates Broad Deployment of Non-Pneumatic Tires

In April 2020, the U.S. Tire and Rim Association (“T&RA”)—the standardizing body for the tire, rim, valve and allied parts industry for the United States¹—approved the addition of Engineering Guidelines for non-pneumatic assemblies (i.e., non-pneumatic tires) to the Engineering Design Information Book for highway vehicle tires. The Engineering Guidelines propose nomenclature for non-pneumatic assembly products and recommend the use of a service description marking. Following is a representation of the nomenclature included in the T&RA’s Engineering Guidelines:

(Assembly OD) x (Tread Width) N (Hub ID) (Service Description) (optional)
625 x 240 N 280 70 A5

The T&RA’s Engineering Guidelines allow the tire industry to use a common framework to design non-pneumatic tire assemblies to meet original equipment manufacturer (“OEM”) fitment requirements, as well as enable interchangeability for replacement purposes. The creation of an industry standard is an essential step to facilitate broad commercial deployment of non-pneumatic tire assembly products. This action by T&RA members demonstrates the tire, rim, valve and allied parts industries’ commitment to the advancement on non-pneumatic technology. Further, the creation of an industry standard for interchangeability resolves a critical hurdle to the

¹ Tire and Rim Association, Inc., <http://www.us-tra.org/index.html>.

commercial deployment of non-pneumatic tires. This progress is separate and complementary to the efforts of NHTSA to support regulatory market access for this technology.

II. Michelin's Uptis Recognized for Technology and Innovation Awards

Michelin has developed a state-of-the-art non-pneumatic tire solution, the Unique Puncture-Proof Tire System ("Uptis"), to provide airless tire and wheel assembly performance on par with conventional pneumatic tires along with the added safety, maintenance and environmental benefits of non-pneumatic technology. To achieve this level of performance, Uptis required innovative solutions in materials and product design. Compared to Michelin's off-road products, including the TWEEL line of products, Uptis has integrated a new shear beam design consisting of advanced fiber reinforcement material encased in low hysteresis composite rubber. In addition, Uptis improved TWEEL's polyurethane spokes with a new fatigue resistant, high deformation composite design. By eliminating inflation pressure as an operating parameter, Uptis eliminates risks associated with underinflation, over inflation, or rapid air loss (or blowout), while enhancing other features including maintenance, load capacity, wear, handling and fuel economy. Like the radial tire design before it, Uptis and other non-pneumatic (airless) tires have the potential to be the next revolutionary advancement in tire safety and performance.

Since Uptis was first announced in June 2019, Michelin has received multiple prominent recognitions for its advancement in airless tire technology, including a Golden Steering Wheel Award in Germany, a COYOTE Automobile Award in France, and Autonomous Vehicle Technology – Autonomy Connectivity Electrification Mobility Services Award in the United States.² Further, in February 2020, Michelin received the prestigious 2020 Tire Technology of the Year award at the Tire Technology Expo held in Hannover, Germany.³ This recognition was awarded by a panel of industry experts including tire manufacturers, car manufacturers, universities and industrial researchers. The Tire Technology of the Year award illustrates the transformative safety benefits of airless tire technology like Uptis.

III. Conclusion

For the reasons discussed herein and more fully in Michelin's Petition, we respectfully request that NHTSA prioritize prompt action on the Petition. A non-controversial clarifying rulemaking eliminating unintended regulatory barriers to tire safety innovation will facilitate the industry's advancement of new tire technology with substantial safety potential. *See, e.g.*, NHTSA Notice of Proposed Rulemaking, "Occupant Protection for Automated Driving Systems," Docket No. NHTSA-2020-0014 and U.S. DOT, *Preparing for the Future of Transportation: Automated Vehicle 3.0* (October 2018) ("U.S. DOT identifies and develops strategies to remove unnecessary barriers to innovation, particularly barriers stemming from existing regulations."). Unlike the development of new standards, the technical adjustment sought by the Petition would not require

² Awards for Uptis, the puncture-proof tire developed by Michelin, available at <https://www.michelin.com/en/news/awards-for-uptis-the-puncture-proof-tire-developed-by-michelin/>.

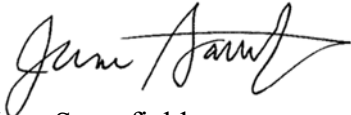
³ 2020 Tire Technology International Awards for Innovation and Excellence: Michelin Kicks off the Year with a Double in Hannover, available at <https://michelinmedia.com/pages/blog/detail/article/c/a960/>.

substantial research or study. Further, such a clarifying amendment would not affect existing standards and tests that apply to pneumatic tires. Significantly, there has not been a single comment filed with NHTSA that opposes or expresses concern about the Petition and the standards clarification it requests.

Michelin plans to bring Uptis to market in 2024. This includes the accumulation of testing and field evaluation data to validate product performances, the fulfillment of OEM tire programs, and the development and qualification of the manufacturing capacity. Further, Michelin has obtained approvals from multiple states to engage in on-road fleet testing in a variety of road, climate and operating conditions. Michelin's technical personnel are available to work with NHTSA staff to provide product demonstrations or to address inquiries related to the design, testing and field evaluation of Uptis.

The modest and eminently reasonable clarifications requested in the Petition are essential to allow Michelin and other manufacturers and OEMs to go forward with the manufacture and deployment of innovative and beneficial non-pneumatic tire technologies. We respectfully urge NHTSA to take advantage of this opportunity to advance tire safety and performance by acting promptly on the Petition and clarifying that regulatory requirements that can apply only to pneumatic tires as a matter of logic, do not apply to airless tires.

Respectfully submitted,



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