



August 19, 2019

Mr. Ian MacIntire  
Office of Crashworthiness Standards  
National Highway Traffic Safety Administration  
U.S. Department of Transportation  
1200 New Jersey Avenue SE, West Building  
Washington DC, 20590

**Re: Notice of Proposed Rulemaking to Amend Visual Inspection Labeling Requirement for Federal Motor Vehicle Safety Standard No. 304, Docket No. NHTSA-2019-0055**

Dear Mr. MacIntire:

Hexagon Mobile Pipeline (“Hexagon”), a division of Hexagon Composites, is the global market leader in high-pressure composite storage cylinders and transportation modules for compressed natural gas (“CNG”) and biogas. The cylinders are lightweight and have a high capacity, making the systems ideal for customers that require large volumes of gas but who are not currently served by traditional pipeline infrastructure. With four times more capacity and weighing 75% less than steel tubes, Hexagon’s composite cylinders offer a more economical delivery solution, enabling a faster return on investment. Hexagon’s product portfolio is the broadest in the market, comprised of the TITAN® and X-STORE® brands, representing the benchmark with regard to quality, weight, safety and payload for composite transport solutions.

Hexagon has a long history of cylinder experience and expertise. Over the years, Hexagon has designed and developed over 80 configurations of high-performance, filament-wound pressure vessels, using liners of aluminum, steel, titanium, Inconel®, plastic, and rubber with structural laminates using a variety of fiber and resin combinations. Hexagon’s products have been used across multiple industries, including for aircraft emergency power, ejection systems, Skylab oxygen tanks, life raft inflation and breathing cylinders. Hexagon is a recognized leader within the cylinder industry.

Hexagon has reviewed the Notice of Proposed Rulemaking issued by the National Highway Traffic Safety Administration (“NHTSA”) on June 21, 2019 relating to amending the visual inspection labeling requirement for Federal Motor Vehicle Safety Standard No. 304 (“Proposed Rule”). See 84 Fed. Reg. 29145 (Jun. 21, 2019). As set forth in further detail herein, Hexagon supports the Proposed Rule and agrees with NHTSA that the amended labeling provisions would result in significant cost savings without sacrificing safety. Hexagon also anticipates that, as technology continues to advance, NHTSA’s inspection requirements will need to similarly evolve. Hexagon encourages NHTSA to keep abreast of recent technological innovations relating to cylinder safety and inspection, and to respond accordingly with further regulatory developments. Hexagon appreciates NHTSA’s continued efforts to improve highway safety in a cost effective and efficient manner.

### The Proposed Rule Will Improve Highway Safety.

Safety is of paramount importance to Hexagon. Indeed, safety has been and will continue to be the most important design factor in Hexagon's development projects. Hexagon's products incorporate the most advanced safety systems and features, with use of the highest-quality materials and designs. For example, Hexagon's cylinders come equipped with state-of-the-art fire protection systems, so that if the ambient temperature reaches a certain point, the tank's contents will be released and vented. All of Hexagon's products also undergo extensive safety testing and quality-control evaluations; qualified professionals perform rigorous safety examinations, beyond what is required by applicable law or regulation. Hexagon also makes every effort to ensure a safe environment for its employees, contractors, customers, visitors, or anyone who may be affected by its business operations, all while protecting the environment by managing its business in an environmentally sensitive and responsible manner. Hexagon's commitment to safety has enabled it to maintain its position as a market leader worldwide. It is based on this set of values that Hexagon offers its support for the Proposed Rule.

As NHTSA acknowledges, field data indicate that there are very few instances of container failures across all CNG-fueled vehicles. 84 Fed. Reg. at 29149. Hexagon appreciates NHTSA's acknowledgment that this low number is attributed to the high quality of CNG fuel containers. *Id.* Nonetheless, Hexagon recognizes that container failures may occur, albeit rarely, and that routine inspections are necessary to detect damage or deterioration to CNG cylinders. Under the current version of Safety Standard No. 304, high-mileage fleets are forced to perform visual inspections too frequently, while low-mileage vehicles perform such inspections too infrequently. Hexagon believes that the Proposed Rule strikes an appropriate balance between these two extremes. Put another way, in Hexagon's view, requiring a visual inspection every 12 months for all heavy-duty vehicles will promote and ensure highway safety, while also limiting repetitive or unnecessary inspections.

In Hexagon's experience, non-visual inspections, such as hydrostatic testing or proof pressure tests, can damage cylinders. Indeed, Hexagon manufactures and tests cylinders for bulk CNG transport. These cylinders are typically 42 inches in diameter, 38 feet long and weigh approximately 5,000 pounds empty, making them very difficult to manipulate. Non-visual inspections are therefore more likely to result in damage to the cylinders. Thus, requiring visual inspections every 12 months is the best way to promote highway safety, without compromising the integrity of the cylinders themselves.

In addition, based on Hexagon's extensive experience relating to CNG cylinders, Hexagon believes that the Proposed Rule appropriately balances the competing interests of various heavy-duty vehicle fleets. The Proposed Rule will improve safety for low-mileage commercial fleets that are currently inspected at intervals greater than 12 months. In Hexagon's experience, low mileage fleets such as refuse typically have more incidents than any other sector. Thus, safety will be significantly improved by requiring more frequent inspections. Hexagon recognizes that, for these low-mileage fleets, the Proposed Rule may result in increased costs and decreased productivity due to additional inspections. To Hexagon, improved safety is worth this additional cost.

### Technological Advancements Will Require Safety Regulations To Evolve.

As described briefly above, Hexagon has been pioneering filament-wound and composite technologies for more than half a century. That level of knowledge and experience makes Hexagon the leading supplier of innovative composite pressure vessel technology that is driving energy transformation and providing affordable fuels for environmental sustainability.

Hexagon continues to look for innovative ways to improve cylinder safety. In 2018, Hexagon acquired the leading testing technology company, Digital Wave Corporation (“Digital Wave”). With the acquisition, Hexagon is on track to fully integrate capabilities for testing and requalification of high-pressure cylinders.

Digital Wave is a leading provider of modal acoustic emission (“MAE”) requalification and ultrasonic examination (“UE”) testing of pressure vessels. MAE is a unique process that uses sound waves to measure structural integrity in composite structures such as CNG cylinders. MAE testing collects data from cylinders under pressure and provides a comprehensive evaluation of the composite structure of each cylinder. UE is an efficient alternative to the traditional hydro-testing of all-metal cylinders.

Hexagon anticipates that technology developed by Digital Wave will ultimately provide continuous safety monitoring of cylinders in the field, allowing cylinders to be evaluated on a continuous basis in real time. Such evaluations will enable mitigation or elimination of cylinder ruptures as a result of accumulated damage.

Hexagon encourages NHTSA to stay apprised of these and other technological advancements in cylinder safety. In too many instances, regulatory amendments trail industry innovations, often by months or years. As a result, highway safety is potentially compromised. Thus, Hexagon requests that NHTSA remain poised to respond to new technological innovations. It is through active engagement with NHTSA that improved highway safety can be most effectively achieved.

#### Conclusion

Hexagon appreciates your consideration of the foregoing comments, which are based on Hexagon’s unique perspective and considerable expertise relating to CNG cylinders. Hexagon looks forward to continuing to work with NHTSA to achieve improved highway safety on the nation’s roads.

Best regards,

A handwritten signature in black ink, appearing to read "Jon A. Smith". The signature is fluid and cursive, with a large initial "J" and "S".

Jon Smith  
President  
Hexagon Mobile Pipeline