The Vehicle Suppliers Association

Comments of

MEMA, The Vehicle Suppliers Association

to the

United States Department of Transportation

National Highway Traffic Safety Administration (NHTSA)

In Response To

Federal Motor Vehicle Safety Standards; Modernization of FMVSS No. 103 and FMVSS 104 To Accompany ADS-Equipped Vehicles; Incorporation by Reference

Docket No. NHTSA-2026-0629

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I. Introduction

MEMA, The Vehicle Suppliers Association (MEMA), respectfully submits these comments in response to the National Highway Traffic Safety Administration's (NHTSA or Agency) Notice of Proposed Rulemaking (NPRM) to modernize Federal Motor Vehicle Safety Standards (FMVSS) No. 103 (Windshield defrosting and defogging systems) and FMVSS No. 104 (Windshield wiping and washing systems).[1]

MEMA represents over 900 vehicle suppliers that manufacture lighting systems, braking systems, visibility systems, automated driving system (ADS) technologies, and other safety-critical components regulated under FMVSS. MEMA members include suppliers of complete wiping and washing systems, components and materials, and integrated sensing and perception systems that support vehicle operation. MEMA members play a central role in developing and deploying advanced safety technologies, including those supporting vehicle automation.

MEMA supports NHTSA's efforts to modernize FMVSS 103 and 104 to reflect evolving vehicle technologies, including ADS-equipped vehicles. At the same time, MEMA emphasizes that such modernization should be guided by several key principles to ensure that updates support safety without introducing unintended regulatory consequences across the supplier base.

First, modernization should remain technology-neutral, ensuring that regulatory changes do not favor one class of solutions over another. MEMA's membership includes suppliers of both traditional visibility systems and emerging sensor-based technologies. Regulatory updates should preserve flexibility for manufacturers to deploy the most appropriate technology to achieve safety objectives. This includes ensuring that regulatory frameworks

[1] *Federal Motor Vehicle Safety Standards; Modernization of FMVSS No. 103 and FMVSS No. 104 To Accommodate ADS-Equipped Vehicles; Incorporation by Reference*, 91 Fed. Reg. 12,537 (Mar. 16, 2026) (to be codified at 49 C.F.R. pt. 571).

appropriately address both traditional visibility systems and emerging sensor-based perception and maintenance requirements.

Second, incorporation of updated industry standards should not result in unintended increases in regulatory stringency absent clear safety justification. For example, where revised SAE standards introduce substantive changes to test conditions or performance thresholds, the Agency should evaluate whether such changes provide measurable safety benefits relative to existing requirements.

Third, regulatory updates should be supported by robust cost-benefit analysis and sufficient implementation lead time. Changes that require redesign, additional validation, or requalification of existing systems should be carefully evaluated to avoid unnecessary compliance burdens across the supplier base, including system integrators, component manufacturers, and material suppliers.

These principles are consistent with the National Traffic and Motor Vehicle Safety Act's (Safety Act) requirements that FMVSS be practicable, meet the need for safety, and be stated in objective terms.[2] They also ensure that modernization efforts support both safety and innovation across the full vehicle supplier ecosystem and are consistent with MEMA's broader position that FMVSS should evolve toward performance-based, technology-neutral frameworks that preserve safety while enabling innovation.[3]

II. Support for Exempting ADS-Equipped Vehicles Without Manual Controls

A. Alignment with Safety Act Principles

The Safety Act directs NHTSA to establish standards that meet the need for motor vehicle safety and are stated in objective terms.[4] Where a requirement no longer addresses a relevant safety need, it is appropriate for the Agency to revise or remove it.[5]

For ADS-dedicated vehicles without manual controls, visibility for a human driver is not required for safe operation. In these vehicles, environmental perception is achieved through integrated sensing systems rather than direct driver observation.

B. Consistency with Technology-Neutral Regulation

This proposal reflects an important shift toward technology-neutral safety regulation, consistent with MEMA's prior comments.[6] As MEMA noted in previous proceedings, safety should be evaluated based on outcomes rather than prescriptive design assumptions,[7] and

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[2] National Traffic and Motor Vehicle Safety Act of 1966, 49 U.S.C. § 30111(a) (requiring motor vehicle safety standards to be "practicable," "meet the need for motor vehicle safety," and be stated in "objective terms").
[3] Comments of MEMA, The Vehicle Suppliers Association; *Re: Vestigial Vehicle Safety Regulations*, Docket No. NHTSA-2026-0133 (March 24, 2026).
[4] 49 U.S.C. § 30101 (stating purpose of motor vehicle safety standards to reduce traffic accidents and resulting deaths and injuries).
[5] 49 U.S.C. §§ 30111(b), 30162(a)(1); *see also Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 42-43 (1983)(requiring agencies to provide reasoned analysis when modifying or rescinding regulatory requirements).
[6] Comments of MEMA, *Vestigial Vehicle Safety Regulations*, supra note 3, at 2.
[7] *State Farm*, 463 U.S. at 43 (agency must articulate a rational connection between the facts found and the regulatory choices made).

alternative technologies should be permitted where they achieve equivalent or greater safety.[8]

At the same time, MEMA emphasizes that removal of legacy requirements should not be interpreted as favoring the elimination of traditional systems in all applications. Vehicle manufacturers may continue to deploy wiping and washing systems, sensor cleaning technologies, or combinations thereof depending on system design and operational needs.

Accordingly, MEMA recommends that NHTSA clarify the following:

- The treatment of vehicles with partial or optional manual controls.
- Whether the exemption applies strictly to fully driverless (ADS-dedicated vehicles).

Clear scoping will ensure consistent application and avoid unintended compliance ambiguity.

III. General Support with Key Considerations

MEMA supports NHTSA's proposal to update FMVSS 103 and 104 through incorporation of modern SAE standards. Updating to current SAE standards reflects modern vehicle architectures and aligns with current engineering practices.

However, MEMA emphasizes that incorporation by reference should not introduce substantive changes to regulatory requirements without appropriate evaluation and justification. In particular, updated SAE standards may include changes that affect test severity, performance expectations, and compliance outcomes.

Accordingly, MEMA recommends that NHTSA clearly distinguish between updates intended to harmonize with current practices and those that would modify existing regulatory requirements. Where such differences exist, the Agency should evaluate whether the updated procedures result in more stringent or materially different performance outcomes.

IV. Specific Comments on FMVSS 104 (Wiping and Washing Systems)

A. Need for Careful Justification of Updated SAE Standards (Including SAE J942 and SAE J902)

MEMA members emphasize that incorporating revised SAE standards, particularly SAE J942 and SAE J902, require careful justification and supporting analysis. Member feedback indicates that updates to these standards introduce several substantive changes to test conditions and performance thresholds, and that these changes may effectively strengthen regulatory requirements beyond current FMVSS 104.[9] These changes, including differences in containment composition, drying conditions, and wiping cycles, collectively increase test severity relative to the currently incorporated standard.

In addition, MEMA members note that updates to more recent SAE standards, particularly SAE J902, may introduce changes to the eye ellipse orientation used to define wiped areas.

[8] 49 U.S.C. § 30113(b)(3)(B)(ii) (permitting exemptions where a vehicle provides an "overall level of safety at least equal to" applicable standards).
[9] SAE Int'l, SAE J942, *Passenger Car Windshield Washer Systems* (latest rev.); compare SAE J942 (1965); *see also* SAE Int'l, SAE J902, *Passenger Car Windshield Defrosting and Defogging Systems* (latest rev.); compare SAE J902 (1964).

These changes can alter the projected A, B, and C visibility zones, potentially making certain zones (particularly the B zone) more challenging to meet under current system designs. As a result, manufacturers may need to consider larger or more complex wiping system configurations, which could increase system mass, complexity, and cost without a clear corresponding safety benefit. These changes represent a departure from assumptions embedded in earlier versions of the referenced SAE standards currently incorporated in FMVSS 104.

B. Cost, Design, and Testing Implications

MEMA members note that adoption of revised SAE J942 may require manufacturers to undertake design changes to wiping system architectures, including potential modifications to arm configurations (e.g., 4-bar extending arms), coverage patterns and system geometry (e.g., butterfly patterns), as well as conduct additional validation and testing, and modify calibration strategies to meet updated cycle/time requirements. As a result, MEMA recommends that NHTSA conduct and publish cost-benefit analysis and evaluate whether changes provide measurable safety benefits relative to current requirements.

C. Lead Time for Compliance

If NHTSA finalizes incorporation of updated SAE standards, MEMA members recommend that NHTSA provide adequate lead time for compliance.

Based on member input, a 180-day implementation period would likely be insufficient.[10] Suppliers require sufficient time for design validation, tooling updates, and system testing, particularly where changes impact integrated system performance.

V. Clarification of Washing Performance Requirements

If the Agency's intent is not to substantively change washing performance requirements, MEMA recommends clarifying regulatory language. For example, MEMA members recommend NHTSA:

- Clarify performance thresholds in revised provisions (e.g., S4.2.1).
- Ensure that test cycles and performance metrics reflect current expectations without unintended stringency increases.
- Consider maintaining alignment with current expectations, including use of a 75% performance threshold and allowing the required number of wiper cycles for the washer performance evaluation be set to within 10 wiper cycles.

MEMA members also note that, as vehicles increasingly rely on sensor-based perception systems, maintaining sensor performance is critical to vehicle safety. As NHTSA recognized in the NPRM, failure to monitor sensor performance or to address sensor obstruction could present safety risks. Accordingly, MEMA encourages the Agency to consider a performance-based approach to sensor cleaning and monitoring, while maintaining flexibility for manufacturers to determine appropriate technical solutions.

[10] 91 Fed. Reg. 12,537, 12,540 (Mar. 16, 2026) (proposing that the final rule would apply to vehicles manufactured 180 days after publication).

VI. Conclusion

MEMA supports NHTSA's efforts to modernize FMVSS Nos. 103 and 104 and appreciates the Agency's focus on aligning regulatory requirements with evolving vehicle technologies. To ensure that modernization advances safety while supporting innovation, MEMA members recommend that NHTSA:

- Maintain a technology-neutral, performance-based approach.
- Ensure that incorporation of updated standards does not introduce unintended increases in regulatory stringency.
- Provide clear analytical justification, including supporting data, for substantive changes.
- Allow sufficient lead time for implementation.

MEMA appreciates the opportunity to provide these comments and looks forward to continued engagement with NHTSA. Please contact Jennifer Lewis, MEMA Vice President of Regulatory Affairs, at jlewis@mema.org with any questions or if the Agency would like additional information on any of the points articulated above.