

A letter sent January 9, 2025, to the Speaker of the House in each of the States

[Updated January 13, 2025]

Happy New Year!

The Society of Automotive Engineers (SAE) is a volunteer led organization which sets standards and recommended practices. This includes everything from the size and shape of license plates (SAE J686) to how you touch each of the controls in your car.

With the start of a new legislative session, we are asking for the help of the Speaker of the House in each of the States to craft legislation which supports a crucial new effort to protect first responders by alerting them to the special hazards involved with alternate fuel vehicles. (SAE J3108) I am a semi-retired National Transportation Safety Board (NTSB) accident investigator who has been the lead in coordinating this and we have members of the group in numerous States to support you.

After manufacturers refused to adopt markings which identify alternate fuel vehicles and the National Highway Traffic Safety Administration (NHTSA) deferred to manufacturers, about two years ago we realized that this effort needs to be adopted by State legislatures. New York is the first State in this effort and we are in discussions with others. Further, we have worked for more than 18 months with the International Standards Organization (ISO17840) to make this the basis of a new Global standard.

New York Bills AO6515 and S09478: Requires the commissioner of motor vehicles to adopt rules and regulations requiring the issuance and placement of special stickers identifying alternative fuel vehicles having a gross vehicle weight of ten thousand pounds or less; requires such stickers to be easily identifiable to first responders as alternative fuel vehicles; defines alternative fuel.

As you probably are aware, battery and other alternate fuel vehicles require special training for firefighters and at least 11 States issue special license plates to mark alternate fuel vehicles. Unfortunately, the designs vary greatly as there has been no standard and none convey the different techniques which are required for fires in battery versus hybrid, hydrogen, CNG, etc.

While electric vehicle (EV) fires are infrequent, the responder community (both police and fire) are increasingly being hurt by vehicles which can operate silently. When a gasoline (ICE) vehicle is in a traffic accident, the engine continues to be audible or stalls and the vehicle will no longer move if/when responders are doing extrication or attending to an injured driver. However, EV and hybrid vehicles may be at rest while still in the Drive mode.

When responders are on scene and a driver's foot moves on the accelerator pedal, electric vehicles have lurched forward to cause injuries. It will take years before proper procedures can be taught to the 1.1 million firefighters and 1.2 million police in the US alone so this is resulting in an increasing number of responder (and owner) injuries. Even in New York where training has been intense the following is an example of a responder who received extensive lower body injuries:

<https://www.facebook.com/watch/?v=1117830495499701>

Note: This may have been prevented by the training of first immobilizing the vehicle with CPPO, which stands for Chock (wheels), PARK(ing brake), PARK(ing shifter position), OFF (Power button or key)

First intended to be placed on license plates, the State may elect whether to place the J308 stickers on the windshield and license plates or the rear glass. Different sticker combinations denote varying types of energy source(s).



Battery Electric Vehicle



Battery Gasoline (Petroleum) Hybrid Vehicle

The stickers are inexpensive and distribution is up to the State. For example, it may be a mandatory distribution as part of registration, mailed to owners by motor vehicle administrations, or distributed by visiting a fire station. Examples may be seen in the attached SAE news article.

The SAE news article follows. To facilitate your review and spare the expense involved with purchasing the released document (https://www.sae.org/standards/content/j3108/1_202412/) let me know if you need the final draft of SAE J3108-1 which went to print.

Please do not hesitate to get input on these from your State fire and police representatives. Also please do not hesitate to contact me if further information is needed.

Thank you in advance for your consideration.

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Introducing SAE Surface Vehicle Recommended Practice J3108-1

December 18, 2024

The SAE has worked for over 18 months on a crucial project to protect first responders at the scenes of accidents and incidents involving alternate fuel light vehicles, the majority of which are battery or hybrid powered.¹ As most are aware, battery powered vehicles require special training for firefighters and at least 11 States issue special license plates to mark alternate fuel vehicles. Unfortunately, the designs vary greatly as there is no standard.

While fires do happen, they are fortunately less common than the bigger problem which has been that these vehicles in accident situations come to rest while still in Drive; then can move silently when responders are on scene. With 1.1 million firefighters and 1.2 million police in the US, this has resulted in numerous responder (and owner) injuries.

This revision to SAE J3108-1 Recommended Practice, originally released in March 2024 and revised December 2024, has been coordinated with the International Standards Organization (ISO) First Responders Group 17840, so it is the first step toward a World Standard. The key is in application of a small set of front and rear stickers to identify alternate fuel vehicles.

The front sticker is to be placed in the corner of the windshield nearest the driver so it is visible to an approaching responder. The sticker in the following photo has an orange field with a white lightning bolt ("flash"), which is both the NHTSA FMVSS 305 and international format to designate a vehicle with high voltage components.²



Manufacturers are increasingly making it harder to identify electric and hybrid vehicles, since the same model may be powered by an internal combustion engine (ICE), as a battery electric vehicle (BEV), or hybrid (HEV/PHEV). The stickers for hybrid vehicles combine the orange flash

¹ Light duty is defined typically as those vehicles weighing 10000 pounds or less.

² National Highway Traffic Safety Administration Federal Motor Vehicle Safety Standard 305 provides the safety requirements for vehicles with high voltage components.

with a red P for petroleum, as shown below on a Ford Escape. States may elect to place the rear sticker on the license plate or in the left lower corner of the rear window.



Modern vehicles can have a wide variety of potential power sources, including hydrogen, methanol, natural gas, and others. Because firefighting is not the same for the various fuels, a range of combinations are listed in the Recommended Practice and these use the same letters and most of the colors contained in ISO 17840. For example, the following depicts a vehicle powered by a hydrogen fuel cell:



While RP J3108-1 keeps the international letters, two ISO17840 colors have not been adopted. Rather than the Dark Red for flammable liquids in ISO 17840 use, the SAE J3108 markings for Petroleum/Ethanol/Methanol are the better known Fire Engine Red. This color provides contrast to Orange without appearing black in night conditions like the Dark Red called for in ISO 17840. The J3108-1 red color is the existing color for depicting flammable materials to make it immediately recognizable for firefighters and other responders.



Fig. 1 Internal combustion engine (ICE) powered by gasoline in J3108-1 and ISO 17840 formats to show the difference in shades of red color.

The second difference is not using the green adopted by ISO 17840 to designate compressed flammable gasses such as LNG, CNG, and Anhydrous Ammonia (NH₃). While the letters are the

same in RP J3108-1 and ISO 17840, the green color has not been adopted because responders and medical personnel have been trained for decades to recognize green as the color for inert gasses, oxygen, and first aid.

Instead, the SAE J3108 markings for compressed gasses such as CNG, LNG, and NH3 are the dark Safety Blue already standardized in the Department of Transportation CNG and LNG Vehicle Fuel System First Responder Guides, regulations adopted by individual States for CNG/LNG vehicles, and NFPA 52 which pertains to CNG.



Fig 2. Vehicle powered by LPG in J3108-1 and ISO 17840 formats. Common lettering is maintained but the J3108-1 format retains the existing NHTSA Safety Blue color to prevent responders associating the green more commonly used in North America to depict oxygen, inert gasses, and safety.

Just as the dimensions for license plates have long been standardized in SAE J686, this new recommended practice promises to be a useful tool for police and firefighters in emergency situations.

The released document may be found here:

https://www.sae.org/standards/content/j3108/1_202412/