



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

1200 New Jersey Avenue SE.
Washington, DC 20590

Mr. Mike Collingwood
Illinois Department of Transportation
2300 South Dirksen Parkway, Room 305
Springfield, IL 62764

August 11, 2020

Dear Mr. Collingwood:

This responds to your two inquiries to the National Highway Traffic Safety Administration (NHTSA) about the installation of barriers in school buses to minimize the spread of the Coronavirus Disease 2019 (COVID-19). In your June 16, 2020 email, you ask about the installation of “plexiglass barriers” installed to the right of, and behind, the driver’s seating position. In a later email, you ask about the installation of clear plastic “soft shields” that would be installed to the immediate right of and behind the driver, and/or installed throughout the passenger compartment by attachment to the interior roof of the school bus and to the seat backs of the passenger seats. As explained below, NHTSA’s regulations would permit the installation of the barriers, subject to the requirements discussed in this letter.

Please note that our answer below is based on our understanding of the specific information provided in your email. This interpretation letter does not have the force and effect of law and is not meant to bind the public in any way. This letter is intended only to provide clarity to the public regarding existing requirements under the law, and represents the opinion of the agency on the questions addressed in your email at the time of signature.

Background

NHTSA is authorized by the National Traffic and Motor Vehicle Safety Act (Safety Act, 49 U.S.C. Chapter 301) to issue Federal motor vehicle safety standards (FMVSS) that set performance requirements for new motor vehicles and new items of motor vehicle equipment. The Safety Act requires manufacturers to self-certify that their vehicles and equipment conform to all applicable FMVSS in effect on the date of manufacture. NHTSA also investigates safety-related defects.

Based on your description of the barriers and the photos you provided, the plexiglass material of the barrier and transparent flexible material of the shield would be motor vehicle “glazing” that must comply with FMVSS No. 205, “Glazing materials.” FMVSS No. 205 applies to glazing installed in motor vehicles prior to first purchase and to aftermarket glazing for use in motor vehicles. The standard incorporates by reference an industry standard, the “American National Standards Institute American National Standard for Safety Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways-Safety Standard”

(ANSI/SAE Z26.1-1996). FMVSS No. 205 and ANSI/SAE Z26.1-1996 specify performance requirements for various types of glazing, called “Items,” and specify the locations in vehicles in which each item of glazing may be used. As motor vehicle glazing, the transparent material of the barrier or shield must meet the requirements of FMVSS No. 205 and be certified as meeting that standard by the prime glazing manufacturer, and, if applicable, the manufacturer or distributor who cuts the glazing into components for use in motor vehicles or items of motor vehicle equipment. If an entity, in assembling the barrier or shield, cuts the glazing, it must ensure the glazing meets the requirements of FMVSS No. 205, and must certify its compliance pursuant to S6.3 of FMVSS No. 205.¹ Anyone who assembles and markets an aftermarket barrier or shield would be a manufacturer of motor vehicle equipment and be responsible for ensuring the product is free from safety-related defects. If the assembler or NHTSA finds the product to contain a safety-related defect, the assembler would be responsible for conducting a recall campaign as required under 49 U.S.C. §§ 30118-30120.

Discussion

Plexiglass Barriers. You ask about plexiglass barriers installed in school buses to the right of and just behind the driver. Assuming the barriers are comprised of plexiglass (or similarly rigid transparent material), NHTSA would consider them to be “interior partitions.”² This classification is important as it, along with the location of the glazing in the vehicle, determines which types of glazing may be used.

Depending upon where the glazing is placed, it may be considered “requisite for driving visibility” and subject to heightened requirements. On buses, the windows deemed requisite for driving visibility are windows to the immediate right or left of the driver and the front windshield.³ (Any portion of glazing that the driver would have to see through to view the windows requisite for driving visibility would also be considered requisite for driving visibility.) You describe the barriers as being located to the right of the driver and immediately behind the driver. Of these locations, only the first would be considered requisite for driving visibility on buses.

Glazing for interior partitions on buses in areas requisite for driving visibility must be of one of the following types of glazing: Items 1, 2, 4, 4A, 10, 11A, 11C, 14, 15A, or 15B. This means the part of the barrier to the right of the driver must be of the items listed above. Interior partitions in areas *not* requisite for driving visibility have additional compliance options, and may also be made of one of following types of glazing: Items 3, 5, 11B, 12, 13, 16A, or 16B. This means the part of the partition immediately behind the driver may be any of the above items.

¹On the other hand, if the entity only assembles the barrier using pre-cut glazing that has been certified by a glazing manufacturer, it is not required to certify the glazing.

² See letter to Ms. Lee Ann Sparks, (June 4, 2020) available at [https://isearch.nhtsa.gov/files/571-205-Driver%20Shield%20for%20Buses%20and%20Vans_final%20signed%20\(002\).htm](https://isearch.nhtsa.gov/files/571-205-Driver%20Shield%20for%20Buses%20and%20Vans_final%20signed%20(002).htm).

³ In a letter to Cris Morgan (January 14, 2009), NHTSA concluded that low-level glazing on doors to the right or left of the driver are considered windows that are requisite for driving visibility. Therefore, glazing through which the driver would view these windows would be considered requisite for driving visibility. <https://isearch.nhtsa.gov/files/08-004149--19%20Nov%2008--sa.htm>.

Soft Shields. You ask about “soft shields” installed in school buses that would be installed to the right of and behind the driver or installed in the passenger compartment by attachment to the interior roof of the school bus and to the seat backs of the passenger seats. Based on photos of the soft shields, and assuming they are comprised of flexible transparent material, NHTSA would consider them to be “flexible curtains.” Again, this classification is important for FMVSS No. 205, as it, along with the location of the glazing in the vehicle, determines which types of glazing may be used.

The photos you provide show that the shields would be installed to the right of the driver or immediately behind the driver, and/or installed between each row of seats by attachment to the interior roof of the school bus and to the seat backs of the passenger seats. Of these locations, only the location to the right of the driver would be considered requisite for driving visibility.

Glazing for flexible curtains on buses in areas requisite for driving visibility must be of one of the following types of glazing: Items 1, 2, 4, 4A, 6, 10, 11A, 11C, 14, 15A, or 15B. This means the soft shield to the right of the driver must be of the items listed above. However, although these Items of glazing are permitted for use as flexible curtains, the only appropriate Item for the pliable plastic shown in the photos may be Item 6. Some of the requirements for certain Items may necessitate a level of rigidity that a soft plastic cannot provide. Some Items of glazing, such as Item 6, have requirements that were designed specifically for flexible plastics.

Glazing for flexible curtains in buses in areas *not* requisite for driving visibility must be one of the following types of glazing: Items 1, 2, 3, 4, 4A, 5, 6, 7, 10, 11A, 11B, 11C, 12, 13, 14, 15A, 15B, 16A, or 16B. Accordingly, the part of the flexible curtain for any location behind the driver and in the passenger compartment must be of these items. Of these permissible Items of glazing, Items 6, 7, and 13 may be the only appropriate ones for the soft, pliable plastic shown in the photos you provide. Soft, pliable glazing may not be able to meet the requirements for certain Items of glazing because they do not provide a level of rigidity that is necessary for meeting some of the requirements. However, Items 6, 7, and 13, have requirements that were designed specifically for flexible plastics.

Other requirements. There may be additional requirements applying to the installation of the partition or curtain (“glazing”) depending on the entity installing it. If the glazing is installed on a new bus prior to first vehicle sale for purposes other than resale, the installer must ensure that, with the glazing installed, the vehicle complies with FMVSS No. 205 and all other applicable FMVSS, and must certify the vehicle as complying with all FMVSS affected by the installation. If the glazing is installed as aftermarket equipment by a manufacturer, distributor, dealer, rental company, or motor vehicle repair business, that entity would be subject to 49 U.S.C. 30122, which prohibits the entity from knowingly making inoperative any device or element of design installed on or in a motor vehicle or item of motor vehicle equipment in compliance with an applicable FMVSS.

In both cases, the entity installing the glazing must ensure that installation of the partition does not: (1) take the vehicle out of compliance with or make inoperative systems installed pursuant to FMVSS No. 222, “School bus passenger seating and crash protection;” (2) impact the vehicle’s compliance with or make inoperative systems installed pursuant to FMVSS No. 302, “Flammability of interior materials;” (3) prevent the driver and passengers from readily

accessing emergency exits installed in compliance with or make inoperative systems installed pursuant to FMVSS No. 217, “Bus emergency exits and window retention and release;” (4) obstruct the driver’s view of the mirrors and/or rearview image required under FMVSS No. 111, “Rear visibility;” or (5) impede the driver’s ability to see through the windows needed for driving visibility. Visibility is particularly important for school buses, as not only are school buses engaged in the transportation of children, they also make frequent stops. Installers should ensure that installation of a partition or curtain, particularly one situated in an area requisite for driving visibility, does not create glare or otherwise reduce the driver’s ability to see embarking and disembarking students and other road users.

Regarding how the installation of the glazing affects compliance with FMVSS No. 222’s head protection requirements, S5.3.1 of FMVSS No. 222 establishes head protection requirements for “contactable surfaces” within the head protection zone defined by S5.3.1.1. The head protection zone is determined based on seating references points. This means that each seat in a school bus has its own head impact protection zone. As an example, a partition that is installed directly behind the driver is likely to fall within the head protection zone for the seat directly behind the driver. Partitions installed to the right of the driver may also partially fall within the head protection zones for the seat directly behind the driver.

If the partition is installed prior to first purchase, the installer must ensure that the vehicle will meet FMVSS No. 222 with the glazing installed. If the head impact protection requirements cannot be met for that first row of seats with the partition installed, the installer might have to remove the first row and move the FMVSS No. 222 restraining barrier rearward such that the bus provides proper compartmentalization for what would be the new (reconfigured) first row. This modification would ensure that the partition is no longer within the head protection zone of any of the school bus seats.

If the partition is installed after first purchase by an entity subject to the make inoperative provision in 49 U.S.C. 30122, the installer may not knowingly make inoperative any part of a device or element of design installed on or in the school bus pursuant to FMVSS No. 222. School buses are required to have passenger seating systems designed to afford impact protection to occupants. Installation of the partition may affect this element of design (compartmentalization) for the front row of seats by impairing the seat’s head impact protection. To avoid this result, the installer may need to remove the first row of seats and move the FMVSS No. 222 restraining barrier rearward such that the bus provides proper compartmentalization for what would be the new (reconfigured) first row.

Entities modifying their own school buses are not subject to Federal restrictions on “making inoperative” the safety systems on their vehicles. However, NHTSA recommends that owners not degrade the safety systems provided on their vehicles. Thus, we recommend that schools take measures to ensure that students will not occupy seats that have compromised head protection zones. For example, if a school installs a partition that will be in the head impact zone, the school can mitigate risk by not allowing students to sit in those first-row seats.

It appears from the photos you sent that the flexible curtain is a “soft shield” made from pliable plastic. Even though the curtains would likely fall within the head protection zones when installed forward of each passenger seat, it does not appear to have an adverse effect on school bus compliance with FMVSS No. 222’s head protection requirements.

In addition to the above, please note that the installation of the barrier may be subject to State laws or regulations. School bus operators should contact their local highway safety office for information governing how school children should be transported.

I hope this information is helpful. If you have any further questions, please feel free to contact Callie Roach of my staff at this address or at (202) 366-2992.

Sincerely,

Jonathan C. Morrison
Chief Counsel