

Chapter 7

Safety Glazing Standards — Locomotives, Passenger Cars and Cabooses Part 223

Guidance:

The Safety Glazing Standards, Part 223, establishes minimum safety requirements for glazing materials in the windows of locomotives, passenger cars, and cabooses in order to reduce the risk of death or serious injury for railroad crew members and railroad passengers from flying objects, including bullets.

Although the actual regulation is relatively self-explanatory, there are some items of interest that the Inspector needs to know to help with compliance activities.



Coach car with FRA-approved
Type II glazing.



Locomotive with FRA-Approved
Type I & Type II glazing.

There have been numerous waivers granted to railroads and car owners, exempting them from the requirements of the Safety Glazing Standards. Inspectors should ask their Regional Specialist about any existing waivers before pursuing any enforcement action. Upon request, a railroad or the owner of the equipment should produce evidence of the waiver granted by FRA.

Federal Railroad Administration

When an Inspector is assigned to investigate a waiver request for glazing, the following information is needed by the Railroad Safety Board in order to process the waiver:

1. The railroad must furnish a written estimate from a verifiable source which details the cost of equipping the vehicle with compliant glazing and implications of economic consequences to the railroad. This estimate shall include at a minimum the cost for the procurement and shipping, installation labor, glazing, gaskets, auxiliary frame if applicable, and dimensions of the existing frames if claim is made that they will not accept compliant glazing;
2. Description of operating environment, to include areas of operation (city or rural), any grade crossings, maximum authorized speed, specific route;
3. Include information regarding the history for window breakage and/or vandalism;
4. The built date of the equipment; and
5. Any pertinent information that may impact the decision. **Facts not opinions.**

Locomotives that have supplementary bay windows added to the side of the locomotive are not required to meet the safety glazing standards. These windows are normally used only during periods of adverse weather and are intended to improve crew visibility without exposing the crew to the adverse weather. It was never FRA's intent to include these supplementary windows, since they are used as an addition to existing glazing which must meet the impact requirements of this regulation.

Carbody type locomotives, such as model numbers F-9, F-40PH, E-9, SD40C, etc., have windows and portholes in the end doors and the side carbody that enclose the motor. Since these are areas that are not in close proximity to the railroad worker during normal locomotive operations, such windows do not require the use of impact resistant glazing. Only windows located in the cab areas are required to have the safety glazing materials.

The Passenger Equipment Safety Standards have included additional requirements for glazing applications in §238.221 for Tier I equipment. This section basically addresses the performance of the frame that attaches to car body. It is intended to ensure the glazing stays in place when subjected to the forces due to air pressure differences caused when two trains pass at the minimum separation for two adjacent tracks. It also secures the window glazing in place so it can resist spalling when struck by a projectile and also resist being knocked out of the window frame.

Motive Power and Compliance Enforcement Manual

The Passenger Equipment Safety Standards have included additional requirements for glazing applications in §238.421 for Tier II equipment. These standards are far more stringent standards than prescribed in Part 223. This section applies to all passenger equipment that operates at speeds in excess of 125 mph, not to exceed 150 mph.

§223.3(b)(3) FRA's interpretation of the terms "historical, antiquated, and excursion" are as follows:

"Historicalequipment" refers to locomotives, passenger coaches or cabooses which have historical significance. For example, the Ferdinand Magellan, U.S.A.-1 passenger car used by President Roosevelt.

"Antiquated equipment" - In general, the FRA Railroad Safety Board considers passenger cars built prior to the end of World War II (1945 or earlier) to be antiquated.

"Excursion" means an operation which transports passengers to one or more points of interest and returns them to the original point of departure.