

**2021 Virginia Construction Code**  
**CHAPTER 24 GLASS AND GLAZING**  
**SECTION 2407**  
**GLASS IN HANDRAILS AND GUARDS**

**2407.1 Materials.**

Glass used in a *handrail* or a *guard* shall be laminated glass constructed of fully tempered or heat-strengthened glass and shall comply with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1. Glazing in a *handrail* or a *guard* shall be of an *approved* safety glazing material that conforms to the provisions of Section 2406.1.1. For all glazing types, the minimum nominal thickness shall be  $\frac{1}{4}$  inch (6.4 mm).

**Exception:** Single fully tempered glass complying with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1 shall be permitted to be used in *handrails* and *guards* where there is no walking surface beneath them or the walking surface is permanently protected from the risk of falling glass.

**2407.1.1 Loads.**

Glass *handrails* and *guards* and their support systems shall be designed to withstand the *loads* specified in Section 1607.9. Glass *handrails* and *guards* shall be designed using a factor of safety of four.

**2407.1.2 Guards with structural glass balusters.**

*Guards* with structural glass *balusters*, whether vertical posts, columns or panels, shall be installed with an attached top rail or *handrail*. The top rail or *handrail* shall be supported by not fewer than three glass *balusters*, or shall be otherwise supported to remain in place should one glass baluster fail.

**Exception:** An attached top rail or *handrail* is not required where the glass *baluster panels* are laminated glass with two or more glass plies of equal thickness and of the same glass type. The *balusters* shall be tested to remain in place as a barrier following impact or glass breakage in accordance with ASTM E2353.

**2407.1.3 Parking garages.**

Glazing materials shall not be installed in *handrails* or *guards* in parking garages except for pedestrian areas not exposed to impact from vehicles.

**2407.1.4 Glazing in windborne debris regions.**

Glazing installed in *exterior handrails* or *guards* in *windborne debris regions* shall be laminated glass complying with Category II of CPSC 16 CFR 1201 or Class A of ANSI Z97.1. Where the top rail is supported by glass, the assembly shall be tested according to the impact requirements of Section 1609.2 and the top rail shall remain in place after impact.