

Truck Side Guard Technical Overview

Safety and Operational Considerations

April 23, 2015

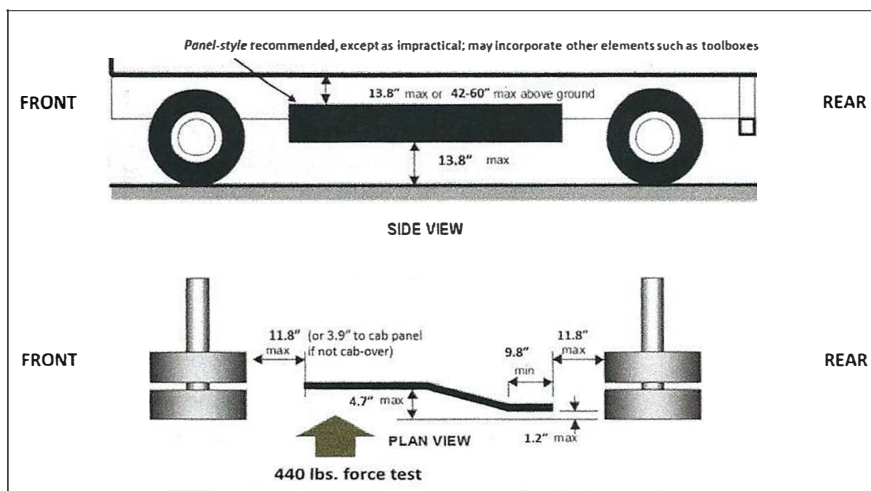
Truck **side guards** are devices designed to keep pedestrians, bicyclists, and motorcyclists—known as vulnerable road users (VRUs)—from being run over by a large truck’s rear wheels in a side-impact collision. This technology works by physically covering the cavity between the front and rear wheels of a truck.

Side guards have been required standard equipment since the 1980s in the European Union and Japan, and more recently in Brazil. Canada conducted research for a national side guard standard from 2009 to 2013 and also began evaluating the viability of using aerodynamic **side skirts** for VRU safety. Reports from that effort and from [Dutch research](#) suggest that certain side skirts may provide comparable protection while also potentially reducing fuel consumption by reducing air drag.

Side collisions with large trucks were associated with 111 pedestrian and bicyclist fatalities annually in the U.S., based on 2005-2009 data on [single-unit trucks](#) and [tractor-trailers](#). **Of the 75 fatal bicyclist crashes per year with large trucks, approximately 50 percent were side impacts.**

Based on studies conducted in the United Kingdom, side guards are an effective technology for reducing the number of VRU fatalities and the severity of injuries, especially for bicyclists.

For example, in the UK, a 61 percent reduction in cyclist fatalities and 20 percent reduction in pedestrian fatalities were [reported](#) in side-impact collisions with trucks following the national side guard mandate.



Volpe-recommended side guard specifications developed for NYC’s Vision Zero program.
[\(Volpe/U.S. DOT\)](#)