

SmartWay-verified Aerodynamic Technologies

EPA's SmartWay Transport Program is a market-driven partnership to help businesses move goods in the cleanest, most efficient way possible. By providing a consistent set of tools and information needed to make informed transportation choices, SmartWay enables companies across the country to benchmark performance data in ways that protect our environment, encourage economic vitality, and enhance our nation's energy security. EPA's SmartWay Technology program helps carrier fleets make informed business decisions to save fuel and improve their supply chain efficiency.

This new program element is part of the 2015 SmartWay trailer program updates that include adding large refrigeration trailers and incorporating multiple aerodynamic performance evaluation tools.

EPA's SmartWay Technology Program has expanded to allow trailer aerodynamic verification through multiple testing pathways.

EPA's SmartWay Technology Program verifies fuel savings from aerodynamic devices and low-rolling resistance tires that can be used on 53-foot box dry van and refrigerated in long-haul operations.

EPA verifies individual devices or combinations of devices tested using SmartWay's robust protocols; these devices are known as "SmartWay-verified" devices. SmartWay aerodynamics-test protocols create consistent, comparable fuel-savings estimates under high-speed cruise conditions for long-haul tractor-trailers.

In 2015, EPA finalized the use of expanded testing-verification pathways to include an enhanced track test, wind tunnel testing, coastdown testing, and computational fluid dynamics (CFD). If trailer aerodynamic devices demonstrate fuel savings in SmartWay testing, they are identified as SmartWay-verified and are listed, along with SmartWay-verified low-rolling resistance tires, on the SmartWay website's technology verification page (www.epa.gov/smartway/forpartners/technology.htm).

Trailer aerodynamic devices can be verified with any of these methods. Previously, SmartWay-verified devices were tested using one method. Manufacturers may now choose from three (3) SmartWay protocols to determine fuel savings for verification. Manufacturers have the option of testing their device using additional SmartWay protocols to receive additional recognition within the online verified device table. For example, a manufacturer could initially test and verify a device using a wind tunnel test. If the manufacturer also conducts coastdown testing on the same device, the SmartWay technology webpage will indicate that the device has demonstrated fuel savings with both wind tunnel and coastdown testing. This provides fleet managers with added confidence that the device has demonstrated fuel savings.

EPA also replaced device-based verification categories with performance-based categories for all aerodynamic device testing. Aerodynamic devices that fall into these new performance thresholds are demonstrated to achieve fuel savings of 1%, 4%, 5% and 9% or more.

Fleet managers can select individually-verified aerodynamic devices from any of the performance thresholds and combine them to meet to the total fuel savings threshold required to qualify as EPA-designated SmartWay or SmartWay Elite trailer. For example, the SmartWay trailer threshold of at least 5% fuel savings could be achieved by using a 5% device or combining a 1% and a 4% device. A SmartWay Elite trailer designation could be earned using a 9% package or pairing individual 4% and 5% components.

A listing of SmartWay-verified devices can be found on www.epa.gov/smartway/forpartners/technology.htm

The table on the following page shows the difference between SmartWay-verified technologies, combinations of these technologies, and EPA-designated SmartWay and SmartWay Elite trailers.

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SmartWay-verified Aerodynamic Technologies *Continued*

Terminology	Definition	Fuel Savings At a Glance
SmartWay-verified low-rolling resistance tires	Low-rolling resistance tires that have been verified to achieve 1% fuel savings for trailers	1% or greater
SmartWay-verified aerodynamic device	A trailer fairing (front, side, rear, or under-trailer) that have been SmartWay-verified to produce 1%, 4%, or 5% fuel savings for trailers	1%, 4% or 5% or greater
SmartWay-verified <i>Elite</i> aerodynamic technology combinations	A combination of multiple trailer fairings (front, side, rear, and/or under-trailer) that have been SmartWay-verified to produce 9% fuel savings for trailers	9% or greater
SmartWay Trailer	A 53-foot box dry van or refrigerated trailer that uses SmartWay-verified low-rolling resistance tires and aerodynamic technology(s) to achieve a total of 6% fuel savings (1% from trailer tires; 5% from aerodynamic technologies)	6% or greater
SmartWay Elite Trailer	A 53-foot box dry van or refrigerated trailer that uses SmartWay-verified low-rolling resistance tires and SmartWay-verified Elite Aerodynamic Technology Combinations to achieve a total of 10% fuel savings (1% from trailer tires; 9% from aerodynamic technologies)	10% or greater

Aerodynamics on trucks will perform differently depending upon driving speeds, tractor and trailer set-up, and the weather. The SmartWay verification program guides fleets to devices with demonstrated performance using controlled verification testing at high-speed cruise conditions (for consistent comparison). Even though some fleets may see fuel savings higher than the EPA verified levels, many fleets may operate at lower speeds.

While SmartWay test methods establish uniform measurement conditions, EPA is also conducting research to provide fleets with information on how they might adjust fuel savings estimates based on their unique operating conditions. These fuel savings are still significant and smart business.

For more information: www.epa.gov/smartway/forpartners/technology.htm or Tech_Center@epa.gov