SmartWay Verified
Low Rolling Resistance Tires
Performance Requirements

SmartWay Technology Verification

EPAs Technology Assessment Center develops test protocols, reviews strategies and verifies the performance of vehicles, technologies and equipment that have the potential to reduce greenhouse gases and other air pollutants from freight transport. The program establishes credible performance criteria and reviews test data to ensure that vehicles, equipment and technologies will help fleets improve their efficiency and reduce emissions.

This fact sheet describes the SmartWay tire verification process, which became effective March 31, 2011.

Tire Verification Process

Tire manufacturers must demonstrate that a tire model has a rolling resistance coefficient at or below the target values (in kg force/metric ton) shown in the table below, using SAE J1269 tire rolling resistance test method (with the conditions established in table 3 of SAE J1269) or the ISO 28580 rolling resistance test method.

◆ For multi-position tires, if the tire qualifies for verification as a trailer tire, it qualifies for verification at all positions. If it qualifies for verification as a steer tire, it also qualifies for verification as a drive tire.

◆ A minimum sample of three tires is to be tested. The average rolling resistance coefficient of the sample is the value to be compared with the target values.

◆ ISO28580 test results are expressed on the basis of a 2 meter test drum. If a drum of a different diameter is used, the rolling resistance is corrected to a 2 meter drum diameter as described in section 9.3 ("Drum Diameter Correction") of the ISO28580 test method.

◆ SAE J1269 results can be expressed in the following ways::

   ◆ The average of the five test points as established in table 3 of the J1269 test method,

   ◆ Test Point 2, as established in table 3 of the J1269 test method, or

   ◆ The "Application Test Point," which represents the maximum load and typical inflation pressures used on the road. The Application Test Point result is determined as follows:

      · Use the test conditions as established in Table 3 of the J1269 test method to obtain rolling resistance force, load, and inflation pressure for each test point.
      · Calculate the coefficients for regression equation 8 of the J1269 test method.
      · Using the coefficients and equation 8, calculate the rolling resistance force (Fr) for a load of either 4,250 pounds and an inflation pressure of 100 pounds per square inch (psi) (drive or trailer tires) or 6,000 pounds and an inflation pressure of 110 psi (steer tires). Single-wide drive and trailer tires are to be tested with a load of 8,500 lbs and an inflation pressure of 100 psi. The rolling resistance coefficient (Crr), in kg/ton, is calculated as follows:

$$Crr = (Fr/Load) \times 1{,}000$$

EQUIVALENT TARGET VALUES
(Rolling Resistance Coefficient in kg force/metric ton)

	Steer	Drive	Trailer
J1269 Application Test Point (1.7 meter drum)	6.6	7.0	5.5
J1269 Test Point 2 (1.7 meter drum)	6.7	6.9	5.5
J1269 5 point average (1.7 meter drum)	6.9	7.0	5.6
ISO 28580 (2 meter drum)	6.5	6.6	5.1