
40 C.F.R. § 1037.525

Aerodynamic measurements for tractors.

This section describes a methodology for quantifying aerodynamic drag for use in determining input values for tractors as described in § 1037.520. This coastdown testing is the reference method for aerodynamic measurements.

(a) *General provisions.* The GEM input for a tractor's aerodynamic performance is a C_d value for Phase 1 and a C_{dA} value for Phase 2. The input value is measured or calculated for a tractor in a specific test configuration with a trailer, such as a high-roof tractor with a box van meeting the requirements for the standard trailer.

(1) Aerodynamic measurements may involve any of several different procedures. Measuring with different procedures introduces variability, so we identify the coastdown method in § 1037.528 as the primary (or reference) procedure. You may use other procedures with our advance approval as described in paragraph (d) of this section, but we require that you adjust your test results from other test methods to correlate with coastdown test results. All adjustments must be consistent with good engineering judgment. Submit information describing how you quantify aerodynamic drag from coastdown testing, whether or not you use an alternate method.

(2) Test high-roof tractors with a standard trailer as described in § 1037.501(g)(1). Note that the standard trailer for Phase 1 tractors is different from that of later model years. Note also that GEM may model a different configuration than the test configuration, but accounts for this internally. Test low-roof and mid-roof tractors without a trailer; however, you may test low-roof and mid-roof tractors with a trailer to evaluate off-cycle technologies.

(b) *Adjustments to correlate with coastdown testing.* Adjust aerodynamic drag values from alternate methods to be equivalent to the corresponding values from coastdown measurements as follows:

(1) Determine the functional relationship between your alternate method and coastdown testing. Specify this functional relationship as $F_{alt-aero}$ for a given alternate drag measurement method. The effective yaw angle, ψ_{eff} , is assumed to be zero degrees for Phase 1. For Phase 2, determine ψ_{eff} from coastdown test results using the following equation:

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