



Wood-Burning Stove Emissions Testing and U.S. EPA Emissions Certification

Wood-burning stoves to be sold in the United States (U.S.) must be certified by the U.S. Environmental Protection Agency (EPA) in accordance with Title 40 of the Code of Federal Regulations (CFR), Part 60, Subpart AAA -- Standards of Performance for New Residential Wood Heaters (i.e., the EPA emissions standard).

Note that in the U.S. this is a Federal regulation, not a “voluntary standard.” Certification is required before a wood-burning stove model line can be offered for sale, which includes wholesale activities such as exhibiting at trade shows. In areas where air emissions are regulated in Canada, EPA emissions certification of wood-burning stoves is recognized and accepted.

For the EPA to certify a wood-burning stove model line, the stove must be tested for emissions by an EPA-accredited testing laboratory like OMNI-Test Laboratories, Inc. (*OMNI*). The laboratory must test a sample stove in accordance with EPA Method 28 and Method 5G or 5H. Method 28 contains stove operating procedures to be used during testing. Method 5G and Method 5H contain the criteria for sampling the emissions in the flue gas. Testing consists of sampling air emissions during the burning of four separate fuel loads, each burned at a different burn rate. Method 5H costs much more to perform but can sometimes provide lower emissions results. *OMNI* recommends that emissions sampling be conducted in accordance Method 5G, unless there are strong indicators that Method 5H would provide better emissions data for a particular stove model.

It is sometimes possible for a group of wood stoves with very similar designs (i.e., a model line) to be certified under a single EPA emissions certification. The EPA emissions standard requires that the stoves within that model line be “similar in all material respects.” That is, the “construction materials, exhaust and air inlet systems, and other design features” must be within an allowed tolerance of ¼” (6 mm) for any linear dimension and 5 percent for any cross-sectional area. If you would like further clarification on this matter please contact *OMNI*.

Every wood-burning stove is different in how it must be operated to achieve the best (i.e., lowest) emissions performance. A day of experimental testing can provide the testing technician with an opportunity to familiarize himself with the unique operating characteristics of your stove. This enables the technician to optimize stove operations during the certification testing.

There are substantial differences between the U.S. EPA emissions standard and those found in Australia and most European countries, especially as compared to the Deutsch Industry (DIN) test standards. It should be noted that although the Norwegian method for measuring emissions has many similarities to the U.S. standard, there are important differences.