



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Ms. Alice Edwards
Director Air Quality Division
State of Alaska
Department of Environmental Conservation
P.O. Box 111800
Juneau, Alaska 99811-1800

03/09/2021

Dear Ms. Edwards,

I am writing in response to your letter dated December 30, 2020, requesting that the Environmental Protection Agency approve for use an alternative test method (ATM) for demonstrating compliance with New Source Performance Standard (NSPS) Subpart AAA, Standards of Performance for New Residential Wood Heaters. Specifically, the State of Alaska Department of Environmental Conservation (DEC) is requesting the use of an ATM to determine compliance for cordwood fueled wood heaters under 40 CFR 60 Section 60.534. **This approval letter supercedes the version approved on February 24th, 2021.**

You state that ADEC has recently reviewed wood heater certification test reports that used Alternate Test Method 125/127 which leverage ASTM E-3053 and that this review has raised serious concerns about certain aspects of the test method. Given your concerns regarding ASTM 3053 and the importance of having and advancing cordwood test methods for certifying wood heaters under the NSPS, you have requested an additional cordwood certification test method option. You state that this will allow additional data collection using another cordwood test that will be beneficial to EPA and state agencies actively engaged in managing wood heat emissions. You are requesting approval for use of the Integrated Duty Cycle Test Method for Certification of Wood Fired Stoves Using Cordwood: Measurement of Particulate Matter (PM) and Carbon Monoxide (CO) Emissions and Heating Efficiency (IDC) developed by NESCAUM, as you feel this approach provides a determination of compliance at an equal or greater stringency as EPA Method 28R; the test method specified under 40 CFR 60 Section 60.534. A detailed IDC test protocol has been attached to this request, and a summary is provided below

You state that the proposed ATM IDC test protocol for cordwood devices assesses appliance efficiency and emissions during start-up and during transition from various heat output loads that ensures emissions and efficiency values are reflective of typical operations. Cold start measurements are required in this ATM and gravimetric analysis of filters collected using ASTM E-2515 are the basis for compliance determination. Additionally, this ATM enhances appliance assessment by requiring three replicate runs of the integrated protocol, which will allow assessment of appliance performance variability against the current emission standard.

You state that providing this alternative approach for certification of wood heaters under the NSPS, the approval of this ATM would be beneficial to Alaska's regulatory program for new wood heater emission standards within the Fairbanks North Star Borough Serious Fine Particulate Matter Nonattainment Area. Alaska regulations, 18 AAC 50.077, allow the state to accept test results from an ATM if approved by EPA and the Department. Alaska regulations also include a TEOM measured 1-hr standard. By approving the IDC as a Broadly Applicable Test Method you expect would also generate additional data with the IDC operating method that may prove useful to EPA's efforts to further develop cordwood test methods for a future NSPS review.

With the following modifications, we approve your alternative test method request for certifying wood heaters using the Integrated Duty Cycle Test Method for Certification of Wood Fired Stoves Using Cordwood: Measurement of Particulate Matter (PM) and Carbon Monoxide (CO) Emissions and Heating Efficiency.

1. First hour filterable emissions must be reported in g/hr
2. Filter treatment and dessication must follow procedures listed in ASTM E-2515
3. Filters must be weighed in pairs to reduce propagation of weighing error, see ASTM E-2515 section 10.2.1 Analytical Procedure
4. Filter temperature must be maintained between 80 and 90 degrees Fahrenheit.
5. Negative filter results must be treated as “zero” in all calculations
6. Dual train comparison must be presented in terms of % difference on a g/hr basis, and as a difference between two g/kg emissions factors values
7. Sample filters must be Pall TX-40 or equivalent Teflon-coated glass fiber, and of 47mm, 90mm, 100mm, or 110mm diameter
8. Only 1 point is allowed outside of the +/-10% proportionality range per test run
9. Each test run must include documented fuel loading per the IDC Fueling Calculator located here: <https://www.nescaum.org/documents/integrated-duty-cycle-test-method-for-cordwood-stoves-1/>

A copy of this letter must be included in each certification test report where this alternative test method is utilized.

It is reasonable that this alternative test method approval be broadly applicable to all wood heaters subject to the requirements of 40 CFR part 60, Subpart AAA. For this reason, we will post this letter as ALT-140 on our website at <http://www3.epa.gov/ttn/emc/approalt.html> for use by other interested parties. As noted earlier in this letter, this alternative method approval is valid until such time that Subpart AAA and QQQQ are revised or replaced to require a different certification method, and at such time, this alternative will be reconsidered and possibly withdrawn.

If you have additional questions regarding this approval, please contact Michael Toney of my staff at 919-541-5247 or toney.mike@epa.gov.

Sincerely,


Steffan M. Johnson, Group Leader
Measurement Technology Group

cc:

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