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Subpart E procedure	Performance test	Performance specification	Test conditions	Part 50, appendix L reference
§ 53.57 Filter temperature control test.	1. Filter temp. meas. accuracy. 2. Ambient temp. meas. accuracy. 3. Filter temp. control accuracy, sampling and non-sampling.	1. 2 °C ..... 2. 2 °C ..... 3. Not more than 5 °C above ambient temp. for more than 30 min.	(a) 4-hour simulated solar radiation, sampling. (b) 4-hour simulated solar radiation, non-sampling. (c) Solar flux of 1000 ±50 W/m^2.	Sec. 7.4.8. Sec. 7.4.10. Sec. 7.4.11.
§ 53.58 Field precision test.	1. Measurement precision. 2. Storage deposition test for sequential samplers.	1. P_j <2 μg/m^3 or RP_j <5%. 2. 50 μg max. average weight gain/blank filter.	(a) 3 collocated samplers at 1 site for at least 10 days. (b) $PM_{2.5}$ conc. >3 μg/m^3 ... (c) 24- or 48-hour samples (d) 5- or 10-day storage period for inactive stored filters.	Sec. 5.1. Sec. 7.3.5. Sec. 8. Sec. 9. Sec. 10.
The Following Requirement Is Applicable to Class I Candidate Equivalent Methods Only				
§ 53.59 Aerosol transport test.	Aerosol transport	97%, min. for all channels..	Determine aerosol transport through any new or modified components with respect to the reference method sampler before the filter for each channel.	

[72 FR 32208, June 12, 2007]

TABLE E–2 TO SUBPART E OF PART 53—SPECTRAL ENERGY DISTRIBUTION AND PERMITTED TOLERANCE FOR CONDUCTING RADIATIVE TESTS

Characteristic	Spectral Region			
	Ultraviolet		Visible	Infrared
Bandwidth (μm)	0.28 to 0.32	0.32 to 0.40	0.40 to 0.78	0.78 to 3.00
Irradiance (W/m^2)	5	56	450 to 550	439
Allowed Tolerance	±35%	±25%	±10%	±10%

[62 FR 38799, July 18, 1997; 63 FR 7714, Feb. 17, 1998]

FIGURE E–1 TO SUBPART E OF PART 53—DESIGNATION TESTING CHECKLIST

DESIGNATION TESTING CHECKLIST

Auditee _____ Auditor signature _____ Date _____

Compliance Status: Y = Yes N = No NA = Not applicable/Not available				
Verification			Verified by Direct Observation of Process or of Documented Evidence: Performance, Design or Application Spec. Corresponding to Sections of 40 CFR Part 53 or 40 CFR Part 50, Appendix L	Verification Comments (Includes documentation of who, what, where, when, why) (Doc. #, Rev. #, Rev. Date)
Y	N	NA		
			Performance Specification Tests Sample flow rate coefficient of variation (§ 53.53) (L–7.4.3)	
			Filter temperature control (sampling) (§ 53.57) (L–7.4.10)	
			Elapsed sample time accuracy (§ 53.54) (L–7.4.13)	
			Filter temperature control (post sampling) (§ 53.57) (L–7.4.10)	
			Application Specification Tests	
			Field Precision (§ 53.58) (L–5.1)	

Compliance Status: Y = Yes N = No NA = Not applicable/Not available				Verification Comments (Includes documentation of who, what, where, when, why) (Doc. #, Rev. #, Rev. Date)
Verification			Verified by Direct Observation of Process or of Documented Evidence: Performance, Design or Application Spec. Corresponding to Sections of 40 CFR Part 53 or 40 CFR Part 50, Appendix L	
Y	N	NA		
			Meets all Appendix L requirements (part 53, subpart A, §53.2(a)(3)) (part 53, subpart E, §53.51(a),(d))	
			Filter Weighing (L–8)	
			Field Sampling Procedure (§53.30, .31, .34)	
			Design Specification Tests	
			Filter (L–6)	
			Range of Operational Conditions (L–7.4.7)	
The Following Requirements Apply Only to Class I Candidate Equivalent Methods				
			Aerosol Transport (§53.59)	

APPENDIX A TO SUBPART E OF PART 53—REFERENCES

(1) American National Standard Quality Systems—Model for Quality Assurance in Design, Development, Production, Installation, and Servicing, ANSI/ISO/ASQC Q9001–1994. Available from American Society for Quality, P.O. Box 3005, Milwaukee, WI 53202 (*http://qualitypress.asq.org*).

(2) American National Standard Quality Systems for Environmental Data and Technology Programs—Requirements with guidance for use, ANSI/ASQC E4–2004. Available from American Society for Quality, P.O. Box 3005, Milwaukee, WI 53202 (*http://qualitypress.asq.org*).

(3) Quality Assurance Guidance Document 2.12. Monitoring $PM_{2.5}$ in Ambient Air Using Designated Reference or Class I Equivalent Methods. U.S. EPA, National Exposure Research Laboratory, Research Triangle Park, NC, November 1998 or later edition. Currently available at *http://www.epa.gov/ttn/amtic/pmqainf.html*.

(4) Military standard specification (mil. spec.) 8625F, Type II, Class 1 as listed in Department of Defense Index of Specifications and Standards (DODISS), available from DODSSP-Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 1911-5094.

(5) Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements. Revised March, 1995. EPA–600/R–94–038d. Available from National Technical Information Service, Springfield, VA 22161, (800–553–6847, *http://www.ntis.gov*). NTIS number PB95–199782INZ.

(6) Military standard specification (mil. spec.) 810-E as listed in Department of Defense Index of Specifications and Standards (DODISS), available from DODSSP-Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 1911-5094.

[62 FR 38799, July 18, 1997, as amended at 71 FR 61295, Oct. 17, 2006]

Subpart F—Procedures for Testing Performance Characteristics of Class II Equivalent Methods for $PM_{2.5}$

SOURCE: 62 FR 38814, July 18, 1997, unless otherwise noted.

§53.60 General provisions.

(a) This subpart sets forth the specific requirements that a $PM_{2.5}$ sampler associated with a candidate Class II equivalent method must meet to be designated as an equivalent method for $PM_{2.5}$. This subpart also sets forth the explicit test procedures that must be carried out and the test results, evidence, documentation, and other materials that must be provided to EPA to demonstrate that a sampler meets all specified requirements for designation as an equivalent method.

(b) A candidate method described in an application for a FRM or FEM determination submitted under §53.4 shall be determined by the EPA to be a Class II candidate equivalent method on the basis of the definition of a Class II FEM in §53.1.

(c) Any sampler associated with a Class II candidate equivalent method (Class II sampler) must meet all applicable requirements for FRM samplers