

Surface Coating of Large Appliances

A Closer Look at Air Quality Requirements

Surface coaters of Large Appliances in Colorado are subject to very specific and often complex State and Federal air quality requirements that exist above and beyond reporting and permitting requirements common to other surface coating operations. This fact sheet supplements the general regulatory information provided in *A Guide to Environmental Regulations for Colorado Surface Coating Operations*. Specific requirements for surface coaters of large appliances covered in this fact sheet include Colorado Air Regulation No. 7, Federal Maximum Achievable Control Technology Standards (MACT), and Federal New Source Performance Standards (NSPS)

Colorado Air Regulation No. 7

Colorado Air Regulation No. 7 limits volatile organic compound (VOC) emissions from all businesses in Colorado. Regulation No. 7 is available for download through the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) web page at www.cdphe.state.co.us/op/regs/airregs.asp.

The *General Provisions* of Regulation No. 7 require select Colorado surface coaters to reduce emissions using Reasonably Achievable Control Technology (**RACT**). These requirements may include the use of low VOC coatings, high transfer efficiency spray guns, or other technology such as thermal oxidizers that achieve a high degree of emission control.

Surface coaters of large appliances located in the Denver-Metro area are also subject to the *Specific Provisions* of Regulation No. 7 contained in Section IX.A and IX.F. These provisions include limits on the content of VOCs allowed in certain coatings applied at the facility.

Is Your Business Affected by the *Specific Provisions* of Regulation No. 7?

Your business is affected by the Specific Provisions of Regulation No. 7 if you surface coat large appliances in the Denver 1-Hour Ozone Attainment/Maintenance Area, which includes:

All of Denver, Broomfield, Jefferson, Douglas, and Boulder County (excluding Rocky Mountain National Park) and the western portions of Adams and Arapahoe Counties.

Large appliances means...

Doors, cases, lids, panels, interior support parts, and any other large (greater than one square decimeter or 15.5 square inches) coated surfaces of residential and commercial washers, dryers, ovens, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and all other products under SIC Code 363. (*Reg. No. 7, Section IX.F.1*).

Emission Limits

Surface coaters affected by the specific provisions of Regulation No. 7 must demonstrate compliance, on a daily basis, with the VOC emission limits shown in Table 1 (*Reg. No. 7, Section IX.F.3*). The CDPHE Small Business Assistance Program (SBAP) can provide guidance and tools to businesses required to track and record daily VOC emissions.

A Guide to Environmental Regulations for Colorado Surface Coating Operations and supplemental fact sheets for other types of surface coaters are available through the APCD Guidance Document Library at www.cdphe.state.co.us/apstationarylibrary.html

Table 1: Emission Limits (Regulation 7 – Section IX.F)

TYPE OF COATING:	KILOGRAM OF VOC /LITER OF COATING (as applied)	POUND OF VOC/GALLON OF COATING (as applied)
All coatings (large appliance coating line; prime, single or topcoat application area, flash-off area, and oven)	0.34	2.8

Additional Recordkeeping Requirements

Surface coaters affected by Regulation No. 7 using add-on control equipment must also maintain **daily** records as listed in Table 2.

Table 2: Overview of Additional Reporting Requirements (Regulation 7 – Section IX.A)

ADD-ON CONTROL EQUIPMENT	REQUIRED RECORDKEEPING
Capture System	Fan power use, duct flow, duct pressure
Carbon Adsorber	Bed temperature, bed vacuum pressure, pressure at the vacuum pump, accumulated time of operation, concentration of VOC in the outlet gas, solvent recovery
Refrigeration System	Compressor discharge and suction pressures, condenser fluid temperature, solvent recovery
Incinerator System	Exhaust gas temperature, temperature rise across a catalytic incinerator bed, flame temperature, accumulated time of incineration

Maximum Achievable Control Technology (MACT) Standards

Some very select surface coaters of large appliances are subject to federal regulations called Maximum Achievable Control Technology (MACT) standards. Specifically, surface coaters of large appliances that are major sources of hazardous air pollutants (HAPs) must comply with the MACT standards provided in 40 CFR Part 63, Subpart NNNN. Surface coaters that were operating on or before December 22, 2000 must be in compliance with the standard by July 23, 2005, while all other affected surface coaters must be in compliance by July 23, 2002 or the source startup date.

The USEPA provides extensive guidance on Subpart NNNN at the **Implementation Information for the Surface Coating MACTs** webpage located at www.epa.gov/ttn/atw/coat/common/coatingsdisc.html.

Is Your Business Affected by Subpart NNNN?

An Affected Source is . . . (§63.4081)

Any new or existing facility that is a *major source* and applies coatings to *large appliances*.

A Major Source is . . .

A facility that emits (or is located at or is part of a facility that emits) over ten tons per year of a single HAP or over 25 tons per year of total HAPs.

Large appliances means . . .

Cooking equipment; refrigerators, freezers, and refrigerated cabinets and cases; dishwashers, trash compactors and water heaters; and heating ventilation, and air conditioning units; air conditioning and heating

The MACT standard for surface coaters of large appliances is available for download through the Electronic Code of Federal Regulations at **www.gpoaccess.gov/ecfr/index.html** (search under Title 40, Volume 12, Part 63, Subpart NNNN)

combination units, and comfort furnaces and electric heat pumps; and other items listed in Subpart NNNN.

Coatings are . . .

Materials applied to a substrate for decorative, protective, or functional purposes, including but not limited to paints, sealants, caulks, inks, adhesives, and maskants.

*Exemptions to Subpart NNNN are provided in §63.4081.

Emission Limits

Surface coaters affected by Subpart NNNN must demonstrate compliance with the HAP emission limits shown in Table 3 (§63.4090)

Table 3: Emission Limits (40 CFR Part 63, Subpart NNNN)

TYPE OF SOURCE (OR FACILITY)	KILOGRAM OF HAP/ LITER OF COATING (as applied)	POUND OF HAP/ GALLON OF COATING (as applied)
Existing source (Start-up was on or before December 22, 2000)	≤0.13	≤1.1
New or reconstructed source (Start-up was after December 22, 2000)	≤0.022	≤0.18

Surface coaters that reduce emissions by using a capture system and add-on control device (e.g., thermal and catalytic oxidizers, select solvent recovery systems, condensers) must also comply with MACT *operating limits*. These limits are site-specific parameter limits determined during the initial performance test of the system (§63.4092).

Additional Recordkeeping Requirements

The MACT includes notification, recordkeeping, and reporting requirements as summarized in Table 4. Reports must be submitted to the CDPHE Air Pollution Control Division (APCD), while records must be retained on site and made available to the APCD upon request.

Table 4: Overview of Additional Reporting Requirements (40 CFR Part 63, Subpart NNNN)

REPORT REQUIREMENT	REPORT DESCRIPTION
Initial Notification [§63.4110]	The initial notification notifies the APCD that your facility is subject to the Large Appliances Surface Coating MACT Standards.
Notification of Intent to Conduct a Performance Test [§63.4110]	If your facility is required to conduct a performance test (e.g., those with add-on control equipment), you must submit a notification of intent to conduct a performance test 60 days prior to the test. .
Notification of Compliance Status [§63.4110]	You must submit a Notification of Compliance Status form by September 30, 2005, if you are an existing source, or within 30 days after the end of the initial compliance period if you are a new source. This form notifies the APCD that your facility is in compliance with the MACT Standards.
Performance Test Report [§63.4120]	If your facility is required to conduct a performance test (e.g., those with add-on control equipment), you must submit a performance test report within 60 days after completion of the performance test.

Startup, Shutdown, Malfunction Reports [§63.4120]	You must submit the report immediately if there is a startup, shutdown, or malfunction of the control device during the reporting period that is not consistent with the startup, shutdown, and malfunction plan. If actions taken were consistent with the plan, the report must be submitted semi-annually.
Semiannual Compliance Reports [§63.3400]	In addition to the initial compliance period, each affected source must submit semiannual compliance reports. (Each reporting year is divided into two semiannual reporting periods.)
Records [§§63.4130 and 63.4131]	You must maintain records necessary to document compliance with the rule for at least 5 years. There may be additional requirements depending on the compliance option that you choose.

New Source Performance Standards (NSPS)

Surface coaters of large appliances may be subject to additional federal requirements (referred to as New Source Performance Standards [NSPS]) provided in 40 CFR Part 60, Subpart SS.

Is Your Business Affected by Subpart SS?

An Affected Source is . . . (§60.450)

Each surface coating operation in a large appliance surface coating line (that coats large appliance *parts* or *products*) that commenced construction, modification, or reconstruction after December 24, 1980.

Large appliance part means . . .

Any organic surface-coated metal lid, door, casing, panel, or other interior or exterior metal part or accessory that is assembled to form a large appliance product. Parts subject to in-use temperatures in excess of 250 °F are not included in this definition.

Large appliance product means . . .

Any organic surface-coated metal range, oven, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

The NSPS for surface coaters of large appliances is available for download through the Electronic Code of Federal Regulations at www.gpoaccess.gov/ecfr/index.html (search under Title 40, Volume 6, Part 60, Subpart SS)

Emission Limits

Surface coaters affected by Subpart SS must demonstrate compliance with the VOC emission limits shown in Table 5 (§60.312.a):

Table 5: Emission Limits (40 CFR Part 60, Subpart SS)

TYPE OF COATING	KILOGRAM OF VOC/ LITER OF COATING (as applied)	POUND OF VOC/GALLON OF COATING (as applied)
All coatings	≤0.90	≤7.5

Compliance Testing

Surface coaters affected by Subpart SS must conduct initial performance tests and monthly calculations to demonstrate compliance with the emission limits. Detailed calculation procedures are provided in §60.453. Surface coaters that use a capture system and incinerator to comply with the emission limit must calibrate, maintain, and operate the temperature measurement devices as provided in §60.454.

Additional Recordkeeping Requirements

The NSPS includes notification, recordkeeping, and reporting requirements as summarized in Table 6. Reports must be submitted to the CDPHE APCD, while records must be retained on site and made available to the APCD upon request.

Table 6: Overview of Additional Reporting Requirements (40 CFR Part 60, Subpart SS)

REPORT REQUIREMENT	REPORT DESCRIPTION
Notification of Intent to Conduct a Performance Test [§60.8]	If your facility is required to conduct a performance test, you must submit a notification of intent to conduct a performance test 30 days prior to the test.
Initial Performance Test Report [§60.455.a]	If your facility is required to conduct a performance test, you must submit an Initial Performance Test Report. The requirements of the report are specified in §60.455, and may be but, are not limited to, the performance test results and a list of coatings and coating content used during a one-month period, and incineration system data.
Quarterly Non Compliance Report [§60.455.b]	This quarterly report identifies instances in which the VOC limit is exceeded at the facility. If no such exceedances occur, a report stating this must be submitted semi-annually.
Records [§§60.455.c and 60.455.d]	Your facility is required to maintain records necessary to document compliance with the proposed rule for 2 years. Additional recordkeeping requirements are provided in §60.455.c depending on the compliance option that you choose.

Small Business Assistance Contacts

The CDPHE Small Business Assistance Program (SBAP) and Generator Assistance Program (GAP) provide free services to small businesses seeking help in understanding and complying with environmental regulations. If you have questions on environmental requirements for your surface coating operation, visit our websites or call us at:

SBAP: 303.692.3175 or 303.692.3148
www.cdphe.state.co.us/ap/sbap.asp

GAP: 303.692.3415
www.cdphe.state.co.us/hm/gap/gaphom.asp