

Standards for the Nonmetallic Mineral Processing Industry
NSPS 40 CFR part 60, subpart 000
Fact Sheet

On April 28, 2009 the Environmental Protection Agency (EPA) amended the requirements for stack testing and opacity observations for the Nonmetallic Mineral Processing Industry. These requirements, known by this industry as OOO standards, will affect facilities that commenced construction, modification, or reconstruction *after* April 22, 2008. Facilities that commenced construction, modification, or reconstruction *before* April 22, 2008 will be subject to the previous provisions of subpart OOO. This guide is organized in two parts: **Part I - Who is Subject to Subpart OOO?** and **Part II – What are the Old and New Opacity and Stack Emissions Requirements?** This guidance provides an overview of opacity and stack testing requirements under subpart OOO.

The final rule can be found at: <http://www.epa.gov/fedrgstr/EPA-AIR/2009/April/Day-28/a9435.pdf>

Part I -Who is subject to subpart OOO?

In Colorado, most businesses that perform Nonmetallic Mineral Processing will have to meet specific stack emissions limits and fugitive emissions limits for particulate matter (PM) to operate. These emission limits are calculated by conducting a stack test and opacity observations prior to Final Approval of a permit. Under subpart OOO, new emission limits have been set for PM and fugitive emissions.

Nonmetallic mineral processing plants, such as lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants or any other facilities that crush or grind the following *Nonmetallic Minerals* are subject to subpart OOO:

<ul style="list-style-type: none"> ❖ Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell. ❖ Sand and Gravel. ❖ Clay including Kaolin, Fireclay, Bentonite, Fuller’s Earth, Ball Clay, and Common Clay. ❖ Rock Salt. ❖ Gypsum (natural or synthetic). ❖ Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate. ❖ Pumice. ❖ Gilsonite. 	<ul style="list-style-type: none"> ❖ Talc and Pyrophyllite. ❖ Boron, including Borax, Kernite, and Colemanite. ❖ Barite. ❖ Fluorospar. ❖ Feldspar. ❖ Diatomite. ❖ Perlite. ❖ Vermiculite. ❖ Mica. ❖ Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.
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➤ **The following facilities operated at Nonmetallic Mineral Processing Plants (fixed or portable) are subject to OOO standards:**

- Crusher
- Grinding mill
- Screening operation
- Bucket elevator
- Belt conveyor
- Bagging operation
- Storage bin
- Enclosed truck or railcar loading station
- Crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement up to the first storage silo or bin

➤ **Facilities at the following plants are not subject to the provisions of this subpart:**

- Fixed sand and gravel plants and crushed stone plants with capacities of 23 megagrams per hour (25 tons per hour) or less;
- Portable sand and gravel plants and crushed stone plants with capacities of 136 megagrams per hour (150 tons per hour) or less; and
- Common clay plants and pumice plants with capacities of 9 megagrams per hour (10 tons per hour) or less.

➤ **The provisions of this subpart do not apply to the following operations:**

- All facilities located in underground mines.
- Plants without crushers or grinding mills above ground.
- Wet material processing operations (as defined in § 60.671). *See note below*
- Facilities that fall under Subpart F (Standards of Performance for Portland Cement Plants) or Subpart I (Standards of Performance for Hot Mix Asphalt Facilities) are not subject to the provisions of subpart OOO.

Note: Wet material processing operations are operations that process saturated materials. Under the definition of saturated materials (§ 60.671), material that is solely wetted by wet suppression systems is not considered to be “saturated.”

Exemption: When an existing facility is replaced by a piece of equipment of equal or smaller size, having the same function as the existing facility, and there is no increase in the amount of emissions, the new facility is exempt from the particulate stack testing, opacity observation and monitoring provisions of subpart OOO. Owner/operator will still be required to submit equipment specifications such as rated capacity. Operations replacing all existing equipment at a facility will not be exempt.

Part II – What are the Old and New Opacity and Stack Emission Requirements?

The Air Pollution Control Division may require each Nonmetallic Mineral Processing Plant to conduct opacity observations and stack tests prior to Final Approval permit issuance to demonstrate compliance with subpart OOO emission standards. Stack tests are used to measure the amount of Particulate Matter (PM) and opacity observations are used to measure the visibility of emissions. Stack emission and

fugitive emission limits (i.e., opacity limits) must be met within 60 days after achieving the maximum production rate at which the facility will be operated, but no later than 180 days after startup.

➤ **What is required to conduct an opacity observation?**

What is opacity? Opacity is the degree to which something reduces the passage of light. Opacity shall be measured using EPA Method 9, which requires that the individual conducting the opacity observation be certified to conduct the readings. A visible emissions observation form can be found at:

<http://www.cdphe.state.co.us/ap/downpermitforms/veofrm4.pdf>

What are the differences between the Old and New opacity requirements of subpart OOO?

Old:

Facilities for which construction, modification, or reconstruction commenced *before* April 22, 2008 are required to conduct an initial 3-hour opacity observation. Fugitive emissions shall not exceed **10 percent opacity** for all affected facilities, except for crushers without capture systems, which have a fugitive emission limit of **15 percent opacity**. See standards in the tables below.

New:

Facilities for which construction, modification, or reconstruction commenced *after* April 22, 2008 are required to conduct Method 9 opacity observations for *30 minutes (five 6-minute averages)*, when determining compliance with the fugitive emissions standard for any affected facility. Fugitive emissions shall not exceed **7 percent opacity** for all types of affected facilities, except for crushers without capture systems, which have a fugitive emission limit of **12 percent opacity** (See table below). Facilities that commenced construction, modification, or reconstruction *after* April 22, 2008 will have to repeat an opacity test (*30 minutes (five-6minute averages)*) every 5 years for all subject equipment. Businesses can choose to have a certified employee conduct the Method 9 reading or hire a certified consultant to conduct the testing.

✚ To see a list of opacity and stack testing companies in the State of Colorado go to:

http://www.cdphe.state.co.us/ap/sbap/sbap_stacktestingfirms.pdf *

*Disclaimer: CDPHE offers this list as a courtesy. We update the list periodically but we cannot confirm its accuracy at any given time. CDPHE does not endorse any firm on the list. A firm's presence or absence from the list should not be considered a judgment as to the quality of the service offered by that firm. If your firm provides opacity or stack testing services and would like to be added to this list, please contact Doug Ryder at 303-692-3189.

Subpart 000—Fugitive Emission Limits

“Fugitive emissions” is defined in subpart 000 as “particulate matter” that is not collected by a capture system and is released to the atmosphere at the point of generation).

For	The owner or operator must meet the following fugitive emissions limit for grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility or from any other affected facility:	The owner or operator must meet the following fugitive emissions limit for crushers at which a capture system is <u>not</u> used:	The owner or operator must demonstrate compliance with these limits by conducting:
Affected facilities that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008	10 percent opacity	15 percent opacity	<ul style="list-style-type: none"> • An initial 3 hours (thirty 6-minute averages) opacity observation in accordance with §60.11 of this part and §60.675 of this subpart.
Affected facilities that commence construction, modification, or reconstruction on or after April 22, 2008	7 percent opacity	12 percent opacity	<ul style="list-style-type: none"> • An initial 30 minute (five 6-minute averages) opacity observation in accordance with §60.11 of this part and §60.675 of this subpart; and • If wet suppression is used, then an initial and then monthly periodic inspections of water flow to wet suppression system must be recorded in accordance with §60.674(b) and §60.676(b); and • A repeat opacity observation shall be conducted within 5 years from the previous observation for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that conduct monthly periodic inspection and record them, as required, are exempt from this 5-year repeat testing requirement.

➤ **What if an affected source has a bag house?**

Bag houses that control emissions from an individual enclosed storage bin are exempt from stack PM concentration limits and testing, but must determine a stack opacity using EPA Method 9 by conducting a *1-hour reading (ten 6-minute averages)*. For bag houses that control storage bins or enclosed truck or railcar loading stations that operate for less than 1 hour at a time, the duration of the Method 9 observations may be reduced to the duration the affected facility operates (but not less than 30 minutes).

Affected facilities for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a bag house to control emissions, must conduct quarterly 30-minute visible emission inspections using EPA Method 22 while operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the bag house to normal operation. Records of each Method 22 test, including the date and any corrective actions taken, shall be recorded in a logbook. As an alternative, a bag house leak detection system may be used as long as the owner/operator follows specific requirements under §60.674 of this subpart.

- ✦ Method 22- No certification of the person conducting the observation is required because this procedure just requires you to record the amount of time you see emissions and does not require the determination of opacity levels. See: [http://www.deq.state.ne.us/AirToxic.nsf/23e5e39594c064ee852564ae004fa010/4355677618f22192862574ec005af2d3/\\$FILE/method22qa.pdf](http://www.deq.state.ne.us/AirToxic.nsf/23e5e39594c064ee852564ae004fa010/4355677618f22192862574ec005af2d3/$FILE/method22qa.pdf) on how to conduct a Method 22 reading.

➤ **What if my equipment is enclosed in a building?**

Opacity readings shall be taken from the outside of the building. Facilities that were constructed/modified/reconstructed after April 22, 2008 will be required to use EPA Method 9 to measure opacity. If the facility was existing (prior to April 22, 2008) and conducted a Method 22 performance test showing zero emissions then no further reading is necessary.

➤ **What is required in a PM stack test?**

Stack tests are typically used by the Division to verify that the correct emission rates were used in the Initial Approval (IA) Permit to calculate emission limits. If one is required, the IA Permit will have a condition specifying that a *compliance test* be conducted. When a stack test is required to finalize the IA permit, the source must do the following:

1. Submit a test protocol that meets the requirements of the Air Pollution Control Division [Compliance Test Manual](#) 30 days prior to the test for Division approval;
2. Receive Division approval of the test protocol;
3. Inform the Division of any changes to the test schedule so that a Division employee may observe the stack test;
4. Complete all stack tests required by the IA permit prior to self-certification; and
5. Submit the results of the stack test to the Division for review and approval within 30 days of completing the testing.

Subpart 000—Stack Emission Limits for Affected Facilities with Capture Systems

(This table is for affected facilities with capture systems used to capture and transport particulate matter to a control device or for process equipment in a building).

For	The owner or operator must meet a PM limit of:	And the owner or operator must meet an opacity limit of:	The owner or operator must demonstrate compliance with these limits by conducting:
Affected facilities that commenced construction, modification, or reconstruction <u>after August 31, 1983 but before April 22, 2008</u>	0.05 g/dscm (0.022 gr/dscf) ^a	7 percent for dry control devices ^b	<ul style="list-style-type: none"> • An initial stack test in accordance with §60.8 of this part and §60.675 of this subpart; and • Monitoring of wet scrubber parameters in accordance with §60.674(a) and §60.676(c), (d), and (e).
Affected facilities that commence construction, modification, or reconstruction <u>on or after April 22, 2008</u>	0.032 g/dscm (0.014 gr/dscf) ^a	<p>Not applicable (except for individual enclosed storage bins).</p> <p>7 percent for dry control devices on individual enclosed storage bins</p>	<ul style="list-style-type: none"> • An initial stack test in accordance with to §60.8 of this part and §60.675 of this subpart; and • Monitoring of wet scrubber parameters- an initial test, and daily thereafter, must include the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate in accordance with §60.674(a) and §60.676(c), (d), and (e); and • Monitoring of bag houses require a quarterly 30-minute visible emissions reading using Method 22 in accordance with §60.674(c), (d), or (e) and §60.676(b).

^a Exceptions to the PM limit apply for individual enclosed storage bins and other equipment. See §60.672(d) through (f).

^b The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

What records must your business maintain?

- Initial Method 9 opacity observations and repeat 5-year opacity observations (if required).
- Stack test report(s) from initial stack testing.
- If you use a wet suppression system, maintain records of monthly inspections (in a log book) of water flow to spray nozzle, including the dates and any corrective action taken.
- If you use a bag house, maintain quarterly records of 30-minute EPA Method 22 readings, including the dates and any corrective action taken.
- If you use a leak detection system on a bag house, a site-specific monitoring plan must be developed and submitted. Also, the following must be maintained:
 - a. Records of output
 - b. Records of adjustments with date and settings
 - c. Records of alarms and cause and if cause was alleviated within 3 hours
- Lime Manufacturing operations must maintain records of visible emissions according to 40 CRF Part 63, Subpart AAAAA NESHP for Lime Manufacturing.
- If you use a wet scrubber, records of change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate shall be measured daily. Also, semiannual reports showing if measurement of the scrubber pressure loss and liquid flow rate decreased more than 30% from

the average of the most recent performance test. Semiannual reports shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

FOR MORE INFORMATION CONTACT:

Air Pollution Control Division: (303) 692-3100

Or

Small Business Assistance Program: (303) 692-3175 or 3148

Small Business Ombudsman: (303) 692-2135

Website: <http://www.cdphe.state.co.us/ap/sbap/index.html>

