

## **AIR PERMITTING**

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## **AIR QUALITY GENERAL INFORMATION**

The Florida Department of Environmental Protection (FDEP) regulates air quality at concrete batching sites through their general permitting process. Florida is divided into six districts. Although inspection and enforcement delegation may vary from district to district, the review and approval of an air quality permit is uniform statewide. Permit approval includes an examination of the concrete batching plant dust collection system specifications as well as a review of the site plan. The amount of impervious surfaces is reviewed in order to reduce airborne emissions. An annual visible emissions test is a general permit requirement. FDEP staff recognizes the efficiency of concrete batching plant dust collection systems. In contrast, an asphalt plant is required to conduct a stack test along with the visible emissions test. FDEP staff also recognizes that the aggregate stockpiles will be sprinkled not only to minimize airborne particulate but as a way to recycle process water used for washing out the mixers.

A concrete batching plant has a dust collector, which operates similar to a vacuum cleaner, at each point or source of discharge. Dust collectors are typically greater than 99 percent effective in removing particulates. Everything that is collected is recycled back to the process.

A very important distinction between a concrete batching plant versus a cement plant is that at a concrete batching plant, aggregate materials are kept in a constantly moist condition. All the voids in the rock are filled with water. There is also a coating of water on the outside of the rock which is necessary in order to batch the concrete properly. This totally moist condition prevents "fugitive" dust during windy conditions. A cement plant by contrast, has open stockpiles that are dry. Substantial fugitive dust can be created by the wind. Also, fugitive dust is minimized at the concrete batching plant as the cement must be stored in waterproof, closed silos.

In addition, the FDEP in its Chapter 62-296 Stationary Sources – Emission Standards, draws a clear distinction between Portland Cement Plants 62-296.407 and Concrete Batching Plants 62-296.414.

## AIR QUALITY OF CONCRETE BATCHING PLANTS

1. Applicable air pollution regulations are formulated by the U.S. Environmental Protection Agency and delegated to the FDEP. Thus, the FDEP regulates air permitting for concrete batching plants, as well as for cement plants. FDEP rules and policies recognize that while cement plants are significant sources of pollution, concrete batching plants are not. For example, cement plants are regulated as “*major*” sources, whereas concrete batching plants are labeled and regulated as “*minor*” sources. Moreover, a concrete batching plant only requires an “air general permit” whereas cement plants require a “Type V” permit. During the review of a permit application for a concrete batching plant, the FDEP recognizes that the technology in removing particulates from the atmosphere in these plants is such that, when equipped with dust collectors, dust collection efficiency is nearly one hundred percent.

2. More particularly, construction and operation of concrete batching plants is pursuant to the procedures and conditions established by the FDEP for general permits, Florida Administrative Code (F.A.C.) Rule 62-210.310(5)(b) and specifically Rule 62-296.414. Among other things, these regulations limit stack emissions to 5% maximum, and require reasonable precautions to be taken against unconfined emissions including paving, watering, sweeping, and wind brakes.

3. Thus, for example, a source of potential fugitive dust would be truck traffic coming in and out over unpaved surfaces. In a concrete batching plant, this is easily eliminated by having all impervious surfaces where trucks are located or travel.

## **ADDITIONAL INFORMATION**

### **Beneficial Effect of Nearby Railways**

1. Materials used at a concrete batching plant have to be brought in from offsite. The raw materials are blended together and transported to the construction site by trucks. Historically, concrete batching plants have been located on parcels with railroad access. The advantage to the producer is lower transportation costs. The advantages to the community are less truck traffic on the roads and less air pollution.

2. As to potential air pollution, the biggest source of fugitive emissions is car and truck traffic. It is a far larger source of air pollution than concrete batching plants or other similar industries. The EPA estimates that mobile source emissions account for nearly one third of the air pollution in the United States.

3. By locating a concrete batching plant adjacent to rail service, the number of truck trips will be reduced by approximately 50%, thus reducing airborne particulates.

## **AIR QUALITY PERMITTING**

The Florida Department of Environmental Protection has established an "air general permit" at Florida Administrative Code (FAC) Rule 62-210.310(5)(b) for concrete batching plants. An air general permit is an authorization by rule to construct or operate a specific type of facility. Use of such authorization by any individual facility does not require action by the FDEP. The terms and conditions of the air general permit are set forth in the rule rather than in a separately issued air construction or air operation permit. The owner or operator shall notify the FDEP of the facility's intent to use the air general permit.

FDEP staff is familiar with the specifications of manufacturers of concrete batching plants. This familiarity and the plant manufacturers' typical emission control equipment efficiencies allow for this administrative determination of eligibility to be permitted under the criteria of an air general permit.

Construction and operation will be pursuant to the procedures and conditions established by the FDEP for general permits, F.A.C. Rule 62-210.310(5)(b) and specifically Rule 62-296.414.

- (1) **Stack Emissions.** Emissions from silos, weigh hoppers (batchers), and other enclosed storage and conveying equipment shall be controlled to the extent necessary to limit visible emissions 5 percent opacity.
- (2) **Unconfined Emissions.** The owner or operator shall take reasonable precautions to control unconfined emissions from hoppers, storage and conveying equipment, conveyor drop points, truck loading and unloading, roads, parking areas, stock piles, and yards as required by paragraph (4), below. For concrete batching plants the following shall constitute reasonable precautions:
  - (a) Management of roads, parking areas, stock piles, and yards, which will include one or more of the following:
    1. Paving and maintenance of roads, parking areas, and yards.
    2. Application of water or environmentally safe dust-suppressant chemicals when necessary to control emissions.
    3. Removal of particulate matter from roads and other paved areas under control of the owner or operator to mitigate reentrainment, and from building or work areas to reduce airborne particulate matter.

4. Reduction of stock pile height or installation of wind breaks to mitigate wind entrainment of particulate matter from stockpiles.
  - (b) Use of spray bar, chute, or partial enclosure to mitigate emissions at the drop point to the truck.
- (3) Test Methods and Procedures. All emissions tests performed pursuant to the requirements of this subsection shall comply with the following requirements.
  - (a) The referenced test method for visible emissions shall be EPA Method 9, as described at 40 CFR, Part 60, Appendix A, adopted and incorporated by reference at Rule 62-204.800.
  - (b) Test procedures shall conform to the procedures specified in Rule 62-297.310. All test results shall be reported to the Department in accordance with the provisions of Rule 62-297.310.
  - (c) Visible emissions tests of the silo dust collector exhaust points shall be conducted while loading the silo at a rate that is representative of the normal silo loading rate. The minimum rate shall be 25 tons per hour unless such rate is unachievable in practice. If the emissions from the weigh hopper (batcher) operation are also controlled by the silo dust collector, the batching operation shall be in operation during the visible emissions test. The batching rate during the emissions test shall be representative of the normal batching rate and duration. Each test report shall state the actual silo loading rate during emissions testing and, if applicable, whether or not batching occurred during emissions testing.
- (4) Frequency of Testing
  - (a) The owner or operator of any concrete batching plant using an air general permit shall have a performance test conducted for visible emissions for each dust collector exhaust point no later than thirty (30) days after commencing operation, and annually thereafter.
  - (b) The owner or operator of any concrete batching plant under the authority of an air construction permit or air operation permit shall have a performance test conducted for visible emissions for each dust collector exhaust point prior to submitting the application for an initial air operation permit, and annually thereafter.

IRC COMMENT #26

DESCRIBE THE METHOD THAT WILL BE USED TO COMPLY WITH FDEP AIR QUALITY REQUIREMENTS, INCLUDING ALL ASPECTS OF UNLOADING MATERIALS, PROCESSING, AND DISTRIBUTION.

1. Stack emissions shall be collected with a dust collector. Typical filtration efficiency is greater than 99%. The dust collector will be equipped with a magnehelic gauge that alerts the operator of possible malfunction by monitoring the pressure drop between the intake and discharge air plenums. Pulsing of the bags in the dust collector is regulated by a timer to facilitate efficient dust collection. Materials collected by the dust collection system are 100% recyclable. In all cases, limit visible emissions to a maximum 5 percent opacity.
2. Unconfined emissions are controlled by paving the interior roads and parking areas. A power broom will be onsite for weeping as necessary. Fugitive dust will be controlled by watering. Dust from aggregate stockpiles will be minimized by sprinkling the aggregates with water. Wind entrainment of particulate matter from stock piles will be mitigated by the use of wind breaks such as trees and other vegetation. See the Site Plan. Chutes with custom shrouds and snorkels shall be installed at the plant to capture airborne emissions.
3. Visible emissions testing shall be as per EPA Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources. This Method involves the determination of plume opacity by qualified observers. The Method includes procedures for the training and certification of observers and procedures to be used in the field for determination of plume opacity. The observer shall record the name of the plant, emission location, facility type, observer's name and affiliation, and the date on a field data sheet. The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition, and plume background are to be recorded. All test results shall be reported to the FDEP.
4. A performance test will be conducted for visible emissions for each dust collector exhaust point no later than thirty (30) days after commencing operation, and annually thereafter.