

**BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator	Tilcon, Connecticut, Inc.
Address	642 Blackrock Ave., New Britain, CT 06050
Equipment Location	563 & 567 South Leonard Street, Waterbury, CT 06708
Equipment Description	Truck-Mix Concrete Batch Plant
Town-Permit Numbers	192-0318
Premises Number	027
Stack Numbers	2 & 3
Permit Issue Date	

Emma Cimino
Deputy Commissioner

Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. DESIGN SPECIFICATIONS

A. General Description

Tilcon Connecticut, Inc. owns and operates a concrete batch plant adjacent to its asphalt plant in Waterbury, Connecticut.

The Plant is a truck-mix operation with a silo for cement and supplement material. In contrast to a central mix plant, the raw materials will be mixed in the trucks rather than prior to truck loading.

Point source and fugitive emissions of particulate matter (PM) consisting predominantly PM and PM-10 are generated by the plant. Fugitive PM emissions occur during material transfer and handling operations and point source emissions occur from the cartridge filter units and baghouse unit serving the cement and supplement cement material silo and batch plant, respectively.

Aggregate and sand are delivered by truck and stored in outside storage bins until needed. PM emissions from the unloading of raw materials are minimized by utilizing a water spray to keep the materials damp.

The aggregate and sand are loaded onto enclosed conveyors using front-end loaders up to elevated storage bins and then conveyed to a weigh hopper. All raw materials including Portland cement, fly ash, and other supplemental materials pass through the weigh batch hopper. These materials are weighted and delivered along with water to the awaiting concrete mixing trucks.

Cement and supplement cement materials are loaded using a pneumatic conveyor up to an elevated silo with two compartments.

Water is added to the mixture of sand, aggregate, cement, and cement supplement in the trucks for mixing.

In winter, hot water will be added to the trucks to facilitate mixing. There will be no heat source used onboard the mixing trucks to heat the concrete mixture.

The truck load out is conducted in an enclosure equipped with a full curtain to contain fugitive PM emissions.

B. Equipment Design Specifications

1. Equipment: CON-E-CO Batchmaster Concrete Batch Plant
2. Materials Processed: Aggregate, Sand, Cement, Cement Supplement Material
3. Design Maximum Rated Capacity (tons/hr): 400
4. Design Maximum Rated Capacity (cubic yards/hour): 200

C. Control Equipment Design Specifications

1. Fabric Filter Baghouse System (Control for Weigh Hopper and Truck-Mix Loading)
 - a. Make and Model: Treyco Performer Series Model 410-8000 Dust Collection System
 - b. Number of Bags in Use: 81
 - c. Filter Material: Polyester
 - d. Net Cloth Area (ft²): 1,296
 - e. Air/Cloth Ratio: 6.2:1 sq ft.
 - f. Cleaning Method: Pulse Air
 - g. Pressure Drop Range (inches H₂O): 0 to 6
 - h. Overall Control Efficiency: 99.99%
2. Cartridge Filter System (Control for Cement and Cement Supplement Material Silo) (There are two units; specifications below are for each unit)
 - a. Make and Model: Con-E-CO PJC-600
 - b. Number of Cartridges in Use: 8
 - c. Filter Material: Polyester
 - d. Net Cloth Area (ft²): 304
 - e. Air/Cloth Ratio: 5:1 sq ft.
 - f. Cleaning Method: High Pressure Air – Pulse Jet
 - g. Pressure Drop (inches H₂O): 0 to 0.5
 - h. Overall Control Efficiency: 99.9%

D. Stack Parameters

Stack No: and Equipment/Operation it Serves	Minimum Stack Height (ft)	Minimum Exhaust Gas Flow Rate (acfm)	Minimum Stack Exit Temperature (°F)	Stack Exit Direction	Minimum Distance from Stack to Nearest Property Line (ft)
Stack No. 2 (Weigh Batch Hopper and Truck-Mix Loading)	21	8000	Ambient	Horizontal	65
Stack No. 3 (Cement/Cement Supplement Silo)	55	3040	Ambient	Horizontal	65

PART II. OPERATIONAL CONDITIONS

A. Equipment

1. Maximum Annual Concrete Production (tons/yr): 3,504,000
2. Maximum Annual Concrete Production (cubic yards 1,752,000

B. Control Equipment

1. The fabric filter and cartridge filter systems shall be equipped with a bag leak detector system. The bag leak detector system shall be properly installed, calibrated, operated, and maintained in accordance with manufacturer's recommendations. An audible alarm shall be set to sound when there is a leak.

2. Fabric Filter Baghouse System (Control for Weigh Hopper and Truck-Mix Loading)
 - a. Fabric Filter Pressure Drop, range (inches H₂O): 0 to 6
 - b. Overall Control Efficiency (%): 99.99

3. Cartridge Filter System (Control for Cement and Cement Supplement Material Silo) per unit
 - a. Pressure Drop (inches H₂O): 0 to 0.5
 - b. Overall Control Efficiency: 99.9%

PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

A. Criteria Pollutants

1. Weigh Hopper and Truck-Mix Loading (Stack No. 2)

Pollutant	lb/hr	tpy
PM	0.006	0.03
PM ₁₀	0.002	0.01

2. Cement and Supplement Material Unloading to Elevated Storage Silo (Stack No. 3)

Pollutant	lb/hr	tpy
PM	0.06	0.26
PM ₁₀	0.03	0.14

3. Fugitive Dust from Aggregate Transfer and Sand Transfer (Uncontrolled)

Pollutant	lb/hr	tpy
PM	1.58	6.91
PM ₁₀	0.75	3.30

4. All Sources Combined

Pollutant	lb/hr	lb/cubic yards concrete	tpy
PM	1.64	0.02	7.20
PM ₁₀	0.79	0.02	3.45

B. Hazardous Air Pollutants

This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [STATE ONLY REQUIREMENT]

C. Opacity

This equipment shall not exceed 10% opacity during any six minute block average as measured by 40 CFR 60, Appendix A, Reference Method 9.

- D. Demonstration of compliance with the above emission limits may be met by calculating the emission rates using emission factors from the following sources:

Process	PM & PM ₁₀ Emission Factor Source
Cement (Pneumatic Transfer) unloading to elevated storage silo	AP-42, 5 th Edition, Volume 1, Section 11.12, Table 11.12-2, February 2011. RCSA 22a-174-18(c)(A)
Cement Supplement Material (Pneumatic Transfer) unloading to elevated storage silo	AP-42, 5 th Edition, Volume 1, Section 11.12, Table 11.12-2, February 2011. RCSA 22a-174-18(c)(A)
Aggregate transfer (Front Loader to Conveyor Belt) to elevated bin (coarse aggregate)	AP-42, 5 th Edition, Volume 1, Section 11.12, Table 11.12-2, February 2011.
Sand transfer (Front Loader to Conveyor Belt) to elevated bin (fine aggregate)	AP-42, 5 th Edition, Volume 1, Section 11.12, Table 11.12-2, February 2011.
Weight hopper loading	Most recent Department of Energy and Environmental Protection (DEEP) approved stack test results
Concrete-Mixing Truck loading	Most recent DEEP approved stack test results

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

1. The Permittee shall monitor the concrete production using a weigh scale.
2. The Permittee shall continuously monitor and continuously record the pressure drop across the baghouse fabric filter system. The Permittee shall maintain these parameters within the ranges recommended by the manufacturer to achieve compliance with the emission limits in this permit.
3. The Permittee shall perform inspections of the control devices as recommended by the manufacturer.

B. Record Keeping

1. The Permittee shall keep records of the monthly, and consecutive 12-month concrete production. The consecutive 12-month concrete production shall be determined by adding the current month's concrete production to that of the previous 11 months. The Permittee shall make this calculation within 30 days of the end of the previous month.
2. For both the fabric filter system and the cartridge filter system, the Permittee shall keep records of the date and time the bag leak detector alarm sounds, the name of the person making the entry, the corrective actions taken, and the results of these actions.
3. The Permittee shall calculate and record the monthly and consecutive 12-month PM, and PM₁₀ emissions in units of tons. The consecutive 12-month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
4. The Permittee shall make and keep records of the inspection and maintenance of the control devices. The record shall include:
 - a. Identification of the control device;
 - b. the name of the person conducting the inspection;
 - c. the date;
 - d. the time;
 - e. observations; and
 - f. the results or actions taken
5. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

C. Reporting

1. The Permittee shall notify the commissioner, in writing, of the following:
 - a. the date of initial startup of this equipment/process;
 - b. the date the equipment/process achieved maximum rated capacity if it is within 180 days of the date reported in Part IV.C.1.b of this permit.

Any required written notification(s) above shall be submitted to DEEP.CACU@ct.gov, DEEP.SEM@ct.gov and DEEP.BAM.AirPermits@ct.gov no later than 30 days after the subject event.

PART V. STACK EMISSION TEST REQUIREMENTS

Stack emission testing shall be performed in accordance with the Emission Test Guidelines available on the DEEP website at www.ct.gov/deep/stacktesting.

For Stack No. 2, initial stack testing shall be required for the following pollutants:

<input checked="" type="checkbox"/> PM	<input checked="" type="checkbox"/> PM ₁₀	<input type="checkbox"/> PM _{2.5}	<input type="checkbox"/> SO ₂	<input type="checkbox"/> NO _x	<input type="checkbox"/> CO
<input type="checkbox"/> VOC	<input type="checkbox"/> Opacity	<input type="checkbox"/> Other :			

The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate, but not later than 180 days after initial startup. The Permittee shall submit test results within 60 days after completion of testing.

Recurrent stack testing for the above pollutants shall be conducted within five years from the date of the previous stack test.

Stack test results shall be reported as follows: all pollutants in units of lb./hr. and lb./cubic yards of concrete.

PART VI. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants. The Permittee shall examine the bags and cartridges each week to check for excessive build up on the outside of the bags or cartridges. If excessive build up occurs, the time interval between the automatic cleanings shall be decreased, in accordance with the manufacturer's specifications.
- C. The Permittee shall operate this equipment and premises at all times in a manner so as not to violate or significantly contribute to a violation of any applicable state requirements for the control of fugitive dust emissions, as set forth in RCSA Section 22a-174-18(c). The Permittee shall take the following steps to reduce fugitive dust emissions:
 1. Sufficient wetting, grading, covering and maintenance of material storage piles, both temporary and permanent, shall be used to comply with the maximum 10% fugitive dust opacity limit.
 2. Minimize fugitive dust emissions from unpaved roads or driveways within the premises through use of water sprays or any other equivalent method. During the winter months water shall be used to the extent that it is feasible and practical so as to not cause a safety hazard

3. Sweep paved roadways within the premises to control fugitive dust emissions.
4. Minimize drag out to paved roads caused by the source's operation through the rinsing of construction equipment with water or any other equivalent method.
5. All open-bodied trucks and vehicles transporting materials likely to give rise to airborne dust must be covered at all times when in motion.
6. Cover conveyors and enclose material transfer points, or use water sprays, as needed.

PART VII. SPECIAL REQUIREMENTS

A. Premises Emissions Summary

1. On January 1st of each calendar year, if the potential emissions of NO_x or VOC from the premises are equal to or greater than 25 tons per year per pollutant, then for such pollutant(s), the Permittee shall:
 - a. Monitor NO_x and/or VOC emissions, as applicable, from the premises for such calendar year.
 - b. Calculate and record annual NO_x and/or VOC emissions, as applicable, from the premises for such calendar year, in units of tons. The Permittee shall make these calculations on or before February 1st of the following year with respect to the previous calendar year. Such records shall include a sample calculation(s).
 - c. If actual NO_x and/or VOC emissions, as applicable, from the premises are equal to or greater than 25 tons for such calendar year, the Permittee shall submit to the commissioner, on or before March 1st of the following year, an annual emissions summary with respect to the premises for the previous calendar year. Such summary shall be submitted on forms prescribed or provided by the commissioner.
2. A Permittee is exempt from Part VII.C.1 requirements of this permit if, on January 1st of the subject year, the premises was operating in accordance with any of the following:
 - a. A valid Title V permit issued pursuant to RCSA section 22a-174-33;
 - b. RCSA section 22a-174-33a; or
 - c. RCSA section 22a-174-33b.

- B.** The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]
- C.** The Permittee shall resubmit for review and approval a Best Available Control Technology (BACT) analysis if such construction or phased construction has not commenced within the 18 months following the commissioner's approval of the current BACT determination (i.e., the date of this permit) for such construction or phase of construction. [RCSA §22a-174-3a(i)(4)]

PART VIII. ADDITIONAL TERMS AND CONDITIONS

- A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal, or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state, and local law.

- B. Any representative of DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring, and enforcing the terms and conditions of this permit and applicable state law.
- C. This permit may be revoked, suspended, modified, or transferred in accordance with applicable law.
- D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E. Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F. Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.
- G. Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H. The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I. Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.