

Hot Mix Asphalt Plants

Hot mix asphalt (HMA) is used primarily as paving material and consists of a mixture of aggregate and liquid asphalt cement, which are heated and mixed in measured quantities. Hot mix asphalt facilities can be broadly classified as either drum mix plants or batch mix plants, according to the process by which the raw materials are mixed. In a batch mix plant, the aggregate is dried first, then transferred to a mixer where it is mixed with the liquid asphalt. In a drum mix plant, a rotary dryer serves to dry the aggregate and mix it with the liquid asphalt cement. After mixing, the HMA generally is transferred to a storage bin or silo, where it is stored temporarily. From the silo, the HMA is emptied into haul trucks, which transport the material to the job site.

Emissions of Concern

The primary emission sources associated with HMA production are the dryers, hot bins, and mixers, which emit particulate matter (PM) and a variety of gaseous pollutants. Other emission sources found at HMA plants include storage silos, which temporarily hold the HMA; truck load-out operations, in which the HMA is loaded into trucks for hauling to the job site; liquid asphalt storage tanks; hot oil heaters, which are used to heat the asphalt storage tanks; and yard emissions, which consist of fugitive emissions from the HMA in truck beds. Emissions also result from vehicular traffic on paved and unpaved roads, aggregate storage and handling operations, and vehicle exhaust. The PM emissions associated with HMA production include the criteria pollutants PM₁₀ (PM less than 10 micrometers in aerodynamic diameter) and PM_{2.5}, hazardous air pollutant (HAP) metals, and HAP organic compounds. The gaseous emissions associated with HMA production include the criteria pollutants sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC), as well as volatile HAPs.



Emission Controls

Hot mix asphalt plants have two major categories of emissions: ducted sources (those vented to the atmosphere through some type of stack, vent, or pipe), and fugitive sources (those not confined to ducts and vents but emitted directly from the source to the ambient air). Dryers are the most significant ducted sources of emissions from both batch mix and drum mix HMA plants. Other potential process sources include the hot-side conveying, classifying, and mixing equipment. Along with the dryer gas, these other sources are vented to the primary dust collector or to a separate dust collection system. Other controls used include mechanical collectors and scrubbers. Emissions from aggregate handling and transfer typically are controlled with fabric filters. Large diameter cyclones and settling chambers also are used as product recovery devices. The material collected in those devices is recycled back into the process.

There also are a number of fugitive dust sources associated with batch mix HMA plants, including vehicular traffic generating fugitive dust on paved and unpaved roads, aggregate material handling, and other aggregate processing operations.



COMPLIANCE ASSISTANCE PROGRAM

New Source Review (NSR) & Fees

YRCAA requires that a NSR permit application be submitted and approved prior to the construction, installation, establishment, replacement or modification of air contaminant sources, emissions units or air pollution control equipment in YRCAA jurisdiction. This includes equipment associated with stationary or portable devices or any part of such a device that emits or has the potential to emit any air contaminant, including HMA plants. There is a NSR permit application fee, and an Order of Approval fee, based on the staff time to conduct the review and draft the Order of Approval.

Annual Registration & Fees

Sources of air contaminants, including HMA plants, must register annually with YRCAA and pay a fee. YRCAA's Board of Directors reviews fees annually. As a part of the registration program, businesses are required to complete and submit a registration form annually. The annual registration program enables YRCAA to classify sources and maintain an inventory of air contaminants. Information is also used to evaluate air pollution control strategies to attain and maintain National Ambient Air Quality Standards.

Inspections

Regular inspections of registered sources are conducted to verify compliance with air pollution regulations. When inspecting HMA plants, the compliance team will:

- review records;
- determine if any changes have been made to processes, equipment, materials or fuels;
- observe operation and maintenance activities and reports;
- determine if any violations of rules, permits or orders exist; and
- determine if any corrective actions are needed to avoid enforcement.

If you have already installed or modified a HMA plant or any equipment or process associated with a HMA plant, or are planning to in the future, please contact YRCAA. Our staff is available to assist you with the permit and registration process.

YRCAA Rules

[YRCAA Regulation 1, Subsection 4.01](#)

State Rules

[WAC 173-400](#) – General Regulations for Air pollution Sources

[WAC 173-460](#) – Controls for New Sources of Toxic Air Pollutants WAC

Federal Rules

40 CFR Part 60 New Source Performance Standards (NSPS) Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants.

In addition, EPA may promulgate new rules for control of hazardous air pollutants (HAPs) also known as maximum achievable control technology (MACT) standards. To determine if your facility, equipment or operation is subject to any new MACT rule standard see the following links:

<http://www.epa.gov/airtoxics/mactfnlalp.html>

<http://www.epa.gov/ttn/atw/area/compilation.html>