



# Air Pollution Control Division

## Small Business Assistance Program

### Asphalt Roofing

### A Guide to Air Quality Regulations

The asphalt roofing industry manufactures asphalt-saturated felt rolls, fiberglass and organic (felt-based) shingles and surfaced and smooth roll roofing. Asphalt roofing manufacturing facilities emit substances that are regulated as air pollutants by the Colorado Department of Public Health and Environment, Air Pollution Control Division (APCD). The two main pollutants that come from asphalt roofing production are particulate matter (PM) and volatile organic compounds (VOC). Particulate matter is a name used to describe small particles suspended in the air. PM is divided into two (2) categories: Total Suspended Particulate (TSP) and PM-10 (particles smaller than 10 microns in diameter). PM-10 is dangerous to human health because small particles are inhaled and can be imbedded in the lungs. Most of the PM from asphalt roofing production is recondensed asphalt fume. VOC is a name for evaporative substances which react in the air to form ozone. When asphalt is heated VOCs are released. Both PM and VOC can be dangerous to human health and the environment.

#### ➤ WHAT AREA IS MY BUSINESS IN?

Air emission reporting and permitting requirements in Colorado vary based on whether a business is located in an “attainment/attainment maintenance” area or a “nonattainment” area of Colorado. In general, air regulations are more stringent in “nonattainment” areas because these areas exceed the National Ambient Air Quality Standards for regulated pollutants. To determine if your business is located in an attainment or nonattainment area, visit the Divisions Ozone information page at: <https://www.colorado.gov/pacific/cdphe/ozone-information>

#### ➤ AIR POLLUTANTS

The Air Pollution Control Division regulates two types of air pollutants: *criteria* and *non-criteria* pollutants. Criteria pollutants include particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and volatile organic compounds (VOCs), among other pollutants. Non-criteria pollutants include Hazardous air pollutants and are a list of over 188 chemicals listed in Colorado Regulation No. 3, Appendix B.

There are numerous sources of emissions at an asphalt roofing facility. Emissions of both VOC and PM are emitted from asphalt storage tanks (loading in and out and tank standing losses), blowing stills, saturators, coater-mixing tanks, coaters, sealant strip and laminate applicators, fuel combustion and material handling, filler and aggregate storage bins and truck haul roads.

## ➤ **New Source Performance Standards (NSPS): CFR 40, Subpart UU - Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture**

Asphalt roofing manufacturing facilities are subject to a set of rules called NSPS. These are industry-specific federal rules and are adopted and enforced by the State of Colorado. NSPS UU applies to any asphalt roofing manufacture that operates any saturator or mineral handling and storage system constructed after November 18, 1980 and located at a roofing plant. Also, asphalt storage tanks or blowing stills constructed after November 11, 1980 and used to produce materials for roofing only, or for roofing and other purposes, and any saturator or blowing still constructed after May 26, 1981 used only for non-roofing material production are subject to the NSPS. This NSPS rule also applies to asphalt storage tanks and asphalt blowing stills located at asphalt processing plants and petroleum refineries.

### **Standards for Particulate matter:**

The NSPS rule contains limits on the amount of particulate matter that an asphalt roofing facility can emit. The standards include limits on emissions from saturators, blowing stills, asphalt storage tanks and mineral handling and storage facilities. The standards include limits on the concentration of particulate matter in the exhaust gases. They also include limits on the opacity of the exhaust gases. To see specific limits see link listed below for NSPS UU.

### **Source Testing:**

Asphalt roofing facilities subject to Section UU, of the NSPS rule are required to perform a number of emissions tests to verify that they meet the standards for particulate matter. Testing is included as a condition on the initial permit ("Issuance 1"). After the owner certifies that the operation is in compliance with the conditions of Issuance 1 of the permit, the Division issues a "Final Approval to Operate" letter to operate under the conditions of Construction Permit Issuance 1. This letter confirms the completion of the self-certification requirements of that permit. The facility must show that it is meeting all of the standards before final approval can be issued. 60 days prior to testing a "Test Protocol" must be submitted to the Air Division for approval. Among other information, the protocol explains who will perform the tests, how the tests will be done and when the tests will take place.

## ➤ **AIR EMISSION REPORTING AND PERMITTING REQUIREMENTS**

### **APEN (Air Pollutant Emission Notice):**

An APEN is a form used to report a facility's emissions. Operators of asphalt roofing production facilities are required to submit an APEN to the Air Pollution Control Division if air emissions exceed the Reporting thresholds presented in Attachment A. If the permitting thresholds are exceeded in Attachment A, the source must obtain a permit from the Air Pollution Control Division (APCD) prior to construction or operation of the unit.

Reporting and Permitting thresholds can be more stringent if your source is in a nonattainment area because these areas exceed the National Ambient Air Quality Standards for regulated pollutants. VOCs and NO<sub>x</sub> are considered precursors to Ozone and therefore businesses in the 8-hour nonattainment area must report at the nonattainment thresholds for those pollutants. All other pollutants are reported at the Attainment thresholds. To view a map of the nonattainment area in Colorado, visit: [www.colorado.gov/pacific/cdphe/ozone-information](http://www.colorado.gov/pacific/cdphe/ozone-information)

All APEN and related forms are available through the Division and can be downloaded at: [www.colorado.gov/pacific/cdphe/air-permits](http://www.colorado.gov/pacific/cdphe/air-permits)

### **Significant Changes**

A Revised APEN must be filed with the Division anytime there is a significant change in emissions. A significant change is an increase of one ton per year over the amount previously reported on an APEN or 5 percent, whichever is greater.

### **Exceeding A Permit Limit**

An APEN must be filed whenever a permit emission limit is exceeded for a permit modification.

### **➤ Air Permits:**

An air permit can define the type of air pollution control measures that a business will have to use. It can also determine the amounts of materials that a business will be allowed to consume and any other operating limits that apply to the particular facility, which in return have an effect on the facility's air emission levels.

In the State of Colorado, Air Pollution Emission Permits (also called "Construction Permits") are issued for both minor and major sources of air pollution. A minor source emits less than 100 tons (uncontrolled) of any one pollutant in a nonattainment area, or less than 250 tons per year (uncontrolled) in an attainment area. If a facility exceeds these limits it is classified as a Major Source. A major source must obtain a construction permit and an Operating Permit. An operating permit is a permit issued under Title V of the 1990 Clean Air Act Amendments that includes all the individual sources of emissions at a plant into one all-inclusive permit. Operating permits usually require more monitoring and reporting of emissions than construction permits. Operating permits often contain operating and equipment maintenance plans.

When you file an APEN, the Air Pollution Control Division will use the information to determine if a permit is required based on the thresholds in Attachment A. If a permit is required, the conditions on the permit will be based on the information which you submitted on the APEN.

### **“Potential to Emit” :**

Potential to Emit (PTE) comes into play when determining if a facility is a major source. PTE is based on the maximum production levels possible if the equipment is operated at the maximum hourly rate 24 hours a day 365 days a year. The equipment’s PTE is often calculated by multiplying the emissions associated with the maximum hourly production rate time’s 8760 hrs (8760 = 24 hours a day X 365 days per year). A source with PTE exceeding 100 tons of VOC or Particulate Matter is considered to be a major source unless the operator obtains a Synthetic Minor Permit. A Synthetic Minor Permit contains limits that restrict production rates or operating parameters so that emissions are maintained below major source thresholds.

In Colorado, Construction Permits are issued in two phases: “Issuance 1” and “Final Approval to Operate”.

- Issuance 1 of a permit allows the plant to be constructed and begin operation. The source must self-certify to Issuance 1 of the permit once in operation within 180 days of receiving the first issued permit.
- After the owner certifies that the operation is in compliance with the conditions of Issuance 1 of the permit, the Division issues a “Final Approval to Operate” letter to operate under the conditions of Construction Permit Issuance 1. This letter confirms the completion of the self-certification requirements of that permit. The source is issued an invoice for processing time for this letter, and must pay the invoice within 30 days of receipt. Please note that if the permit processing fee is not paid within 30 days of receipt, you will be in violation of your permit conditions and may result in revocation of the permit.
- If the source modifies an existing permit, the source will be issued Construction Permit Issuance 2 (Issuance number determined by modification sequence). The source may have to self-certify to the new Issuance if required by the permit.

A permit describes key areas that an operator needs to address. The permit defines the type of air pollution control measures to be used, limits the annual production at the site, provides guidelines for opacity (how dense the visible emissions are allowed to be), and includes recordkeeping requirements.

### **➤ Air Pollution Control Devices:**

Emissions from asphalt storage, blowing stills and saturators and wet loopers are vented to knock-out boxes and then to control devices such as a bagfilters or scrubbers. Emissions from storage and handling of filler and aggregate are controlled by using complete or partial enclosures. Conveyor transfer points on storage and handling systems are usually completely enclosed and vented to a control device. Emissions from saturator and coater operations are controlled through emission capture hoods vented to a control device. Emissions from asphalt blowing stills are vented to incinerators. Typical control devices for asphalt roofing operations include low voltage electrostatic precipitators (ESP), high energy air filters (HEAF), coalescing filters (mist eliminators), afterburners, wet scrubbers and baghouses.

## ➤ Calculations:

Businesses are required to calculate the annual emissions from their processes when submitting an APEN. If you are a new source that doesn't have a year of throughput data yet to base your emission calculations on, you can estimate your emissions based on hours of operation, estimated production, design capacity, etc. The most common method used for calculating emissions from an asphalt roofing facility is to refer to the emission factors in EPA's air pollution engineering manual AP-42. AP-42 contains emission factors for calculating emissions from all the various processes that are involved in the manufacture of asphalt roofing materials. AP 42 has specific emission factors for each asphalt roofing process, which is listed in English and Metric units. AP-42, Section 11.2 - Asphalt Roofing can be found at the following web address:

<http://www.epa.gov/ttnchie1/ap42/ch11/final/c11s02.pdf>.

## ➤ KEEPING YOUR APEN AND/OR AIR PERMIT CURRENT

APENS are valid for five years and must be updated when certain changes occur at the site. It is important to submit revised or renewed APENs to keep your air permit accurate and up-to-date. A revised or renewed APEN must be submitted under the following scenarios:

### 1. Submit an APEN... Annually whenever a significant change in emissions occurs.

Sources must submit a revised APEN to inform the Division of significant changes in actual emissions by April 30<sup>th</sup> of the following year (e.g., a change in emissions in calendar year 2010 must be reported by April 30, 2011.) The definition of a "significant change in emissions" varies based on whether the source emits criteria or non-criteria pollutants, as described below.

#### *Criteria Pollutants:*

- For sources emitting less than 100 tons per year a change in actual annual emissions of 5 tons per year or more above the level reported on the last APEN submitted to the Division;
- For volatile organic compound (VOC) sources in ozone nonattainment areas emitting less than 100 tons per year of VOC, a change in actual annual emissions of 1 ton or more, or 5 percent, whichever is greater above the level reported on the last APEN submitted to the Department;
- For sources emitting 100 tons per year or more, a change in actual annual emissions of 50 tons or more, or 5 percent, whichever is less above the level reported on the last APEN submitted to the Division;
- A change in actual emissions of 50 pounds per year of lead, above the level reported on the last APEN submitted to the Division.

#### *Non-Criteria Pollutants:*

- An increase in actual annual emissions of 50 percent or 5 tons, whichever is less.

### 2. Submit an APEN... When there is a change in ownership or a change in the business/source location.

An APEN must be submitted to the Division whenever the ownership or location of a business (or source) changes. For a change in ownership, the new owner must also supply a signed agreement containing the specific date for the transfer of the permit, responsibility, coverage and liability between the current and new permittee. After the Division receives the APEN, fee and written agreement, the Division will issue a new permit reflecting the ownership change.

If a company is changing its name only, and all other procedures and information as stated in the last APEN submitted by the business remains unchanged, the company must only submit one APEN indicating the name change and a **Permit Amendment** form specifying the name change if a permit exists.

### **3. Submit an APEN... When new or different air pollution control equipment is installed.**

An APEN is required whenever new control equipment is installed, or whenever a different type of control equipment replaces an existing type of control equipment. Revised APENs are not required for routine maintenance or repair of control equipment.

### **4. Submit an APEN... When a permit limit is modified.**

If you have an existing permit that requires modification (e.g., the owner wishes to change the operation equipment or throughput), a revised APEN must be submitted. Make sure you know your permit limits. If you think you may exceed those limits, you may want to modify your permit.

### **5. Submit an APEN... Before the current APEN expires.**

An APEN is valid for five years. A new, complete APEN form must be submitted at least 30 days before expiration of the five year term of the current APEN. Contact the Division at 303-692-3150 if you are unsure when your APEN expires.

## **➤ WHAT FEES APPLY?**

**Filing Fee:** A filing fee is required for each APEN submitted. This includes APENs submitted for administrative changes (e.g., change in ownership, change in location). Fees are subject to change by the legislature on an annual basis.

**Annual Fee:** All sources required to file APENs must pay annual fees. The Division bills each source subject to an APEN filing fee per ton of criteria pollutants emitted and per ton of non-criteria (hazardous air pollutants) emitted. The Division mails invoices for these fees in May or June of each year (these fees account for the emissions from the previous year's operation). Fees are subject to change by the legislature on an annual basis.

**Permit Processing Fee:** In addition to the APEN filing fee, permit-processing fees will be assessed at an hourly rate. If the total processing time is anticipated to be more than 30 hours the Division will contact the applicant in writing and provide an estimate of the projected processing time. The applicant can waive this notice by submitting a letter making this request when the application is submitted.

Current fee information is available online at:

<https://www.colorado.gov/pacific/cdphe/emissions-and-permitting-fees>

## Small Business Assistance:

The Small Business Assistance Program (SBAP) is available to answer questions you may have regarding environmental issues at your facility. The SBAP can help you understand regulations, fill out required forms, calculate your emissions, or provide information by presenting a workshop for your company or for your industry. We are here to help, and our services are always free.

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- **RESOURCES**

- ❖ Air Pollution Control Division (APCD): (303) 692-3100
- ❖ Small Business Assistance Program: (303) 692-3175 or 3148
- ❖ Small Business Ombudsman: (303) 692-2135