STACK TESTING FOR ASPHALT PLANTS

PURPOSE, REQUIREMENTS, METHODS,

AND FIELD BEST PRACTICES

Plant Operations

OUTLINE

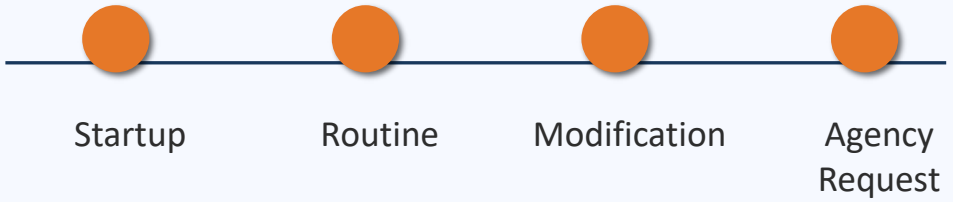
Emission Controls

Compliance Data

1. What are typical emissions sources
2. Key Pollutants
3. When is testing required
4. Typical Testing Methods
5. Operations Conditions to consider
6. Pre Test Planning
7. Test Day execution
8. Successful test Practices
9. Competitive comparison
10. Real World Issues

WHEN TESTING IS TYPICALLY REQUIRED

- Initial startup or initial compliance demonstration
- Periodic permit-required retesting
- After process or burner modifications
- When requested by the agency



TYPICAL ASPHALT PLANT EMISSION SOURCES

- Dryer drum stack
- Blue smoke capture / reclaim system
- Loadout or silo vents (site-specific)
- Burner combustion exhaust
- Screen
- Pugmill

COMMON EPA TEST METHODS

Method 5	Particulate matter
Methods 202A/202	PM10 and PM2.5 and condensables
Method 8	Sulfuric Acid Mist and Sulfur Dioxide*
Method 9	Opacity
Method 10	CO
Method 7E	NOx
Method 25 / 25A	VOC

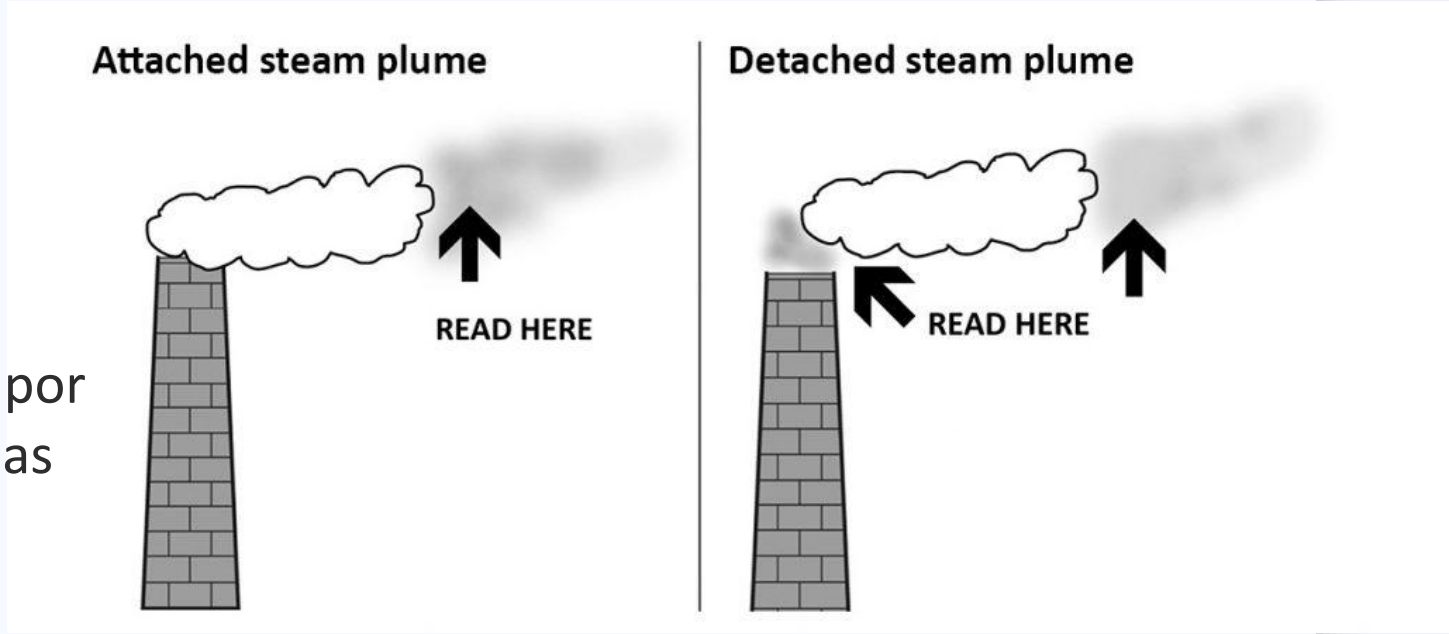
Method 1	Sample and Velocity Traverses
Method 2	Stack Gas Velocity and Volumetric Flow Rate
Method 3A	

Use the approved method listed in the permit or test protocol.

* Method 6c if just SO_2

OPACITY

- Method 9 Certification
- Harder
- Most of the time in colder temps
- Must **exclude** condensed water vapor (steam) from the opacity reading, as water vapor is not considered a pollutant



PRE-TEST PLANNING

- Probably the most important and difficult part
- Review permitting requirements
- Prepare a test protocol
- Submit protocol to the agency
- Confirm production rate, mix design, RAP %, and fuel type
- Any changes to the stack or fan/flow rate
- Verify access ports, platforms, and utilities for the test team
- **Equipment maintenance review**.

Poor planning often leads to failed runs, invalid data, or costly retesting.

Best practice:
run a pre-test readiness audit

OPERATING CONDITIONS DURING THE TEST

- Throughput (tons/hr)
- Drum temperature
- RAP percentage
- Burner firing rate
- Baghouse pressure drop

Goal

Representative operation at maximum normal production

Unstable or low-rate operation can invalidate the test.

WHAT THE TEST CONFIRMS

Baghouse

Primary PM control
Expected high efficiency

Blue Smoke Controls

Capture and manage hydrocarbon emissions from loadout / silos

Burner Performance

Impacts CO, NOx, and combustion efficiency

A passing test supports both compliance and maintenance decisions.

COMMON FAILURE RISKS

- Testing below target production rate
- Baghouse leaks or poor pressure drop control
- Inconsistent feed or moisture conditions
- Blue smoke breakthrough
- Insufficient stabilization before test runs
- Poor coordination with the stack testing firm

Each failure risk can result in invalid runs, exceedances, or retesting costs.

TEST DAY EXECUTION

- Stack testing firm sets up sampling equipment
  - Usually, the day before
- Plant maintains stable production and control settings
- Record process data throughout each test run
- A consultant or environmental manager oversees logistics and documentation
- Should not stop the test just because of non-compliance
  - Could result in additional Violation

Track throughput, temperatures, fuel use, and control device parameters in real time.

DATA REDUCTION AND REPORTING

- Samples are analyzed and reduced using the approved method
- Emission rates are calculated in permit units
- Results are compared against applicable limits
- Final report is submitted to the agency and retained on site

Typical units

gr/dscf
lb/hr
ppm
% opacity

SUCCESSFUL TEST PRACTICES

- Inspect the baghouse and ductwork before the test
- Schedule testing during peak, stable production
- Use experienced testers familiar with asphalt plants
- Build extra time into the schedule for adjustments
- Maintain complete records of operating conditions

Success formula

Planning + stable operations + strong documentation

REAL WORLD ISSUES THAT AFFECT THE TESTING

- Stack testing firm doesn’t have the right equipment or the equipment breaks (Method 25)
- Plant or meters malfunction during test
- Not enough production or no production on test day
- Instrument Span and Calibration are incorrect for the test.
- Operational Changes during test
- Baghouse not operating correctly.
- Air infiltration
- High moisture in stone
- Unable to record operational data
- Unexpected Results

Questions?

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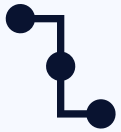
CONTACT



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