

# ASME PTC 4.2 Coal Sampling System

The ASME PTC 4.2 Coal Sampling System is utilized to sample particulate carried within an air stream. The sample is extracted isokinetically to determine the particulate flow rate. The sampling probe features a single, slotted nozzle meeting the geometry specifications of the ASME method. The probe is inserted into the flow stream and positioned at specific locations covering the cross section.

The particulate extraction is via a vacuum system with the extraction rate set by the operator. The vacuum setting is based on the air velocity within the pipe. The particulate is captured in a cyclone separator and weighed after each test to calculate the total particulate flow rate.

The ASME PTC 4.2 Coal Sampling System by Airflow Sciences Equipment LLC (ASE) provides all the basic equipment needed to sample coal isokinetically per the ASME procedure. The air velocity can be measured using a probe such as ASE's Dirty Air Pitot (DAP).

The standard system (ASE part no. ASME-SYSTEM-V2) is shown in the photograph below.



ASME PTC 4.2 sampling in a coal pipe



## Components:

- 1 – ASME Style Coal Sampling Probe (CP-ASME)
- 2 – Dustless Connector (DC-ASMECP)
- 3 – Cyclone Assembly (ASME-CYC)
- 4 – Sample Jar (ASME-CJ)
- 5 – Vacuum Sampling Hose, 8' [3.8m] (ASME-UMB)
- 6 – Control Box (Part no. ASME-CB-V2)
- 7 – Compressed Air Hose (Optional)
- 8 – Filter Bag (ASME-FA3-FB)

- Stopwatch (not shown)
- Data Sheet and Calculations Spreadsheet (not shown)
- Users manual, Certificates of Calibration (not shown)
- Carrying Case (Optional, not shown)

## ASME PTC 4.2 Coal Sampling System Details and Specifications

The ASME sampling probe can be manufactured to a variety of specifications. Typical features are listed below, though custom orders are available:

- Pipe diameter – 12” to 32” [304 to 812 mm]
- Probe body diameter – 1” [25.4 mm]
- Bubble level indicator (to ensure proper alignment)
- Material – 304 stainless steel
- Dustless connector – 1.5” [38.1 mm] or 2” [50.8 mm] NPT thread



ASME PTC 4.2 sample nozzle



ASME probe end with bubble level and handle



Dustless connector

### Optional Accessories

#### ▫ Seal Air Fitting with Traverse Rod

ASE's Mobile Seal Air Fitting (part no. SAF-MOB) greatly improves the accuracy, speed, and safety of a test. When testing flows with high positive static pressure, the SAF keeps the air and particulate from leaking out of the pipe when the test port is open to insert the probe. The SAF blows plant compressed air into the test port, allowing safe access and making for a much cleaner test.



SAF-MOB

The SAF-MOB has an integrated Traverse Rod with color-coded markings corresponding to the probe insertion depths for the ASME probe traverse. This makes it easy for the operator to accurately and quickly position the probe at each test point for the coal flow sampling. The Traverse Rod eliminates the need to manually mark the probe.

