

Stack Emission Monitoring Procedure

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Stack Emission Monitoring Procedure

- Stack Emission monitoring procedure includes tasks of Measurement, testing, sampling and analysis. Onsite determination of physical parameters of flue gases such as temperature, flow and pressure also involved in Stack emission monitoring
- Air Quality is major environmental responsibility for all manufacturing industries. Those industries can use air quality monitoring or stack monitoring to measure degree of pollutants or contaminants present in current exhaust air and take required steps to reduce them
- All industries must have sampling port built into their stack and permanent sampling platform to ease Stack Emission Monitoring Procedure for environmental consultants who perform monitoring of stack emission



Selection of Sampling Site in Stack Emission Monitoring Procedure

- The objective of sampling in Stack Emission Monitoring Procedure is to determine accurate degree of pollutants present in air emitted from stack. Laminar flow should be present in stack to get accurate readings.
- To select representative sample sampling point should be at least eight stack diameter downstream and two stack diameter upstream from any joint, bend, expansion and contraction.



Stack Emission Monitoring Procedure :Travers Point

- As per new Notifications all stacks must have sampling post and sampling platform. Location of traverse points will be decided by pollution control board.
- After previous criteria met, to determine the minimum traverse points required first diameter of stack is to be calculated in case of circular stack. Also it should be far 3cm from stack wall.
- [Know more about how to select Traverse Point in stack monitoring](#)



Molecular weight Determination

Molecular weight can be found by drawing known amount of gas into gas chromatograph or Orsat apparatus. Moisture should be found. Molecular weight can be calculated by knowing gas components.

The average molecular weight can be determined by using below mentioned formula:

$$M = \sum_{i=1}^n (x_i M_i)$$

X is mole fraction and M_i is mole weight of each constituents in mixture of number of constituents.



Stack Emission Monitoring Procedure: Velocity Determination

- Once Pitot tube is connected Dynamic and static pressure is found using manometer. Also Temperature inside duct is also measured. The velocity of gas and amount of air can be found using formula
- [Learn Advantages of Stack Emission testing](#)
- [You can also use our stack monitoring calculators to calculate velocity of gases online.](#)



Stack Emission Monitoring Procedure: Moisture Determination

Moisture can be determined by dry and wet bulb temperature and the referring to psychometric chart. Also condenser method work well for almost all gas streams and comparatively easy to perform.



Condenser Method to determine moisture in gas stream

In this process sample of the stack is extracted through a filter to remove particulate matter then through condenser, collecting the condensate formed in the process and then it is measured.



Wet/Dry method to determine moisture in gas stream

- The equilibrium temperature attained by water which is vaporising into a gas of constant composition and constant dry bulb is called as wet bulb temperature. The amount of depression of wet bulb temperature below the dry bulb is the saturation degree of humidity of the gas. Hence, moisture content of gas can be determined by using wet and dry bulb method.



Sample Recovery

- After the sample has cooled, brush down the dust on side of nozzle into thimble and replace it in labelled container.
- This blog is written by Perfect Pollucon Services. They offer [Environmental services](#) in India including Consultancy and Monitoring Services.



Thank you



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