



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT  
ARIYALUR  
INSTRUMENTATION MANUAL**

Issue No:02	Rev. No: 00	Effective Date: 01.11.2019	INST/SOP/010
Issued By: M.R		Approved By: HOD - INSTRUMENTATION	
SOP for checking of kiln Inlet & PC Gas Analyzers			

**Scope:** Checking and Maintenance of kiln Inlet & PC Gas Analyzers.

**Responsibility:** Instrumentation technician.

**Accountability:** Instrumentation - Section Engineer.

**PPE:**

- Safety helmet
- Safety shoe
- Mask
- Goggles
- Hand gloves
- Kevlar suit

**Tools required:**

- Multimeter
- Tester
- Screw Driver
- Hand Blower
- Ring spanner

**Hazard Analysis:**

Risks associated

Electrocution

Mitigating Measures

Use Insulated hand glove and Tools



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**Procedure**

1. Wear hand gloves, goggles and nose mask.
2. Do not open the water line when probe is inside.
3. Do not clean the sample gas line with compressed line when it is connected to Analyzer.
4. Do not remove the sample filter when compressor air valve is open.
5. Keep calibration gas cylinders in vertical position.
6. Do not disconnect the water hose line when water temperature is more than 45 deg.
7. Do not check any electrical connections while probe in line.
8. Sample gases should be re-filled as per renewal date and Test certificate should be maintained.
9. Clean the analyzer panel with hand blower.
10. Change the Selection from auto to manual mode thro HMI for probe cleaning.
11. Give Air purging twice by manually through HMI to clean the sample line inside the probe.
12. Check for air pressure it should be >4kg in the receiver tank.
13. Remove the probe from the local panel by pressing the Probe out Push button.
14. Check and ensure the water and air hoses are free from any obstackles to free movement of the workmen.
15. Clean the Probe coating and check the coating or jamming near the sampling point.



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16. Check any water leakage in the probe, hose and near the heat exchanger.
17. Check for the abnormal noise in the water pump and heating in radiator cooling fan.
18. Note the water pressure gauge reading in the panel. The water pressure should be in between 1-2 kg/cm<sup>2</sup>.
19. If water pressure is less than the 1kg/cm<sup>2</sup> top up with fresh water up to 1.5kg/cm<sup>2</sup>. While taking water relief valve should be open to avoid air bubbles in the water line.
20. Start the water pump and observe water pressure.
21. Check for any moisture inside the sample lines.
22. Insert the probe by manually through local panel by pressing PROBE INSERT push button up to 50% and observe water temperature. Water temperature should not exceed 80 degree centigrade.
23. Note the Gas Flow it should be in between 40 to 60 LPH. If Gas flow is less than the 40 LPH, Adjust the flow regulator to maintain 40 to 60 LPH.
24. If gas flow and water temperature are OK, then insert the probe fully.
25. Check any alarms in HMI. Change Manual mode to Auto mode.
26. Check the readings in the analyzer and confirm with CCR readings.
27. Check Analyzer room AC working condition.

**Emergency / Emergency Shut OFF:**

1. If any unconsciousness is there, give First aid and inform to the Safety department or Call Emergency number 3108/9865152222/9750963761.



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**Records/Annexure:**

1. Refer Line clearance certificates.
2. JSA as enclosed below.

**JOB SAFETY ANALYSIS: (JSA)**

<b>Job Safety Analysis</b>	Job: Gas analyzer	Date: 01.11.2019	Analysis by: Section Head	Reviewed by: HOD
Title of employee doing job: INST - TECHNICIAN	Supervisor: Section Engineer	Department: Instrumentation	Section: Pyro	Approved by:
Req'd/recommended PPE: Safety helmet, Safety shoe, Mask, goggles & insulated Gloves.				
<b>Sequence of Basic Job Steps</b>	<b>Potential Hazards</b>	<b>Recommended Safe Job Procedure</b>	<b>What Could Go Wrong</b>	<b>Corrective Action</b>
Clean probe coating.	Due to high temperature of probe burn injury may occur.	Wear Hand gloves, goggles and PPE.	Burn injury may occur.	Probe should be cleaned only with cleaning tool.
Ceramic filter cleaning	Dust suffocation	Before cleaning use nose mask.	Breathing problem.	Use proper PPE.
Clean the analyzer Panel	Dust will come out from the analyzer.  Electrocution.	Before cleaning use nose mask.  Ensure the fitness certification for portable instruments.	Breathing problem.  Resulting electrocution	Use proper PPE  Check the instruments healthiness and fitness certificate validity.