



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



Issue No. 01	Rev. No: 02	Effective Date: 20.09.2017	SOP/INST/013
Issued By: M.R		Approved By: HOD - INSTRUMENTATION	
SOP for Checking of Dampers			

Scope: Checking of Dampers.

Responsibility: Instrumentation technician.

Accountability: Instrumentation - Section Engineer.

PPE:

- Safety helmet
- Safety shoe
- Mask
- Goggles
- Hand gloves
- Safety belt

Tools required:

- Multimeter
- Tester
- Screw Driver
- Hand Blower

Hazard Analysis:

Risks associated

Electrocution

Mitigating Measures

Use Insulated hand glove



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Procedure:

- 1 Use nose mask, goggles.**
- 2 Carry all the necessary tools in a tool bag.**
- 3 Ensure the signal interlocks and block the interlock if necessary.**
- 4 If the height is more than 1.5 meters, use safety belt.**
- 5 Line clearance to be taken before attending the Dampers.**
- 6 Before starting the job, check the Damper operation in local mode for ensuring the energy isolation.**
- 7 Clean the junction box and limit switches box with blower.**
- 8 Check the limit switch contacts by using multi meter with insulated probes.**
- 9 Check the condition of Pinion gear and limit switch assembly.**
- 10 Use manual wheel and declutch to ensure dosing valve full open and full close and Observe limit switches operation.**
- 11 Ensure 4-20 milli amps converter output while Damper is in full close condition was 4 mA and 20 milli amps in full open condition.**
- 12 Ensure torque switches operation.**
- 13 Return the line clearance duly signed copy for Electrical Department.**
- 14 Operate from local push button station to ensure full open and full close of Damper**
- 15 Compare physical opening of Damper with % opening indicated on Damper.**
- 16 Then operate from CCR by % Set point and observe feed back of Damper open/close and confirm the signal in CCR.**
- 17 Retrieve all the blocked signals.**
- 18 Give the clearance to operation.**



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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.

Records/Annexure:

1. JSA as enclosed below.

JOB SAFETY ANALYSIS:(JSA)

Job Safety Analysis	Job: CHECKING OF DAMPERS	Date:20-09-2017	Analysis by:	Reviewed by:
Title of employee doing job: INST - TECHNICIAN	Supervisor: SECTION ENGINEER	Department: INSTRUMENTATION	Section:RAWMILL,PYRO, CEMENT MILL &PACKING PLANT	Approved by:
Req'd/recommended PPE: SAFETY HELMET, SAFETY SHOES, GOGGLES, DUST MASK, HAND GLOVES				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
1. SWITCH OFF THE ISOLATOR & TAKE THE LINE CLEARANCE.	MOVEMENT OF THE ACTUATOR WHILE CHECKING.	ENSURE THE LINE CLEARANCE IS OBTAINED.	RESULT IN ELECTROCUTED,INJURY.	ENSURE FEEDER ISOLATION AND FOLLOW THE LOTO SYSTEM
2. OPEN THE JUNCTION BOX & BLOWER THE TERMINAL BLOCKS.	DUST MAY COME OUT OF THE JUNCTION BOX	WEAR GOGGLES,HAND GLOVES & NOSE MASK BEFORE BLOWERING	COUGHING,EYE IRRITATION MAY OCCUR	USE GOGGLES, DUST MASK AND HAND GLOVES
3.CHECK THE OPEN/CLOSE LIMIT & TORQUE SWITCHES BY USING MULTIMETER WITH INSULATED PROBES	LIVE SUPPLY IS EXPOSED AT THE MEASURING POINT NEAR THE PROBE	ENSURE THE PROBE IS PROPERLY INSULATED	RESULT IN ELECTROCUTED	USE INSULATED HAND GLOVES
3. TIGHTEN THE TERMINAL BLOCKS USING SCREW DRIVER/TESTER.	LIVE SUPPLY IS EXPOSED AT THE METTALIC PART OF THE SCREW DRIVER/TESTER.	ENSURE THE METTALIC PART OF THE TESTER/SCREW DRIVER IS INSULATED PROPERLY.	RESULT IN ELECTROCUTED	USE INSULATED INSULATE THE SCREW DRIVER/TESTER USING INSULATION TAPE
4. CHECK THE OPERATION OF THE DAMPER FROM THE CENTRAL CONTROL ROOM.	SUDDEN MOVEMENT OF ACTUATOR LEVER.	MAINTAIN 1M DISTANCE FROM THE ACTUATOR	RESULT IN INJURY,FRACTURE	STAND OPPOSITE SIDE OF THE ACTUATOR WHERE THE LEVER ACTUATES