DALMIA CEMENT (B) LIMITED DALMIAPURAM INSTRUMENTATION DEPARTMENT			
Issue No. 02	**Rev. No: 02**	**Effective Date: 25.05.2016**	**SOP/INST/08**
Issued By: S & P		**Approved By: HOD-Instrumentation**	

SOP FOR CALIBRATION OF SOLID FLOW FEEDER

Scope/Purpose : This SOP is applicable for solid flow meter operation and Calibration

Responsibility : Instrument section -Engineer

Accountability : Section In-Charge

PPE:

Helmet
Shoe
Nose Mask

Tools:

1. Multi meter
2. Screw driver

Hazard Analysis:

Risks associated	Mitigating Measures
Electric shock	Usage of Insulated tools and Safety shoes
Leg Injury	Correct position while fixing check weight into this eye bolt

Training needs:

1. First aid procedures
2. Awareness of Dangerous shock
3. Operating procedures

MODES OF OPERATION:

1.Gravimetric mode : Controlled mode (Closed Loop)

- ✓ Feed rate actual value is controlled for specified set point. Maximum possible set point equals nominal feed rate.

2.Volumetric mode : Uncontrolled mode (Open Loop)

Drive motor for material pre-feeder is controlled in proportion to set point. At rated conditions, feed rate roughly corresponds to specified set point. Set point is limited to the triple nominal feed rate

SOP FOR CALIBRATION OF SOLID FLOW FEEDER

CALIBRATION PROCEDURE

Control Measuring in Automatic Operation.

1. Ensure level in the bin is more than 75% of its capacity.
2. Stop bin loading system and ensure all the bin feeding loops are brought to manual mode.
3. Ensure agitation system and air purging systems are working all right.
4. Ensure no fluctuation in the extraction system by observing the process variable.
5. Keep set point of Solid Flow meter constant.
6. Press the control measuring button **>0<** in automatic operation.
7. Note down the quantity extracted during control measuring (W), weighed quantity during control measuring (F) and Control measuring error (Sk).
8. If the error is within +/- 1% then stop the calibration, else proceed as follows.
9. Note down the Span count value from the SET4 parameter.
10. If the error is negative then

$$\text{New Span Count value} = \text{Old Span Count Value} + \left\{ \frac{\text{Error} * \text{Old Span count value}}{100} \right\} \times 100$$

11. If the error is positive then

$$\text{New Span Count value} = \text{Old Span Count Value} - \left\{ \frac{\text{Error} * \text{Old Span count value}}{100} \right\} \times 100$$

12. Then enter the new span count value in the SET4 parameter.
13. Repeat the above steps until the error value comes within +/- 1%.
14. After completion of error adjustments inform CCR.

SOP FOR CALIBRATION OF SOLID FLOW FEEDER

Static Calibration

1. Get required work permit and line clearance from CCR.
2. Check the weighing zone and ensure the weighing plate is clean.
3. Select **Calibration-feeder -> Calibration using weights** from the TUC controller.
4. The actual dead load value will be displayed in terms of "d" in the lower display line.
5. With a completely empty belt, delete the dead load with -> key, then the display will show 0000d.
6. Press [○] key to display the actual load cell mV value.
7. Press ↑↓ Key to switch further.
8. Load a known test weight and wait for a steady display.
9. The actual calibration load value will be display on the left side and is ready to accept the new value.
10. Then enter the new count value corresponding to test weight (A value of 2000 corresponds to 100% load).
11. Conclude the calibration procedure with ↓ key.
12. Then check the BB value by placing and removing the test weights to ensure the repeatability.

Emergency / Emergency Shut OFF:

1. If any unconsciousness is there, give First aid and inform to the Safety department or Call Emergency number 222/233/9865155288

Records/Annexure:

1. Daily check list
2. Sop for operating procedure

SOP FOR CALIBRATION OF SOLID FLOW FEEDER

JOB SAFETY ANALYSIS: (JSA)

Job Safety Analysis	Job: Calibration of Solid flow meter	Date: 25.05.2016	Analysis by: Section Incharge	Reviewed by: Section Head
Title of employee doing job: Instrument Engineer	Supervisor: Section Engineer	Department: Instrumentation	Section: Instrument	Approved by: HOD - Instrumentation
Req'd/recommended PPE: Insulated Tools, Safety shoes,				
Sequence of Basic Job Steps	**Potential Hazards**	**Recommended Safe Job Procedure**	**What Could Go Wrong**	**Corrective Action**
Weighing Plate empty condition	While ensuring weighing plate empty dust may come out with positive draught	Use nose mask and glass goggles	Air could blow dust in eye	If dust particles enter the eyes ,splash eyes with cold water
Ensure agitation system and air purging systems are working all right.	While ensuring the connections may open	Use nose mask and glass goggles	Air could blow dust in eye	If dust particles entre eye ,wash eye with cold water
Placing the test weight on the load cell	Weight may slip from the hand	Wear Hand gloves	Leg Injury	Use hand gloves and safety shoes before lifting the weight