



## DALMIA CEMENT (B) LIMITED – ARIYALUR

### MECHANICAL

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/002
Issued By: M.R		Approved By:	
SOP-JSA for Bucket Elevator Maintenance			

**Scope:** Bucket Elevator Maintenance & Inspection

**Responsibility:** General Fitter

**Accountability:** Mechanical-Section Engineer

**PPE:**

1. Safety helmet.
2. Safety shoe.

**TOOLS:**

1. Box spanner set
2. Ring spanner set
3. Chain Block
4. Wire rope slings
5. Manila / Nylon rope
6. "D" Shackle.
7. Local stop Key.

**Hazard Analysis:**

Risks associated:

Mitigating Measures

Heavy Material

: Use of Chain blocks & Ropes

Auxiliary Drive May start

: 1) Keep the Auxiliary LPB is visibly locked & controlled.

: 2) Check and conform the Auxiliary derive LPBs (both top & bottom) are working.

**Bucket Elevator Maintenance (Buckets, Pulley Inspection & rectification)**

- a) Take the LOTO for the Main drive & and also for material Incoming drives.
- b) Attain required permits( Hot, Height & Confined permits as per the requirement)
- c) Couple the clutch & Empty out the Bucket Elevator with the Auxiliary drive mode.(Ensure the discharge Equipment is in running condition to avoid Jam.)
- d) Open the Inspection door(Head or tail any one only)



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- e) Rotate the Elevator in Auxiliary mode, identify the damaged bucket then stop the elevator.
- f) Remove the bolts from the bucket, take out the bucket.
- g) Re-fix the new bucket and tighten all the bolts, if possible with the required torque as mentioned by the OEM
- h) Lock the LPB & ensure.
- i) De-clutch the coupling.
- j) Confined area work permit is essential for sending the persons inside to work.
- k) Check the oil level & qty inside the Gearbox if it is necessary fill the oil by manual pump without any spill.
- l) Open Inspection Doors at Drive & tail station Check any abnormality Guide channels worn condition & free movement.
- m) Check the Alignment of the belt / Chan in the pulley center.
- n) Clear the DED material inside the boot with proper tools.
- o) Ensure all the tools and material cleared & Close all the Doors opened for inspection.
- p) Return the Line clearance & work permit.
- q) Take trail for the elevator.

#### **Emergency / Emergency Shut OFF:**

1. If any injury takes place, provide First aid and inform to the Safety department or Call Emergency number 3108/9865152222

#### **Records/Annexure:**

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



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<b>Job Safety Analysis</b>	Job: <b>Bucket Elevator Maintenance / Inspection</b>	Date: <b>20/10/2012</b>	Analysis by: <b>Section Engineer</b>	Reviewed by: <b>Section Head</b>
Title of employee doing job: <b>Fitter</b>	Supervisor: <b>Section Engineer (Mech.)</b>	Department: <b>Mechanical</b>	Section: <b>Pyro.: RVRM; CVRM; Packing Plant</b>	Approved by: <b>HOD Mech.</b>
Req'd /recommended PPE:				
<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>
Opening inspection	Material May flush	Ensure the BOOT empty or keep the way to escape from the flushing Material	Material in Boot may release suddenly	Don't open all the bolts of the door, keep some bolts loosen at its place. Empty out without flushing
Open the inspection door	Loose material may fall from top of the Maintenance doo	Tap the casing before opening the inspection door to release loose material	Material may fall on the working personnel	Don't engage anybody at the top(Drive station)
Bucket may fall during handling for replacement.	Fingers trap	Use Suitable tools to handle (Chain Block, slings, etc...)	Slings & chain tightening.	Take care of fingers at nip points



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S L N O	Activity			Isolation Matrix						
				Isolation Type						
				<b>Electrical Energy</b>				<b>Other Energy</b>		
1	<b>Bucket elevator internal inspection</b>	Name and Tag for the Equipment		<b>Drive For The Elevator</b>	<b>Feeding Equipment for the Elevator.</b>	<b>Elevator discharge Air RSLIDE FAN</b>		<b>Bag Filter related to the Elevator</b>		