



## DALMIA CEMENT (B) LIMITED – ARIYALUR

### MECHANICAL SOP

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/064
Issued By: M.R		Approved By: HOD Mechanical	
SOP Bucket Elevator Chain / Belt replacement			

**Scope:** Bucket Elevator Maintenance & Inspection

**Responsibility:** Mechanical section Engineer

**Accountability:** Mechanical section Manager

**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.

### **SOP for the Bucket elevator chain/ belt replacement**

- Take the Line clearance for the Main drive & Feeding gate concern with Process persons.
- Couple the clutch & Empty out the Bucket Elevator with the Auxiliary drive from local mode.
- Rotate the conveyor in Auxiliary mode, identify the damaged bucket and then stop the elevator after that get the line clearance.
- After LC taken, De-clutch the coupling.
- Take confined area work permit for sending the persons inside to work.



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- Inspect the Discharge chute without material if it is their remove the same without any material spillage.
- At the bottom side of the Elevator casing, remove all the bolts of the inspection door.
- Remove the dead stock material from the bottom side of the casing, if any. Feed the Material inside the circuit itself to reduce dust spillage.
- Check the oil level & qty inside the Gearbox if it is necessary fill/Drain the oil by manual pump without any spill.
- Remove the all buckets from the belt/chain.
- Remove & fix the belt/chain.
- Align the belt/chain in the pulley center.
- Remove the bolts from the bucket, take out the bucket.
- Re-fix the new bucket and tighten all the bolts, if possible with the required torque as mentioned by the OEM.
- Return the old buckets, belt, chains into stores.
- Return the Line clearance & work permit.
- Take trail for the elevator.

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

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>01/09/2014</b>	Analysis by: Section Engineer	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 Mechanical</b>
Req'd /recommended PPE:				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
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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#### Isolation Matrix:

S L N o	Activity				Tag / Name of the Equipment		
					Isolation Type		
					Electrical Energy	Other Energy	

1	<b>SILO FEED BELT BUCKET ELEVATOR INTERNAL INSPECTION</b>	Name and Tag for the Equipment	<b>391MD1 SILO FEED BELT ELEVATOR DRIVE</b>	<b>391FN4 AIRSLIDE BLOWER</b>				
2	<b>REJECT BUCKET ELEVATOR INTERNAL INSPECTION</b>	Name and Tag for the Equipment	<b>361MD1 REJECT CHAIN ELEVATOR DRIVE</b>	<b>361BC1 -MILL REJECT BELT</b>	<b>331BC1-MILL FEED BELT</b>			