



## DALMIA CEMENT (B) LIMITED – ARIYALUR



### MECHANICAL SOP

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/184
Issued By: M.R		Approved By: HOD Mechanical	
SOP - Maintenance of AFR double flaps			

#### Scope:

This SOP is applicable for maintenance of AFR double flaps safely.

**Responsibility** : Section Engineer – Mechanical

**Accountability** : Section head – Mechanical

#### PPE:

1. Helmet,
2. Safety shoe,
3. Goggles
4. Gloves.
5. Nose mask
6. Full body harness

#### Tools:

1. Spanner set
2. Hammer
3. chain block-1no
4. Web (Nylon) slings-2Nos.

#### Hazards:

##### Risks associated

1. Body injury
2. Leg injury
3. Hand injury
4. Fall of person

##### Mitigating Measures

1. Safe and tested tools and tackles
2. On job training
3. Full body harness



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#### Isolation matrix:

Sl: No	Activity	Description	Electrical Energy			Other Energy	
1	AFR double flap maintenance	481 FV1,2,3,4	Belt conveyor feeding (481bc1)	Weigh feeder (481WF1)	Double flap of which maintenance going to take(4811 FV1,2,3,4)	Pneumatic Slide gate air line isolation	Double flap valve compressor airline isolation

#### Procedure:

1. Take the Energy isolation permit as per the isolation matrix
2. Ensure use of PPE & dust mask etc.
3. Ensure the closing of pneumatic slide gate and its isolation physically through inspection door.
4. Open all the inspection doors and has to clear the AFR material(if any) before starting of the job.
5. Make sure the feed belts stopped after empty out the material completely.
6. Ensure all the compressor air line was isolated properly
7. Open the Flap shaft inspection door by removing its nuts bolts.
8. Remove the two ends of the bearings and shaft covering pipe properly.
9. Made ready the lifting arrangement to remove/replace the flap plate.
10. Shift the new flap plate to the platform



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11. Cut and remove the flap plate if any bend observed.
12. Replace with new flap plate(10 mm ss plate) and weld along with plate
13. Tighten all the shaft locking bolts properly.
14. Fix the shaft end bearings again properly.
15. Connect the pneumatic cylinder to flap after fixation of bearings
16. Close all the inspections doors properly.
17. Clear all the scrap material near the work area
18. After completion of all of the above points energy isolation can remove.

#### Emergency / Emergency Shut OFF:

1. If body injury is there, First aid will be given and inform to the Safety department or Call Emergency number 3108/9865152222.

#### Records/Annexure:

1. Refer Line clearance/permit in mech department.

JSA is enclosed below

#### JOB SAFETY ANALYSIS :( JSA)

Job Safety Analysis	Job:	Date: 01/09/2014	Analysis by: G.SHYAM	Reviewed by: G.SHANKARAPPA
Title of employee doing job: Section Engineer	Supervisor: Section Head	Department: MECH	Section: PYRO	Approved by:
Req'd/ recommended PPE: Safety helmet, Safety shoe, Gloves, Goggles, Gloves, Nose mask & Full body harness				



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Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Opening of inspection doors	Leg and hand injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles
Inspection of feed pipe for any accumulation of AFR material	Health injury	Use goggles & nose mask	Some materials having itching nature	Ensure Use of goggles & nose mask
Removing the lock pin connected to cylinder and flap	hand & body injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles
Clean the debris/AFR material	Health injury & hand injury	Use goggles, nose mask & proper tools	AFR materials have odd smell in nature	Ensure Use of goggles & proper chipping tools or wire brush and wearing of nose mask
Removing the shaft end bearings	Leg and hand injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles
Removing of locking bolts of flap to plate.	Leg and hand injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles
Cut and remove the bend flap plate	Health injury & hand injury, Fire hazard	Use goggles, nose mask & proper tools, chain clocks	Plate have weight and while removing it may struck up	Ensure proper cleaning of afr material and fire hydrant line made ready and also proper plate opening to be ensured for removal of plate
Fix the new plate and welding	Health injury & hand injury, Fire hazard	Use goggles, nose mask & proper tools, chain clocks	Plate have weight and while fixing it may struck up	Ensure proper cleaning of afr material and fire hydrant line made ready and also proper plate opening to be ensured for fixing of plate
Shaft covering pipe locking	hand injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles
Bearings fixation and cylinder lock pin fixing	Leg and hand injury	Use proper tools and tackles so that fasteners will not slip	Fasteners may slip and tools may hit to the hand and leg	Ensure Use/working condition of tools and tackles



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